AGENDA

Regular Meeting of the Council of the Village of Chase
To be held at the Chase Community Hall, 547 Shuswap Avenue
Tuesday, October 27, 2020 at 4:00 p.m.

1. CALL TO ORDER

2. ADOPTION OF AGENDA

Resolution:
"THAT the October 27, 2020 Village of Chase Regular Council meeting agenda be adopted as presented."

3. ADOPTION OF MINUTES

3.1 Regular Meeting held October 13, 2020 Pages 1-5

Resolution:
"THAT the minutes of the October 13, 2020 Regular Meeting of Council be adopted as presented."

4. PUBLIC HEARINGS

None

5. PUBLIC INPUT ON CURRENT AGENDA ITEMS

This opportunity is for members of the gallery to provide input on items on this Agenda

6. DELEGATIONS

None

7. REPORTS

a) Mayor and Council Reports

8. UNFINISHED BUSINESS

8.1 2021 1-Year Permissive Tax Exemption Bylaw No. 893-2020 Pages 6-7

The bylaw has received first and second reading and has been statutorily advertised. Council may give the bylaw a third reading. Alternatively, Council may want to amend the recipient list by rescinding second reading, making a change, reading the bylaw a second time, and advertise for 2 more weeks. Regardless, the bylaw requires at least one day between third reading and adoption.

Recommendation:
"THAT the 2020 Permissive Tax Exemption Bylaw No. 893-2020 be adopted."

8.2 Development Cost Charges Bylaw – Review and Update

As per a Notice of Motion put forward by Councillor Scott at the October 13, 2020 meeting, Council is being asked to provide direction to Administration regarding the review and creation of a new Development Cost Charges Bylaw.

Recommendation:
"THAT Administration commence works on reviewing the Village's *Development Cost Charges* bylaw."

9. NEW BUSINESS

9.1 Village of Chase Water Utilization Strategy — Pages 8-43
The CAO will provide a verbal report

Recommendation:
"THAT the Village of Chase Water Utilization Strategy be approved by Council."

9.2 Christmas Closures — Pages 44-45
Report from the Corporate Officer

Recommendation:
"THAT Council approve the closure of Municipal Hall to the public effective noon, Thursday December 24, 2020 reopening Monday January 4, 2021."

9.3 2021 Budget Direction — Page 46
Report from the CFO

Council direction is requested

9.4 Liability Insurance for Chase Country Christmas Parade
The Chase Country Christmas Parade will be held this year on December 4, 2020 in a similar fashion to other parades that have been held since the Covid-19 pandemic was declared. The parade will travel around the streets of Chase to allow people to see the parade from their own properties, rather than gathering for a few blocks. There will be several Village of Chase Council members and staff members helping to organize and as well as participate in the parade, providing Village oversight.

Council is being asked to pass a resolution that will enable the Village's liability insurance to extend to the parade event.

Recommendation:
"THAT the Village of Chase take on overall responsibility for the 2020 Chase Country Christmas parade and extend liability coverage to the participants."

10. NOTICE OF MOTION

11. OPPORTUNITY FOR PUBLIC TO SPEAK ON MUNICIPAL MATTERS

12. RELEASE OF IN CAMERA ITEMS
None

13. IN CAMERA

14. ADJOURNMENT
Resolution:
"THAT the October 27, 2020 Village of Chase Regular Council meeting be adjourned."

Minutes of the Regular Meeting of the Council of the Village of Chase
held at the Chase Community Hall, 547 Shuswap Avenue on
Tuesday, October 13, 2020 at 4:00 p.m.

PRESENT: Mayor Rod Crowe
Councillor Alison (Ali) Lauzon
Councillor Ali Maki
Councillor Steve Scott (partial)
Councillor Fred Torbohm

In Attendance: Joni Heinrich, Chief Administrative Officer
Sean O'Flaherty, Corporate Officer
Joanne Molnar, Chief Financial Officer
Joe Matias, Manager of Public Works
Brian Lauzon, Fire Chief

Public Participants: 6

1. CALL TO ORDER
Mayor Crowe called the meeting to order at 4:00 p.m.

2. ADOPTION OF AGENDA
Moved by Councillor Maki
Seconded by Councillor Lauzon
"THAT the October 13, 2020 Village of Chase Regular Council meeting agenda be adopted as presented."
CARRIED
#2020/10/13_001

3. ADOPTION OF MINUTES
3.1 Regular Meeting held September 8, 2020
Moved by Councillor Lauzon
Seconded by Mayor Crowe
"THAT the minutes of the September 8, 2020 Regular Meeting of Council be adopted as presented."
CARRIED
#2020/10/13_002

4. PUBLIC HEARING
None

5. PUBLIC INPUT ON CURRENT AGENDA ITEMS
Jeanne Talbot, of 743 Okanagan Avenue, regarding item 9.5, is the President of the Chase Lions Club, and was in attendance to support the club's request for permission to use Room B of the Chase Community Hall for the Club's meetings.

7. REPORTS
a) Mayor and Council Reports

Mayor Crowe
- September 9 – Attended a Shuswap Watershed Council meeting
- September 17 – Attended a TNRD Board of Directors meeting
- September 21 – Participated in the Municipal Insurance Association of BC Annual General Meeting at UBCM

- September 21-23 – Attended virtual UBCM
- September 25,26 – Attended Council Strategic Planning sessions
- September 28,29 - Attended virtual SILGA Annual General Meeting

Councillor Lauzon
- September 22-24 – Participated in a portion of the virtual UBCM with Councillor Torbohm
- September 25,26 – Attended Council Strategic Planning sessions

Councillor Maki
- September 17 – Participated in the Strategic Planning Survey
- September 21 – Participated in the EcDev survey for SIDIT
- September 25,26 – Attended Council Strategic Planning sessions
- October 5 - Met with potential new business investor regarding their concerns with empty commercial storefronts in the downtown core
- October 10 – Met with a member of Chase Country Christmas to discuss this year's event

Councillor Scott
- Absent during this time of the meeting

Councillor Torbohm
- September 11 – Met with Shawn McCarthy, Chase Fire Rescue regarding location for auto extrication practice site
- September 22-24 - Attended virtual UBCM
- September 25,26 – Attended Council Strategic Planning sessions
- September 29 – Attended virtual SILGA Annual General Meeting
- Reviewed agenda, met with staff and local citizens as required

b) Staff Reports

Reports from the CAO, Corporate Officer, CFO, Manager of Public Works, and Fire Chief were included in the agenda package.

Moved by Councillor Torbohm
Seconded by Councillor Lauzon
"THAT the reports from Council members and staff be received for information."
CARRIED
#2020/10/13_003

6. DELEGATIONS
None

8. UNFINISHED BUSINESS
8.1 101 Aylmer Road – Boscher Land Purchase Request
Moved by Mayor Crowe
Seconded by Councillor Lauzon
"THAT Council accept the appraisal report from Cosh Property Appraisals, and sell approximately 1740 ft2 (162 m2) to the Boschers at the appraised rate of $5.05 per square foot ($0.469 m2)."
CARRIED
#2020/10/13_004

8.2 2021 1-Year Permissive Tax Exemption Bylaw No. 893-2020
Moved by Councillor Maki
Seconded by Councillor Torbohm
"THAT the 2020 Permissive Tax Exemption Bylaw No. 893-2020 be given third reading." **CARRIED**
#2020/10/13_005

8.3 Firetruck Procurement
Moved by Councillor Torbohm
Seconded by Mayor Crowe
"THAT the Request for Proposal for procurement of a new fire truck commence." **CARRIED**
#2020/10/13_006

8.4 Arena Operations Partnering Agreement
Moved by Mayor Crowe
Seconded by Councillor Lauzon
"THAT the Arena Operations Partnering Agreement be approved." **DEFEATED**
ALL OPPOSED
#2020/10/13_007

Moved by Mayor Crowe
Seconded by Councillor Maki
"THAT a Special Meeting of Council be scheduled to discuss the Arena Operations Partnering Agreement." **CARRIED**
#2020/10/13_008

<< Councillor Scott entered the meeting at 4:23 p.m. >>

9. NEW BUSINESS

9.1 Council Remuneration
Moved by Mayor Crowe
Seconded by Councillor Torbohm
"THAT Council, in accordance with policy ADM-19, increase the remuneration by 2% effective December 1, 2020." **CARRIED**
#2020/10/13_009

9.2 Application for Development Variance Permit – 1013 Paquette Road
Moved by Councillor Scott
Seconded by Councillor Torbohm
"THAT the Development Variance Permit application from Dan Nelson, 1013 Paquette Road, be commuted into a zoning bylaw amendment to allow for higher fence heights in the rear yard for all properties that border the Trans-Canada Highway; AND,

Refund the applicant his $500 application fee." **DEFEATED**
ALL OPPOSED
#2020/10/13_010

Moved by Mayor Crowe
Seconded by Councillor Scott
"THAT the matter be deferred until all background information be provided."
DEFEATED
ALL OPPOSED
#2020/10/13_011

Moved by Councillor Torbohm
Seconded by Councillor Scott
"THAT the Development Variance Permit application from Dan Nelson, 1013 Paquette Road, be accepted; AND,

THAT Administration be directed to proceed with the required referral process and to prepare a draft Development Variance Permit for Council's consideration, that would vary the rear parcel line fence height to allow a height of 2.7m." **CARRIED**
#2020/10/13_012

9.3 Commercial Business Fire Code Inspections
Moved by Councillor Scott
Seconded by Councillor Maki
"THAT Administration be directed to develop a bylaw to institute fees for LAFC fire safety re-inspections at businesses within Chase and that fines also be included in such a bylaw to be used as a heavier tool to gain compliance of fire safety requirements." **CARRIED**
#2020/10/13_013

9.4 Community Economic Recovery Infrastructure Program (CERIP)
Moved by Councillor Torbohm
Seconded by Councillor Lauzon
"THAT Administration submit a grant funding application for upgrades to improve pedestrian and vehicular access to Willson Park to the Community Economic Recovery Infrastructure Program; AND,

THAT Council supports the project and commits to its share of the project ($0), as well as any cost overruns; AND,

THAT the Village of Chase will provide overall grant management for the project." **CARRIED**
#2020/10/13_014

9.5 Chase Lions – Request Community Hall, Room B
Moved by Mayor Crowe
Seconded by Councillor Lauzon
"THAT the Village of Chase reinstate the regular booking availability of Room B in the Community Hall." **CARRIED**
#2020/10/13_015

9.6 Universal Access to no-cost prescription contraception
Moved by Councillor Scott
Seconded by Mayor Crowe
"THAT the letter from the Mayor of the City of New Westminster, regarding Universal Access to no-cost prescription contraception, be received for information." **CARRIED**
#2020/10/13_016

9.7 Chase Fire and Rescue – Auto Extrication Training Site
Moved by Councillor Lauzon
Seconded by Mayor Crowe
"THAT Administration make contact with Adams Lake Indian Band regarding the possibility of them hosting a site for auto extrication training." **CARRIED**
#2020/10/13_017

10. NOTICE OF MOTION

Councillor Lauzon provided the following Notice of Motion:

- To revisit the RV Park lease with the Chase Lions Club at the November 10, 2020 Regular meeting; and consider extending or canceling the RFP process, and also consider renewing the lease agreement with the Chase Lions Club

Councillor Scott provided the following Notice of Motion:

- That Administration proceed with a review of the Village's Development Cost Charge Bylaw

11. RELEASE OF IN CAMERA ITEMS

None

12. IN CAMERA

None

13. ADJOURNMENT

Councillor Scott attended an Adams River Salmon Society meeting and reported that trout anglers were disrupting salmon spawning beds on the Adams River.

Moved by Councillor Torbohm
Seconded by Councillor Scott
"THAT the October 13, 2020 Village of Chase Regular Council meeting be adjourned."
CARRIED
#2020/10/13_018

The meeting concluded at 5:00 p.m.

Rod Crowe, Mayor

Sean O'Flaherty, Corporate Officer

VILLAGE OF CHASE

Bylaw No. 893-2020

A Bylaw to provide for Permissive Tax Exemptions for the year 2021

WHEREAS, under the authority of the Community Charter, a Council may by bylaw exempt land or improvements, or both, from taxation;

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

1. The following assessments shall be exempt from taxation for the taxation year 2021:

a) Chase and District Curling Club
District Lot 517, Plan KAP19733, KDYD
PID 012-870-285
Exempt all land and improvements utilized for the purposes of the Club.

b) Chase Creekside Seniors Organization, Lease/Permit/License #343509,
Block A, District Lot 517, Plan KAP514, KDYD
PID 012-290-246
Exempt all land and improvements utilized for the purposes of the Organization.

c) Chase and District Museum and Archives Society
Lot 6, District Lot 517, Plan KAP1467, KDYD
PID 004-971-531
Exempt all lands and improvements utilized for the purposes of the society.

d) Chase & District Lions Community Club
Portion of Lot 1, District Lot 517, Plan 43085 and Portion of Plan B264 except Plan A 18415 and Plan A 1315 (the lands identified in Schedule A of the lease dated 14 April 2015)
Exempt all land and improvements utilized for the purposes of the Club.

e) Chase and District Chamber of Commerce
located on Village of Chase Right-of-Way between Shuswap Avenue and Canadian Pacific Rail Line, West of Aylmer Road
Exempt all lands and improvements utilized for the purposes of the organization.

f) Chase & District Recreation Centre Society (Arena)
Lot 1, District Lot 517, K.D.Y.D., Plan 20201, Except Plan KAP49449,
all leased to the Chase & District Recreation Society; except that portion leased to Chase Canyon Eco-Adventures for the operation of a Zip-Line business.
Exempt all lands and improvements utilized for the purposes of the organization.

g) Chase & District Recreation Centre Society-Sunshore Golf Course
Lot A, District Lot 517, Plan KAP82245
PID 026-854-449
Exempt all Class 6 & 8, lands and improvements utilized for the purposes of the Golf Course.

h) Royal Canadian Legion Branch 107
Lot A, District Lot 517, Plan 37207, KDYD
PID 004-896-955
Exempt all lands and improvements utilized for the purposes of the Legion.

2. This bylaw may be cited as "The Village of Chase 2021 Permissive Tax Exemption Bylaw No. 893-2020".

READ A FIRST TIME THIS **8** DAY OF **SEPTEMBER, 2020**

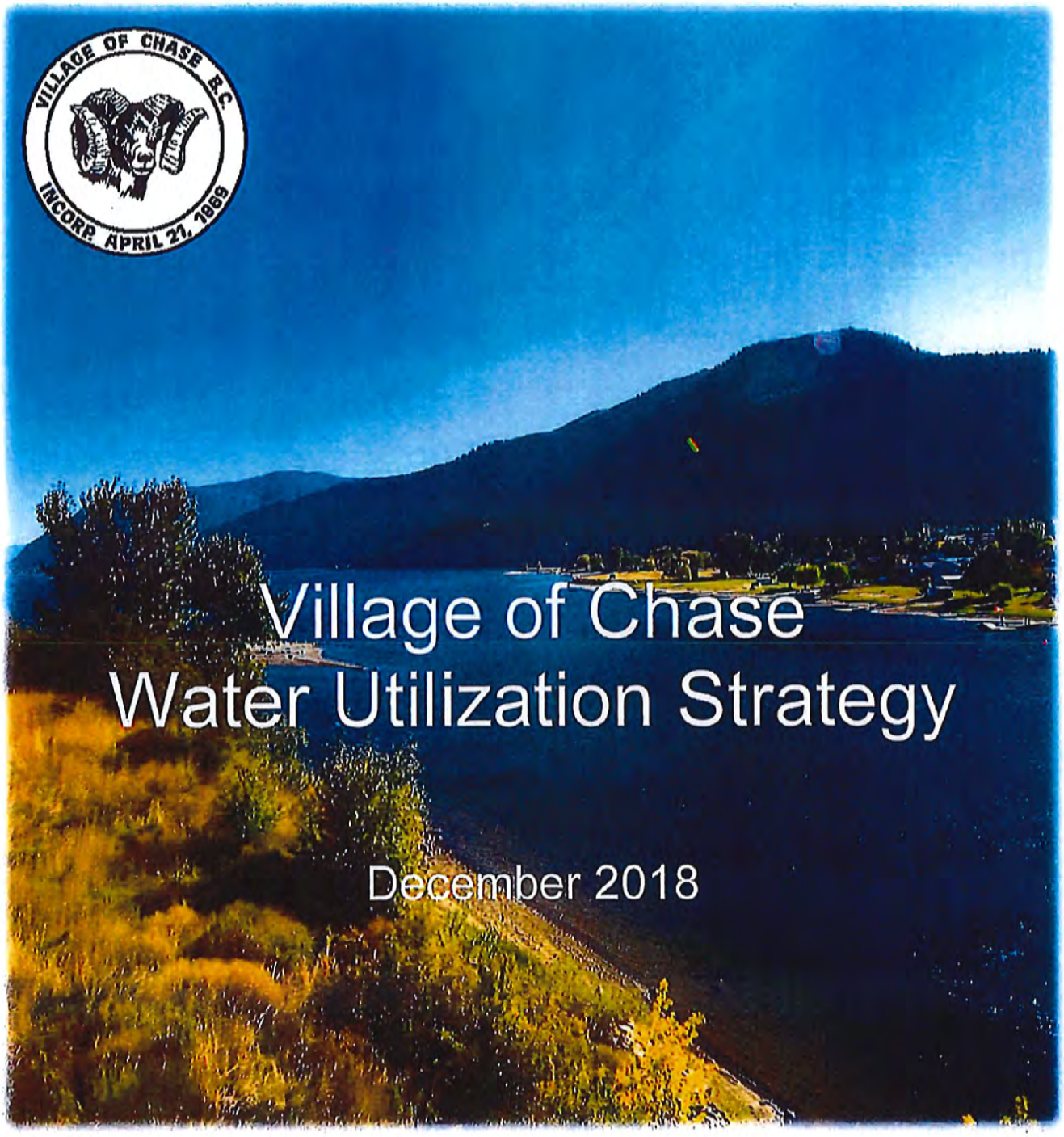
READ A SECOND TIME THIS **8** DAY OF **SEPTEMBER, 2020**

READ A THIRD TIME THIS **13** DAY OF **OCTOBER, 2020**

ADOPTED THIS _____ DAY OF _____, 2020

Rod Crowe, Mayor

Sean O'Flaherty, Corporate Officer



Village of Chase
Water Utilization Strategy

December 2018

URBAN systems

0511.0031.01

200 - 286 St. Paul Street, Kamloops, BC V2C 6G4
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REPORT

0511.0031.01

December 2018

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1.0 Introduction

Clean water is an integral part of a healthy community. Providing potable water to community members is a key part of the service provision mandate of many local governments. However, municipalities face considerable environmental, economic and social pressures in terms of water, which push communities to pursue responsible water usage that promotes conservation to the highest degree possible. To this end, the Village of Chase has a desire to:

- Protect the environment from harm due to changes in the natural water course;
- Extend the life of the current water system to decrease the economic impacts of expanding facilities; and
- Meet social demands that water be treated and used in the most responsible way possible.

The Village has already created policy around, and actively implemented a water conservation strategy. The Official Community Plan (OCP) outlines the high level water conservation goal of the Village, which is to manage usage by reducing demand rather than increasing the supply. This water utilization strategy is an important step in working towards this conservation goal.

1.1 Strategy Objectives

There are several objectives of this strategy that will help the Village to work towards this priority. These include:

- Understand the characteristics of the water system and current usage;
- Assess the viability of water conservation measures relevant to the Village; and
- Identify steps the Village can take to reduce water consumption.

Funding for this study was provided by the Union of BC Municipalities' (UBCM) Gas Tax program. It is important to note that much of the work on this report was undertaken in 2014/15 with an initial draft completed in 2015. This report represents an update to that initial draft and includes updates to water consumption data from both the Village's water meters and SCADA system.

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2.0 Why is Understanding Water Usage Important?

Undertaking a water utilization strategy for Chase has many key benefits. Water is the foundation of a healthy community and water conservation has long term sustainability impacts for a municipality in terms of the environment, society and the economy.

Environmentally, reducing water use will lower impacts on the natural flow of water in the South Thompson River watershed. A reduction in demand for water will decrease the amount of energy required for water treatment and pumping activities to supply fresh water to homes. Water conservation prolongs the life of water and sewage treatment facilities, which will lengthen the useful life of these facilities, and defer the need for future capital improvements. This will ultimately reduce the resources needed in the long-term for providing clean water to the community.

Water conservation also affects social sustainability. It is important for community members to feel empowered to take action on environmental issues. By taking actions to reduce household water usage, community members may feel more engaged with minimizing their impact on the environment. Actions such as retrofitting water appliances, installing rain barrels or reducing lawn watering may also build water conservation capacity in the community whereby neighbours, friends and colleagues will be better able to share expertise and water conservation tips. This will result in a more widespread knowledge of water conversation in the community, where implementing household water reduction techniques will become the norm.

Economically, water conservation will reduce the overall costs of water provision for the Village. Reducing water usage will prolong the life of water treatment and sewage treatment facilities. Although the upgrading of these facilities needs to be taken into consideration in long-term capital planning, by extending the useful life of these facilities the average cost per year of providing water is significantly reduced. This benefits the Village in terms of financial planning, and for community members, who can avoid steep increases in water rates and tax increases as a result of infrastructure replacement and renewal. Furthermore, reducing water use will potentially mitigate the impacts of potential droughts and allow the nearby agricultural industry to maintain irrigation levels. Supporting agriculture is key to Chase at is an important economic sector.

BC's *Living Water Smart Plan* which was released in 2008 has a number of requirements and goals listed. Particularly relevant to Chase, these goals include:

- 50% of new municipal water needs will be acquired through conservation by 2020

- Government will require all users to cut back their water use in times of drought
- By 2020, water use in BC will be 33% more efficient
- New water saving technologies, such as low flow toilets will be incorporated into plumbing fixtures

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Purple pipes will be required in new buildings. The eventual implementation of the *Water Sustainability Act* will provide greater regulation on the use of surface and groundwater. Noteworthy in this is the increase in pricing of water licences.

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3.0 How Much Water is Being Used in Chase?

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3.1 Chase Population

Chase is a compact Village at the western end of Little Shuswap Lake. The community enjoys warm and sunny summer weather and a relatively mild winter. The main industries in Chase are forestry and tourism.

The population of Chase has been generally declining since 2001. The biggest annual increase in population occurred between 2007 and 2008. **Figure 3.1** illustrates the change in population since 2001.

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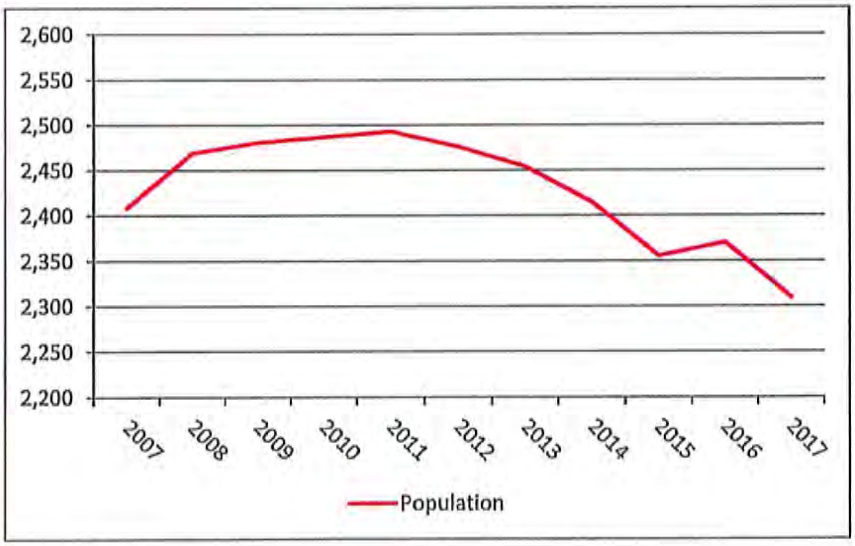
Figure 3.1: Chase Population 2007 to 2017



Source: BC Stats

According to Statistics Canada Census data, the number of private dwellings has increased by 3.6% in the 15 years between 2001 and 2016, though the number declined between 2011 and 2016. **Table 3.1** summarizes data for number of dwelling units.

Table 3.1: Number of Private Dwellings

Year	Total Private Dwellings
2001	1,151
2006	1,175
2011	1,236
2016	1,169

Source: Statistics Canada

An important consideration in water conservation is the age of the housing stock in a community. Products and technology that promote water efficiency have greatly improved in recent years, and are now much more widespread in new building. The BC Building Code has been updated in recent years to require more water efficient fixtures such as low flow toilets.

As indicated in **Table 3.2** the majority of the dwelling units were reported in the 2016 Statistics Canada Census to have been built before 1980. As of 2016, these housing units will be 28 years old, or older.

Table 3.2: Dwelling Units in Chase by Age

Period of Construction	# of Dwelling Units Constructed
1960 or Before	165
1961 to 1980	410
1981 to 1990	165
1991 to 2000	210
2001 to 2005	40
2006 to 2010	75
2011 to 2016	25
Total	**1,090**

Source: Statistics Canada

According to the 2016 Statistics Canada Census. single detached houses account for 72% of dwelling units in the Village of Chase, followed by mobile homes at 12%. **Table 3.3** summarizes the proportion of housing for each type of dwelling unit.

Table 3.3: Types of Dwelling Units

Type of Dwelling Unit	# of Dwelling Units
Single Detached House	780
Semi-Detached House	30
Row House	65
Duplex	75
Mobile House	130
Total	**1,080**

Source: 2016 Census Canada

3.2 Water System Characteristics

3.2.1 *History of Water Service in Chase*

Chase gained access to running water in 1908 when the Adams River Lumber Company Mill was first created. A dam was built on Chase Creek, adjacent to the modern day Chase Creek Falls trail which overlooks the Village. The water was originally carried into the Village using a 12 inch wooden pipe. When the Mill shut down in 1925, they continued to supply water and electricity to the Village until 1930 when Carlin Bros took over the utilities provision. The dam burst twice after the Carlin Bros took over - once in 1935 and once in 1948. After it was rebuilt in 1948, irrigation intakes were added and used for farm land in the area.

In 1950 the BC Power Commission purchased the utility rights from the Carlin Bros and in 1960 the water system with a river intake at the mouth of the South Thompson was built. Now water is pumped southeast beyond the Trans-Canada Highway and into a reservoir where it is gravity-fed into the Village.

3.2.2 *Description of Water System*

The Village of Chase draws water from the South Thompson River. This water traditionally has not been treated, except with chlorine and subsequently pumped to the community through the Hysop Pump; however, in 2014, the Village added a water treatment plant to the system in order to provide higher water quality. While the intention is to continue to pump from the South Thompson River, groundwater is also being used as an additional source.

3.2.3 *Water Pumping Patterns*

Water pumping data was provided by the Village of Chase. This data represents the amount of water exiting the treatment facility and being delivered to the community. **Table 3.3** shows that water pumping has decreased by

approximately 11% since 2011 with average pumping over that time being 578,393 m³ per year. Water demands peak in July and August

Table 3.3: Chase Water Pumping 2011-2017 (m³)

	2011	2012	2013	2015	2016	2017
January	27,550	30,662	31,773	26,010	22,378	26,157
February	24,160	24,700	27,770	21,814	20,079	21,261
March	28,786	29,972	30,955	28,751	22,498	22,092
April	33,032	51,781	39,009	41,353	36,993	21,047
May	48,100	60,543	69,643	81,802	60,940	32,099
June	67,136	57,217	61,953	93,440	64,329	75,928
July	69,893	88,779	121,556	106,830	67,996	111,022
August	114,317	120,159	101,319	92,348	76,824	93,942
September	82,171	81,813	54,108	43,692	32,544	53,263
October	36,436	37,440	33,370	27,735	24,329	25,128
November	27,843	26,664	28,602	28,834	21,007	21,522
December	28,481	27,265	29,369	24,963	22,831	22,248
Total	**587,905**	**636,995**	**629,427**	**617,573**	**472,748**	**525,709**

Sources – 2011 – 2013 data was provided by Village of Chase through a copy of pump data logs. 2015 – 2017 data was provided through the SCADA at the Water Treatment Plant. Data for 2014 was incomplete and was not included

Figure 3.2 compares the amount of water pumped with the monthly average precipitation and temperature. The water pumping data and the temperature follow a similar cycle, and are closely correlated. Greater amounts of rainfall generally leads to less water pumping in the summer. For example, in July 2011 there was approximately 50 mm of rainfall and there was 70,000 m³ of water pumped. In July 2013, there was just over 1 mm of rainfall and water pumped exceeded 121,000 m³.

Similarly, the months of August and September in 2011 and 2012 were very dry compared to 2013, and therefore water pumping in 2011 and 2012 was much higher than in August and September 2013 when there was more precipitation.

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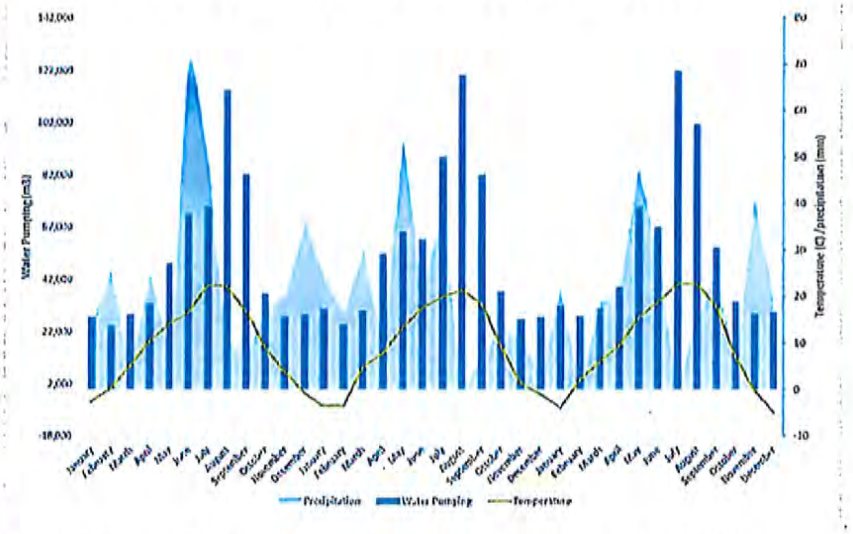
Figure 3.2: Water Consumption Patterns 2011 - 2013



Source: Environment Canada (precipitation and weather data based on data from Kamloops)

The water pumping data shows that in 2017 annual residential consumption of water in the Village of Chase was 228 m^2 per person, or 623 litres of water per person per day. This number is higher than the Canadian average daily per capita water consumption of 510 Litres (2009 data)[1]. A 2008 report by the Organization of Economic Cooperation and Development (OECD) found that Canada has the second highest water consumption per capita of the 31 member countries of the OECD[2]. **Table 3.5** summarizes per capita water pumping data.

Table 3.5: Per Capita Water Consumption in Chase

Year	Water Pumping (m^3)	Population (BC Stats)	m^3 per person per year	Litres per person per day
2011	587,905	2,494	236	647
2012	636,995	2,472	257	705
2013	629,427	2,446	257	705
2015	617,573	2,355	262	718
2016	472,748	2,370	199	546
2017	525,709	2,309	228	623

[1] http://www.ec.gc.ca/doc/publications/eau-water/COM1454/survey2-eng.htm#note3
[2] http://www.oecd-ilibrary.org/docserver/download/3008011ec059.pdf?expires=1403822082&id=id&accname=guest&checksum=81FA9246FD64BD0562A3F1D337F7AAD8

5.0 Implementation

5.1 Strategy

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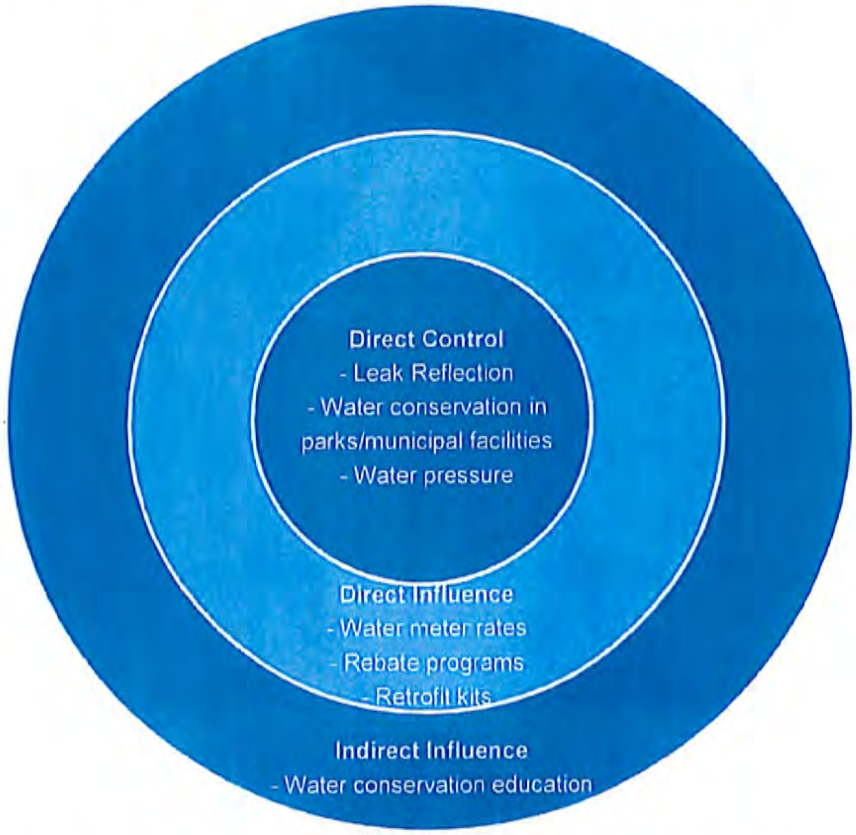
Figure 5.1 summarizes the various options for water conservation in terms of the Village's ability to exert control and result in direct reductions to water consumption.

Figure 5.1: Summary of Village's Influence on Water Conservation



In terms of developing a strategy for water conservation, it is recommended that the following activities be undertaken.

.1 Continue summer water restrictions program – the Village should continue its summer water restrictions program with consideration of strengthening enforcement and penalties for non-compliance.

.2 Review water pressure in the system – the Village should review water pressure in the system and determine if there are opportunities to reduce pressure to reduce the impacts of leaks in the system.

.3 Undertake review of water meter data – collecting and analyzing water meter data can provide valuable information about how the water system is operating. Once water meters are fully calibrated and operational (water meter rates implemented), the Village should review the water meter data to ascertain the following:

- Identify water usage by each property and map this data to illustrate where high water use is occurring
- Determine the magnitude of leaks in the system by comparing the amount of water pumped with water meter data and with influent at the sewage treatment lagoons
- Identifying areas of the community with uncharacteristically high water usage

.4 Undertake leak detection program – the Village should begin a leak detection program to identify leaks in the system and begin to rectify them. Given that leakage in the system could be up to 30% of the water pumped, this could result in substantial benefits.

.5 Undertake review of Village water use and high water use facilities – the Village should review water use in its own facilities and parks, and also review areas such as the golf course to determine options for reducing water usage.

.6 Offer water saving kits – the Village should work with an organization such as BC Hydro or City Green Solutions to offer water savings kits in the community to residents who desire them.

.7 Enhance water conservation education – the Village should enhance water conservation education by:

- Having regular tips published in local media on how to reduce water usage
- Preparing brochures summarizing how individual residents can make an impact on water conservation
- Preparing information to accompany water utility bills including leveraging water meter data to put each property's water usage in context to other similar properties in Chase

Table 5.1 summarizes the implementation strategy.

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Table 5.1: Water Conservation Implementation Strategy

Action	Timeline	Budget	Relationship to Water Reduction Target
Continue summer water restrictions	Ongoing	Part of Bylaw Enforcement	Maintain current water pumping
Water conservation education	Ongoing	$5000 per year	5% reduction in water pumped due to education
Reduce water pressure in system	Spring 2019	$5000 for SCADA review	Assume 5% reduction due to less water leakage
Partner with an organization to offer water savings kits	Summer 2019	$7,000 per year for three years	3% if 500 kits are installed
Review water meter data	Fall 2019	$8000	Informational purposes only
Undertake leak detection program	Spring 2020	$15,000 - $25,000 plus repairs	10% once leaks are repaired
Review high water use facilities	Summer 2020	$10,000	3 – 5% of overall water pumped

Appendix A

REPORT

Survey Responses

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URBAN systems

Detailed Survey Responses

Village of Chase Residential Water Conservation Survey

A survey was conducted at two Open House events held at the Chase Farmer's Market on July 11th and July 25th 2014. There was a total of 15 surveys completed on July 11th and 13 surveys on July 25th. There was also one survey completed and handed into the Village of Chase. The survey was available online and it was completed by 8 residents and 4 business owners. In summary, a total of 37 residential water conservation surveys were completed, and 4 commercial surveys.

Survey Participant Demographics (questions 1-6)

The majority of the survey participants indicated that they lived in a single family home that they owned. Most participants indicated that their lot size was average (21) or larger than the average urban lot (11). The majority of participants have one or two people living in their home on a regular basis. Approximately half the participants indicated they use their property for a backyard garden and half indicated that they do not use their property for agriculture.

Communication (question 7)

When asked what the best way to learn more about water conservation is, most participants selected all types of print media. Newspapers, flyers and brochures, and Village publications and information were all selected by over 10 participants (newspapers being most often selected at 18).

Individual Water Conservation Actions (questions 8-10, 12-13)

When asked how they conserve water inside the home, the participants selected the following list of actions in order of frequency:

- I don't leave the water running when doing dishes in the sink (31)
- I do my best to run full dishwasher loads and run efficient clothes washes (25)
- I take short showers (23)
- I turn off the water when brushing my teeth (23)
- I listen for and quickly repair any water leak (23)
- I have a water efficient washing machine (23)
- I have a low flow toilet (21)
- I have a water efficient dishwasher (17)
- I have low flow shower heads (17)
- I have low flow taps/faucet fixtures (13)

When asked how they conserve water outside the home, the participants selected the following list of outdoor water conservation actions, in order of frequency:

- Water lawn less (twice a week or less in the summer) (24)
- Stop or reduce washing the car (20)
- Use efficient automatic irrigation systems (11)
- Plant drought resistant plants and trees (10)
- Reduce the square footage of lawn (9)
- Use a rain barrel (8)
- Add heavier soils to the lawn so that it needs less water (3)

When asked why it is important to reduce water use participants selected the following reasons in order of frequency:

- To help the environment (26)
- To save money in the Village's operations (22)
- To save money (20)
- To save energy (20)
- I do not save water (1)

The average response to the question "how much effort do you put into reducing water" out of a scale of 1-5 (with 1 being none at all and 5 being a lot of effort) was 3.6. When asked how knowledgeable they were about water conservation on a scale from 1 to 5, participants selected on average 3.7.

Village Water Conservation (question 11, 14, 15)

Survey participant's average response to the question "how important do you think it is for Chase to reduce water consumption" on a scale of 1 to 5 was 3.9.

Finally, 25 participants indicated that, yes, they think the Village of Chase should invest in water conservation while 6 indicated no. When asked what kind of water conservation program would best support the community, participants selected the following actions in order of frequency:

- Mandatory restrictions on outdoor watering during the summer months (17)
- A rebate on water efficient fixtures and appliances (13)
- Education on various water conservation options (13)
- Voluntary restrictions on outdoor watering in the summer months (6)
- Higher water rates based on usage (8)

There were also two open comments received for this question:

- Fixing the system you have
- 4pm is the heat of the day- should be restricted 11am -6pm

Question 16 provided room for additional comments:

- Need more information as to why it is a problem
- I don't believe it should cost any money at all to conserve water. There is more than enough for everyone. Take care.
- Village runs water during non-watering hours. Ie. Between 11-5 but tells community not to!!

- Family based savings plan to "play" with the kids to help understand how and why- same with electricity
- Maybe the Village could quit watering the hanging baskets 7 days a week.
- Don't support additional cost to Village if more than education and restrictions- unless funding provided by other agencies/gov't. More info on metering would help us to decide on projects in apartment complex.
- Education is best form of conservation
- Look into cisterns and grants to put them in
- The water pressure on the upper level of Okanagan bay water pressure is so bad it won't run the sprinkler. Before you look to conserve water I would suggest fixing the system you have. Don't get enough to conserve.
- Comparing water use of Chase 2013 with average daily per capita 2009 is at worst misleading and at best meaningless! What about comparing data for same years?! Also are you comparing apples to apples? Golf courses included in all those stats? Is Chase short of water or are you just looking for grants? Or more money from citizens? This survey smells of manipulation – telling folks what only possible answers are does not inform in any meaningful way! Please, quit wasting our money and insulting our intelligence with manipulations like this document!
- Common sense
- Chase is still a rural community where most folks have vegetable gardens. In our particular climate we need to water. Not lawns though. Plus fruit trees. You need to be cognizant of the fact that home grown fruit and vegetables means folks are not driving to stores to buy produce (one hundred mile diet etc). Plus saving gas not polluting. There will always be some trade-offs to conservation and environmental stewardship.
- On question 15 I could only pick one, not all that apply. I would restrict watering during the summer months with the By-law officer ticketing offenders. The ticket would be a 3 strike your out system. First offense= warning; second offense=small fine ($30); third offense=much larger fine ($200 for example). I would also like to see the water meters working and then people would see, and feel in their pocketbook, how much water they use.
- I use a 2nd lot for growing some garden vegetables and experiment with the growing of flowers. About 1/3 of the lot is used for this purpose and water is used as restricted by the village during the summer months,
- If there are outside water restrictions, set HEAVY fines on those not complying and cut out the at-home car wash during those peak times as well. If there are charges for meters, there should be an "excessive" limit set and heavily charge those using in that quantity. The only way people will start conserving water is to hit them in their wallets, otherwise, they won't care.

Commercial Water Conservation Survey

The commercial water conservation survey was completed by 4 small organizations with 1-5 employees. Most owned their building and only one out of the four respondents indicated they operated water-intensive appliances like dishwashers and laundry. Most felt their level of knowledge of water conservation

was a 3/5. Print media was selected by most as the best way to learn more about water conservation. In terms of water conservation activities that are already practiced, not leaving the water running and repairing leaks were selected most often. There was a range of responses in terms of effort put into water conservation from 1/5 to 4/5. The majority of participants felt saving water was important for helping the environment, and rated the importance of saving water as a 5/5. The majority of participants thought the Village should invest in water conservation and that this was best accomplished by having higher water rates based on usage.

There were two additional comments:

- Any method that does not have a high cost, TV and radio ads are expensive, do not use.
- We don't use much water in our business, but I think water should be treated like any other utility, that being user pay, and not flat rate for everyone. Should be fully metered, only then will people manage their usage.

REPORT

Appendix B

Surveys

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URBAN systems

Village of Chase
Water Conservation Strategy Survey

The Village of Chase is undertaking a water conservation strategy to examine:

1. How much water is being used;
2. Key trends that factor into water use in Chase; and
3. Strategies to reduce overall water consumption in the community.

Thank you for taking the time to fill out this survey. Your feedback will help the Village in understanding how to best support residents in water conservation.

---

1. What type of home do you live in?
- ☐ Single family home
- ☐ Apartment
- ☐ Mobile home
- ☐ Other

2. Do you rent or own the dwelling you live in?
- ☐ Rent
- ☐ Own

3. If you rent, do you pay the water bill?
- ☐ Yes
- ☐ No

4. Approximately how large is the property on which you live?
- ☐ Average sized urban lot (about 50 metres x 75 metres or 0.15 acres)
- ☐ A larger than average urban lot (between ¼ acre and 1 acre)
- ☐ Rural property (1 acre to 5 acres)
- ☐ An acreage (5 acres to 10 acres)
- ☐ A large acreage (over 10 acres)

5. How many people live in your home on a regular basis?
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5+

6. Do you use your property for agriculture?
- ☐ No
- ☐ Backyard garden
- ☐ Hobby farm
- ☐ Market garden or small commercial agriculture
- ☐ Commercial agriculture

7. What is the best way for you to learn more about water conservation? Check all that apply.
- ☐ Newspaper
- ☐ Radio
- ☐ Television
- ☐ Website
- ☐ Social media
- ☐ Flyers/brochures
- ☐ Events
- ☐ Word of mouth
- ☐ Information booths at public events
- ☐ Village publications/information
- ☐ Other _____

8. How do you conserve water inside the home? Check all that apply.
- ☐ I have low flow taps/faucet fixtures
- ☐ I have low flow show heads
- ☐ I have a water efficient dishwasher
- ☐ I have a water efficient washing machine
- ☐ I do my best to run full dishwasher loads and run efficient clothes washes
- ☐ I have a low flow toilet
- ☐ I take short showers
- ☐ I turn off the water when brushing my teeth
- ☐ I listen for and quickly repair any water leak
- ☐ I don't leave the water running when doing dishes in the sink

Village of Chase
Water Conservation Strategy Survey

9. **How do you conserve water outside of the home?**
   - ☐ Reduce the square footage of lawn
   - ☐ Water lawn less (twice a week or less in the summer)
   - ☐ Stop or reduce washing the car
   - ☐ Add heavier soils to the lawn so that it needs less water
   - ☐ Use efficient automatic irrigation systems
   - ☐ Plant drought resistant plants and trees
   - ☐ Use a rain barrel

10. **How much effort do you put into reducing water? (1 being no effort at all and 5 being a lot of effort)**

    1 2 3 4 5

11. **How important do you think it is for Chase to reduce water consumption? (1 being not important at all and 5 being very important)**

    1 2 3 4 5

12. **Why do you think it's important to reduce water use?**
    - ☐ To save money
    - ☐ To help the environment
    - ☐ To save money in the Village's operations
    - ☐ To save energy
    - ☐ I do not save water

13. **How knowledgeable of water conservation are you? (1 being not knowledgeable at all and 5 being very knowledgeable)**

    1 2 3 4 5

14. **Do you think the Village of Chase should invest in water conservation?**
    - ☐ Yes
    - ☐ No

15. **What kind of water conservation program would best support the community in conserving water?**
    - ☐ Voluntary restrictions on outdoor watering in the summer months
    - ☐ Mandatory restrictions on outdoor watering during the summer months
    - ☐ A rebate on water efficient fixtures and appliances
    - ☐ Education on various water conservation options
    - ☐ High water rates based on usage

16. **Do you have any additional comments?**

3.2.4 *Residential vs. Commercial Water Use*

Water meter data allows the Village of Chase to analyze how much water is being used by different types of account holders. **Table 3.6** shows the water usage of commercial and residential water accounts, based on water meter data. Based on the data collected, residential water use generally accounts for approximately 80% of overall metered water usage.

Table 3.6: Chase Residential and Commercial Metered Water Use

	2014	2015	2016	2017
Commercial	104,454	88,567	59,084	116,156
Residential	386,333	364,025	257,600	314,071
Total	490,788	452,592	316,684	430,228
Residential Proportion	79%	80%	81%	73%

As indicated in **Figures 3.3** and **3.4**, residential and commercial water use follows similar seasonal usage patterns with peaks in the summer months.

Figure 3.3: Residential Metered Water Use – 2014 – 2017

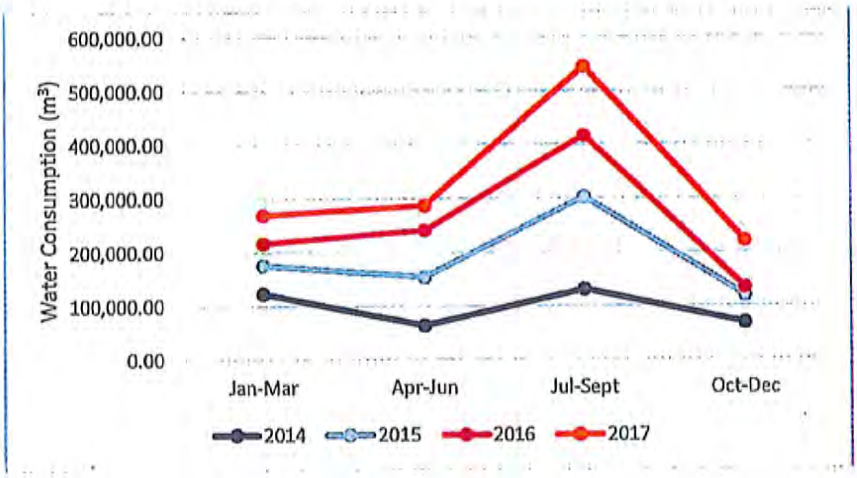

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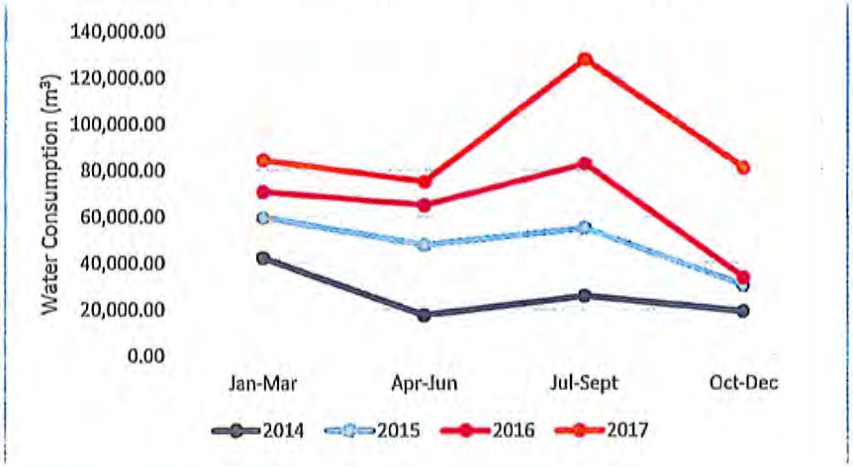
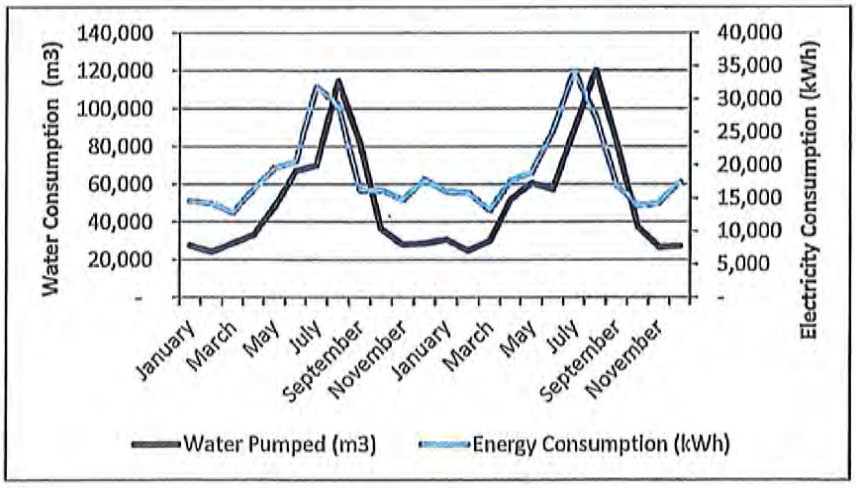
Figure 3.4: Commercial Metered Water Use – 2014 – 2017



3.2.5 *Water Pumped and Electricity*

There is a strong correlation between water demand and energy consumption. This correlation is due to the intensive energy required to pump water to reservoirs or to homes or businesses. **Figure 3.5** shows 2011 and 2012 water pumping data compared to electricity usage for the Hysop water pump during the same period.

Figure 3.5: Water Pumped Compared to Electricity Consumption



A correlation analysis was undertaken to determine the strength of the relationship between water pumping and electricity consumption. A strong

relationship would indicate that reducing water consumption would also have a strong likelihood of reducing electricity consumption. The analysis undertaken for Chase indicated that the correlation, between the water pumped and energy consumed is 0.75. This indicates a fairly strong relationship.

In 2011, the Hysop pump used 224,100 kWh of electricity, while in 2012, the pump used 230,760 kWh. On average, it required 0.43 kWh of electricity to pump 1 m^3 of water. This electricity usage results in 5 tonnes of carbon emissions per year. In BC, GHG emissions per kWh of electricity use is fairly low due to the low carbon footprint of hydro dams.

More recent BC Hydro data suggests that the use of the Hysop Pump has declined with electricity consumption being 100,667 kWh in 2016 and 139,528 kWh in 2017. This is likely the result of the reconfiguration of the water pumping, treating and distribution system in Chase.

3.2.6 *Potential Magnitude of Water Losses*

One key issue in considering a water conservation strategy is the potential magnitude of water losses in the water distribution system. In order to provide a potential measure of this, a comparison can be made to the amount of sewage collected to the amount of water pumped in the winter time. Winter pump volumes are used as it is assumed there is little water loss in the system due to outdoor watering. **Table 3.7** summarizes the comparison of sewage influent volumes at the sewage lagoons (less sewage collected from Adams Lake Indian Band) and the amount of water pumped.

Table 3.7: Water Losses

	2011			2012			2013		
	Water	Influent	Losses	Water	Influent	Losses	Water	Influent	Losses
January	27,550	19,409	30%	30,662	19,073	38%	31,773	20,378	36%
February	24,160	18,155	25%	24,700	15,706	36%	27,770	17,738	36%
November	27,843	20,062	28%	26,664	18,528	31%	28,602		
December	28,481	19,318	32%	27,265	19,164	30%	29,369		

Some of the water losses could be expected for such activities as:

- Firefighting and training
- Industrial processes
- Flooding of the curling rink (the arena is on a separate well)

- General losses in the system including for major fires in the community.

In addition to these water losses, there is potential, particularly given the age of the Chase water system, that leakage in pipes could be an issue. Consideration should be given to addressing this issue. In general, water losses of 10 – 20% can be expected[3]. Based on **Table 3.7**, the Village has experience losses of up to 38%, indicating that there could be an issue with leaks in the system.

In the future, the Village could also calculate the extent of water losses by comparing water pumped data to water meter data. This may provide a more accurate calculation of water losses and point to areas where there may be leaks in an individual property's water line.

3.2.7 Comparison of Water Meter Data to Water Pumped

Comparing the amount of water pumped with water meter data can provide another indication of whether there are potential leaks in the water system. Water meter data will not capture parks and institutional water use. **Table 3.8** summarizes the difference between water pumped and water consumption based on metered data.

Table 3.8: Comparison of Water Data to Water Pumped

Year	Water Pumping (m^3)	Water Meter Data (m^3)	Difference (m^3)
2015	617,573	452,592	164,981 (27%)
2016	472,748	316,684	156,064 (33%)
2017	525,709	430,228	95,481 (17%)

3.2.8 Projection of Water Use

Winter water consumption has increased in Chase over the past two winters. This is important as winter water use is less impacted by fluctuations in temperature and outdoor water use is minimized. This is also important as it is occurring at a time when actual population growth appears to be stagnant. This would seem to indicate that some other factor is influencing water demand in Chase.

Despite stagnant growth, it is anticipated that a new development will add 76 modular housing lots in the next few years. This would increase the number of dwelling units by approximately 6%. Given the lack of growth in population in

[3] Source: http://water.me.vccs.edu/exam_prep/leakdetection.htm

Chase and the reasonable assumption that this could continue into the future, future water pumping patterns will be influenced more by the following:

- New industrial development that may be reliant on Village-supplied water;
- Exacerbation of existing leaks in the water system; and
- Changes in weather patterns with hotter and drier summers resulting in higher water use in the summer.

Since it is unknown the magnitude of these potential changes in water use, a projected annual increase in water use of 2% was assumed. If this growth rate occurs, the amount of water pumped would increase to over 723,000 m^3 in the absence of any water conservation measures. Assuming that prices in 2020 for electricity are approximately 11.8¢ per kWh, the Village would spend approximately $36,685 for electricity for the Hysop pump. The generation of this electricity would result in greenhouse gas emissions of 43 tonnes per year.

3.2.9 *Current Water Conservation Initiatives*

The Village of Chase has been active in taking steps towards conserving potable water and encouraging responsible water usage. The Official Community Plan outlines Chase's commitment to water conservation. It states that the Village will:

> *"Aggressively pursue a water conservation program aimed at managing demand for water rather than increasing supply. When an increase in system capacity becomes unavoidable, the Village will focus its efforts on enhancing storage capacity."*

Since adopting the OCP in 2002, the Village has implemented summer outdoor water restrictions with the following policies:

- Between May 15th and September 30th watering is allowed only every second day, and no watering between 11 am and 4 pm.
- Hand watering is permitted anytime.

In addition, the Village has installed water meters for all residential and commercial water users though consumption charges have not been adopted.

3.3 Community Input on Water Conservation

A survey was conducted at two Open House events held at the Chase Farmer's Market on July 11th and July 25th 2014. A total of 28 surveys were completed at these events and one was handed into the Village office at a later date. The survey was also available online and was completed by 8 residents, which resulted in a total of 37 residential surveys completed. Four business owners completed a commercial water conservation survey online.

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Generally, the residential survey participants indicated that water conservation was important and that residents already undertake many individual initiatives to reduce their water consumption. There was strong support for the Village investment in water conservation, with education and watering restrictions being the most favored water conservation potential programs. Survey participants indicated that various types of print media was the best form of communication. Most lived in single family homes on average sized lots, where about half have a backyard garden or practice some form of agriculture.

Of the 4 commercial businesses that completed the survey, most felt that water conservation was important, and that the Village should invest in it by implementing higher water rates based on usage. Most businesses already tried to reduce usage by repairing leaks and turning water off when not in use. Most of the respondents owned their building and only one used water intensive appliances like dishwashers and laundry in their business.

4.0 Reducing Water Usage

4.1 Guiding Principles

REPORT

In order to develop a strategy for reducing water use, the following guiding principles have been established which provide guidance for selecting various initiatives to conserve water:

Cost effective – a water conservation program must have a sound business case and therefore be cost effective for the Village to operate.

Tangible benefits – the installation of new technologies should result in tangible impacts on water conservation and reduced costs.

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Simplicity – whatever program is initiated, it must be simple to administer as well as relatively simple to participate in.

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Engage community-wide participation- a water conservation program will facilitate meaningful and effective public consultation and opportunities for feedback from all stakeholders. The entire community should feel they are a positive part of the action and a catalyst of positive change.

4.2 Options

Potential options to improve water conservation are discussed below.

4.2.1 *Fixtures Improvements*

The Village has the option of assisting residents and businesses in reducing water consumption by providing incentives for the installation of fixtures that result in less water being consumed. Due to the age of the homes in Chase (53% are over 38 years old) it is likely that a majority of homes have outdated water fixtures. There are a number of devices available to assist with water conservation for residential and commercial purposes. **Table 4.1** summarizes these fixtures and their potential impacts.

Table 4.1: Water Saving Technologies

Water Saving Technology	Cost for Technology[4]	Savings/Year/ fixture[5]
Low Flush Toilet	$75 - $500	[10 flushes per day, 12 litres/flush savings] 43.8m³ water savings per year
Energy Star Washing Machine	$800 - $1,400	[0.3 loads per day] 3.3m³ water savings per year
Low flow fixtures (shower)	$18 - $35	[12 shower-use-minutes per day saving 9 litres/minute][6] up to 39.4 m³ water savings per year
Low flow fixture (sinks)	$5-$10	[10 faucet-use-minutes per day, reduce water use from 8.3 litres per minute to 5.7 litres per minute][7] 9.0 m³ water savings per year
Dishwashers	$600-1,000	[0.5 loads per day] 3.5 m³ water savings per year

According to the review of devices, toilets and low flow fixtures (showerheads and faucets) can result in substantial savings relative to their costs.

Low Flush Toilet Rebate Program

A number of communities have implemented rebate programs for the installation of low flush toilets. Communities that have done this include:

- City of Fort St. John
- Cowichan Valley Regional District
- City of Richmond
- City of Cranbrook
- City of Abbotsford/District of Mission

These rebates have typically been in the range of $50 - $100 with the rebate coming off the water utility bill or being provided through a cheque. In most programs, a program participant fills out an application and submits a sales

[4] Based on online scan
[5] Use per fixture based on: USEPA. (1998, August 6). *Appendix B.* Retrieved April 8, 2013, from Benchmarks used in conservation planning: http://www.epa.gov/WaterSense/docs/app_b508.pdf
[6] Source: https://www.bchydro.com/powersmart/residential/guides_tips/green-your-home/water_guide/low_flow_shower.html
[7] Source: http://www.epa.gov/WaterSense/products/bathroom_sink_faucets.html

receipt for the toilet that was purchased. Once verified, the participant would receive their rebate.

Example

If Chase were to offer a program for the replacement of 500 toilets, this would result in water savings of approximately of 21,900 m³ per year. If a rebate of $100 per toilet was offered, the overall program cost would be $50,000 plus any administration fees and interest on borrowing. Electricity savings from reduced pumping would be approximately 9500 kWh per year resulting in cost savings of approximately $500 - $1000 per year.

Low Flow Fixtures

Low flow fixtures such as showerheads and tap aerators can result in substantial reductions in water consumption. Many communities have provided residents with water savings kits that include aerators and showerheads through the *Tap by Tap* program offered by City Green Solutions. Communities that have participated in this include:

- Penticton
- Summerland
- Princeton
- Osoyoos
- Keremeos
- Kelowna
- Saanich
- Victoria

Kits are typically cost $35. Given their low cost and high potential for savings, they often offer a good payback.

Example

If Chase were to purchase and distribute 500 water savings kits, this would result in water savings of up to 48.3 m³ per year of water savings per kit or 24,000 m³ in water savings per year on the municipal system. Electricity savings from reduced pumping would be approximately 10,300 kWh per year resulting in cost savings of approximately $500 - $1000 per year. The cost of the kits would be $17,500 plus a distribution cost. It is important to note that this does not consider the reduced costs of energy due to less water heating being required.

4.2.2 *WATER ACCOUNTING*

A water accounting system helps track water throughout the distribution system and identifies areas that may need attention, particularly large volumes of unaccounted for water. Associated measures include:

- Water system accounting
- Repairing known leaks
- Analysis of non-account water
- Distribution system audit
- Leak detection and repair strategy
- Automated sensors/telemetry
- Loss-prevention program.

According to the National Research Council of Canada, the national average for lost water is 25%.

With the addition of water meters in Chase, there is an opportunity to undertake water accounting.

A number of water utilities have undertaken leak detection programs to identify the extent of leaks in their system. There are a number of benefits to identifying and remedying leaks in the system including:

- Reducing the amount of water pumped
- Preserving infrastructure and proactively addressing key issues before they become major issues
- Supporting overall asset management

Example

As indicated in **Section 3.2.6**, the Village of Chase water system appears to experience water losses of up to 38%. While more analysis could be undertaken to more accurately calculate the water losses, the fact remains that the Village could likely save significant amounts of water by identifying and addressing leaks in the distribution system.

A leak detection program could cost in the range of $10,000 - $15,000. It is not feasible to estimate the cost of fixing any leaks at this point in time but it could represent a significant cost. If the resulting fixes to the water system reduced water losses by 50%, there could be a reduction in the amount of water pumped of up to 60,000 m^3. This could result in reduced electricity of 25,800 kWh per year resulting in energy cost savings of $1500 - $2500 per year. More importantly, the proactive addressing of leaks could save the Village significant amounts of money in reduced emergency maintenance costs and enable the Village to financially plan for these expenditures.

4.2.3 *EDUCATION*

Information and education are critical to the success of any conservation program. Information and education measures can directly produce water savings by changing customer's water-use habits. These measures can include:

- Events that promote awareness of water use
- Website with water conservation regulations and tips
- Understandable/informative water bills
- Informational products (e.g. brochures, utility bill inserts)
- School/public education programs
- Industry workshops
- An advisory committee

Although the United States Environmental Protection Agency (USEPA) estimates 2 - 5% water savings from information and education initiatives, some Interior BC communities (such as Kamloops and Prince George) have realized savings of 15 - 20% through public education initiatives.

There are a number of simple low cost changes that can be made to increase the efficiency of houses. Often times, however, people may not have the knowledge and/or the skills to make these changes. Helping residents to identify the improvements they can make in their homes by simple fixes such as installing low flow showerheads and tap aerators, and fixing leaky faucets can result in substantial improvements to water consumption. In addition, better understanding how to undertake water efficient yard maintenance can also be beneficial. The City of Kamloops following the implementation of the WaterSmart program was able to reduce peak water consumption in the City by approximately 23% from 1992 to 2007.

Example

The Village could consider hiring post-secondary students who can be trained to make these changes in houses to help people make their homes more water efficient. If a water conservation education program costs $10,000 per year and results in water reduction of 10%, the savings would be approximately 63,000 m^3 per year. This would result in energy savings of 27,000 kWh per year, therefore resulting in savings of $2000 - $3000.

4.2.4 *Target High Water Users*

Focussing efforts on high water use facilities can result in reductions in water consumption. High water use facilities in Chase includes the golf course, parks, and recreation facilities such as the curling rink, as well as some businesses.

Water use or end use audits can provide water systems and their customers with invaluable information about how water is used and how usage might be reduced through specific conservation strategies. Feasible audits may include:

- Audits of large volume users, or
- Large landscape audits.

Audits will provide information on what the water is being used for and can assist with the determination of alternative technologies that can assist in water conservation efforts. The anticipated savings can vary largely depending on the types of users on the system.

4.2.5 *Landscape Efficiency*

Outdoor water usage drives maximum day demand, which in turn drives requirements for storage and source water pumping facilities. Reducing outdoor usage can thus be an effective conservation strategy. This is particularly the case in Chase where the increase is water use in the summer is quite significant. Outdoor water use can be reduced through efficiency-oriented landscaping principles, such as xeriscaping. There are a variety of methods for encouraging such landscaping, and can be tied effectively to public awareness campaigns and materials. Landscape efficiency measures include:

- Regulating landscape efficiency;
- Selective irrigation sub-metering;
- Landscape planning and renovation; and
- Irrigation management.

The average garden hose pours out 20 litres per minute.

Water savings in excess of 10% can be obtained through use of xeriscaping principles and large landscape management. The Village led by example in 2015 by reducing outdoor watering in the summer.

4.2.6 *Water Pressure Management*

Reducing water pressure can decrease leakage, amount of flow through open faucets, and stresses on pipes and joints which may result in leaks. Lower water pressure may also decrease system deterioration, reducing the need for repairs

and extending the life of existing facilities. Pressure management measures include:

- System wide pressure management; and
- Pressure reducing valves on individual water service connections.

Reducing pressure in residential areas can realize water use reductions of 5-30%.

4.2.7 *Water Reuse and Recycling*

An alternative water source for some systems is "gray water," or treated wastewater for non-potable water uses. Recycled wastewater can be used for some industrial purposes, agricultural purposes, groundwater recharge, and direct reuse. The most likely applications for water reuse are:

- Industrial applications;
- Large volume irrigation applications; and
- Selective residential applications.

Significant care should be used to ensure that potable water sources are not cross connected to gray water systems. Water systems will need to check with local plumbing codes and ordinances for possible conditions and restrictions.

This is an expensive retrofit for developed neighborhoods, but could potentially be incorporated into future developments.

4.3 Evaluation Framework

There are several options in terms of the approach the Village could take to encourage water conservation. To find the option that will have the most impact, the following considerations need to be reviewed:

Cost to Implement - for a water conservation program to be successful it must be affordable to implement and result in cost savings that are consistent with the cost of implementation. It is important for the Village to consider whether a program's cost will outweigh the potential economic benefits for residents, business owners and the Village itself.

Complexity of Option - if a program is not simple to implement or becomes too administratively cumbersome, it might prevent residents and businesses from participating, or it might be costly in terms of staff time for the Village, negating any costs savings the water conversation might represent.

Impact on Water Consumption- it is important that the program is effective at reducing water consumption. This must be able to be easily measured and monitored to ensure that an impact is being made.

Impact on other values and priorities - the Village of Chase is committed to sustainability in all facets. Water conservation will have a positive environmental impact in terms of reducing the impact on the water shed and reducing the need for new water and wastewater treatment facilities. The water conservation program may impact other important priorities such as asset management. It is important to recognize the opportunities for water conservation to integrate with other priorities.

REPORT

0511.0031.01

December 2018

4.3.1 *Options*

Table 4.2 provides a summary of the evaluation of each of the options.

Table 4.2: Evaluation Summary

	Cost to implement	Complexity of option	Impact on water consumption	Impact on other values and priorities	Political Will
Low Flow Toilet Rebates	High	Moderate - Would require significant staff time to administer the program	Minimal – might result in a 3% reduction in water production if 500 toilets were replaced		
Water Fixture Kits	Moderate	Moderate - Would require staff time to distribute kits. Would also be reliant on homeowners doing the installation	Minimal – this could result in reduced water pumping of 4% if 500 water savings kits were distributed		
Conservation Education	Moderate	Moderate – Would require staff time or contractor to provide education	Moderate – Experience suggests that a well-executed education program can result in water savings of 10%		
Water Meter Rates	Moderate	Moderate – the Village would need to complete its water rates study and set its rates at a level that would encourage conservation	High – experience suggests that the implementation of a water meter program can result in water consumption being reduced by up to 25%	While supportive of the Village's sustainability goals, experience in other communities suggests that if water meter rates are not set right, it can lead to a shortfall in revenue for the water utility	
Target High Water Use Facilities	Low	Low – many of the high water use facilities are owned by the Village or the Village has significant influence on them	Moderate – depending on the facilities being targeted, water could be reduced significantly	The Village could work with business owners to reduce their operating costs and make their businesses more efficient	
Landscape Efficiency	Low	Moderate – this would involve education to encourage property owners to improve their outdoor water use	High – outdoor water use is a significant issue in Chase.	The maximum day demand provides guidance for the sizing of infrastructure and is usually based on summer water consumption. Reducing outdoor water use would enable the Village to reduce the size of infrastructure	
Water Pressure Management	Low – High	Moderate – the Village would have to review water pressures to ensure that they are still appropriate for fire protection	High – reducing water pressure can reduce the impacts of leaks on the system. Experience suggests that water use can be reduced 5 – 30% through reduced water pressure	Reducing water pressure can increase the lifespan of distribution pipes, particularly for pipes that are in their later stages	
Water Accounting/ Leak Detection	High	High – the Village would have to contract a company to do the water accounting and leak detection as well as ensuring that the water meters are calibrated and working properly	High – by addressing the issues in a water accounting and/or leak detection program, the Village can significantly reduce water use.	This exercise would provide the Village with a better understanding of the condition of its infrastructure and enable it to proactively plan for infrastructure maintenance and rehabilitation	
Water Reuse and Recycling	High - these type of systems can be costly to install	High – it is challenging to retrofit infrastructure/buildings to enable water reuse and recycling	Moderate to High – if the golf course and other parks could have a portion of water offset through the re-use of water, it may result in significant water savings	This could result in more cost and energy efficient use of water for large irrigated areas	

URBAN systems

Village Of Chase
Administrative Report

TO: **Mayor and Council**

FROM: **Corporate Officer**

DATE: **18 October 2020**

RE: **Christmas – 2020 Municipal Hall closure**

ISSUE/PURPOSE

The purpose of this report is to obtain a resolution of Council for Municipal Hall closures during Christmas 2020.

OPTIONS

1. Approve the Municipal Hall closure beginning noon Thursday, December 24 2020, and re-opening Monday, January 4, 2020. The Staff Leave Policy ADM-01 would apply to any staff requesting leave other than statutory holidays during this period.

Sunday	Monday(noon)	Tuesday	Wednesday	Thursday	Friday	Saturday
20	21	22	23	24 **(partial)**	**25- Closed**	26
27	**28- Closed**	**29- Closed**	**30- Closed**	**31- Closed**	**1- Closed**	2

2. Approve some other schedule for closing Municipal Hall over the Christmas period

HISTORY/BACKGROUND

In some years, Municipal Hall was closed on only the statutory holidays or the customary days in lieu between Christmas and New Year's Day. In other years Municipal Hall was closed the entire week of Christmas. Neither type of closure scenario appears to have inconvenienced the public, as no complaints have been received in this regard.

In the past when the Village office remained open for the week of Christmas, public traffic attending the office is very light. In 2018, the office was closed for seven (7) straight days from noon Monday December 24, until Wednesday January 2. We did not receive any negative feedback from the public for this closure. And in 2019, there were only 1.5 non-statutory closure days due to a favourable arrangement of the calendar.

DISCUSSION

In accordance with Article 14(a) of the Collective Agreement, Staff are entitled to three Statutory Holidays during the Christmas holiday season (Christmas Day, Boxing Day and New Year's Day). During the upcoming Christmas period these three statutory vacation days fall on Friday December 25, Monday December 28 (observed), and Friday, January 1 respectively.

If the Village office is closed and an employee does not have sufficient banked vacation time, or does not wish to take the additional days off, they will be permitted to work in the office for these days and their supervisor will assign specific projects to the employee to be worked on during those days. The office would still be advertised as closed.

Given that the demands on municipal staff are lighter during the holiday season, Administration is confident that the closure of municipal operations during the one (3) non-statutory holiday days (December 29-31) will not significantly impact the residents of Chase. Additionally, most other local governmental offices, and First Nation's offices are closed between Christmas and New Year's.

FINANCIAL IMPLICATIONS

There are no financial implications.

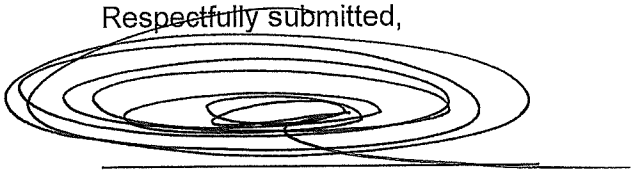
POLICY IMPLICATIONS

There is no policy on Christmas Municipal Hall closures. Regardless of which days Municipal Hall is closed during the holiday season, public notice of the holiday hours will be posted on the Village's website, Notice Board at the Village office and in the Chase Sunflower.

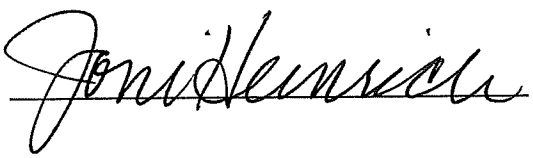
RECOMMENDATION

"THAT Council approve the closure of Municipal Hall to the public effective noon, Thursday December 24, 2020 reopening Monday January 4, 2021."

Respectfully submitted,



Approved for Council Consideration by CAO



VILLAGE OF CHASE
Administrative Report

TO: Mayor and Council
FROM: CFO
DATE: October 23, 2021
RE: 2021 Budget Direction

ISSUE/PURPOSE

To seek Council direction for the 2021 Operational Budget

OPTIONS

1. Maintain 2020 operational budget levels for all departments
2. Increase 2020 operational budget levels 1, 2, 3%
3. Decrease 2020 operational budget levels 1, 2, 3%

HISTORY/BACKGROUND

For 2020 the Province of BC offered school tax reductions to Major Industry and Business to reduce the impacts of COVID 19. The Village of Chase Council also reduced the business tax rate for 2020 (approximately 9%) and applied no increases to the other taxation classes. The completed revised assessment roll did see an increase of property values, which was used to offset the tax rate reduction.

DISCUSSION

Staff is beginning the budget process for 2021. The Water, Sewer and Solid Waste budgets are moving forward as revenues are known, due to the rate schedule adopted by Council and expenditures will reflect those values. Any capital improvements or special projects requiring additional funding will be brought forward for Council discussion.

Staff is seeking direction from Council regarding the 2021 operational budget levels, which will directly impact the 2021 tax rates. While the impact of the COVID 19 pandemic for the 2021 year are unknown, it is widely anticipated that 2021 will not see the end of COVID 19, certainly not until the latter part of 2021. TT tax assessment values are not yet available, but not major changes are anticipated..

FINANCIAL IMPLICATIONS

Budget increases will have a direct impact on the 2021 tax rate. It would be difficult to decrease the operational budget, however maintaining to 2020 budget levels maybe an option, except for the increase to the Arena operations service contract, ($25,000). Increases to the operational budget are also an option. All capital additions or special projects, and those items not traditional in the operational budget, would be brought forward for Council discussion.

Respectfully submitted,

Approved for Council Consideration by CAO