AGENDA
SUMMER VILLAGE OF GHOST LAKE
MEETING OF COUNCIL

Feb 16, 2023, 5:30. p.m.
SUPER 8, COCHRANE

COUNCIL	John Walsh	Mayor
	Carey Fougere	Deputy Mayor
	Karen Foudy	Councillor
STAFF		
	Mustafa Hashimi	Chief Administrative Officer
	Suzanne Gaida	Finance Manager
	Hassan Saeed	Planning and Development Technologist

ITEM DESCRIPTION

1.0 CALL TO ORDER

23-001

Moved by Mayor Walsh that the February 16th, 2023 Regular Council Meeting is called to order at 5:39 p.m.

CARRIED

1.1 Land Acknowledgement

"We are very grateful to be located within the Treaty 7 territory, traditional lands and home of the Bearspaw, Chiniki and Good Stoney Nation, the Kainai, Piikani, Siksika Nations, the Tsuut'ina Nation, and Region 3 Métis People. We are honoured to live, work and play in their territory and commit to the work of reconciliation. "

2.0 APPROVAL OF AGENDA

2.1 Agenda for the February 16th, 2023, Regular Council Meeting

23-002

Moved by Councillor Fougere that Council approve the February 16th, 2023 Regular Council Meeting Agenda

CARRIED

3.0 APPROVAL OF MINUTES

3.1 Approval of Minutes for the December 6th, 2022, Regular Meeting

23-003

Moved by Mayor Walsh that Council adopt the minutes for the December 6th, 2022 Regular Council Meeting

CARRIED

4.0 DELEGATIONS

NIL

5.0 OLD BUSINESS

5.1 Compost – NELS committee recommendation

Council advised administration to investigate options for getting the existing village compost hauled away as per NELS' recommendations. They also directed administration to acquire costs for levelling out the compost and adding topsoil in order to compare all possibilities.

23-004

Moved by Mayor Walsh that Council direct administration to acquire costs for getting the village compost pile hauled out; and costs for levelling the compost pile and adding topsoil.

CARRIED

5.2 Community Hall

5.2.1 Internet

Council decided to wait until the Community Hall has been renovated before installing an internet network for the building. Council further directed administration to investigate grants for acquiring fibre internet connection for the building once it is built and conduct a survey to assess how many villagers use the internet in the community.

23-005

Moved by Councillor Foudy that Council accept administration's report on internet pricing as information

CARRIED

5.2.2 Hall access – New lock

Council has decided to finalize a single code for villagers to have access to. Council directed administration to send a notice to villagers indicating that the access code may be provided if villagers email the administration.

Lock codes for the community hall are determined per block. Decision to finalize and make one code which all villagers will have access to.

5.2.3 Community Hall Rental

Administration was advised to create a virtual calendar embedded on the village website for easier accessibility for the village.

5.3 Shell oil well reclamation

There will be a meeting on March 16th, 10 am, at the community hall which will be attended by Shell Oil, Rod Keller and members from the NELS committee to discuss reclamation works on the wells in the north of Ghost Lake.

5.4 Climate Resilience Capacity Project

23-006

Moved by Mayor Walsh that Council accept administration's report on the Climate Resilience Capacity Project as information

CARRIED

5.5 Village AED

Council has decided to move the village AED to the library so it may be more accessible to the villagers.

6.0 FINANCIAL

6.1 Bank Reconciliations

23-007

Moved by Mayor Walsh that Council approve the bank reconciliations for the period ending December 31, 2022, as presented.

CARRIED

6.2 Cheque Register

Approved by Council. Full report attached at the end of this document.

6.3 Financial Report

23-008

Moved by Mayor Walsh that Council approve the Financial Report as presented by administration

CARRIED

Council advised administration to pursue the Seniors Week Event grant on behalf of ghost lake.

6.4 CRA Update

The Canadian Revenue Agency reached out to administration informing them that the village had not filed GST returns since 2018. CRA reached out to administration, along with payroll liabilities for 2021 and T4 Slips for 2020 and 2021.

They have been completed by the administration, and the village is now in compliance with both GST and Payroll with the Canada Revenue Agency.

6.5 2023 Assessment Notices

Administration has changed the layout of the 2023 Assessment Notices, to simplify them and only keep relevant information.

23-009

Moved by Councillor Foudy that Council accept Administration's proposal for the 2023 Assessment Notices layout and accept the relevant report as information

CARRIED

6.6 2023 – 2027 Capital Budget

Administration has updated the 2023-2027 Capital Budget to reflect appropriate grant funding for each project. Based on what has previously been discussed in this meeting, the village will proceed with acquiring rental bins with Waste Management, and therefore Council has advised administration to remove the Bear Bins grant from the budget.

23-010

Moved by Mayor Walsh that Council approve the 2023-2027 Capital Budget as presented by administration

CARRIED

23-011

Moved by Councillor Foudy that Council direct administration to remove the Bear Bins Grant from the 2023-2027 Capital Budget

CARRIED

6.7 Roll 4030 Tax Penalty

Tax Roll 4030 had outstanding taxes for 2021 and 2022. Administration applied penalties and contacted the banking institute responsible for paying the taxes for the home owner. It became apparent that the situation was unique and while not a normal recommendation, Administration would like Council to consider waiving the penalties associated with this account.

23-012

Moved by Councillor Foudy that Council direct administration to waive the 2021 and 2022 penalties for Tax Roll 4030

CARRIED

7.0 NEW BUSINESS

7.1 2023 Community Survey

Council directed administration to not circulate a survey as it is currently not necessary. The survey meant to ask villagers about their opinions on the village compost pile and playground equipment, but administration is still looking into options and costs for both items.

7.2 Grants

Administration is investigating grants to fund the playground project to cover costs for equipment. The village will also host an open house to discuss options for the playground.

7.3 Waste and Recycling Services

23-013

Moved by Councillor Foudy that Council direct administration to proceed with acquiring a contract for waste and recycling services with Waste Management Canada

CARRIED

23-014

Moved by Councillor Fougere that Council direct administration to acquire bear bins for waste and regular bins for mixed recycling, as recommended by Waste Management Canada

CARRIED BY MAJORITY

For: Councillor Fougere, Mayor Walsh

Against: Councillor Foudy

7.4 Birdfeeders

Due to the issue of birdfeeders and littered feed causing a possibility of attracting bears, Council has directed administration to spread more awareness around BearSmart tips and properly using birdfeeders.

7.5 Community Hall Design

Administration will work closely with Audrey to help design the playground and incorporate the community's interests for $3000. Audrey will help to select furniture, materials, etc. before reaching out to contractors along with completing inspections and providing a deficiency list.

Administration will also work with Audrey and aim to organize a group of dedicated community volunteers to work on the playground project.

23-015

Moved by Councillor Foudy that Council accept the information presented by administration as information.

CARRIED

7.6 Playground

Discussed in 7.2

7.7 Bylaw # 2022-07 – Short-term Rental Bylaw – Bylaw renamed to bylaw #2023-01

Administration has drafted the short-term bylaw for Council to review and adopt. The bylaw prohibits any sort of short-term rentals and advertisements.

The bylaw

23-016

Moved by Mayor Walsh that Bylaw #2023-01, with the amendments, be given first reading

CARRIED

23-017

Moved by Councillor Fougere that Bylaw #2023-01, with the amendments, be given second reading

CARRIED

23-018

Moved by Councillor Foudy that Bylaw #2023-01, with the amendments, be introduced for third reading

CARRIED

23-019

Moved by Mayor Walsh that Bylaw #2023-01, with the amendments, be given a third reading

CARRIED

7.8 Purchasing Policy

23-020

Moved by Mayor Walsh that Council adopt the proposed purchasing policy as presented with the following amendments:

- ***Rename policy to policy #2023-01***

CARRIED

8.0 CORRESPONDENCE

9.0 COMMITTEES

9.1 Disaster Services Committee

Councillor Fougere provided update. The committee is working to apply for three grants sent by Josh Haddinot on behalf of Ghost Lake.

23-021

Moved by Councillor that Council approves the submission of application for the FRIAA grants for advanced FireSmart Assessment, Hazard and Risk Assessments, and Open House

CARRIED

23-022

Moved by Councillor Foudy that Council approve Josh Haddinot's master service agreement to be a client for the FRIAA grant on behalf of the Summer Village of Ghost Lake

CARRIED

23-023

Moved by Councillor Carey that Council approve Mayor Walsh to sign the letters of support for the FRIAA grants.

CARRIED

9.2 FireSmart Program

Discussed in 9.1

9.3 Public Works

Committee is working on organizing a prescribed burn, and will work to collaborate with various fire departments in the area for the event. The committee is still discussing the best date for hosting the event and more details will be provided in the future.

9.4 Dock Committee

No new updates.

9.5 Community Association

The Community Association has planned out upcoming events for 2023. They recently held a curling event along with a BBQ and a games night. The next upcoming event will be in March for St. Patrick's Holiday.

9.6 Natural Environment and Lake Stewardship

No new updates.

10.0 ADJOURNMENT

23-024

Moved by Mayor Walsh being that the agenda matters have been concluded, the meeting adjourn at 9:12 p.m.

CARRIED

MINUTES
SUMMER VILLAGE OF GHOST LAKE
REGULAR MEETING OF COUNCIL

Dec 6, 2022, 5:30. p.m.
SUPER 8, COCHRANE

ITEM DESCRIPTION

1.0 CALL TO ORDER

22-136

Moved by Mayor Walsh that the December 6th, 2022 Regular Council Meeting is called to order at 5:34 p.m.

CARRIED

1.1 Land Acknowledgement

"We are very grateful to be located within the Treaty 7 territory, traditional lands and home of the Bearspaw, Chiniki and Good Stoney Nation, the Kainai, Piikani, Siksika Nations, the Tsuut'ina Nation, and Region 3 Métis People. We are honoured to live, work and play in their territory and commit to the work of reconciliation. "

1.2 New Finance Manager Introduction

2.0 APPROVAL OF AGENDA

2.1 Agenda for the December 6th, 2022 Regular Council Meeting

22-137

Moved by Councillor Foudy that that Council approve the agenda as presented with the following changes:

5.7.3 Hall Rental

5.7.4 Camera for community hall

5.8 Annexation

8.0 Committee Updates

9.0 Adjournment

CARRIED

3.0 APPROVAL OF MINUTES

3.1 Approval of Minutes for the September 26th, 2022 Regular Council Meeting

22-138

Moved by Mayor Walsh that Council approves the September 26th,2022 Regular Council Meeting Minutes

CARRIED

3.2 Approval of Minutes for the November 21st, 2022 Special Council Meeting

22-139

Moved by Councillor Fougere that Council approves the November 21st, 2022 Special Council Meeting Minutes

CARRIED

4.0 DELEGATIONS

NIL

5.0 OLD BUSINESS

5.1 Bins

5.1.1 Garbage bins

After investigating different options for bear proof bins, administration recommends two 6yd bearproof bins from BluPlanet for a total cost of $6,424 plus tax. The bins may be purchased as capital from the Community Capacity

Building Fund. Administration recommended not purchasing any mixed recycling bins but will aim to share information with the village to encourage practising safe disposal procedures.

Full report attached at the end of this document

22-140

Moved by Mayor Walsh that Council approves the purchase of two 6yd bins from BluPlanet Recycling as per administration's recommendation

CARRIED

5.1.2 Compost bins

Administration reached out to BluPlanet Recycling to get options for acquiring compost bins for the community and getting the existing compost pile hauled away for disposal. Based on the costs, administration recommends against acquiring a fixed compost service, and instead opt for seasonal pickup service if needed.

Full report attached at the end of this document

The village will aim to manage the existing compost pile by spreading it on site within the village through a combination of volunteer work and equipment hire. The village will also consider closing the existing compost "storage" and investigate the need and feasibility of implementing a seasonal compost collection instead.

5.2 Carraig Ridge Well

Administration submitted all related documents and Notice of Appeal on behalf of Ghost Lake to AEP via email and mail.

5.3 Hwy 1a Realignment

Administration had previously reached out to the Government of Alberta to request signage on the highway by the village emergency exit. Their response indicated that they will not be adding any signage as they do not want to promote the use emergency access road on a regular basis.

5.4 Village Signage Update

Administration received costs from the City of Calgary for 8 small signs to be posted on a sign board by the village entrance. The costs for these signs (with vinyl coating) will be $520 plus tax.

Full report attached at the end of this document

Council directed administration to also acquire 6 “No Parking” signs and 2 bigger signs displaying the message, “For Ghost Reservoir Rec Area, turn around and drive East for 4 km”

5.5 West/Emergency Exit to Hwy 1a Update

Discussed in 5.3

5.6 Beaupre Hall Agreement

Administration has finalized and sent Beaupre Community Association the agreement which allows Ghost Lake to use the Beaupre Community Hall in case

of emergencies. The contract will be valid for a 10-year period and there is no cost associated with the rental of the hall in such situations.

Full report attached at the end of this document

5.7 Community Hall

5.7.1 Community Hall Survey and Open House Document

The Community Hall Survey and Open House summary document has been posted on the village website and emailed to the community.

5.7.2 Internet

Council directed administration to look at costs and pricing for internet for the village community hall.

5.7.3 Hall Rental

Ghost Lake village has created an agreement that may be used for the rental of the community hall. The agreement, along with relevant information will be posted on the website for the community to access.

22-141

Moved by Councillor Foudy that Council approves the agreement for the rental of the Ghost Lake Village Community Hall

CARRIED

5.7.4 Camera

Councillor Foudy suggested investigating options for surveillance cameras for the community hall.

5.8 Annexation

Consultant Greg Birch provided update to administration that the consulting firm is undertaking further discussion with the MD of BigHorn to address any ongoing concerns from their CAO and Council regarding the annexation process.

6.0 FINANCIAL

6.1 Finance Update

Administration recommended Council to remove the transfer of $7,172 into Operating Reserves and the transfer of $5,000 into Capital Reserves from the 2022 Budget, and further direct administration to transfer any 2022-year end surplus into Operating Reserves.

Full report attached at the end of this document

22-142

Moved by Mayor Walsh to approve administration's request to remove the transfer of $7,172 into Operating Reserves and the transfer of $5,000 into Capital Reserves from the 2022 Budget, and further direct administration to transfer any 2022-year end surplus into Operating Reserves

CARRIED

6.2 Operating Reserves

Full report attached at the end of this document

22-143

Moved by Councillor Fougere that Council direct administration to create a single Operating Reserve that all current Operating Reserves are transferred

into and a single Capital Reserve that all current Capital Reserves, except the MR Reserve are transferred into resulting in three reserve accounts for the Summer Village of Ghost Lake

CARRIED

6.3 Budget

Administration presented the 2023-2025 Operating Budget and the 2023-2027 Capital Budget to Council for approval.

Full report attached at the end of this document

Administration will work to update the village's purchasing policy and present it to Council for approval later.

22-144

Moved by Councillor Foudy that Council approves the 2023-2025 Operating Budget and the 2023-2027 Capital Budget as presented by administration

CARRIED

6.4 Bank Reconciliations

22-145

Moved by Mayor Walsh that Council approves the General Bank Reconciliation for the period ending October 31, 2022, as presented

CARRIED

6.5 Cheque Register

Full report attached at the end of this document

7.0 NEW BUSINESS

7.1 Property Tax Late Fee, waived for 2021 and 2022 for discussion

Property owner requested administration to waive penalties associated with paying their property tax late in 2021 and 2022.

22-146

Moved by Mayor Walsh that Council instructs the property owner (roll #6100) to pay all required penalties by June 30th, 2023, via installments or lump sum, and that no additional penalties to their outstanding balance will be applied unless the owner fails to pay before the deadline.

CARRIED

7.2 Village Newsletter

Administration aims to circulate the winter newsletter to the village by mid-December.

7.3 AED pad replacement

Administration is working to get the AED pads for the AED device in the community hall replaced as the existing ones have expired. Council also discussed moving the AED to the library as it would allow for easier access in emergency situations.

7.4 Marigold Library

22-147

Moved by Councillor Fougere that Council approves the amended agreement for Marigold Library and that Mayor Walsh sign the agreement.

CARRIED

8.0 COMMITTEE UPDATES

8.1 Emergency Management

Working with Alberta Forestry to set up a controlled burn for 2023. Talked to Richard Payton regarding the weather station who suggested installing the weather station near the entrance of the village. Furthermore, Tim Bliek will be joining the Emergency Management committee.

8.2 Public Works

No new updates

8.3 Dock Committee

No new updates

8.4 Community Association

Hosted a Halloween party and a Christmas potluck dinner, both with good engagement and turnout. Working to raise money for fireworks.

9.0 ADJOURNMENT

22-148

Moved by Mayor Walsh being that the agenda matters have been concluded, the meeting adjourn at 8:55 p.m.

CARRIED

Report Date: February 11 2023
Contact: Mustafa Hashimi
Agenda Item Number: 5.1
Meeting Date: February 16 2023

TO: **Council**

FROM: **Administration**

Subject: **NELS Committee – Compost**

RECOMMENDATION: THAT Council review the report provided by NELS for discussion.

REPORT SUMMARY

Previously, Council had explored the idea of spreading the existing village compost pile in a controlled area near the pile, and had requested administration to get the input of the NELS Committee before doing so. The NELS Committee discussed Council's plan and responded that they were not in favor of the solution as spreading the compost could create more problems for the village.

The full email is attached below.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.
From: Karen Laustsen

Good Afternoon,

The NELS Committee members have now discussed Council's idea to spread out the compost pile material and the majority are NOT in favor of this solution. The main reason is that the pile is heavily infested with a wide variety of weeds, weed seeds, and roots (including weeds listed on the provincial noxious weeds list, such as Canada Thistle and Creeping Bell Flower). In addition, the older, deeper layers of the pile consist mainly of clay and rocks from dredging the breakwater area.

Although many of our public areas do have some weeds, spreading the compost pile in public areas around the village would very likely create a much bigger weed problem. The compost pile weeds would actually benefit by being spread out and would likely thrive in new locations. Unfortunately, since many weed varieties have become semi-resistant to herbicide treatment, we could end up with difficult and wide-spread weed problem as a result. With regard to the clay dredgings in the pile, that material is essentially sterile (contains little to no organic material) and if spread around would create very difficult conditions where few plants (other than weeds!) could grow.

The NELS Committee did not consider the option of spreading out the compost pile when we prepared our Compost Pile Report and Recommendations for Council in September 2022, but after due consideration at this time, it is our opinion that distributing the compost pile around the village may end up creating larger problems than it currently poses sitting in a heap. The cost to mitigate a widespread weed infestation and correcting for the clay content would be expensive, not to mention environmentally unfriendly.

Since you have said that the compost pile does not have to be tested for potential environmental hazards, would it be possible to dispose of it at a local landfill, or could it be sold or donated as clean fill for one of the construction projects in the area, as suggested in the September Council meeting? Failing this, our recommendation remains to haul it away and start over, as detailed in our Compost Pile Report and Recommendations to Council from September 2022.

Thanks for asking for our input in this matter.

Sincerely,

Karen Laustsen (on behalf of the NELS Committee)

Report Date: February 12 2023
Contact: Mustafa Hashimi
Agenda Item Number: 5.2.1
Meeting Date: February 16 2023

TO: **Council**

FROM: **Administration**

Subject: **Community Hall Internet**

RECOMMENDATION: THAT Council direct administration to acquire a Telus SmartHub for internet in the village Community Hall.

REPORT SUMMARY

Based on Council's direction, administration has been working to acquire pricing for internet services for the Community Hall. Administration reached out to Velocity Network, Telus and Blue Fibre for quotes, and found Telus to have the best offer in terms of price and internet speed provided.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

Council had previously directed administration to investigate costs for acquiring internet services for the community hall. The purpose of internet access would be to allow for virtual meetings, online presentations and more. Administration was advised to reach out to various vendors and look for the costs of medium speed internet services as it would be most practical for its intended use.

DISCUSSION

The costs from Velocity Network and Telus for rural internet services are listed below. Administration reached out to Blue Fibre for costs but was unable to get a response.

Velocity Network

1. $90/mo.
    a. Speed: 10mbps download
    b. Term: Month-to-month contract
    c. Installation fee: $100

2. $85/mo.
    a. Speed: 25mbps download
    b. Term: 2-year
    c. Installation fee: N/A

Telus- Smart Hub

1. $70/mo. ($90/mo. After 24 months)
    a. Speed: 25mbps download
    b. Term: 2-year
    c. Data: 500 GB monthly

2. $55/mo. ($75/mo. After 24 months)
    a. Speed: 25 mbps
    b. Term: 2-year
    c. Data: 100 GB monthly

CONCLUSION

Based on the above-mentioned prices, administration recommends purchasing the Telus Smart Hub device with the 500 GB monthly data option, as it is cost effective and also practical in regard to its intended use for the community hall.

REVIEWED AND APPROVED BY

Mustafa Hashimi, CAO

Report Date: February 11, 2023
Contact: Mustafa Hashimi, Chief Administrative Officer
Agenda Item Number: 5.4
Meeting Date: February 16, 2023

TO: **Council**

FROM: **Administration**

TITLE: **Climate Resilience and Adaptation Plan**

RECOMMENDATION:

That council adopt the Morrison Hershfield Climate Resilience and Adaptation Plan and accept this report for information.

REPORT SUMMARY

The Summer Village of Ghost Lake hired Morrison Hershfield Ltd. to develop a Climate Resilience and Adaptation Plan that balances governance and community approaches to help increase the community's resilience to climate change. The plan follows the Climate Express Process, the Climate Lens General Guidance, and the PIEVC High Level Screening Guide, and is structured around four community pillars. A community session helped prioritize the proposed actions, and the plan identified 20 key priority actions that can help the community cope with climate change and retain their self-sufficiency and community-oriented attributes.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approves this report.

REPORT

BACKGROUND/CONTEXT

The Summer Village of Ghost Lake is a small municipality located on the Ghost Reservoir in the Bow River watershed. Due to the capacity and resource challenges of being a small rural municipality, the plan prioritizes co-benefits and multi-solving solutions wherever possible. A climate risk assessment identified future projected conditions for the 2080 time period in SVGL, which consisted of 33 negligible, 71 low, 23 moderate, 42 high, 17 extreme, and 38 special consideration risk interactions. High and extreme risks included extreme heat, wind, and extreme combination events, riverine flooding, drought, and dry conditions, indirect wildfire events, and invasive species.

DISCUSSION

One of the most significant challenges during this process was capacity, for staff, elected officials, and community members, which was overcome by being flexible and adaptable in their approach. The plan is designed to build the capacity of SVGL's staff and residents to assess their actions through the lens of a changing climate and ensure that projected future climate conditions are adequately considered during decision-making.

CONCLUSION

Small investments in actions that help reduce vulnerability and risk can result in many social, economic, and environmental co-benefits for the Village. Climate change requires local attention as many effective actions are within the jurisdiction of local governments. Actions taken today to respond to climate change can influence how communities respond to impacts in the future. The plan aims to help SVGL become self-sufficient, community-oriented, safe, resilient, and responsive, even in the face of future climate uncertainty.

REVIEWED AND APPROVED BY

Mustafa Hashimi, Chief Administrative Officer

SUMMER VILLAGE OF GHOST LAKE

Presented To

Mustafa Hashimi
Chief Administrative Officer

Climate Resilience & Adaptation Plan

MORRISON HERSHFIELD

SUMMER VILLAGE OF GHOST LAKE

Climate Resilience & Adaptation Plan

Presented to:

Mustafa Hashimi
Chief Administrative Officer

Report No. 220264800
December 2022

EXECUTIVE SUMMARY

The Summer Village of Ghost Lake will build capacity within its means wherever possible, to ensure that our community and its residents remain safe, resilient, responsive, and self-sufficient, in the face of a changing climate for generations to come.

Climate change is a global challenge which requires collective local action to address the degree of change and adapt to the changing climate and its associated impacts; there is overwhelming evidence to show that the earth's climate is changing (IPCC, 2001). These changes will have a multitude of impacts on the built and natural environment that will be seen from global to local levels. The Summer Village of Ghost Lake (SVGL) has a role to play in building the resilience of Canadian communities, and the community recognizes the need to prepare for these potential impacts and is committed to increasing its resiliency to the effects of a changing climate. It is crucial that communities of all sizes prioritize resilience to climate impacts even though there is still uncertainty about where, when, and how severe these impacts may be. This planning exercise has set out to reduce some of this uncertainty for SVGL, so that staff and residents can continue on a journey to learn what works, what doesn't, and what actions can be taken to remain resilient in the face of such uncertainty.

To address this need to prepare for the potential impacts of climate change, the Summer Village of Ghost Lake retained Morrison Hershfield to develop a Climate Resilience and Adaptation Plan. Acknowledging that SVGL values self-sufficiency and citizen action, this Plan is intended to achieve a balance between governance and community approaches, prioritizing multi-solving solutions and actions with co-benefits wherever possible to help overcome the capacity and resourcing challenges that come with being a small rural municipality. To facilitate an effective climate adaptation planning process for the Summer Village of Ghost Lake, this Plan is centered around 4 key pillars of the community:

- Municipal Buildings & Services
- Homes & People
- Parks, Greenspace, & Recreation
- Water

This Plan will assist the Summer Village of Ghost Lake in understanding how the climate is projected to change into the future and to prioritize climate change resilience actions that have been determined to address significant climate change impacts on the four community pillars. Further, it is designed to build the capacity of the Summer Village of Ghost Lake's staff and residents to be able to assess their actions through the lens of a changing climate and ensure that projected future climate conditions are adequately considered during decision-making. The plan includes a complete climate profile for the Village outlining future predicted climate conditions as well as highlighting potential climate related hazards to the Village. Using these predictions, a risk assessment of the Village's municipal and community infrastructure and operations was conducted. Elements at risk in the Village were identified and adaptation actions were recommended to address these risks.

For the Summer Village of Ghost Lake, climate adaptation planning needs to prioritize actions that reduce the negative impacts of climate change and protect individuals and community resources from said impacts; all with an eye to remaining practical, affordable, and implementable for a small community with limited capacity and resources. To this end, the risk assessment was conducted by Morrison Hershfield engineers and specialists in their respective fields, followed by the development of adaptation actions and risk treatment options. This Plan will support SVGL in identifying and implementing local actions to manage the risks stemming from these changes as well as capitalize on opportunities that may present, to ensure the community is resilient in the face of a changing climate.

This Plan identifies 20 key priority actions the Summer Village of Ghost Lake could implement to increase the community's resilience in the face of a changing climate while respecting existing capacity and resource limitations, as well as retaining valued community attributes. Many of these actions build upon and are supported by the analysis and actions already contained within the SVGL's Municipal Development Plan and Sustainability Plan. Small investments in actions that help reduce vulnerability and risk can result in many social, economic, and environmental co-benefits. The actions presented in this Plan are not mandatory, but it is recommended that SVGL prioritize the implementation of these actions recognizing that the community is vulnerable to climate change, and there are steps that can be taken to become more resilient to climate change impacts.

ACKNOWLEDGEMENTS

Land Acknowledgement

The Summer Village of Ghost Lake respectfully acknowledges that our community is located on the traditional lands of the Stoney Nakoda peoples of the Chiniki, Bearspaw and Wesley Bands, the Tsuut'ina, the Niitsitapi (Blackfoot) peoples of Siksika, Piikani and Kainai Band.

Morrison Hershfield Team

Clarissa Huffman - Climate Risk Project Manager

Alexander Templeman - Climate Risk Analyst

Joelle Doubrough - Senior Climate Risk Analyst / Environmental Planner

Andrew Harkness - Director, Climate Change Practice Lead

SVGL Staff

Mustafa Hashimi - Chief Administrative Officer

Hassan Saeed - Planning and Development Technologist

This project was funded by the Municipal Climate Change Action Centre (MCCAC).

MCCAC was established in 2009 as a partnership initiative between the Alberta Municipalities, Rural Municipalities of Alberta, and the Government of Alberta. They provide municipalities, schools, and non-profit community related organizations with support, technical assistance, and funding programs to implement energy efficiency and renewable energy projects that reduce greenhouse gas emissions and energy costs while increasing community resilience.

DEFINITIONS

Climate Parameters: Broader categories of measurable climate conditions in relation to which specific climate hazards or indicators can be defined. Climate parameters include temperature, precipitation, sea-level rise, wind, etc. (PIEVC, 2021)

Climate Hazard: A specific impactful event related to the broader climate parameter category. (PIEVC, 2021)

Climate Hazard Indicators: Specific climate values (TMax > 35C; Precip > 100mm; Freezing Rain > 30 mm, etc.) that are defined by their ability to impact an infrastructure system or component (i.e., exceed a threshold) (PIEVC, 2021)

Cooling Degree Days: The annual sum of daily mean temperature above 18º.It indicates the amount of cooling that may be required to maintain comfortable conditions within a building during hotter/warmer months. Cooling degree days are calculated by measuring the difference between the daily mean temperature and the threshold of 18ºC. Each degree above the threshold equates to one cooling degree day. (For example, a daily mean temperature of 21ºC would equate to 3 cooling degree days for that day.) The summation of all cooling degree days is then taken to provide the annual number of cooling degree days in a year.

Freeze-Thaw Conditions: Conditions resulting from air temperature fluctuating between freezing and non-freezing temperatures.

Global Climate Models: Complex mathematical representations of the drivers of earth's climate system such as the atmosphere, oceans, land surface, ice, and their interactions at the global scale. Used in the study of global climate system dynamics and the prediction of future climate scenarios.

Heat Wave: For the purposes of this assessment, heat waves are defined as three consecutive days of 30°C or higher.

Heating Degree Days: The annual sum of daily mean temperature below 18ºC indicates the amount of heating that may be required to maintain comfortable conditions within a building during colder/cooler months. Heating degree days are calculated by measuring the difference between the daily mean temperature and the threshold of 18ºC. Each degree below the threshold equates to one heating degree day. (For example, a daily mean temperature of 15ºC would equate to 3 heating degree days for that day.) The summation of all heating degree days is then taken to provide the annual number of heating degree days in a year.

Invasive Species: Species of flora and fauna that are not native to the given region they are found in.

Regional Climate Models: Downscaled from global climate models, regional climate models are complex mathematical representations of the drivers of the earth's climate system and their interactions at a regional level.

Representative Concentration Pathways: Representative Concentration Pathways (RCPs) represent predictions of future greenhouse gas emission scenarios. Developed by the IPCC and used in the AR5 and AR6 reports, each pathway has representative risks and impacts based on the associated amount of predicted net emissions. The most common scenarios used are RCP2.5, RCP4.5, and RCP8.5 representing low, moderate, and high emission scenarios, respectively. RCP8.5 high emissions scenario was used as the basis for climate data used in this report as it currently represents the most likely emissions pathway and associated impacts.

Tropical Nights: Describes days where the minimum temperature does not fall below 20ºC during the night.

Uncertainty in Climate Data: While it is known with certainty that the climate is changing and will continue to change, the complex nature of the climate system leads to a level of uncertainty when trying to predict specific climate parameters at a given place and time. Uncertainty in climate predictions comes from several sources such as natural climate variability, and uncertainties within the emission scenarios related to potential future human, policy, and industrial trends. To mitigate this uncertainty, an ensemble of models and emission scenarios are used to capture the range in model outputs.

Urban Heat Island: A metropolitan area that has consistently higher temperatures than surrounding areas. This effect is due to factors of the urban environment such as lack of vegetation, and low albedo of building and road materials.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1. CALL TO ACTION

Data and research continue to demonstrate that climate change is already impacting our communities and that these impacts are expected to continue to increase in rate and intensity. While some of these impacts may be difficult to quantify with certainty, especially for smaller communities with limited resources, it is important to act now, even in the face of uncertainty. Climate change is a global challenge which requires collective local action to address the degree of change and adapt to the changing climate and its associated impacts; the Summer Village of Ghost Lake (also referred to within as 'SVGL' and 'the Village') has a role to play in building the resilience of Canadian communities.

Acknowledging that SVGL values self-sufficiency and citizen action, this Plan is intended to achieve a balance between governance and community approaches, prioritizing multi-solving solutions and actions with co-benefits wherever possible to help overcome the capacity and resourcing challenges that come with being a small rural municipality.

SVGL VISION

The Summer Village of Ghost Lake will build capacity within its means wherever possible, to ensure that our community and its residents remain safe, resilient, responsive, and self-sufficient, in the face of a changing climate for generations to come.

1.1 Climate Change

Climate change refers to long term shifts in atmospheric conditions such as temperature and weather systems (IPCC, 2001). These changes are mainly driven by the addition of greenhouse gases to the atmosphere (IPCC, 2001). These greenhouse gases trap heat in the atmosphere leading to an increase in average global temperatures and shifts in weather systems. The Canadian prairies, including Alberta communities, have seen higher rates of warming when compared to other regions of southern Canada (Sauchyn et al., 2020).

Community responses to climate change fall generally into two broad categories: mitigation (reducing our inputs to climate change) and adaptation (responding to impacts caused by a changing climate). This is summarized in Figure 1. Increasingly, actions that achieve emissions reductions while simultaneously helping communities adapt to climate change are preferred in order to maximize efficiency; this emerging work is called low-carbon resilience, as illustrated in the middle portion of the Venn Diagram (Figure 1).

Historic and existing greenhouse gas emissions have already resulted in observed changes to our climate resulting in impacts that we must respond to (Canadian Institute for Climate Choices, 2020). Examples of climate change hazards include but are not limited to increases in wildfire events, increases in flooding frequency and intensity, more intense droughts and water scarcity issues, more severe and frequent storm systems, human health impacts, and a loss in biodiversity (IPCC, 2022). These changes in climate change hazards will have significant impacts on people, infrastructure, and natural ecosystems.

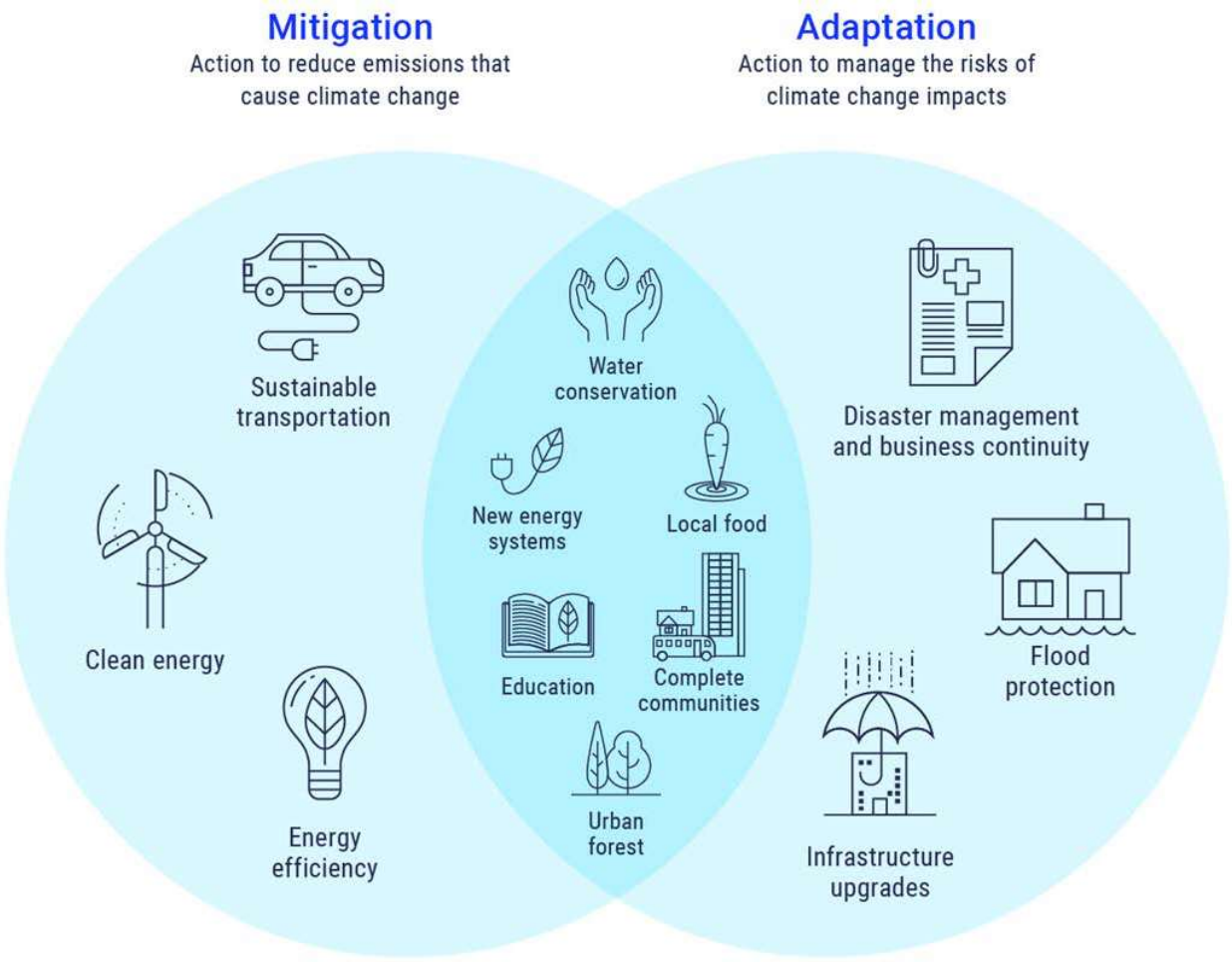


Figure 1: Climate Change Adaptation and Mitigation (Sauchyn et al., 2020)

1.2 Regional Climate Context

Climate related impacts will be felt globally by communities of all sizes including the Summer Village of Ghost Lake. For example, the southern Prairies, including the Bow River watershed, typically have a more limited and variable water supply compared to other Prairie regions, relying largely on groundwater (Sauchyn et al., 2020). Further, the 2013 flooding in Calgary and the 2016 wildfire in Fort McMurray were two of the most expensive disasters in Canadian history, and many Prairie communities are working to adopt and implement policies and programs to build resilience in response to these extreme types of events (Sauchyn et al., 2020). Other potential climate hazard impacts predicted to impact the Village include extreme heat, wildfire, and wind and storm events. To best deal with these changes and impacts, proper planning and adaptive measures must be taken.

SVGL's geographic context is shown in Figure 2. This report aims to outline potential climate related hazards and interactions and their associated impacts on the Summer Village of Ghost Lake. Recommendations to adapt to these impacts within the context of what is possible and realistic for a small community with limited resources and capacity are included. With proper knowledge and planning the Summer Village of Ghost Lake can increase its resiliency to potential future climate related hazards.

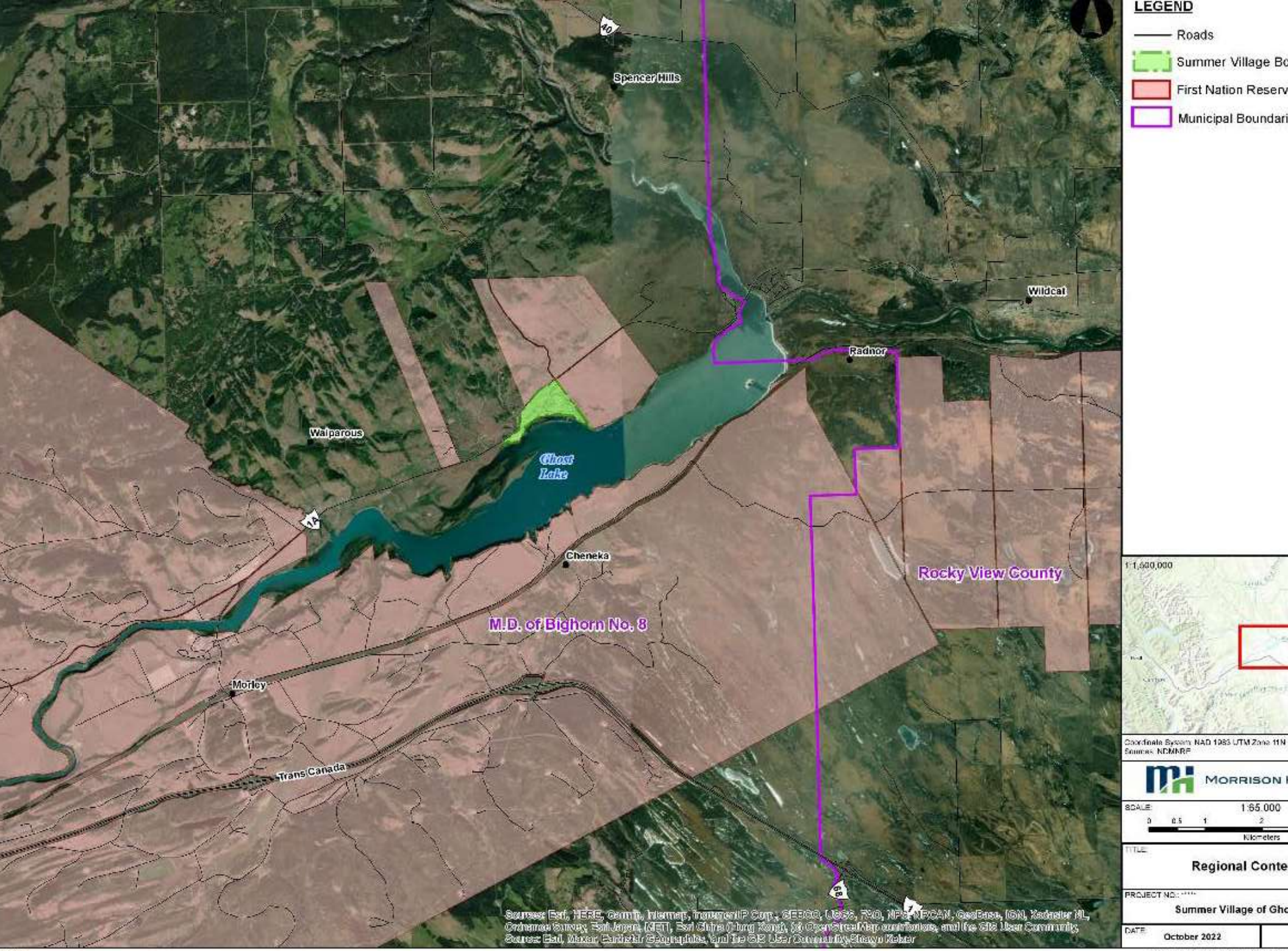


Figure 2: Regional Context Map

1.3 Climate Adaptation for Summer Village of Ghost Lake

Climate adaptation planning is a process for us to identify current and potential climate change impacts and establish a working plan to proactively (wherever possible) respond to these impacts and to better prepare our community, natural spaces, buildings, and infrastructure to climate change impacts. The adaptation planning process also allows communities to take advantage of opportunities by prioritizing co-benefits and multi-solving solutions. Climate resilience, in a nutshell, is the ability to prepare for, recover from, and adapt to, disturbances caused by climate change impacts.

Co-Benefits: *Beneficial outcomes that are not directly related to climate change. Examples of co-benefits to climate adaptation might include healthier green spaces and wildlife habitat, improved air and water quality, creation of new job and economic development opportunities, or an increased sense of place/community cohesion.*

Multi-Solving Solutions: *Working across diverse silos and sectors of our community to develop solutions that contribute to solving more than one issue at a time. For example, tree planting initiatives help to reduce GHGs in the atmosphere through carbon sequestration, can decrease energy consumption due to shade, reduce urban heat island effect, and have a positive impact on stormwater management efforts.*

While climate change is a global concern, it requires local attention, as many of the most effective actions we can take to become more resilient to climate change are within the jurisdiction of local governments. Actions we take today to respond to climate change can influence how our communities respond to impacts in the future; therefore, it is important to use this process as a starting point to adopt a climate lens, where climate considerations are a part of all decision-making processes.

To facilitate an effective climate adaptation planning process for the Summer Village of Ghost Lake, this Plan is centered around 4 key pillars of the community (Figure 3). These 4 pillars will be further defined and explored throughout the Plan.

Photo 1: Image of the Study Area

Figure 3: Four Pillars of Climate Change

Municipal Buildings & Services

Successful climate action will require the integration of climate considerations into municipal decision-making and planning processes, including decisions about infrastructure and services. This is most effective when climate adaptation is included as a key consideration or policy goal at the very beginning of a planning process. This section will look at the key buildings, infrastructure, and service offerings owned and maintained by the Summer Village of Ghost Lake. For example:

- SVGL owns and maintains one multi-functional community building.
- Roads in the community are owned by the province but are maintained by SVGL.
- SVGL relies on porous local soils, low development density, and a rural road cross-section design with open drainage ditches and culverts for stormwater management.
- SVGL collects municipal solid waste (garbage) for disposal at a landfill site in Calgary. Recycling and yard waste are also collected and disposed of at the appropriate facilities.

This Plan will consider climate risks that may impact these assets and services, as well as actions that can be taken to increase resilience so that SVGL can continue to offer the level of service expected by residents. The Plan will further have consideration for expanding 'green' initiatives, as these types of initiatives were previously identified as an area of interest during community engagement for the Sustainability Plan and the Municipal Development Plan.

Homes & People

The majority of developed land in SVGL is residential, with single detached dwellings occupying the majority of lots. Effective climate adaptation actions will consider how to support the people living in the community, as well as the homes they live in, to become more resilient to climate change impacts. Current building design is based on historic climate conditions and may not be as suitable under future climate conditions. This may impact:

- Residents financially through increased cooling costs
- Comfort and well-being in extreme heat events
- Physical assets, such as leaks in homes
- Water quantity in domestic use groundwater wells

Photo 2: Image of Study Area

These impacts can be reduced through proper planning, monitoring, and implementation of suitable resiliency measures. As noted in the Village's Municipal Development Plan, the population of SVGL is not expected to grow. This will allow SVGL to prioritize keeping existing infrastructure and residents safe and resilient to future climate impacts.

Parks, Greenspace, & Recreation

Natural spaces are very important to the community, and there is an interest to preserve remaining vacant land in a naturalized state. The following elements of natural spaces are identified as socio-culturally significant in the Summer Village of Ghost Lake include:

- Wetland and decorated trails
- Sensitive fescue grasslands
- Wooded areas with walking trails
- Waterfront with bird nesting areas
- Undeveloped natural areas

Forest, grassland, and parkland ecosystems are expected to shift at variable rates due to climate change, with disturbances such as development and the success of adaptation actions affecting the rate of change (Sauchyn et al., 2020). However, when managed well and given space to function as intended, natural systems can also have strong multi-solving properties (Eyquem et al, 2022). SVGL is in an ideal position to leverage these benefits as a component of their climate response by looking to the ecosystem services and resilience solutions that can reduce capacity constraints and increase efficiency. Finally, recreational opportunities such as parks & leisure areas, the golf course, and the Ghost Lake reservoir are all part of this pillar, as they are impacted significantly by the health and resilience of the natural systems that support them.

Water

There is no municipal or common water system in SVGL. Instead, water is obtained from private wells and cisterns located on individual properties. Sewage is also handled through private systems, typically traditional septic tank and tile field systems or holding tanks. As previously mentioned, the southern Prairies are susceptible to variations in water availability, which will be a key consideration for SVGL moving forward. Hydrological drought (or low water tables) can impact municipal water supplies relying on groundwater. However, the extensive management of water flows in this region makes it difficult to tell whether changes and impacts are caused by climate change or other human-induced strains on water systems (e.g., development pressures). SVGL will also want to consider the impacts of:

- Heat waves
- Increased average temperatures
- Longer snow-free periods on surface water levels (such as the community's wetland areas)

1.4 This Plan

This Plan is designed to build the capacity of the Summer Village of Ghost Lake's staff and residents to be able to assess their actions through the lens of a changing climate and ensure that projected future climate conditions are adequately considered during decision-making.

To be able effectively plan for climate adaptation and resilience, it is important to understand what climate hazards could potentially impact the community, and what elements of the community are most at risk. From there, conceptualization on how to use this information to plan for and respond to these risks can begin.

Determination of climate risk requires looking at:

- What hazards could potentially impact the community
- What elements of the community are exposed to these hazards
- The likelihood that the exposure will happen

Consideration of the above, informs an understanding of community vulnerability. We then look to understand the consequences of the interaction or understanding the significance of, say, the indirect effects of wildfire impacts like air quality on recreational resources like the golf course or beachfront. The output of this process is an understanding of the overall climate risk. Finally, we can use the results of this risk assessment to frame out the community's plan to respond to these risks, including what we need to do and how we need to do it. This framework has been carried through in the layout of this Plan, with the remaining sections of this report containing the information as follows:

- **Section 2** describes the methodology of this process in more detail.
- **Section 3** describes the climate profile, including the potential climate hazards that were assessed and the data that supports the decision to include or exclude certain hazards from the risk assessment and resilience planning process. It also explores the planning context of this report, including exploring the Summer Village of Ghost Lake's Municipal Development Plan and Sustainability Plan to set the stage for climate adaptation planning.
- **Section 4** describes the overall results of the climate risk assessment process.
- **Section 5** lays out the most significant actions that the Summer Village of Ghost Lake can implement over the short-medium term to increase the community's resilience to a changing climate
- **Section 6** outlines the various resources required to achieve the actions identified in Section 5.
- **Section 7** provides some commentary on next steps, including how to evaluate success and keep this Plan relevant over time.

2. DEVELOPING THE PLAN

2.1 Methodology

The climate adaptation and resilience planning process used to develop this Climate Adaptation Plan generally followed the approach described in the All One Sky Climate Express Process (All One Sky, 2021), the Climate Lens General Guidance (Infrastructure Canada, 2019), and the PIEVC High Level Screening Guide (PIEVC, 2021).

This Plan will assist the Summer Village of Ghost Lake in understanding how the climate is projected to change into the future and to prioritize climate change resilience actions that have been determined to address significant climate change impacts on the four community pillars. This Plan will support SVGL in identifying and implementing local actions to manage the risks stemming from these changes as well as capitalize on opportunities that may present, to ensure the community is resilient in the face of a changing climate. Figure 4 shows the 4-step process followed in to complete this Plan, with each step further described in the subsections that follow, and Figure 5 shows the Village boundary, which largely informs the study area. The main exception is the beach area and marina, which is not part of the Village but is culturally and socially significant.

Figure 4: Climate Adaptation Planning Process

Figure 5: Map of the Summer Village of Ghost Lake

2.1.1 Step 1: Define Scope and Collect Data

2.1.1.1 Scope of the Assessment

The first step of the climate action planning process is to define the scope. As part of this scoping, several decisions needed to be made very early on. The following determinations were made to inform the scope of the project:

- A higher-level screening and a simple process would be most suitable for the Summer Village of Ghost Lake, as a very small community with limited staff and resources.
- The process was designed to be shorter in duration so that it could be completed in a few months, allowing SVGL to spend limited time and resources as efficiently as possible.

The Plan and associated climate risk assessment would be qualitative in nature, based on secondary research and the planning documents that SVGL has already published. This approach required limited public engagement, though the project team worked to keep SVGL staff and community members informed as the project proceeded.

2.1.1.2 Defining Community Elements

To define the community elements that are valued and should be included in the Plan, the project team used existing planning documents and publicly available research in collaboration with SVGL project representatives. These community elements will be explained in greater detail in the following sections. For an initial example, during this process we identified that water supply was a major concern, particularly considering that as the reservoir levels change, this can impact well water, and considering a lack of pressurized water in the event of a wildfire. We also learned that while riverine flooding is a common concern in many Canadian municipalities, this is not particularly relevant for SVGL due to the village's siting on a controlled reservoir. These are all important considerations for the scoping. We also learned that hazards of particular concern include extreme heat, drought events, and wildfires. These community concerns help us to ensure we scope the risk assessment appropriately.

Finally, to perform the climate risk assessment in Step 2, we needed to know how the climate in SVGL is projected to change in the future. The final activity in the scoping exercise was to compile this information. A detailed description of the climate data synthesized for the Summer Village of Ghost Lake can be found in Section 3.2.

2.1.1.3 Climate Change Projection Data

The climate risk assessment process started with a series of climate impact statements which described the links between the projected changes and the related hazards that have the potential to impact SVGL now and into the future. During this step of the process, the project team defined the scope and timescale of the climate related data that would inform the temporal boundaries for the assessment. The assessment used two climate change projection time horizons (historic and projected future (2080s)), following standard best practice by applying Representative Concentration Pathway (RCP) 8.5 as a high future global GHG emissions scenario. The 2080 time period was selected given the lifespan of the infrastructure in the Village and to facilitate long term planning. Since shorter timeframes were not considered, for

this reason, near term impacts were not captured in the assessment. Climate Atlas and ClimateData.ca were primary sources for climate data, as they present an amalgamation of climate science outputs and modelled climate projections and are supported by the Canadian Centre for Climate Services of Environment and Climate Change Canada.

The result of this exercise presents a picture of how the climate is expected to change in the SVGL under a continued high GHG emissions scenario, through to the time horizon of the 2080s. The full climate profile can be viewed in APPENDIX A.

2.1.2 Step 2: Assess Risks and Opportunities

In Step 2, the project team collected information relevant to the scope of work to further understand the interactions between valued community elements, and climate hazard indicators. With support from our team of technical specialists, the project team used this collected data to conduct a climate risk assessment. For a more detailed breakdown of risk assessment methodology including definitions and limitations please refer to APPENDIX B.

Using likelihood and consequence rating systems, the project team qualitatively assessed climate risks.

Risk = Exposure (E) x Likelihood (L) x Consequence (C)

Exposure: *Exposure of a valued community element to a specific climatic condition. Exposed elements receive a score of 1 with non-exposed elements receiving a score of 0. This results in non-exposed elements to "screen out" of the assessment.*

Likelihood: *The likelihood of a particular climate event occurring during a specific time-period. Based on observed trends and climate projection data with scores between 1-5. Existing conditions typically receive a score of 3. Similar future conditions, receive a similar likelihood score; increasing climatic trends receive an increased likelihood score; decreasing climatic trends receive a decreasing likelihood score.*

Consequence: *The potential consequences/severity of an interaction arising from the climate event exposure. These scores were determined in the risk assessment workshop by relevant technical leads at MH. Scores are between 0-5 with 0 being no consequence and 5 being very high consequence.*

Interaction: *The relationship between a given climate hazard and community element where an exposure has been identified.*

A simple numeric rating system was defined for each likelihood and consequence to generate a qualitative risk analysis for each community element.

First, each element was assessed to determine if it had the potential to be exposed to the climate hazard. If no exposure was anticipated, the element was 'screened out' of the assessment. Where exposures were identified, the pre-assigned likelihood scores were applied (Table 1).

Likelihood scores were assigned using the 'middle baseline' approach. This means that current/recent climate considerations received a score of 3. When comparing to future projected conditions to the future time horizon of the 2080s, the degree of change from the baseline was considered. Reductions in intensity or frequency will receive scores lower than 3, while increases in intensity or frequency receive higher scores, with degree of change in likelihood scores dependent on the degree of change in climate trends. In some cases, where future conditions are projected to stay roughly the same, the likelihood will not change. Next, the project team assigned consequence scores. This process was conducted using a facilitated workshop approach, where the team of subject-matter experts systematically assessed each interaction to determine the potential exposure and associated consequences of each community element to a given climate hazard (Table 2). When assigning consequence scores, consideration of the various ways that a community element might be impacted by a potential exposure to a climate hazard was included. If a score was low for one community response consideration, but moderate for another, the more conservative (higher consequence) score was applied.

Table 1: Likelihood Score Definitions (PIEVC HLSG, 2021)

LIKELIHOOD SCORE	PIEVC HLSG METHOD	RATIONALE
1 – VERY LOW	Unlikely	5-100% reduction in frequency or intensity when compared to baseline mean
2 – LOW	Likely to occur less frequently than current climate	10-50% reduction in frequency or intensity when compared to baseline mean
3 – MODERATE	Likely to occur as frequently as current climate	Baseline mean conditions or a change in frequency and intensity ± 10% when compared to baseline mean
4 – HIGH	Likely to occur more frequently than current climate	10-50% increase in frequency or intensity when compared to baseline mean
5 – VERY HIGH	Almost certain to occur	50-100% increase in frequency or intensity when compared to baseline mean

Table 2: Consequence Score Definitions (Adapted from PIEVC HLSG, 2021)

CONSEQUENCE SCORE		
1	Very Low	**Insignificant**
		Little to no financial loss or increase in operational plan/operational expenses. Little to no impact on cohesion, or health and safety of residents. Little to no impact on green spaces and water supply.
2	Low	**Minor**
		Additional operating costs or small financial loss. Small changes in site operations and maintenance. Small impact to cohesion, or health and safety of residents. Small impact to green spaces and water supply.
3	Moderate	**Moderate**
		Moderate financial loss. Significant changes in operations and maintenance/ operating expenses/repairs. Moderate impact on cohesion, or health and safety of residents. Moderate impact on green spaces and water supply.
4	High	**Major to Serious**
		Impact to load capacity. Major financial loss. Closure for repairs (short-term or extended). Major impact to cohesion, or health and safety of residents. Major impact on green spaces and water supply.
5	Very High	**Hazardous to Catastrophic**
		Complete loss of function. Extreme financial loss. Partial or full rebuild required. Extreme impact to cohesion, or health and safety of residents. Extreme impact on green spaces and water supply.

Community response considerations assist in examining how exactly a community is vulnerable and to what extent climate change or extreme weather events might affect its built, natural, and social components. Figure 6 outlines some of the community response considerations that were considered in the determination of potential consequences within the context of this assessment.

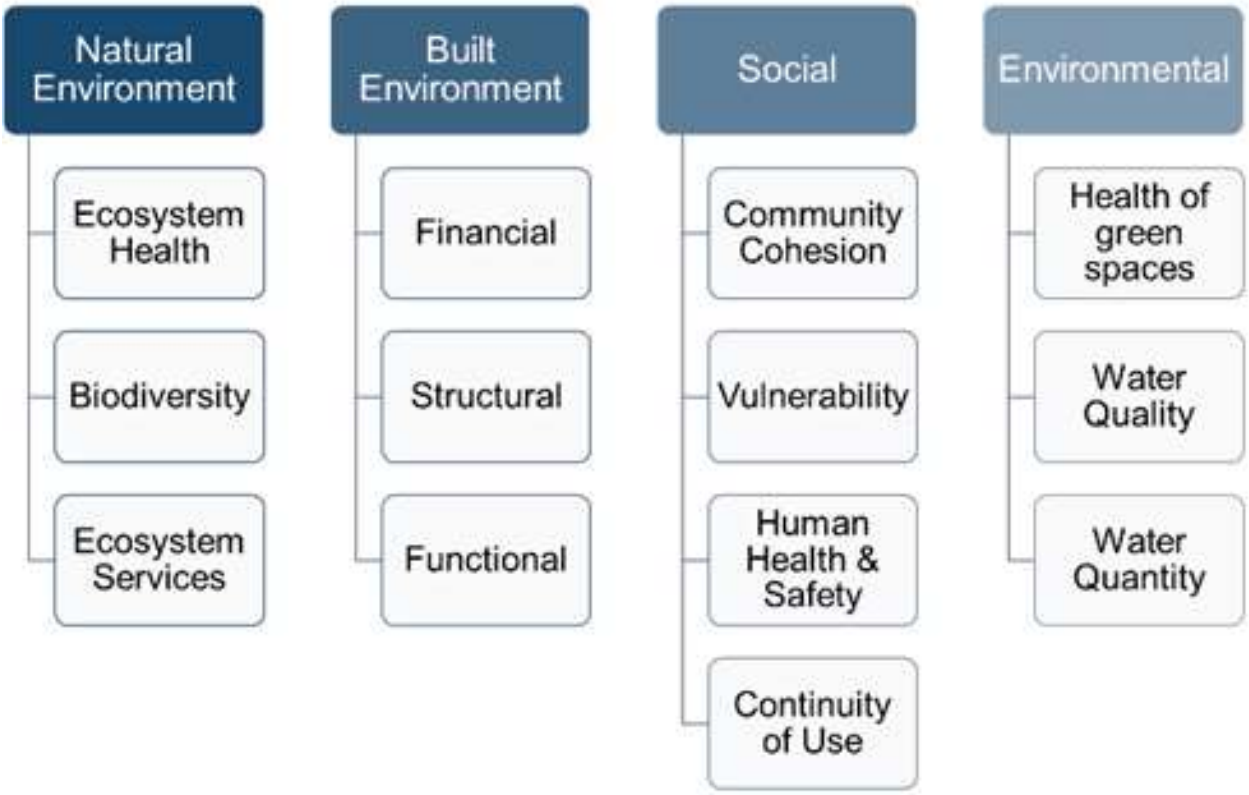


Figure 6: Community Response Considerations

The results of the consequence and likelihood scoring exercise are combined at this stage to generate an overall risk rating for each climate impact interaction. Putting all of this together, each interaction was assigned a qualitative risk score based on the relationship between exposure, likelihood, and consequence. A matrix was used to assign the category of risk, as shown in Figure 7.

Risk ratings can be defined as follows:

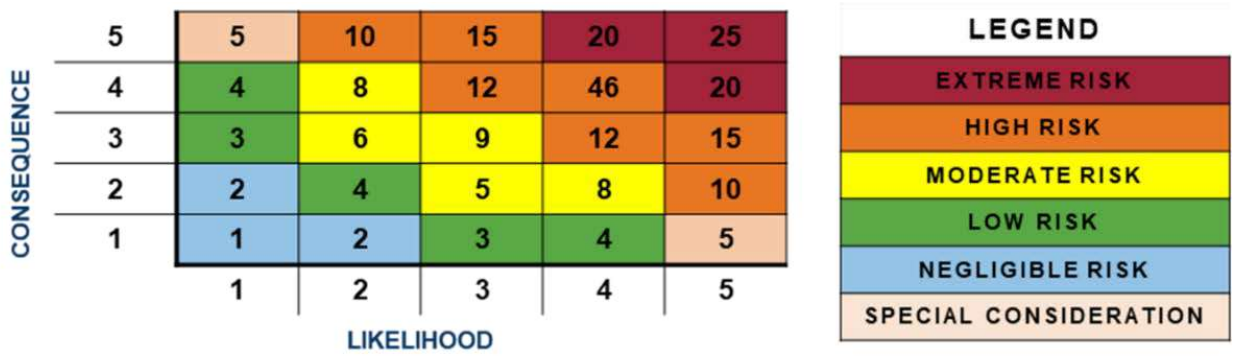


Figure 7: Risk Score Matrix

Our analysis has considered how SVGL might be able to prepare for higher consequence interactions/risks in ways that support the prioritization of limited resources while limiting the negative consequences of a potentially damaging or catastrophic event.

Negligible Risk (Risk Scores Between 1 and 2): *Risk events do not require further consideration.*

Low Risk (Risk Scores Between 3 and 4): *Risk requiring minimal action. Controls are not likely required.*

Moderate Risk (Risk Scores Between 6 and 9): *Risk that may require further action. Some controls may be required to reduce risks to lower levels.*

High Risk (Risk Scores Between 10 and 19): *Risks that require action. High-priority control measures may be required.*

Extreme Risk (Risk Scores Between 20 and 25): *Risks that require immediate action. Immediate controls may be required.*

Special Consideration: *Describes two unique scenarios. Low likelihood and high consequence interactions would consider events such as tornados, where the likelihood of a direct hit is very low, but the overall consequence could be catastrophic; and high likelihood low consequence events such as ongoing deterioration of elements resulting from continued exposure to various climatic conditions.*

2.1.3 Step 3: Action Planning

Identifying resilience strategies, categorizing them, and prioritizing them is the final step in the climate change adaptation and resiliency planning process. Through this Plan, risk treatment and adaptation actions were developed for interactions that fall into high and extreme risk categories. Low-moderate items as well as special consideration items have been flagged for reference for monitoring by SVGL into the future, but are not carried forward into the action planning stage in order to focus limited resources and capacity on the highest risks. Step 3 consisted of the following components:

1. Identifying actions to reduce or avoid the harmful consequences of priority climate risks. Our team reviewed each of the high and extreme risks and proposed a series of action items that could be implemented to address each one. Recognizing that a consolidated, streamlined list of actions was a stated priority for SVGL, this long list of actions was then consolidated by looking for areas of efficiency and actions that could be merged or modified to reduce duplication and high crossover.
2. Evaluating actions against key decision criteria and implementation considerations to help determine priorities for implementation. These decision criteria include order of magnitude cost and complexity level. Additionally, an aggregated order of magnitude priority level was developed, which combined both professional judgement and community perspectives on relative priority level. Community perspectives on relative priority level were identified during a virtual engagement session with Council members, staff, and community members in attendance.
3. Characterizing priority actions and developing an implementation plan. Based on the order of magnitude implementation considerations identified above, a detailed implementation plan was developed for the consolidated list of community actions, including identifying one key priority per pillar.

2.1.4 Step 4: Implementation

Step 4 is where the Summer Village of Ghost Lake will take the information that has been synthesized as part of this project, and the implementation plan that was subsequently developed, and begin to take action to increase the community's overall resilience in the face of a changing climate. Implementation should be monitored to access the success of the action and ways to improve in the future.

3. DATA COLLECTION

The climate data most relevant to the SVGL, including past and historic events that informed plan development, are included within this section of the report. The section also explores the Summer Village of Ghost Lake planning context with the intent of highlighting existing policy language that can help inform climate action and create efficiencies between the various plans. Finally, it summarizes the community elements that were analyzed during this Plan as being material to SVGL's climate response.

3.1 Community Elements

Elements were chosen based on discussions with the Summer Village of Ghost Lake, review of the Village's municipal documents such as the Municipal Development Plan (SVGL, 2020) and the Village's Sustainability Plan (SVGL, 2012) as well as input from relevant MH staff. A summary of the community elements included in the analysis is shown in Table 3. The development of the community elements list was also supported by a site visit to SVGL on August 24, 2022. The visit helped to inform an understanding of historic exposures, responses, and existing conditions of the community elements included in the assessment. Elements included in this assessment as well as their descriptions and reason for inclusion can be seen below in Figure 8.

As described in Section 2.1, these community valued elements formed the basis of the climate risk assessment. Each community element was assessed against the relevant climate hazards as described in Section 3.1. In Step 3 of the climate adaptation planning process, adaptation measures proposed for each interaction that was classified as a high or extreme risk. Types of adaptation measures considered for this assessment include but are not limited to those shown in Figure 8.

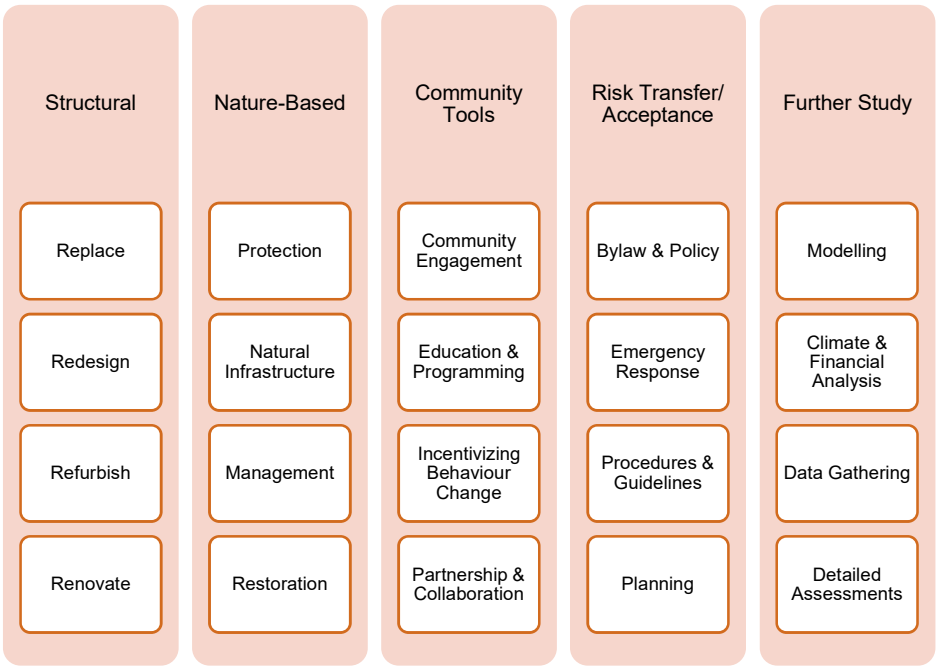


Figure 8: Types of Adaptation Actions

Table 3: Summary of Community Elements Included in Assessment

Community Pillar	Element	Description	Reason for Inclusion
Municipal Buildings & Services	Community Hall	SVGL Community Hall	The Community Hall is noted as the main social hub and meeting hall for the Village.
	Municipal Services	Garbage collection, etc.	Services to the community may be impacted by future climate conditions.
	Roads & Stormwater Management	Overland Drainage, Ditches, Culverts, etc.	Provides essential civil services to the community which may be impacted by future climate conditions.
	Leased Property	Leased Property from TransAlta	Leased property may have different operation and maintenance procedures.
	Management & Changes Outside of Village Control	Forest Management, Reservoir Management, etc.	Certain impacts may fall outside municipal control but are still significant to consider, particularly when identifying adaptation actions.
Homes & People	Staff	Municipal Staff	Health, safety, and overall working conditions for staff may be impacted by future climate conditions.
	Residents	SVGL Residents (Local and Tourist)	Health, safety, quality of life, and overall well-being of residents may be negatively impacted by changes in climate conditions.
	Residential Buildings	Building property of SVGL residents	Building infrastructure of residents in the Village may be vulnerable to changes in climate conditions.
	Residential Soft and Hard Landscaping	Hard and soft landscaping infrastructure of SVGL residents	Hard and soft landscaping elements on residential property may be impacted by future climate conditions.
	Private Septic Systems	Septic systems of SVGL residents	Provides civil services to the community and may be impacted by future climate conditions.

Community Pillar	Element	Description	Reason for Inclusion
Parks, Greenspace, & Recreation	Golf courses	Specific purpose greenspace area for golfing and walking activities.	Provides recreational activities for the community. Natural areas may be impacted by future climate conditions.
	Marina	Sheltered Marina for docking boats.	Provides shelter for resident boats and provides access to related reactional activities to the community. Noted as important infrastructure in the Municipal Development Plan.
	Beachfront	Ghost Lake Beach Front	Developed recreational area for the community Provides access to lakefront activities. Natural areas may be impacted by future climate conditions.
	Parks and Green spaces	All SVGL parks and green spaces excluding sensitive ecosystems	Provides recreational services and greenspaces for the community. Natural areas may be impacted by future climate conditions.
	Sensitive Ecosystem - Native Grasslands	Sensitive Grassland Species	Sensitive ecosystems may be vulnerable to changes in climate.
Water	Groundwater Quantity/Supply	Wells and natural springs	Main water source for most residents. May be impacted by future climate conditions.
	Groundwater Quality	Quality of groundwater supply	Water quality is essential for community health and may be impacted by future climate conditions.
	Surface Water	Surface water quality and quantity, including wetlands	Water quality and quantity are essential for community health and may be impacted by future climate conditions.

3.2 Community Climate Profile

In general, by 2080 under a high global GHG emissions scenario, the Summer Village of Ghost Lake is projected to become warmer with increasing intensity and frequency of precipitation. Periods of extreme heat (heat waves) are predicted to increase, as are extreme annual maximum temperatures. The timing of seasons is expected to shift, and a decrease in freeze-thaw cycles is projected. Precipitation is expected to increase in all seasons with the most notable changes in the winter and shoulder seasons. Increases in temperature and evapotranspiration are predicted to lead to increases in the frequency of intensity of drought and dry conditions. Total average snowfall is projected to decrease leading to a possible reduction in the total snowpack, further exacerbating seasonal drought and dry conditions. Conditions for convective events such as wind and storms are predicted to increase in the region (City of Calgary, 2022)

Climate related hazards included in this assessment include:

- Average annual temperature
- Extreme heat/hot temperatures
- Extreme cold/cold temperatures
- Total precipitation
- Extreme Rainfall and Snowfall
- Average snowfall
- Rain on snow and freezing rain
- Riverine flooding
- Drought and dry conditions
- Wind and extreme combination events
- Invasive species
- Wildlife (Direct and Indirect Impacts)

Table 4 is an overview of the results of the scenario analysis, demonstrating the overall trends for the hazards that have the potential to impact the community due to climate change.

	Climate Hazard	Direction of Change
	Average Temperature	↑
	Extreme Hot Temperatures	↑
	Cold and Extreme Cold Temperatures	↓
	Total Annual Precipitation	↑
	Extreme Rainfall	↑
	Riverine Flooding	↑
	Extreme Snowfall	↓
	Rain-on-Snow Events	↑
	Freezing Rain Events	↑
	Drought/Dry Conditions	↑
	Forest Fires – Wildfire Interface	↑
	Indirect Impacts – Reduced Air and Water Quality	↑

Category	Climate Hazard	Direct
WIND AND EXTREME COMBINATION EVENTS 	Wind Gusts	
	Severe Storms	
	Hail	
	Tornadoes	
	Lightning Events	
	Wind-Driven Rain	
OTHER 	Invasive Species	

High and extreme risk interactions for SVGL are projected to result from extreme heat, wildfire, wind and extreme combination events, invasive species, extreme precipitation, riverine flooding, and drought and dry conditions. The following sections explore these hazards in more detail.

3.2.1 Extreme Hot Temperatures

Extreme hot temperatures are expected to increase by the 2080 time period. The Summer Village of Ghost Lake is predicted to see a significant increase in the number of days over 30°C annually, with less than two days per year projected at baseline increasing to over 55 days per year by the 2080s (Climate Data, 2019). Days over 32°C are projected to increase by approximately 23 times by the 2080s with days over 37°C increasing approximately 3 times by the 2080s compared to current baseline conditions (Climate Data, 2019).

3.2.2 Extreme Precipitation

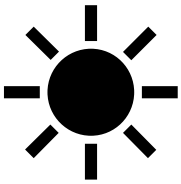
Extreme precipitation events are expected to increase in frequency and severity by the 2080 time period (Climate Data, 2019). Max total one day precipitation is expected to increase by 33% by the 2080 time period (Climate Data, 2019). Precipitation is predicted to increase during all seasons with the most notable increases in the fall, winter, and spring and less significant increases during the summer season (Climate Data, 2019).

3.2.3 Riverine Flooding

The Government of Alberta is currently incorporating climate projections into provincial flood mapping data sets, which are not yet publicly available at the time of writing this report (Government of Alberta, 2022). That said, increases in riverine flooding have been predicted for most of western Canada (Sauchyn et al., 2020) as well as regionally (City of Calgary, 2022). Max total one day precipitation is to increase by 33% by the 2080 time period (Climate Data, 2019). Sudden intense and/or prolonged precipitation events could increase the likelihood of riverine flooding within the watershed, though it is important to note that the local hydrological conditions at the SVGL are largely influenced by the Bow River Dam infrastructure.

3.2.4 Drought/Dry Conditions

Drought and dry conditions are predicted to increase slightly in the region by the 2080 time period (City of Calgary, 2019). The number of periods with five or more consecutive dry days (days with less than 1 mm of precipitation) is projected to increase by 18% by the 2080 time period (Climate Data, 2019).



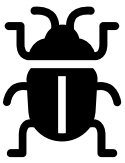
3.2.5 Wildfire

Wildfires are predicted to increase in severity and frequency in the region under future projected climate conditions (Sauchyn et al., 2020). The risk of extreme wildfire is said to already have increased by a factor of 1.5 to 6 due to changes in climate conditions from human influence (Sauchyn et al., 2020). Increases in temperatures and dry conditions in the future will likely increase this risk (Sauchyn et al., 2020).

3.2.6 Extreme Combination Events

Extreme weather events with increased intensity and severity due to changing climate conditions will be the most challenging consequence to the prairie provinces related to climate change (Sauchyn et al., 2020). Wind and storm events have the potential to have severe negative impacts on natural and built infrastructure. In addition, the frequency of the events has a high level of uncertainty and are very difficult to forecast. Favorable conditions for severe storm formation are predicted to increase by 77% for the region by the 2080 time period (City of Calgary, 2022).

3.2.7 Invasive Species



The number of growing degree days (above a threshold temperature of 5°C) is projected to increase by approximately 101% by the 2080 time period (Climate Data, 2019). Local greenspaces, agriculture, and crop production may benefit from increases in temperatures in the region, however, these benefits will be contrasted with impacts such as an increase in pests and invasive species (Sauchyn et al., 2020). Future projected climate conditions are expected to lead to an increase in invasive species (Sauchyn et al., 2020).

3.3 Summer Village of Ghost Lake Planning Context

Two key planning documents informed the development of the Summer Village of Ghost Lake's Climate Resilience and Adaptation Plan (Figure 9). These two documents also have the ability to work alongside this Plan for more effective and resource-efficient implementation.

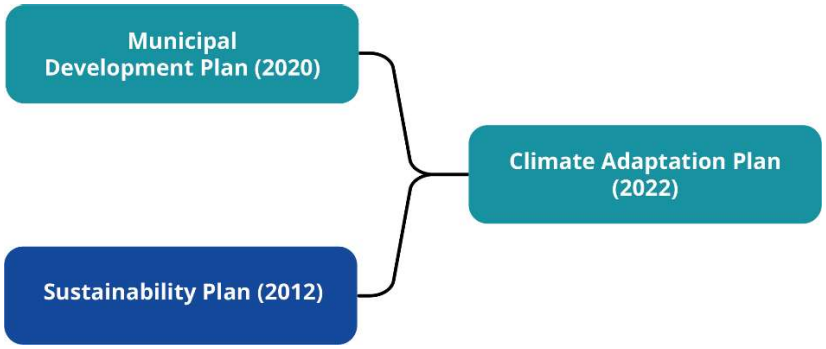


Figure 9: SVGL Planning Context

3.3.1 Sustainability Plan

The Sustainability Plan (SP) was adopted by Council in 2012. During the consultation for the Municipal Development Plan (MDP) in 2020, most residents felt that the SP was still relevant, despite being an older planning tool, therefore it was not updated, and the MDP was developed using the SP as a foundation. The SP identifies village values such as respect, safety, environmental stewardship, and local governance. The vision further describes these values and prioritizes preserving the village lifestyle alongside environmental stewardship. Many priority initiatives can be explored from a climate resilience perspective, including actions related to learning about and preserving the natural environment features that are fundamental to the community's identity and sense of place.

3.3.2 Municipal Development Plan

The Summer Village of Ghost Lake's Municipal Development Plan (MDP) was approved by bylaw in April 2020 and is intended to address future land use and development. The MDP also lays out a vision for the community's future and establishes goals and policies to help the community move toward that vision. As explained in the MDP, SVGL has several unique aspects regarding population and development constraints. SVGL has numerous seasonal landowners, as well as children and family members who may not have been counted in the population due to being classed as 'visiting'. The community also has a higher-than-average population of older adults (65+) – 23.5% as compared to Alberta's 12.3%. This may have implications for climate resilience, as youth and seniors/elderly populations may be more vulnerable to climate-related impacts. The MDP identifies development constraints such as Highway 1A, areas of steep slopes, TransAlta lease area (along the shoreline for recreational purposes), wetlands, and natural water springs. These constraints also require consideration from a climate resilience perspective. For example, steep slopes may be susceptible to erosion during extreme weather events; drought may impact surface water levels in wetlands, and leased areas mean that there can be limited municipal authority to take proactive action on land not owned.

There is limited commercial development in SVGL, therefore commercial areas were not included in the community elements assessed in this project. Likewise, agriculture is common in the landscapes surrounding SVGL, but there is no agricultural land within the municipal boundaries, therefore this was also excluded.

MDP Vision: *"In 10 to 15 years, the Summer Village of Ghost Lake will remain a small, cohesive and self-reliant municipality where commitment to the community is readily apparent, and where people take advantage of retained open spaces and direct access to the Ghost Reservoir for recreation and relaxation."*

4. RISKS AND OPPORTUNITIES – RESULTS SUMMARY

Using the methodology as described in Section 2, 234 interactions (18 elements cross-referenced with 13 hazards) were assessed. Of these interactions, 17 extreme risks, 42 high, 23 moderate, 71 low, 33 negligible, 10 no risk, and 38 special consideration items were identified under projected 2080s conditions (Figure 10).

Figure 10: Risk Summary Under Projected Future Conditions

The changes in the risk profile from the baseline time period to the projected future 2080s time period are summarized in Figure 11 and detailed below.

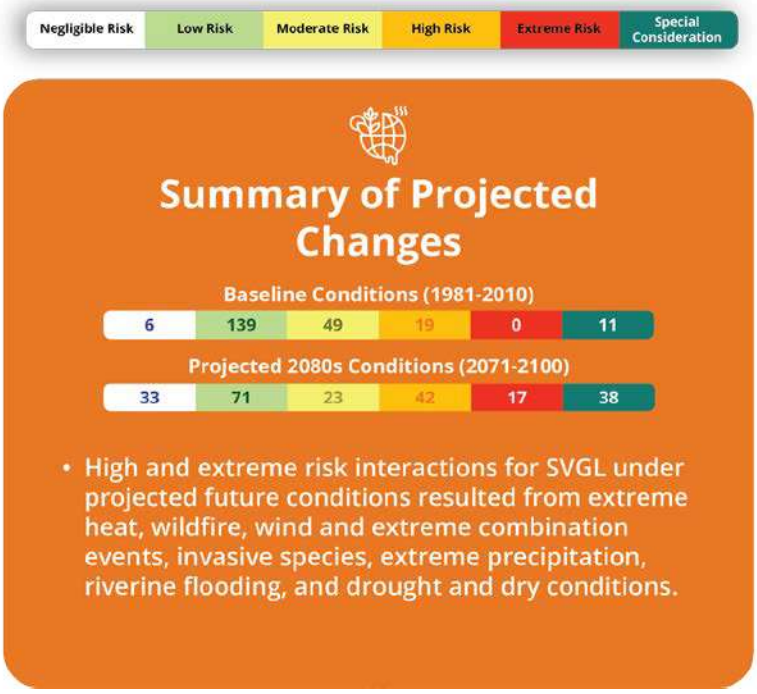


Figure 11: Summary of Changes from Baseline to Projected Future Conditions

4.1 Baseline Conditions Risk Profile

The risk profile for baseline conditions consists of 6 negligible, 139 low, 49 moderate, 19 high, 0 extreme, and 11 special consideration risk interactions. High risk interactions are dominated by interactions with extreme heat and wind and extreme combination events with 5 and 10 interactions respectively. These risks result from interactions with exposed municipal and community-built infrastructure; natural spaces; as well as residents and staff. Other high-risk interactions included one of each of the following climate hazard interactions: riverine flooding, drought, and dry conditions, indirect wildfire impacts, and invasive species. High risk interactions were seen for most elements in baseline conditions with the exception of the leased TransAlta property, hard and soft landscaping, water supply, groundwater quality, private septic systems, and surface water quality and quantity.

4.2 Future Conditions Risk Profile

Future projected conditions for the 2080 time period consisted of 33 negligible, 71 low, 23 moderate, 42 high, 17 extreme, and 38 special consideration risk interactions. Climate interactions resulting in high and extreme risks are similar to baseline conditions including extreme heat, wind, and extreme combination events, riverine flooding, drought, and dry conditions, indirect wildfire events, and invasive species. However, the 2080 period also sees the addition of risk interactions resulting from average temperature, extreme precipitation, and direct wildfire interface.

All elements evaluated had at least one high risk interaction identified, except for water supply and private septic systems.

Most elements had at least one extreme risk interaction except for:

- The leased TransAlta property
- Hard and soft landscaping
- Water supply
- Groundwater quality
- Private septic systems
- Surface water quality and quantity
- Management changes outside SVGL control

There is a distinct shift to higher levels of risk interactions for elements in SVGL during the 2080 time period when compared to baseline conditions. This shift is mainly driven by increasing likelihood scores of temperature, precipitation, wildfire, wind and extreme combination events, and invasive species.

4.3 High and Extreme Risks Carried Forward

High and extreme risk items were carried forward in the process, meaning that the project team recommended risk treatment and adaptation options for these risks to help SVGL prioritize the actions that will have the most impact when considering how to increase community resilience. All assessed elements had at least one high or extreme risk interaction except for water supply and private septic systems.

Moderate and low risk items do not require any further actions at this time. It is worthwhile to revisit this risk assessment periodically as an important part of plan monitoring and evaluation, to ensure that risk scores are still accurate over time. There is the possibility that as data and projections improve, or as SVGL's situation changes, risk scores may change, and something that is moderate at the time of this assessment may elevate to a high risk in the future, meaning that action may be required.

No extreme risk interactions were identified under current conditions. Projected extreme risk interactions for the 2080 time period resulted mainly from extreme heat and extreme combination events with remaining extreme risks coming from wildfires (indirect), and invasive species as shown in Table 5. Table 6 is a full summary of the results of the risk assessment, grouped by the four community pillars. The full results are compiled in APPENDIX C.

Table 5: Extreme Risk Interactions

Climate Hazard	Interactions
Average Annual Temperature	▪ Community Hall ▪ Golf Course ▪ Parks & Greenspaces ▪ Residential Buildings ▪ Residential Soft & Hard Landscaping
Extreme Heat	▪ Community Hall ▪ Golf Course ▪ Municipal Staff ▪ Municipal Services ▪ Sensitive Ecosystems - Native Grasslands ▪ Residential Buildings ▪ Residents ▪ Residential Hard & Soft Landscaping ▪ Surface Water (Quality & Quantity) ▪ Management & Changes Outside of Village Control
Extreme Precipitation	▪ Roads & Stormwater Management ▪ Sensitive Ecosystems - Native Grasslands ▪
Riverine Flooding	▪ Management & Changes Outside of Village Control
Drought and Dry Conditions	▪ Management & Changes Outside of Village Control
Extreme Combination Events (Wind Gusts, Severe Storms, Hail,	▪ Community Hall ▪ Golf course ▪ Marina ▪ Beachfront

Climate Hazard	Interactions
Tornadoes, Lightning, Wind-Driven Rain)	▪ Parks & Greenspaces ▪ Roads & Stormwater Management ▪ Municipal Staff ▪ Municipal Services ▪ Residential Buildings ▪ Residents ▪ Residential Soft & Hard Landscaping ▪ Surface Water (Quality & Quantity) ▪ Management & Changes Outside of Village Control
 **Wildfire - Indirect Impacts**	▪ Community Hall ▪ Golf Course ▪ Marina ▪ Beachfront ▪ Parks & Greenspaces ▪ Municipal Staff ▪ Residential buildings ▪ Residents ▪ Groundwater Quality ▪ Surface Water (Quality & Quantity)
 **Wildfire - Direct Impacts**	▪ Community Hall ▪ Golf Course ▪ Marina ▪ Parks & Greenspaces ▪ Municipal Staff ▪ Municipal Services ▪ Leased Property ▪ Residential buildings ▪ Residents ▪ Residential Soft & Hard Landscaping ▪ Groundwater Quality ▪ Management & Changes Outside of Village Control
 **Invasive Species**	▪ Golf Course ▪ Marina ▪ Beachfront ▪ Parks & Greenspaces ▪ Sensitive Ecosystems - Native Grasslands ▪ Residential Soft & Hard Landscaping ▪

	Baseline Conditions (1981-2010)						Projected 2080s Conditions (2071-210			
	Negligible Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration	Negligible Risk	Low Risk	Moderate Risk	High Risk
Buildings es (M)	-	42	8	7	-	4	8	19	4	11
People (H)	1	42	9	7	-	4	10	*23*	3	11
nspaces, & (P)	2	36	19	5	-	3	9	21	6	16
	3	19	13	-	-	-	6	8	10	4

5. CLIMATE ADAPTATION PLAN

For the Summer Village of Ghost Lake, climate adaptation planning needs to prioritize actions that reduce the negative impacts of climate change and protect individuals and community resources from said impacts; all with an eye to remaining practical, affordable, and implementable for a small community with limited capacity and resources. As this Plan has conveyed thus far, all governments, sectors, and communities have a role to play in the local and global responses to climate change. It is crucial that communities of all sizes prioritize resilience to climate impacts even though there is still uncertainty about where, when, and how severe these impacts may be. This planning exercise has set out to reduce some of this uncertainty for SVGL, so that staff and residents can continue on a journey to learn what works, what doesn't, and what actions can be taken to remain resilient in the face of such uncertainty.

This section of the Plan is structured around the four community pillars introduced in Section 1.3 and carried throughout. For each pillar, there is a guiding principle statement, intended to help the reader understand the intended outcomes of the selected action item. Each pillar also includes a prioritized action list, developed based on prioritized short-term actions that the Summer Village of Ghost Lake can take to improve the community's resilience to climate impacts while continuing to live within their means. To be more manageable, adaptation actions in this section have been presented for high and extreme risk actions, and proposed action items prioritize co-benefits and multi-solving solutions wherever possible. This section specifically calls out one action for each pillar to serve as the immediate priority, to focus attention and resources where they have the potential to be most impactful, as well as a high-impact action for residents to consider. Thus, Section 5 describes the highest priority action items in each pillar. The full list of 20 adaptation actions is included in Section 6.

Many adaptation actions were designed specifically to minimize risk in more than one category. Adaptation actions also prioritize things that are within SVGL's sphere of influence, or actions that the community has direct control over. In some cases, actions are also considered where there are opportunities to partner with other actors, participate in other programs, and/or advocate for solutions by other actors and jurisdictions (e.g., the provincial government) that aim to increase the community's resilience. Finally, each pillar contains some information about how residents and community members can take individual action, and what they can do within their own sphere of influence to contribute to the goals of the Plan.

Municipal Buildings & Services

Guiding Principle: Municipal buildings, along with other infrastructure (such as roads), are upgraded using climate informed data and decision-making processes when the time comes. The municipality is adequately prepared to continue service delivery at the levels expected by residents despite the potential future impacts of climate change.

Resident Action: Assess your property to understand how and where stormwater flows and take steps to manage stormwater without it leaving your property.

Action M.6 Develop/Review Fire Fighting Response Plan, including access to water both when the lake is at a normal and low level.

Homes & People

Guiding Principle: Residents have the tools and information they need to make climate information decisions and enhance the resilience of their homes and properties. Residents and community members have safe spaces to shelter from acute climate impacts.

Resident Action: Develop an emergency management plan for your home to ensure that everyone knows how to respond in the event of an extreme event.

Action H.3 Develop an emergency management plan in coordination with neighbouring municipalities, as well as associated community engagement programs to ensure all residents understand how to remain safe during extreme events.

Parks, Greenspace, & Recreation

Guiding Principle: The community works together to protect and conserve both recreational and natural greenspaces for their intrinsic and recreational values, which helps to leverage nature-based solutions to enhance the community's resilience to a changing climate.

Resident Action: Engage in climate resilient landscaping practices such as removing invasive species and choosing to plant native and naturalized species over ornamental varieties.

Action P.3 Develop and implement a fire-smart climate resilient landscaping program for parks and recreational areas.

Water

Guiding Principle: All residents, community members, and visitors have a source of safe and reliable drinking water. Both surface and groundwater sources are protected as our water provides many benefits beyond drinking water, including supporting natural systems and recreation.

Action W.4 Conduct a detailed groundwater assessment to assess the likelihood and consequence of climate impacts on well quantity/quality.

Resident Action: Take steps to ensure your household conserve water wherever possible (e.g., low flow fixtures), and be sure to responsibly dispose of materials that could contaminate water supply (such as paint, fertilizer, etc.).

6. PLAN IMPLEMENTATION

This Plan identifies 20 key priority actions the Summer Village of Ghost Lake could implement to increase the community's resilience in the face of a changing climate while respecting existing capacity and resource limitations, as well as retaining valued community attributes. Many of these actions build upon and are supported by the analysis in the Municipal Development Plan and the Sustainability Plan.

Small investments in actions that help reduce vulnerability and risk can result in many social, economic, and environmental co-benefits. The actions presented in this Plan are not mandatory, but it is recommended that SVGL prioritize the implementation of these actions recognizing that the community is vulnerable to climate change, and there are steps that can be taken to become more resilient to climate change impacts. This section provides a high-level assessment of how the Summer Village of Ghost Lake can implement the priority actions, based on an order of magnitude assessment of costs, complexity, and combined priority level. The combined priority level is based on inputs on relative priority from both MH staff and the Village. In the event that the priority levels differed by one level (i.e., Low vs Moderate), the higher priority was used to take the most conservative approach, as shown in Table 7. Table 8 provides implementation considerations for the full list of recommended actions based on an assessment of what SVGL could realistically achieve in the short-medium term to respond to the high and extreme risks identified during this planning process. By including order of magnitude implementation considerations, this portfolio of actions is intended to serve as a resource for SVGL, allowing decision-makers to draw upon this list where funding, resources, and capacity allows.

Table 7: Resilience Strategy Implementation Order of Magnitude Definitions

Cost		Complexity		Combined Priority	
$ 	Lowest Cost Implementation	**Low** 	Low complexity projects can be completed in a shorter timeframe, for example 6-12 months. They are likely to be simple and straight forward, with minimal ongoing elements.	**Low** 	Low priority recommendations are the nice-to-dos. Lower priority items may have high costs and long-term implementation timelines. The community may feel that these are the least impactful for their overall resilience.
$$ 	Moderate Cost for Implementation	**Medium** 	Medium complexity projects need a bit more time but could be expected to be completed within 1-2 years. These projects might have elements that are longer/more complicated, thus extending the timeline.	**Moderate** 	Moderate priority recommendations will address the values of most concern to the community, though they may not necessarily represent treatment of the greatest risk, and/or largest number of resilience items.
$$$ 	Highest Cost of Implementation	**High** 	High complexity projects are those that are expected to take 2+ years. They are commonly made more complex by multi-stakeholder processes and elements that are out of the sphere of control of SVGL.	**High** 	These strategies will address the highest risk elements or the largest number of risks. Implementation is strategic to reduce risk to the greatest extent possible for the SVGL

n	Action Category	Risks Addressed	Cost	Compl
ocesses to account for changes to operating costs and nging climate, such as upgrading emergency power options, emperature sealants at the time of renewal, developing an age operations management plan, clearing pathways for es, stormproof siding/windows, etc.	Structural, Further Study	AT-1; EH-1; WEC-1; WEC-9; WFD-1; WFI-1	$$ 	Lov 
lated safety policies and procedures for staff to protect human nd identify procedures for safely continuing or resuming service entifying safe working temperatures and procedures for ts.	Risk Transfer/Acceptance	EH-3; EH-4; EH-9; WEC-12; WEC-7; WEC-8; WFD-5; WFD-6; WFD-7; WFI-6	$ 	Lov 
and risk assessment of the Community Hall to identify specific ence measures to ensure the facility can continue to act as a ng extreme and/or poor air quality events, as well as remain g climate conditions to support service delivery. Could consider FCM's Municipal Retrofit pathway.	Structural, Further Study	EH-7; WEC-10; AT-1; EH-1; WEC-1; WEC-9; WFD-1; WFI-1	$$ 	Medi 
ter analysis to identify properties which are at risk of overland reme precipitation events and prepare measures to protect his should include a program to ensure roads, ditches, and ined in a state of good repair.	Further Study	HP-1	$$ 	Lov 
els of government (e.g., Province of Alberta) to consult on ction, riverine flooding, and drought risk to mitigate potential VGL.	Community Tools, Risk Transfer/Acceptance	RF-1; DD-1	$ 	Hig 
re Fighting Response Plan. Including access to water both normal and low level.	Risk Transfer/Acceptance	WEC-8; WEC-9; WFD-1; WFD-2; WFD-10; WFD-11	$ 	Lov 
d residential buildings in identifying resources to achieve high pgrades to counter solar heat gain, as well as protection from ch as fire breaks. Consider combining with energy-efficiency ge funding, for example through FCM's local home-energy program.	Community Tools	AT-4; EH-6; EH-8; WFD-8; WFI-7	$$ 	Medi 

ment community education and participation programs on water lerant landscaping, for example, rain barrel programs, tree and so on. Could consider programs such as TD's Friends of help offset costs.	Community Tools	AT-5	$ 	Lo
ency management plan in coordination with neighbouring evelop associated community engagement programs to ensure stand how to remain safe during extreme events (including for recreational activities).	Risk Transfer/Acceptance	EH-7; WEC-10; WEC-11; WFD-3; WFD-9; WFI-3; WFI-4; WFI-5; WFI-8	$ 	Hig
stem to the golf course to improve the resilience to high lrought. An irrigation system would most likely require to emand.	Structural	AT-2; AT-3; WFD-4	$$ 	Medi
n' approach to parks and maintained greenspaces, to reduce ing periods of high temperatures and drought.	Risk Transfer/Acceptance	AT-2; AT-3; WFD-4	$ 	Lo
ment a fire-smart climate resilient landscaping program for nal areas, including actions such as planting drought-tolerant ecies, installing wood chips around large vegetation to support planting species that can act as wind breaks, and planting trees to support shading of recreational and naturalized spaces.	Community Tools, Risk Transfer/Acceptance	AT-2; AT-3; EH-10; EH-2; EH-8; WEC-11; WEC-2; WEC-3; WEC-5; WFD-4; WFI-2; EH-5	$ 	Medi
alysis into strategies to protect native grasslands from erosion extreme precipitation events. Examples of strategies might etaining ponds to prevent water from pooling in sensitive areas, ant native species in areas prone to pooling/flooding, or compensation areas for native grasslands where other gies are not possible.	Further Study	HP-2	$ 	Lo
ment detailed Invasive Vegetation Management plan that agement practices on how to eradicate and prevent the growth , and includes considerations of how native ranges may shift ging climate.	Risk Transfer/Acceptance, Further Study	IS-1; IS-2; IS-3; IS-4; IS-5; IS-6	$$ 	Medi
ment on trees in landscaped and maintained areas to assess dition of trees, identify high-risk trees that may pose potential fety, and develop mitigation strategies to balance tree health	Further Study	WEC-2; WEC-3; WEC-5; WEC-6; WFD-4	$$ 	Lo

ity of mitigation measures to protect the beachfront area from storm events, such as retaining walls to protect infrastructure d tolerant species to develop a robust root network to combat	Further Study	WEC-4; WEC-5	$ 	Medi
to monitor surface and groundwater quality following wildfire or nfirm water quality is not impacted, and to mitigate to debris or contamination.	Community Tools	WEC-13; WFI-10; WFI-9	$ 	Medi
ity education and participation program to educate the ntial surface and groundwater impacts and encourage rs to report potential impacts observed on surface water.	Community Tools	WEC-13; WFI-10; WFI-9	$ 	Lo
backup water supply if the groundwater supply has been	Risk Transfer/Acceptance, Structural	WFI-9	$ 	Medi
groundwater assessment to assess the likelihood and mate impacts on well quantity/quality and explore the feasibility aptation actions where appropriate.	Further Study	WFI-9	$ 	Medi

7. MONITORING AND EVALUATION

The actions recommended in this Plan provide a path forward for the Summer Village of Ghost Lake to respond to climate risk and increase community resilience. This Plan and its implementation should be evaluated regularly; it is recommended that implementation is assessed on an annual basis to help understand where to prioritize future resources. An evaluation of this Plan should occur at least every five years, using the most up to date data available. Through the ongoing monitoring and evaluation process, SVGL can assess what has been achieved, what challenges have arisen, what lessons have been learned, and what new actions need to be added to the prioritized list of actions.

8. CLOSURE

The Summer Village of Ghost Lake retained Morrison Hershfield to conduct the work described in this report, and this report has been prepared solely for this purpose.

This document, the information it contains, the information and basis on which it relies, and factors associated with implementation of suggestions contained in this report are subject to changes that are beyond the control of the authors. The information provided by others is believed to be accurate and may not have been verified.

Morrison Hershfield does not accept responsibility for the use of this report for any purpose other than that stated above and does not accept responsibility to any third party for the use, in whole or in part, of the contents of this document. This report should be understood in its entirety, since sections taken out of context could lead to misinterpretation.

We trust the information presented in this report meets Client's requirements. If you have any questions or need additional details, please do not hesitate to contact one of the undersigned.

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APPENDIX A: Detailed Climate Profile

CLIMATE HAZARD CONTEXT

This section of the assessment will document the data collected relevant to the analysis of climate hazards with consideration of historic data and climate projections for the 2080 time horizon (2071-2100) under a high greenhouse gas (GHG) emissions scenario of RCP8.5; and relevant climate hazard thresholds.

Climate Projection Timeframe

Historic and projected future climate information on relevant climate factors for locations at or near the Summer Village of Ghost Lake have been compiled. Future climate projections have been compiled for a period of 60 years into the future (+/- 2080) based on climate models for the Intergovernmental Panel on Climate Change's (IPCC's) Fifth Assessment Report (AR5) Representative Concentration Pathway 8.5 (RCP8.5) for a high greenhouse gas emission scenario.

Climate Scenario Selection

Given the uncertainty of human behavior and how greenhouse gas emissions may change in the future, various greenhouse gas emissions scenarios ('emissions scenarios') have been developed by the IPCC. These emission scenarios present insight into a range of potential climatic futures based on the amounts of greenhouse gases in the atmosphere. Climate change projections are developed using varying future emissions scenarios, also called Representative Concentration Pathways, (RCPs) (Charron, 2016).

RCP scenarios present various future "what-if" scenarios based on combinations and assumptions related to population growth, economic activity, energy intensity, and land use changes to name a few (ClimateData.ca, 2019). A highlight of the three RCP scenarios considered for this assessment is presented in **Exhibit 1** below.

Exhibit 1: Climate Scenario Selection

Greenhouse Gas Emissions Scenario/ Representative Concentration Pathway	Overview	Selection
RCP2.6	▪ Low emissions scenario ▪ Human-caused climate change is limited ▪ Carbon emissions peak almost immediately ▪ Current trajectory will need to change to reach this scenario	✘
RCP4.5	▪ Moderate emissions scenario ▪ Some measures implemented to limit human-caused emissions ▪ Requires carbon emissions to stabilize by end of the century on a global scale	✘

	▪ Current trajectory will need to change to reach this scenario.	
RCP8.5	▪ High emissions scenario ▪ Assumed that emissions continue to increase throughout this century ▪ Current trajectory based on the current global context	✓

Representative Concentration Pathway 8.5

When possible, projections corresponding to the 'high emissions scenario (RCP 8.5 or equivalent) were selected for the analysis within this Climate Risk Assessment, as this is considered a conservative approach for the relevant climate hazards and the potentially long-lived nature of the project asset.

IPCC Sixth Assessment Report (AR6)

The IPCC is currently on its sixth assessment cycle in which it is producing the Sixth Assessment Report (AR6). The Physical Science Basis Report was released on August 9, 2021, to address the most up-to-date physical understanding of the climate system and the changing climate. The Climate Change 2022: Impacts, Adaptation, and Vulnerability report was released on February 28, 2022, to address the impacts of climate change, looking at ecosystems, biodiversity, and human communities at global and regional levels. SSPs are scenarios of projected socioeconomic global changes up to the year 2100.

These new reports continue to use the RCP8.5 high emission scenario with the AR6 reports having additional consideration for Shared Socioeconomic Pathways (SSPs). These SSPs present scenarios of projected socioeconomic global changes up to the year 2100 (IPCC, 2022).

CLIMATE MODEL SELECTION

The data used in this assessment were gathered from ClimateData.ca (2019) unless otherwise noted. ClimateData.ca is part of a national suite of publicly available climate data portals.

ClimateData.ca primarily utilizes model data generated by the Pacific Climate Impacts Consortium (PCIC), including 24 CMIP5 global climate models (GCMs) for RCP4.5 and RCP8.5 emissions scenarios. In general, GCMs evaluate global-scale climate conditions and are calculated at coarse spatial resolutions, which can impact the value of GCMs for the projection of local-scale climate changes. To correct for systemic bias within the models for use at a local scale, PCIC has downscaled its data using the Bias-Correction/ Constructed Analogues with Quantile mapping reordering method, Version 2 (BCCAQv2).

Climate Data Limitations and Uncertainty

Sources of uncertainty exist in climate projections related to what exactly our climate future may look like. Given differences in global future possible scenarios, there are differences between the climate model outputs, with each model having notable strengths and weaknesses. To ensure a range of possible climate conditions is captured within the assessment the data is presented as the output of the range of models.

The data from ClimateData.ca presented within this report depicts the median (50th percentile) of the statistically downscaled data from 24 climate models. The data selected for this study is representative of a range of models which encompasses the uncertainty associated with the climate modeling process, and thus the 10th and 90th percentiles are also presented. Each of the data compiled in climate models simulates the climate for baseline conditions and plausible future scenarios, in response to the three emission scenarios as described above (ClimateData.ca, 2019).

Data sourced from ClimateData.ca (Climate Data, 2019) references a 10x6 km grid that encompasses the Village and the majority of Ghost Lake.

Baseline Data

Various sources of the baseline time period (1976-2005) climate data exist including weather station data, interpolated data for locations away from weather conditions, adjusted and homogenized data, and modeled baseline data. Modeled baseline data has been used in this report as it is recommended for comparing future projections to baseline time period conditions (ClimateData.ca, 2019).

Modeled baseline data corrects for biases of the modeled data simulations to provide a better comparison with future projections (ClimateData.ca, 2019). Given climate models are mathematical representations generated to simulate values over larger areas, they generate some systematic differences from observed station data (ClimateData.ca, 2019). The baseline time period datasets available on ClimateData.ca are noted to exhibit similar average values and variability when compared with observed conditions for the baseline time period (ClimateData.ca, 2019), and thus the modeled baseline data sets have been used for comparative purposes.

Computerized Tool for the Development of Intensity-Duration-Frequency Curves under Climate Change – Version 6.0

Intensity-Duration-Frequency (IDF) curves play an important role in municipal water management in Canada. IDF_CC (Western University, 2021) is a publicly available web-based IDF tool that provides data to scale local extreme rainfall statistics to climate change scenarios for different time horizons. This tool provides an approach for updating IDF curves under a changing climate and is pre-loaded with data from 898 Environment and Climate Change Canada (ECCC) rain stations. Version 6.0 of the tool uses version 3.20 of the Environment Canada IDF dataset, released in March 2021. The tool allows users to select any rain station with 10 or more years of data and develop projected IDF curves based on this baseline time period data adjusted to reflect climate change projections. The tool also allows the development of IDF curves for ungauged locations in Canada.

The IDF_CC tool provides precipitation accumulation depths for a variety of return periods (2, 5, 10, 25, 50, and 100 years) and durations (5, 10, 15, and 30 minutes and 1, 2, 6, 12, and 24 hours), and allows users to generate IDF curve information based on baseline time period data, as well as future climate conditions. Curves can either be presented as rainfall intensity (mm/hr) for the given return period and duration, or as total precipitation (mm). The ungauged IDF curve estimates, for all durations (5, 10, 15, 30 min, 1, 2, 6, 12, and 24 hrs) and return periods (2, 5, 10, 25, 50, and 100 years), are extracted directly from the gridded dataset produced for the IDF_CC tool. Ungauged IDF curve estimates for the location of the asset have been used within this assessment.

Due to the nature of the IDF dataset and variable ranges of historic rain station data, the modified baseline time period used for projections at ungauged stations is not explicitly defined, therefore some uncertainty is associated with using this baseline data.

Projected data used from the IDF_CC tool in this assessment corresponds to the median (50th Percentile) value for the 2080 (2071-2100) time horizon under RCP8.5 using CMIP5 models.

The IDF_CC tool allows users to see some statistics pertaining to the range of data in each projected outcome (i.e., for varying return periods and durations). Available statistics include the 25th and 75th percentile values from the projections, as well as the “low” and “high” range values, or the minimum and maximum values from the projections. Because the 10th and 90th percentile values were not readily available for this dataset, the “low’ and “high” values were substituted for all illustrations of data ranges to represent the spread of future projections.

Additional Sources of Information

Where climate projection data was not available for potential climate hazards and indicators, additional resources were reviewed including but not limited to the following:

- Canada’s Changing Climate Report (2019)
- Canada’s Changing Climate Report – Regional Perspective Reports (2020)
- Climate Projections for Calgary (2022)

The Climate Projections for Calgary Report (2022) served as a regional proxy dataset for the SVGL as Calgary is approximately 60 km away. Where primary data was not available for the

SVGL, The Climate Projects for Calgary Report was used as regionally, the municipalities will experience similar trends. The report is based on data from a regional scale analysis completed for The City of Calgary and The Calgary Airport Authority by GHD referred to as the Climate Data for Hydrologic and Hydraulic Analysis Project. Specifically, this data comes from a technical memo '11203679-MEM-2-Technical Memorandum 2 Final'. These documents were not publicly available at the time of this assessment.

Potential Climate Parameters and Hazards

A list of potentially relevant climate parameters for the SVGL was developed based on a review of published reports, studies, and federal climate data sets.

For the purposes of this assessment, climate hazard thresholds, as defined by Climate Data.ca (Climate Data, 2019), are presented in **Exhibit 2,** along with asset-specific response considerations

In general, under the RCP8.5 high greenhouse gas emissions scenario for the 2080's time horizon, the SVGL is projected to become warmer with increasing intensity and frequency of precipitation. Periods of extreme heat are predicted to increase, as is an increase in extreme temperatures. The timing of seasons is expected to shift, and a decrease in freeze-thaw cycles is projected. Precipitation is expected to increase in all seasons with the most notable changes in the winter and shoulder seasons. Increases in temperature and evapotranspiration are predicted to still lead to increases in the frequency of intensity of drought and dry conditions. Total average snowfall is projected to decrease with possible increases in freezing rain leading to a possible reduction in the total snowpack.

Climate change parameters and potential future climatic trends relevant to the SVGL are listed in **Exhibit 2**. This list was used for the preliminary screening process, to determine which hazards were specifically applicable to the project and merited more detailed data collection and greater investigation. For each hazard, a comment is included to capture the rationale behind its inclusion in or exclusion from the assessment.

Exhibit 2: Climate Change Hazard – Preliminary Screening

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
Average Annual Temperature	**Average Annual Temperature**	Temperatures are projected to increase over the various time horizons in the SVGL Region. An increase in average annual temperatures is well analyzed and is most likely to occur. (Climate Data, 2019). Shoulder seasons will see the greatest degree of increase, with summer and winter also increasing in average temperatures, though to a lesser degree.	An increase in average temperatures is predicted to occur. In addition to average annual temperatures, seasonal considerations have been included: Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (cooling requirements) ▪ Water Quantity (potential increased demand including groundwater demand from wells) ▪ Water Quality (conditions favorable for algal blooms) ▪ Sewage Quantity (potentially increased loading as a result of increased water consumption) ▪ Recreational Greenspace (longer summer recreational seasons) ▪ Natural Environment (growing degree days)	1976 – 2005 annual average temperature 1976 – 2005 mean annual accumulated Heating Degree Days (HDD) 1976 – 2005 mean annual accumulated Cooling Degree Days (CDD)	✓
Extreme Hot Temperatures	**Extreme Hot Temperatures**	An increase in the frequency and intensity of extreme warm/hot temperatures is well analyzed and will most likely occur. (Climate Data, 2019)	An increase in the frequency and intensity of extreme warm/hot temperatures is predicted to occur. Potential interactions may include but are not limited to:	1976-2005 Days with Tmax ≥30°C 1976-2005 Days with Tmax ≥32°C 1976-2005 Days with Tmax ≥37°C	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
			▪ Municipal and Residential Buildings (cooling requirements) ▪ Municipal Staff and Community Residents (health and safety) ▪ Water Quantity (potential increased demand including increased groundwater demand from wells) ▪ Water Quality (conditions favorable for algal blooms) ▪ Sewage Quantity (potentially increased loading as a result of increased water demand) ▪ Recreational Greenspace (longer summer recreational seasons) ▪ Natural Environment (growing degree days) ▪ Utility (Power) Connections (grid outages)		
	Heat Waves	Heatwaves are projected to increase in length and duration in the future.	For the purposes of this assessment, heat waves refer to daily maximum air temperature ≥ 30°C for 3 days or more. (Prairie Climate Centre, 2019) Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (cooling requirements) ▪ Municipal Staff and Community Residents (health and safety)	1976-2005 Annual Number of Heat Waves (Prairie Climate Centre, 2019) 1976-2005 Average length of Heat Waves (Prairie Climate Centre, 2019)	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
			▪ Vulnerable Populations (health and safety) ▪ Water Quantity (potential increased demand including an increase on groundwater from wells) ▪ Water Quality (conditions favorable for algal blooms) ▪ Sewage Quantity (potentially increased loading as a result of increased water demand) ▪ Recreational Greenspace (longer summer recreational seasons) ▪ Natural Environment (growing degree days) ▪ Utility (Power) Connections (grid outages)		
Extreme Cold Temperatures	**Extreme Cold Temperatures**	Cold temperatures are projected to rise, resulting in a decrease in the number of very cold days and winter days.	Decreases in the number of cold and winter days are potential benefits related to overall energy savings. However, there still is potential for extreme cold days in the future and thus risks should be addressed. Extreme cold days could pose threat to residents, particularly vulnerable residents. Extreme cold days could impact houses more with a reduction in insulation from snowpack. Risks associated with changing winter temperatures are evaluated with consideration of associated precipitation events.	1976-2005 Days with Tmax ≤-15°C 1976-2005 Days with Tmax ≤-25°C	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
			Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (heating requirements) ▪ Municipal Staff and Community Residents (health and safety) ▪ Vulnerable Populations (health and safety)		
Freeze-Thaw Cycles	**Winter Freeze-Thaw Cycle Days**	The annual projected number of freeze-thaw cycle days is projected to decrease, though seasonal variation is anticipated with this trend. Freeze-thaw-cycle days are days when the air temperature fluctuates between freezing and non-freezing.	Annual freeze-thaw is typically associated with the slow onset of risk associated with the expansion and contraction of built materials. A reduction in the projected number of annual freeze-thaw cycles may be a potential benefit to the built community infrastructure. **This climate hazard indicator will not be carried forward for further risk assessment.**	N/A	✗
Total Precipitation	**Total Annual Precipitation**	Increases in total precipitation are projected for all seasons with the most significant changes seen in the winter and spring seasons.	Total precipitation and shifts in seasonal precipitation will inform other precipitation indicators (such as water shortage and drought) that may affect civil and structural elements, and residents related to more extreme events. Potential interactions may include but are not limited to: ▪ Water Quantity (water balance)	1976 - 2005 annual total precipitation (mm)	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
Drought and Dry Conditions	**Drought/Dry Conditions**	The maximum number of consecutive dry days (annual) and the number of periods with 5 or more consecutive dry days (annual) are anticipated to increase.	Evaporation and transpiration (evapotranspiration) will increase with warmer temperatures, leading to more frequent and intense droughts and soil moisture deficits over the southern Prairies during summer (Sauchyn et al., 2020). Potential interactions may include but are not limited to ▪ Municipal and Residential Buildings (seals) ▪ Municipal Staff and Community Residents (health and safety) ▪ Vulnerable Populations (health and safety) ▪ Water Quantity (Groundwater level drop and shortage in water supply wells) ▪ Recreational Greenspace (golf course maintenance)	1976-2005 maximum number of consecutive dry days (annual) 1976-2005 number of periods with 5 or more consecutive dry days (annual) 1960-2014 Annual Evapotranspiration (mm/yr) (City of Calgary, 2022)	✓
Extreme High Precipitation	**Extreme Precipitation Events**	Precipitation events are predicted to increase in frequency and intensity. This aligns with a projected increase in total precipitation, projected over the same number of wet days.	Extreme precipitation is projected to increase for multiple duration events. Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (overland flood potential for below-grade components, roof drainage)	Changes in Max 1-day Precipitation (mm) Changes in Max 3-day Precipitation (mm) Changes in Max 5-day Precipitation (mm) # days greater than 10 mm	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
			▪ Water Quality (increased runoff affecting both surface and groundwater) ▪ Recreational Greenspace (increased runoff) ▪ Municipal Infrastructure (overland flood potential for roads and culverts)	# days greater than 20 mm	
Riverline Flooding	**Riverine Flooding**	Projected increases in riverine flooding are likely for the region (City of Calgary, 2022). Warmer temperatures and increased precipitation in the spring months could lead to more flooding, with quicker snowmelt also playing a role.	SVGL does not have any flood mapping zones in the land use planning. Studies are currently being conducted on the local upper bow river system including the construction of a dam that could potentially impact the reservoir (Government of Alberta, 2022). With this uncertainty comes a certain level of risk. Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (below grade components) ▪ Water Quality (increased runoff and deposited debris affecting both groundwater and surface water) ▪ Recreational Greenspace (beachside and marina spaces) ▪ Emergency Planning	Flood Mapping Studies (Government of Alberta, 2022)	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
Changing Snow and Ice	**Changing Snow and Ice**	Ice days are a useful indicator in the prediction of snow formation and retention. A reduction in annual ice days (regionally) indicates that days favorable to snow formation/retention are decreasing.	Snowfall accumulation can act as an insulator during cold and extreme cold events. Though temperatures are warming and the number of extremely cold days are reducing, they are still projected to occur. Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (frozen service lines from wells) ▪ Municipal Infrastructure (operations and maintenance costs and schedule)	Change in # Icing Days	**TBD** **Based on Site Visit**
Extreme Snowfall	**Extreme Snowfall**	High year-to-year variability makes it difficult to predict extreme snowfall events. Increases in precipitation frequency and variability have the potential to lead to increases in extreme snowfall events. (Bush et al., 2019).	Extreme snowfall events have the potential to affect roadway and residential travel leading to unsafe conditions and closures. Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (structural loads) ▪ Municipal Infrastructure (operations and maintenance) ▪ Emergency and Municipal Service Delivery ▪ Municipal Staff and Community Residents (health and safety) ▪ Vulnerable Populations (health and safety)	N/A – continue to plan for the future	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
			▪ Greenspace and Natural Systems (breaking branches)		
Rain-on-Snow and Freezing Rain	**Frequency of Rain-on-Snow Events**	Conditions favorable to the formation of freezing rain and rain-on-snow are projected to increase (regionally).	Rain-on-snow events and freezing rain events result in icy conditions with a heavy weight of precipitation. Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (structural loads) ▪ Municipal Infrastructure (operations and maintenance) ▪ Emergency and Municipal Service Delivery ▪ Municipal Staff and Community Residents (health and safety) ▪ Vulnerable Populations (health and safety) ▪ Utility (Power) Connections (grid outages) ▪ Greenspace and Natural Systems (breaking branches) ▪ Overland SWM infrastructure (culverts can be frozen in these conditions leading to further flooding/freezing conditions)	1976-2005 Average total winter precipitation (mm) 1960-2014 Number of winter freeze-thaw cycles (City of Calgary, 2022) Change in # Icing Days	✓
Wildfire	**Direct Wildfire Impacts – Wildfire Interface**	Future projections indicate the potential for increases in wildfire events (City of Calgary, 2022)	Wildfire events could pose risk to <u>all elements</u> within the community.	Wildfire weather is predicted to increase in future predictions. The risk of extreme fires in western Canada has already increased by a factor of 1.5 to 6 due to	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
				human-caused climate change (Sauchyn et al., 2020). Proximity mapping with respect to forested areas	
	Indirect Wildfire Impacts	Projected increases in wildfire conditions for the region are projected. Reduced air quality may be a result of both regional fires and fires outside of the region.	Wildfires could lead to reduced air quality (City of Calgary, 2022) from smoke and ash particles contaminating the air. Downstream effects of wildfire include additional sediment, soot, and debris in watercourses. Potential interactions may include but are not limited to: ▪ Municipal and Residential Buildings (ventilation maintenance) ▪ Emergency and Municipal Service Delivery ▪ Municipal Staff and Community Residents (health and safety) ▪ Vulnerable Populations (health and safety) ▪ Recreational Areas (beach)	Wildfire weather is predicted to increase in future predictions. The risk of extreme fires in western Canada has already increased by a factor of 1.5 to 6 due to human-caused climate change (Sauchyn et al., 2020).	✓
Wind Gusts and Storms	**Severe and Convective Storms**	Convective storms are often characterized by intense precipitation, thunder, lightning, hail, strong winds (>90 km/hr), and	Convective storm events could pose risk to all elements within the community. The degree of consequence will be dependent on the type and severity of the storm.	Average annual convective events/conditions (City of Calgary, 2022)	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
		sometimes the potential for tornado development (City of Calgary, 2022). The occurrence of potential convective precipitation days in the region is projected to increase.			
	Extreme Weather Event - Wind Gusts	Wind speeds are predicted to remain relatively stable in future scenarios (City of Calgary, 2022). There is some uncertainty in this projection as modeling is limited by coarse spatial resolution.	Strong winds events could pose risk to all elements within the community.	Number of days per year exceeding the threshold (40 km/h gusts (% increase in frequency) (Chen et al., 2014) Number of days per year exceeding the threshold (70 km/h gusts (% increase in frequency) (Chen et al., 2014)	✓
Other	**Invasive Species**	Climate change, particularly temperature changes are expected to lead to both the expansion of native species and the arrival of new invasive species in the Prairie Provinces	Potential risks to the community are the result of a potential increase in invasive pests, changes in native pollinator populations, and competitive species. Certain pests such as termites can be detrimental to wood construction and local tree species, while others may spread disease. Potential interactions may include but are not limited to:	1976-2005 average number of frost days 1976-2005 average number of Growing Degree Days (5°C) 1976-2005 average number of Growing Degree Days (10°C) 1960-2014 Frost season length (Average) (days)	✓

Category	Climate-Related Hazard	Climate Projections/ Statements	Potential Community Interactions	Relevant Climate Hazard Thresholds	Included in the Assessment
		(Sauchyn et al., 2020).	▪ Municipal and Residential Buildings (wood construction) ▪ Recreational and Greenspaces (golf course and parks) ▪ Recreational Areas (beach and marina)	(City of Calgary, 2022)	

Historic and Future Climate Hazard Data Collection and Analysis

The most current, publicly available climate information was used to guide this Assessment. No primary research or additional site-specific climatological analyses (climate modeling or downscaling of climate projections) was conducted for this report. As climate science evolves and emissions patterns shift, climate projections may change. This could result in variations in the overall climate risk profile for the community. For this reason, the assessment should be reviewed periodically to identify potential deviations resulting from newer, better climate information.

When possible, projections corresponding to the 'high emissions scenario (RCP8.5 or equivalent) were selected for this analysis, as this is considered a conservative approach for the relevant climate hazards and the potentially long remaining life of the project asset. The data used in this assessment were gathered primarily from ClimateData.ca (2019) unless otherwise noted.

Exhibit 3 highlights the climate change parameter, climate hazard indicator, direction, projected degree of change between baseline and 2080's climatic conditions, and potential asset and climate hazard interactions.

The following potential climate hazards have been excluded from this assessment per the screening exercise documented in **Exhibit 2**:

- Winter Freeze-Thaw Cycles

Exhibit 3: Climate Projections

Category	Climate Hazard	Climate Change Hazard Indicator	Direction and Projected Degree of Change	Potential Asset/Climate Interactions
Average Temperature	**Average Temperature**	Change in average annual temperature (°C)	↑ +164%	An increase in average temperatures is predicted to occur. Increases in average annual temperature are not considered to be a primary indicator of temperature-related risks. Potential increase in water and sewage demand. Potential impacts to greenspaces and natural ecosystems. Impacts on tourism as seasons shift.
	Winter Design Considerations	Change in Tropical Nights (Days with Tmin>18°C)	↑ 2x Increase	Building cooling system design for increased average and extreme conditions should be considered. Potential to increase the cost of cooling homes for residents and municipal facilities.
		Change in Tropical Nights (Days with Tmin>20°C)	↑ 5x Increase	
		Change in Heating Degree Days (HDD)	↓ -31%	
		Change in Above Freezing Days	↑ +55%	
		Change in Winter Melting Days	↑ +177%	
		Change in Freezing Degree Days	↓ -54%	
		Change in January 1% design air temperatures	↑ +26%	

Category	Climate Hazard	Climate Change Hazard Indicator	Direction and Projected Degree of Change	Potential Asset/Climate Interactions
		Change in January 2.5% design air temperatures	↑ +28%	
	Summer Design Considerations	Change in Cooling Degree Days (CDD)	↑ +2200%	Changes in temperatures could increase demand for building cooling systems and increase the cost of cooling to residents. Design components may need to consider future temperature projections
		Change in July 2.5% design air temperatures	↑ +24%	
Extreme Hot Temperatures	**Extreme Hot Temperatures**	Change in the number of hot days (≥29°C)	↑ +607%	An increase in the frequency and intensity of warm/hot temperatures is predicted to occur. Building ventilation and cooling system design for extreme conditions should be considered as well as passive cooling options for residential buildings and municipal facilities. Heat stroke and other health hazards could impact residents. Potential increase in water and sewage demand. Potential impact on road systems. Potential impact on municipal service delivery.
		Change in # days over 30°C	↑ +2686%	
		Change in # days over 32°C	↑ +23x Increase	
		Change in # days over 37°C	↑ +3x increase	
	Heat Waves	Annual number of heat waves	↑ +3067%	
		Average length of heat waves	↑ +1684%	
Extreme Cold Temperatures	**Extreme Cold Temperatures**	Change in # days below -15°C	↓ -54%	Extreme cold days are predicted to decrease in the future.

Category	Climate Hazard	Climate Change Hazard Indicator	Direction and Projected Degree of Change	Potential Asset/Climate Interactions
		Change in # days below -25°C	↓ -49%	Potential decrease in heating demand and costs. Extreme cold days could pose threat to residents, particularly vulnerable residents.
Total Precipitation	**Increases in Total Precipitation**	Change to annual mean total precipitation (mm)	↑ +12%	Annual precipitation climate hazard as it relates to the SVGL may contribute to general wear and tear on building envelopes and associated components. Annual precipitation is not considered to be the primary indicator of risk. Extreme events and specific precipitation events have been further defined and included.
Extreme Precipitation	**Increase in Extreme Rainfall**	Change in 1-hr design storm (50-year event)	↑ +23%	Stormwater management components, overland flooding, roof components, residential areas below grade, and roadways may be affected.
		Change in 24-hr design storm (50-year event)	+23%	
Riverline Flooding	**Riverine Flooding**	Flood Hazard Mapping	↑ (Mapping)	Riverine flooding poses hazards to neighboring natural and built infrastructure including beachside areas.
		Chang in max 1-day total precipitation	↑ +33%	
		Chang in max 5-day total precipitation	↑ +21%	
Extreme Snowfall	**Extreme Snowfall**	Change in total annual snowfall accumulation (cm)	↓ -40%	Extreme snowfall events have the potential to affect roadway and residential travel leading to unsafe conditions and closures. Extreme snowfall events may also strain the roof and structural systems of buildings.

Category	Climate Hazard	Climate Change Hazard Indicator	Direction and Projected Degree of Change	Potential Asset/Climate Interactions
				Extreme snowfall events could impact emergency service delivery. Extreme snowfall events could impact municipal service delivery. Potential increase in road maintenance. Potential isolation of vulnerable community members.
Rain-on-Snow and Freezing Rain	**Increased Frequency of Rain-on-Snow Events**	Change in average total winter precipitation (mm)	↑ +31%	Civil and structural elements, mobility, movement and safety of residents, and maintenance costs may be affected by rain-on-snow and freezing rain events. Rain-on-snow and freezing rain events could impact utility infrastructure such as powerlines, leading to potential power outages in the community. Rain-on-snow and freezing rain events could impact green spaces and vegetation, particularly the limbs of trees. Rain-on-snow and freezing rain events could impact municipal service delivery.
	Increased Frequency of Freezing Rain Events	Change in the number of winter freeze-thaw cycles	↑ +9%	
Drought and Dry Conditions	**Drought/Dry Conditions**	Change in maximum # of Consecutive Dry Days	↑ +6%	Drought/dry conditions may deteriorate built elements with exposure. Natural green space, parks, and landscape elements may be affected by dry conditions. Water shortages are often associated with drought conditions. Water shortages may impact water balance within the watershed, including groundwater sources. This could impact residential water sources such as wells.
		Change in # of periods with 5 or more consecutive dry days	↑ +18%	
		1960-2014 Annual Evapotranspiration (mm/yr) (City of Calgary, 2022)	↑ +15%	

Category	Climate Hazard	Climate Change Hazard Indicator	Direction and Projected Degree of Change	Potential Asset/Climate Interactions
Wildfire	**Forest Fires – Wildfire Interface**	Wildfire weather is projected to increase in the region	↑ (Trend)	Wildfire events could pose risks to residents as well as natural and built infrastructure through a direct interface. Potential impact on roadways and access points of the Village. Potential impact on emergency service delivery.
	Reduced Air Quality			
Wind and Extreme Combination Events	**Severe Storms**	Average annual convective events/conditions	↑ +77%	Convective storm events could cause potential hazards to residents, as well as natural and built infrastructure. Risks include direct and indirect impacts of lightning strikes, hail, strong winds, and tornadoes. Hail events can be damaging to building envelope elements, vehicles, and residents, depending on hail size. Hail events have occurred in the province and should continue to be considered in the future. Tornado events have the potential to cause damage to people as well as natural and built infrastructure. Given the history of tornado events in the province, this hazard should be considered in this assessment. Lightning strikes could cause damage to natural and built infrastructure from direct strikes. Lightning also is a potential danger to residents in the unlikely event of a direct lightning impact. Lightning strikes causing server voltage surges may break down insulation and damage voltage-sensitive equipment in buildings should be considered
	Extreme Weather Event - Hail			
	Extreme Weather Event - Tornadoes			
	Extreme Weather Event – Lightning Events			
	Extreme Weather Event - Wind Gusts	The number of days per year exceeding the threshold (40 km/h gusts (% increase in frequency)	↑ +4%	

Category	Climate Hazard	Climate Change Hazard Indicator	Direction and Projected Degree of Change	Potential Asset/Climate Interactions
		The number of days per year exceeding the threshold (70 km/h gusts (% increase in frequency)	 +12%	Lightning strikes could impact power utility infrastructure and lead to potential power loss in the Village. Strong winds and wind gusts can be damaging to building envelopes, roofs, off-site servicing, and landscape elements. Wind gusts could also pose hazards to residents through direct impact or flying debris. The ongoing potential for higher wind gusts should be considered.
		The average number of days with maximum wind gusts is≥ 90 km/hr	 -37%	
	Extreme Weather Event - Wind-Driven Rain	Frequency and intensity related to wind-driven rain events may be affected by climate change and should be reviewed		
Other	**Invasive Species**	Change in 1976-2005 average number of frost days	 -34%	Potential risks to the community are the result of a potential increase in invasive pests, changes in native pollinator populations, and competitive species. Certain pests such as termites can be detrimental to wood construction and local tree species, while others may spread disease.
		Change in 1976-2005 average number of Growing Degree Days (5°C)	 +101%	
		Change in 1976-2005 average number of Growing Degree Days (10°C)	 +201%	
		Change in 1960-2014 Frost season lengths (Average) (days) (City of Calgary, 2022)	 -20%	

APPENDIX B: Detailed Climate Risk Assessment Methodology and Results

DETAILED RISK ASSESSMENT METHODOLOGY AND RESULTS

The overall assessment process utilized for this assessment is consistent with the PIEVC Protocol High Level Screening Guide (HLSG). The PIEVC HLSG aligns with international risk management standards ISO 31000 and ISO 14090, and other risk assessment processes.

Risk Assessment Calculations

For the purposes of this assessment risk scores were calculated based on exposure of an element to a climatic condition (exposure), the likelihood of a particular climate event occurring under existing and future climate conditions (likelihood), and the potential consequences/severity of an interaction arising from the climate event exposure (consequence).

The risk analysis conducted for this assessment was based on a standard proxy risk calculation, as outlined in the PIEVC HLSG. For the purposes of this report.

Risk = Exposure (E) x Likelihood (L) x Consequence (C)

Exposure

Exposure is determined by examining the relationship between the element and the climate hazard (as defined by specific indicators). If the evaluated element "sees it", or has exposure to a particular climate hazard, the exposure output is evaluated as a "1". If the element is determined not to have exposure to a specific climate hazard, a score of "0" is applied, and the element fails to continue through the risk assessment process. Determination of asset element exposure to the determined climate hazards was completed in the Risk Assessment Workshop.

Likelihood

For this high-level screening, a "middle baseline" approach was used to determine climate hazard likelihood as presented in **Exhibit 1**. This approach determines the current climate baseline per climate hazard indicator and assigns a likelihood ranking of 3 for the baseline conditions. Future climate scenarios are then assigned a likelihood score based on the event/condition occurring more or less frequently than current climate conditions, as described in **Exhibit 1.** Deviations from the "middle baseline" likelihood scoring approach, were based on professional judgment and associated with very low likelihood events that may be overstated with the middle-baseline approach.

Exhibit 1: Climate Likelihood Scoring Matrix

Likelihood Score	PIEVC HLSG Method	Rationale
1 – VERY LOW	Unlikely	50-100% reduction in frequency or intensity when compared to baseline mean.
		Not likely to occur during the period.
2 – LOW	Likely to occur less frequently than current climate	10-50% reduction in frequency or intensity when compared to baseline mean.

Likelihood Score	PIEVC HLSG Method	Rationale
		Likely to occur once between 30 and 50 years.
3 - MODERATE	Likely to occur as frequently as current climate	Baseline mean conditions or a change in frequency and intensity of ± 10% when compared to the baseline mean
		Likely to occur once between 10 and 30 years.
4 - HIGH	Likely to occur more frequently than current climate	10-50% increase in frequency or intensity when compared to baseline mean.
		Likely to occur at least once per decade.
5 – VERY HIGH	Almost Certain to Occur	50-100% increase in frequency or intensity when compared to baseline mean.
		Likely to occur once or more annually.

Overall likelihood scoring was completed in advance of the Risk Assessment Workshop, though all likelihoods were presented, discussed, and adjusted as needed, based on consensus and professional judgment of the project team before proceeding to discussions of asset exposure and potential consequence.

Consequence

The consequence, or severity, of each potential interaction between the climate hazard and specific element, was assigned a numeric score using the criteria outlined in **Exhibit 2**. The score assigned for each potential impact was informed by professional judgment at the risk assessment workshop. Consequence scores are based on community response considerations.

*Exhibit 2: **Consequence Scoring Matrix***

Consequence Score		
1	Very Low	Insignificant
		Little to no financial loss or increase in operational plan/ operational expenses. Little to no impact on cohesion, or health and safety of residents. Little to no impact on green spaces and water supply.
2	Low	Minor
		Additional operating costs or small financial loss. Small changes in site operations and maintenance. Small impact to cohesion, or health and safety of residents. Small impact to green spaces and water supply.
3	Moderate	Moderate
		Moderate financial loss.

		Significant changes in operations and maintenance / operating expenses/repairs. Moderate impact on cohesion, or health and safety of residents. Moderate impact on green spaces and water supply.
4	High	Major to Serious
		Impact to load capacity. Major financial loss. Closure for repairs (short-term or extended). Major impact to cohesion, or health and safety of residents. Major impact on green spaces and water supply.
5	Very High	Hazardous to Catastrophic
		Complete loss of function. Extreme financial loss. Partial or full rebuild required. Extreme impact to cohesion, or health and safety of residents. Extreme impact on green spaces and water supply.

Risk Rating and Classification

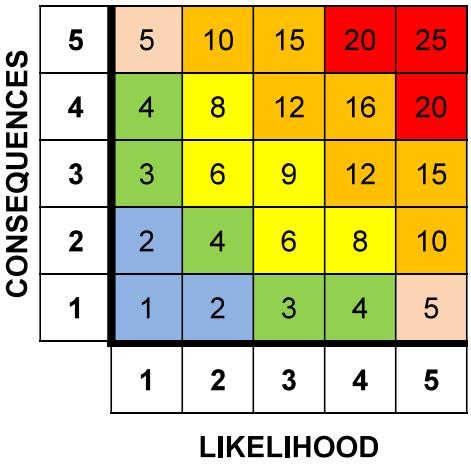
A numeric risk rating was determined for each impact based on the product of the exposure, likelihood, and consequence scores. The risk assessment matrix illustrated in **Exhibit 3** was used to derive a semi-quantitative measure of risk. Based on this methodology, risk ratings were determined as follows:

- **Negligible Risk** (risk scores between 1 and 2): Risk events do not require further consideration.
- **Low risk** (risk scores between 3 and 4) – risk requiring minimal action. Controls are not likely required.
- **Moderate risk** (risk scores between 6 and 9) – risk that may require further action. Some controls may be required to reduce risks to lower levels.
- **High risk** (risk scores between 10 and 19) – risks that require action. High-priority control measures may be required.
- **Extreme risk** (risk scores between 20 and 25) – risks that require immediate action. Immediate controls may be required.
- **Special Consideration** – describes two unique scenarios. Low likelihood and high consequence interactions would consider events such as tornados, where the likelihood of a direct hit is very low, but the overall consequence could be catastrophic; and high likelihood low consequence events such as ongoing deterioration of elements resulting from continued exposure to various climatic conditions.

Exhibit 3:Risk Assessment Matrix

Legend

Extreme Risk	High Risk	Moderate Risk	Low Risk	Negligible Risk	Special Consideration



Limitations

As our understanding of climate change improves, climate projections may change. This could cause changes to the risk profile. The work should be reviewed from time to time to identify potential changes resulting from newer climate information.

The projections used for this work were based on the business-as-usual (RCP 8.5) climate scenario. While this represents the upper limit of modeled climate results, it also covers extreme values. These outliers are included in the RCP8.5 information used in this analysis, but their impact may be reduced by averaging.

The work only contemplated two climate projection periods, the current (baseline) climate and model projections for the 2080s. Thus, the work may not reflect near-term climate conditions that may be reflected in the 2050s modeling outputs. The results reflect the team's best estimate of the worst-case climate events likely over the expected useful service life of the element.

This analysis is based on the combined professional judgment of the team. It reflects the team's best estimate of expected climate risk over the useful service life of the element being assessed. The team used data available at the time of the assessment.

There are uncertainties in every climate risk assessment. The work should be viewed as part of a continuing process. Results from the work reflect the state of climate change and element components at the time of the assessment. As climate science develops, periodic reviews of the risk profile and revisions when necessary are recommended.

The work was done as a high-level screening of elements to inform recommendations to improve resilience and included social, and environmental impacts. More data, analysis, and assessment would be needed to expand the work for wider applications.

Baseline Conditions (1981-2010)					Projected 2080s Conditions (2071-2100)					
Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration	Negligible Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration
12	5	-	-	-	-	-	-	5	-	12
8	5	5	-	-	-	-	-	5	5	8
17	-	-	-	-	17	-	-	-	-	-
17	1	-	-	-	-	17	1	-	-	-
11	7	-	-	-	-	11	5	2	-	-
12	5	1	-	-	-	12	5	1	-	-
16	1	-	-	-	16	1	-	-	-	-
16	2	-	-	-	-	16	2	-	-	-
11	6	1	-	-	-	11	6	1	-	-
7	9	1	-	-	-	-	-	9	1	7
2	3	10	-	-	-	-	-	3	10	2
9	5	1	-	-	-	-	-	5	1	9
2	-	-	-	11	-	3	4	11	-	-

erview by Community Element – Baseline Versus Projected 2080s Conditions

Baseline Conditions (1981-2010)					Projected 2080s Conditions (2071-2100)					
Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration	Negligible Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration
8	2	2	-	1	2	5	-	3	2	1
6	5	1	-	1	2	4	1	5	1	-
8	3	1	-	1	2	4	1	3	1	2
9	2	1	-	-	2	6	-	2	1	2
7	4	1	-	1	2	4	1	4	1	1

Baseline Conditions (1981-2010)					Projected 2080s Conditions (2071-2100)					
ble	Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration	Negligible Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk	Special Consideration
	10	2	1	-	-	2	3	2	1	1	4
	9	1	2	-	1	2	5	-	2	2	2
	9	1	2	-	1	2	4	1	1	2	3
	12	-	-	-	1	2	5	-	1	-	5
	6	5	1	-	-	1	3	3	2	1	3
	7	3	2	-	1	2	4	1	3	2	1
	9	-	3	-	1	2	5	-	1	3	2
	8	4	-	-	1	2	5	-	5	-	1
	7	3	-	-	-	2	3	3	-	-	3
	6	4	-	-	-	2	3	3	1	-	2
	9	1	-	-	-	2	4	2	0	-	3
	6	6	-	-	-	2	2	4	3	-	2
	3	3	2	-	1	-	2	1	5	-	1

Exhibit 6: Baseline Risk Profile by Category

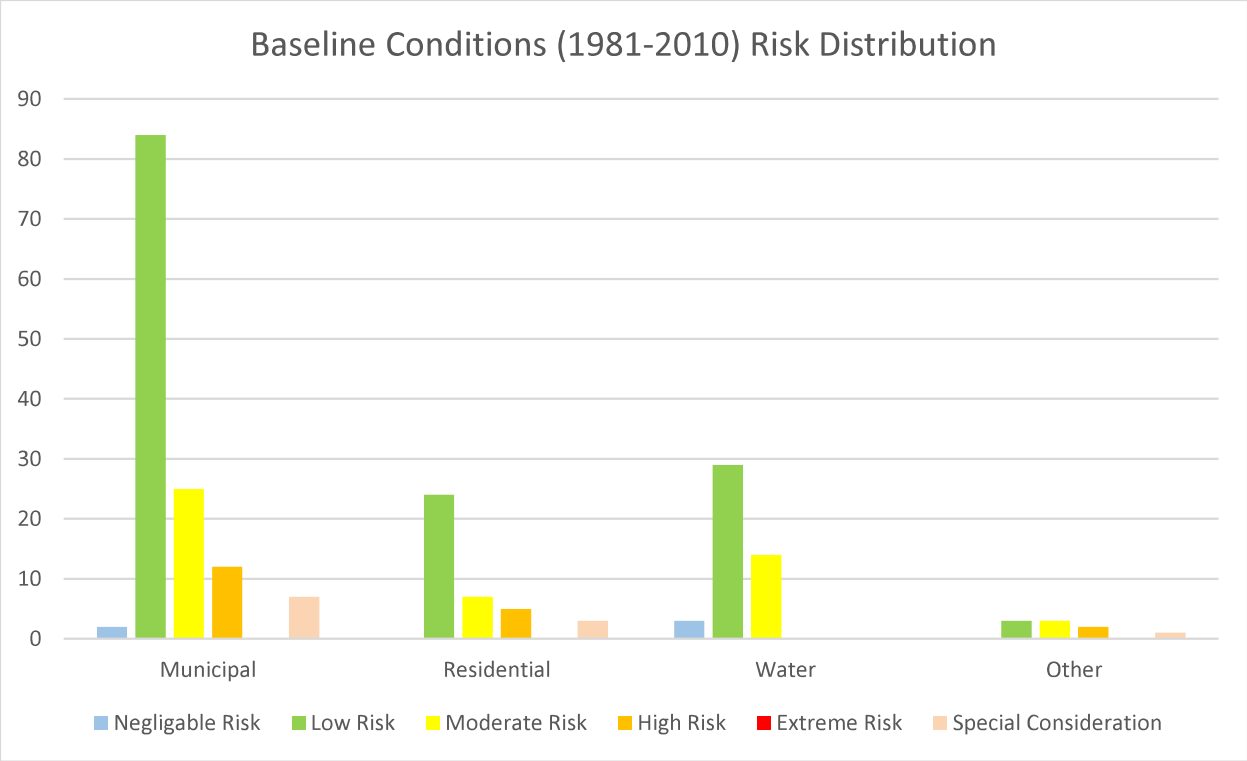


Exhibit 7: Projected 2080s Risk Profile by Category

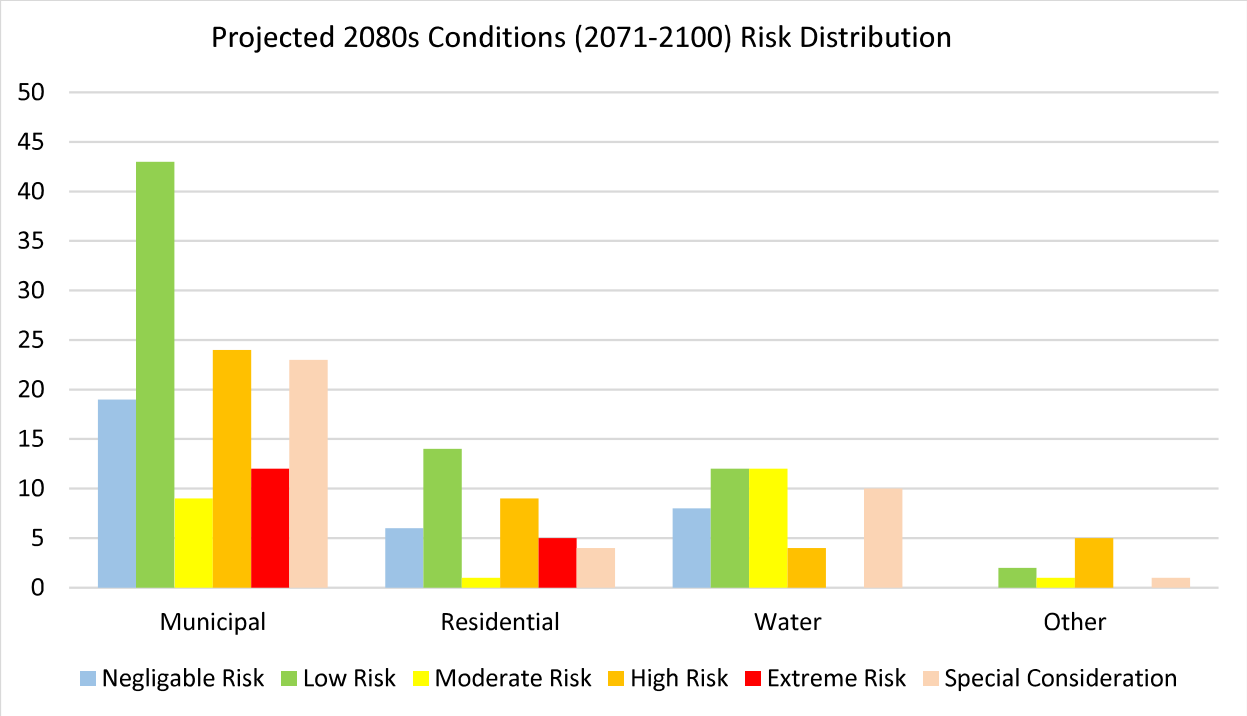


Exhibit 8: High and Extreme Risk Interaction Summary – Average Temperature

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
AT-1	**Community Hall:** Changes to operating costs and procedures.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	2	2	**10**
AT-2	**Golf Course:** Increases in water demand to greenspaces.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	2	2	**10**
AT-3	**Parks and Green Spaces:** Increases in water demand to greenspaces.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	2	2	**10**
AT-4	**Residential Buildings:** Increases in cooling costs in residential homes.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
AT-5	**Residential Hard and Soft Landscaping:** Increases to water demand on soft landscaping elements.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	2	2	**10**

** L = Likelihood C = Consequence R = Risk*

Exhibit 9: High and Extreme Risk Interaction Summary – Extreme Heat

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
EH-1	**Community Hall:** Changes to operating costs and procedures. Potential for closure of facility during extreme heat events.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**
EH-2	**Golf Course:** Potential for financial loss from courses during extreme heat events.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
EH-3	**Municipal Staff:** Extreme heat events could lead to unsuitable work conditions for municipal staff.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**
EH-4	**Municipal Services:** Extreme heat events could impact municipal service delivery.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
EH-5	**Sensitive Ecosystem – Native Grasslands:** Extreme heat events could cause negative impacts to native grasslands.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	2	2	**10**
EH-6	**Residential Buildings:** Increases in cooling costs in residential homes.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**
EH-7	**Residents:** Extreme heat events could lead to negative health implications to residents.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
EH-8	**Residential Hard and Soft Landscaping:** Extreme heat events could negatively impact residential hard and soft landscaping lading to reduced lifespan of elements.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	2	2	**10**
EH-9	**Management & Changes Outside of Village Control (Forest Management, Reservoir Management):** Extreme heat events could potentially lead to changes in management of staff, visitors and residents.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
EH-9	**Surface Water Quality/Quantity:** Extreme heat could potentially raise water temperatures, causing impacts to fish and aquatic species or cause algal blooms.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**

** L = Likelihood C = Consequence R = Risk*

Exhibit 10: High and Extreme Risk Interaction Summary – Heavy Precipitation

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
HP-1	**Roads & Stormwater Management (Overland Drainage, Ditches, Culverts, etc.):** Extreme precipitation events could potentially overload stormwater management systems such as ditches and culverts leading to overland flooding and washout of roadways.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	4	3	**12**
HP-2	**Sensitive Ecosystem - Native Grasslands:** Extreme heavy precipitation events could potentially flood and erode native grassland areas. Grasslands are traditionally dry areas and may not compensate for extreme excess water.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	4	3	**12**

** L = Likelihood C = Consequence R = Risk*

Exhibit 11: High and Extreme Risk Interaction Summary – Riverine Flooding

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
RF-1	**Management & Changes Outside of Village Control (Forest Management, Reservoir Management):** Factors with unknown consequences to riverine flooding such as dam construction could impact flood risk.	**High**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	3	4	**12**

** L = Likelihood C = Consequence R = Risk*

Exhibit 12: High and Extreme Risk Interaction Summary – Drought and Dry Conditions

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
DD-1	**Management & Changes Outside of Village Control (Forest Management, Reservoir Management):** Impacts related to drought conditions and management of reservoir.	**High**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	3	4	**12**

** L = Likelihood C = Consequence R = Risk*

Exhibit 13: High and Extreme Risk Interaction Summary – Wildfire – Indirect Impacts

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
WFI-1	**Community Hall:** Potential for increase in operation and maintenance costs to ventilation system such as additional filters.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
WFI-2	**Golf Course:** Potential for financial loss from courses during air quality impacts.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
WFI-3	**Marina:** Potential for decrease in use during air quality impacts.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
WFI-4	**Beachfront:** Potential for decrease in use during air quality impacts.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
WFI-5	**Parks and Greenspaces:** Potential for decrease in use during air quality impacts.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
WFI-6	**Municipal Staff:** Air quality impacts could cause unsuitable working conditions for municipal staff.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
WFI-7	**Residential Buildings:** Potential for increase in maintenance costs to ventilation system such as additional filters.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
WFI-8	**Residents:** Air quality impacts could potentially lead to negative health implications for residents.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WFI-9	**Groundwater Quality:** Wildfire events could potentially contaminate groundwater supply and reduce water quality.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
WFI-10	**Surface Water Quality/Quantity:** Wildfire events could potentially contaminate surface water supply (with debris, ash) and reduce water quality.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**

** L = Likelihood C = Consequence R = Risk*

Exhibit 14: High and Extreme Risk Interaction Summary – Wind and Extreme Combination Events

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
WEC-1	**Community Hall:** Wind and extreme combination events could potentially lead to loss of asset.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-2	**Golf Course:** Wind and extreme combination events could potentially lead to severe damage to courses and are a serious threat to users.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-3	**Marina:** Wind and extreme combination events could potentially lead to severe damage to the marina and are a serious threat to users.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-4	**Beachfront:** Wind and extreme combination events could potentially lead to severe damage to the beachfront and are a serious threat to users.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
WEC-5	**Parks and Greenspaces:** Wind and extreme combination events could potentially lead to severe damage to greenspaces and are a serious threat to users.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-6	**Roads & Stormwater Management (Overland Drainage, Ditches, Culverts, etc.):** Wind and extreme combination events could potentially lead to severe damage to roads and storm water management infrastructure.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**
WEC-7	**Municipal Staff:** Wind and extreme combination events are a serious threat to exposed municipal staff.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-8	**Municipal Services:** Wind and extreme combination events could potentially lead to service disruption.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**
WEC-9	**Residential Buildings:** Wind and extreme combination events could potentially lead to severe damage to residential buildings.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-10	**Residents:** Wind and extreme combination events are a serious threat to exposed residents.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	5	**15**	5	5	**25**
WEC-11	**Residential Hard and Soft Landscaping:** Wind and extreme combination events could potentially lead to severe damage to hard and soft landscaping.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
WEC-12	**Management & Changes Outside of Village Control (Forest Management, Reservoir Management):** Opportunity for management procedures to cover polices related to wind and combination events.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
WEC-13	**Surface Water Quality/Quantity:** Wind & extreme storm events could potentially contaminate surface water supply with debris and reduce water quality.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**

** L = Likelihood C = Consequence R = Risk*

Exhibit 15: High and Extreme Risk Interaction Summary – Invasive Species

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
IS-1	**Golf Course:** Invasive species could have negative impacts on natural areas and green spaces.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
IS-2	**Marina:** Invasive species could have negative impacts on natural areas and green spaces.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
IS-3	**Beachfront:** Invasive species could have negative impacts on natural areas and green spaces.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	3	**9**	5	3	**15**
IS-4	**Parks and Greenspaces:** Invasive species could have negative impacts on natural areas and green spaces.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**
IS-5	**Sensitive Ecosystem - Native Grasslands:** Invasive species could have negative impacts on native grasslands.	**High**			**Extreme**		
		L	**C**	**R**	**L**	**C**	**R**
		3	4	**12**	5	4	**20**
IS-6	**Residential Hard and Soft Landscaping:** Invasive species could have negative impacts on soft landscaping elements.	**Moderate**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		3	2	**6**	5	2	**10**

** L = Likelihood C = Consequence R = Risk*

Exhibit 16: High and Extreme Risk Interaction Summary – Wildfire – Direct Impacts

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
WFD-1	**Community Hall:** Wildfire events could potentially lead to severe damage to the community hall and are a serious threat to users.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-2	**Golf Course:** Wildfire events could potentially lead to severe damage to courses and are a serious threat to users.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**

	Potential Consequence Description	Risk Ranking					
		Present			2080s		
WFD-3	**Marina:** Wildfire events could potentially lead to severe damage to the marina and are a serious threat to users.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-4	**Parks and Greenspaces:** Wildfire events could potentially lead to severe damage to greenspaces and are a serious threat to users.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-5	**Municipal Staff:** Wildfire events are a serious threat to exposed municipal staff.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-6	**Municipal Services:** Wildfire events could potentially lead to service disruption.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-7	**Leased Property:** Wildfire events could potentially lead to severe damage to leased property and are a serious threat to users.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-8	**Residential Buildings:** Wildfire events could potentially lead to severe damage to residential buildings.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-9	**Residents:** Wildfire events are a serious threat to exposed residents.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-10	**Residential Hard and Soft Landscaping:** Wildfire events could potentially lead to severe damage to hard and soft landscaping	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**
WFD-11	**Management & Changes Outside of Village Control (Forest Management, Reservoir Management):** Opportunity for increased fire management procedures.	**Special Consideration**			**High**		
		L	**C**	**R**	**L**	**C**	**R**
		1	5	**5**	3	5	**15**

** L = Likelihood C = Consequence R = Risk*

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.1
Meeting Date: February 16, 2023

TO: Council

FROM: Suzanne Gaida, Finance Manager

Subject: General Bank Reconciliation

RECOMMENDATION: That Council approve the General Bank Reconciliation for the period ending December 31, 2022.

REPORT SUMMARY

The bank reconciliation for the General Bank Account for the period ending December 31, 2022 is attached for Council's review and approval. The reconciliation provides a listing of all cleared transactions as well as uncleared transactions at the time of the report printing. Administration will be able to answer questions of Council on any of the transactions.

Currently there are no investment accounts.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

Summer Village of Ghost Lake
Reconciliation Detail
310-120 · Bank - TD Canada Trust, Period Ending 2022-12-30

Type	Date	Num	Name	Clr	Amount	Balance
Beginning Balance						517,178.23
Cleared Transactions						
Cheques and Payments - 15 items						
Bill Pmt -Cheque	2022-11-14	2078	Hassan Saeed	X	-705.13	-705.13
Bill Pmt -Cheque	2022-11-21	2083	Jeanette Kennard	X	-52.67	-757.80
Bill Pmt -Cheque	2022-12-06	1975	Carey Fougere	X	-968.48	-1,726.28
Bill Pmt -Cheque	2022-12-06	1977	Karen Foudy	X	-500.00	-2,226.28
Bill Pmt -Cheque	2022-12-06	1976	John Walsh	X	-500.00	-2,726.28
Bill Pmt -Cheque	2022-12-12	Debit	Epcor Energy Se...	X	-46.94	-2,773.22
Bill Pmt -Cheque	2022-12-16	Debit	Cochrane Lake G...	X	-227.85	-3,001.07
Bill Pmt -Cheque	2022-12-21	2089	Mustafa Hashimi	X	-2,682.61	-5,683.68
Bill Pmt -Cheque	2022-12-21	2086	Planning Protocol...	X	-1,417.50	-7,101.18
Bill Pmt -Cheque	2022-12-21	2087	Suzanne Gaida	X	-1,187.76	-8,288.94
Bill Pmt -Cheque	2022-12-21	1978	Hassan Saeed	X	-801.33	-9,090.27
Bill Pmt -Cheque	2022-12-21	1980	Hassan Saeed	X	-672.34	-9,762.61
Bill Pmt -Cheque	2022-12-28	Debit	TD Canada Trust	X	-787.48	-10,550.09
Bill Pmt -Cheque	2022-12-28	Debit	TD Canada Trust	X	-6.25	-10,556.34
Bill Pmt -Cheque	2022-12-31	Debit	ASFF - Provincial...	X	-23,138.12	-33,694.46
Total Cheques and Payments					-33,694.46	-33,694.46
Deposits and Credits - 11 items						
Deposit	2022-12-01			X	7,172.00	7,172.00
Payment	2022-12-08	CAQ...	5010 Couchman	X	1,000.00	8,172.00
Payment	2022-12-16		6150 Smith	X	5,000.00	13,172.00
Payment	2022-12-19	CAux...	6150 Smith	X	2,061.29	15,233.29
Payment	2022-12-21	Q1/Q...	Receiver General...	X	1,292.86	16,526.15
Payment	2022-12-21	Q3/Q...	Receiver General...	X	1,398.68	17,924.83
Payment	2022-12-21	Q1/Q...	Receiver General...	X	1,416.95	19,341.78
Payment	2022-12-21	Q1/Q...	Receiver General...	X	1,481.07	20,822.85
Payment	2022-12-21	Q1/Q...	Receiver General...	X	2,962.75	23,785.60
Payment	2022-12-21	Q3/Q...	Receiver General...	X	3,220.48	27,006.08
Payment	2022-12-28		Receiver General...	X	4,364.99	31,371.07
Total Deposits and Credits					31,371.07	31,371.07
Total Cleared Transactions					-2,323.39	-2,323.39
Cleared Balance					-2,323.39	514,854.84
Uncleared Transactions						
Cheques and Payments - 4 items						
Bill Pmt -Cheque	2020-01-16	Debit	Cochrane Lake G...		-98.53	-98.53
Bill Pmt -Cheque	2022-12-16	2090	Calgary RCSSD ...		-3,000.27	-3,098.80
Bill Pmt -Cheque	2022-12-21	1979	Morrison Hershfie...		-17,389.44	-20,488.24
Bill Pmt -Cheque	2022-12-26	2091	Morrison Hershfie...		-7,835.63	-28,323.87
Total Cheques and Payments					-28,323.87	-28,323.87
Total Uncleared Transactions					-28,323.87	-28,323.87
Register Balance as of 2022-12-30					-30,647.26	486,530.97
New Transactions						
Cheques and Payments - 28 items						
Bill Pmt -Cheque	2023-01-02	2088	Blu Planet Recycl...		-1,233.75	-1,233.75
Bill Pmt -Cheque	2023-01-09	Debit	Epcor Energy Se...		-178.53	-1,412.28
Bill Pmt -Cheque	2023-01-16	Debit	Cochrane Lake G...		-278.54	-1,690.82
Bill Pmt -Cheque	2023-01-27	Debit	TD Canada Trust		-901.94	-2,592.76
Bill Pmt -Cheque	2023-01-27	Debit	TD Canada Trust		-6.25	-2,599.01
Bill Pmt -Cheque	2023-02-02	2097	MD of Bighorn		-3,469.10	-6,068.11
Bill Pmt -Cheque	2023-02-02	2094	Benchmark Asse...		-1,270.47	-7,338.58
Bill Pmt -Cheque	2023-02-02	2095	Blu Planet Recycl...		-1,233.75	-8,572.33
Bill Pmt -Cheque	2023-02-02	2098	Suzanne Gaida		-1,119.30	-9,691.63
Bill Pmt -Cheque	2023-02-02	2092	Alberta Municipali...		-1,017.06	-10,708.69
Bill Pmt -Cheque	2023-02-02	2093	Assoc of Summe...		-975.00	-11,683.69
Bill Pmt -Cheque	2023-02-02	2096	Fred Smith Cons...		-118.91	-11,802.60
Bill Pmt -Cheque	2023-02-04	2099	Mustafa Hashimi		-3,406.49	-15,209.09
Bill Pmt -Cheque	2023-02-04	2100	Oldman River Re...		-1,025.00	-16,234.09
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-1,439.98	-17,674.07

Summer Village of Ghost Lake
Reconciliation Detail
310-120 · Bank - TD Canada Trust, Period Ending 2022-12-30

Type	Date	Num	Name	Clr	Amount	Balance
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-1,067.84	-18,741.91
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-919.10	-19,661.01
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-814.85	-20,475.86
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-742.40	-21,218.26
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-738.81	-21,957.07
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-716.19	-22,673.26
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-665.80	-23,339.06
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-611.57	-23,950.63
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-581.70	-24,532.33
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-300.56	-24,832.89
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-127.65	-24,960.54
Bill Pmt -Cheque	2023-02-08	Debit	Receiver General		-13.03	-24,973.57
Bill Pmt -Cheque	2023-02-17	Debit	Receiver General		-217.45	-25,191.02
Total Cheques and Payments					-25,191.02	-25,191.02
Deposits and Credits - 5 items						
Deposit	2022-12-31				17,750.00	17,750.00
Payment	2023-01-08	CAPr...	5010 Couchman		1,000.00	18,750.00
Deposit	2023-02-01				5,528.67	24,278.67
Payment	2023-02-01		4030 Janis		5,759.47	30,038.14
Payment	2023-02-04	CAs...	5010 Couchman		1,000.00	31,038.14
Total Deposits and Credits					31,038.14	31,038.14
Total New Transactions					5,847.12	5,847.12
Ending Balance					**-24,800.14**	**492,378.09**

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.2
Meeting Date: February 16, 2023

TO: Council

FROM: Suzanne Gaida, Finance Manager

Subject: Cheque Register December 1, 2022 – January 31, 2023

RECOMMENDATION: That Council accept the cheque register for December 1, 2022 – January 31, 2023 as information.

REPORT SUMMARY

The cheque register, outlining payments of direct withdrawals and cheques 1975-1980 & 2086 – 2091 for December 1, 2022 thru January 31, 2023 in the amount of $63,761.01 is attached. This is provided for Council information and Administration can provide specifics on any payments outlined in the attached report for Council.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

Summer Village of Ghost Lake
Cheque Register
As of 31 January 2023

Num	Name	Memo	Amount
310-120 · Bank - TD Canada Trust			
Debit	Cochrane Lake Gas Co...	November 2022 Gas	-227.85
Debit	Epcor Energy Sevices	November 2022 Power	-46.94
Debit	ASFF - Provincial Tresu...	December 2022 Public Schoo...	-23,138.12
Debit	Epcor Energy Sevices	December 2022 Power	-178.53
Debit	Cochrane Lake Gas Co...	December 2022 Gas	-278.54
Debit	TD Canada Trust	December 5 2022 Credit Car...	-787.48
Debit	TD Canada Trust	December 5, 2022 Credit Ca...	-6.25
Debit	TD Canada Trust	January 5, 2023 Credit Card ...	-6.25
Debit	TD Canada Trust	Jan 5, 2023 Credit Card Bill - ...	-901.94
1975	Carey Fougere	Expense Report & Honorarium	-968.48
1976	John Walsh	2022 Honorarium	-500.00
1977	Karen Foudy	2022 Honorarium	-500.00
1978	Hassan Saeed	Payroll November 2022 & Ex...	-801.33
1979	Morrison Hershfield Lim...	SVGL Climate Resilience Ass...	-17,389.44
1980	Hassan Saeed	Payroll - December 2022	-672.34
2086	Planning Protocol 2 Inc.	General Planning 2022	-1,417.50
2087	Suzanne Gaida	December 2022 Finance Man...	-1,187.76
2088	Blu Planet Recycling	January 2023 Recycling & W...	-1,233.75
2089	Mustafa Hashimi	payroll December 2022 & Ex...	-2,682.61
2090	Calgary RCSSD No 1	Seperate School Requisition ...	-3,000.27
2091	Morrison Hershfield Lim...	SVGL Climate Resilience Ass...	-7,835.63
Total 310-120 · Bank - TD Canada Trust			-63,761.01
TOTAL			**-63,761.01**

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.3
Meeting Date: February 16, 2023

TO: Council

FROM: Suzanne Gaida, Finance Manager

Subject: 2022 Financial Update

RECOMMENDATION:
That Council accepts the 2022 Finance Update as information.

REPORT SUMMARY

The December 31, 2022 Budget Variance Report is attached for Council information. This report is an unaudited year end Financial Report.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

The Budget Variance report reflects 12 months of operation. As presented, some of the line items are over budget and some are under budget. The full transfer of $22,000 from Operating reserves as approved as part of the 2022 Budget has been completed to offset any deficit due to not enough taxes being collected to offset the actual expenses and penalties and payroll liability shortfalls from 2022. It is anticipated that once audited, there will be a surplus of approximately $10,000. Any surplus remaining at the end of the year can then be transferred into reserves. As the 2024 and 2025 Financial Plan has a strategy for investing in Capital Reserves to increase them, it is recommended any surplus be put into Operating Reserves. The 2022 Audit will be completed and presented to Council in April or May 2023, and any surplus can then be allocated as Council sees fit.

The 2022 Climate Action Grant was fully received and expended in 2022 and has been reported on to the funder. The Alberta Days Grant was received in 2022 but has not been expended and will carryover into 2023.

The 2022 Capital Project – Golf Greens was completed and has been reported on to Alberta Municipal Affairs.

DISCUSSION

Administration can answer any questions Council has on the Variance Report.

REVIEWED AND APPROVED BY

December 2022 Financial Report

2022 Operating Budget

Revenue	2022 YTD	2022 Budget
Transfer From Reserves	$ 22,000	$ 22,000
General Admin	$ 477	$ 570
MSI Operating Grant	$ 7,172	$ 7,172
Protective Services Grant	$ 500	$ -
Recreation Grants	$ 7,841	$ 13,680
Regatta Income	$ 6,487	$ -
Total Income	$ 44,477	$ 43,422

Expenses	2022 YTD	2022 Budget
Council	$ 3,787	$ 2,200
General Administration	$ 83,111	$ 97,795
Protective Services	$ 13,370	$ 15,218
Roads	$ 314	$ 3,500
Waste Management	$ 15,469	$ 14,600
Planning & Development	$ 5,673	$ 5,515
Recreation & Building	$ 27,050	$ 29,928
Cultural	$ 1,095	$ 981
Total Expense	$ 149,868	$ 169,737

Taxes & Requisitions - Revenue	2022 YTD	2022 Budget
Requisitions	$ 126,924	$ 118,029
Taxes	$ 117,475	$ 126,319
Total	$ 244,398	$ 244,348

Taxes & Requisitions - Expenses	2022 YTD	2022 Budget
Requisitions	$ 120,777	$ 118,033
Total	$ 120,777	$ 118,033

2022 Capital Budget

Project	2021	2022 YTD	Total Project Costs	Budget	Fund
Golf Greens Project - Completed	$ 25,000	$ 22,035	$ 47,035	$48,000	MSI

2022 Operating Grants - Other			
	Income	Expenses	Total Remaining
Climate	$ 71,000	$ 71,000	$ -
Alberta Days	$ 1,500	0	$ 1,500

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.4
Meeting Date: February 11, 2013

TO: **Council**

FROM: **Suzanne Gaida, Finance Manager**

Subject: **Canada Revenue Agency Update**

RECOMMENDATION:
That Council accepts the Canada Revenue Agency Update as information.

REPORT SUMMARY

The Summer Village of Ghost Lake is up to date to the end of 2022 with the Canada Revenue Agency for Payroll and GST.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

The Summer Village had not filed GST Returns since 2018. All GST returns have now been filed for 2019, 2020, 2021 and 2022 and all funds have been received.

Total funds received were $21,666. These funds are not additional budget dollars, but are refunds for the GST paid by the Summer Village on each transaction from 2019-2022.

Payroll liabilities for 2021 were not paid and T4 slips for 2020 and 2021 were not filed. They have now been completed. Total Liabilities owing from 2021 were $127.65. Due to the filing of T4's being late the Summer Village was fined by the CRA $217. The 2022 payroll liabilities and T4's have been completed and filed with the CRA. All fees and fines were paid from the 2022 Budget.

The Summer Village of Ghost Lake is now in compliance with both GST and Payroll with the Canada Revenue Agency.

REVIEWED AND APPROVED BY

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.5
Meeting Date: February 11, 2013

TO: **Council**

FROM: **Suzanne Gaida, Finance Manager**

Subject: **2023 Assessment Notices**

RECOMMENDATION:
That Council direct Administration to use the Assessment Notice as presented for 2023.

REPORT SUMMARY

In 2021, the Summer Village of Ghost Lake underwent an Assessment Review by Municipal Affairs. The review identified areas that needed to be updated in order for the Summer Village to be in compliance with the MGA. Quickbooks and the Assessment Role are being updated and an updated Assessment Notice is attached that meets all requirements of the MGA.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

The attached assessment notice has the following updates from the 2022 Notice:

- There is one combined Assessed Value listed instead of a land value, an improvements value and a combined Assessed Value. This brings the Summer Village into alignment with other urban communities.
- The instructions and link for residents to view their full assessment as well as any other assessment. This allows residents to see the submission by the Assessor on their properties as well as neighbouring properties
- The removal of year to year comparator. This is an assessment notice and should only contain assessment information and not tax information. Tax notices will be mailed out following the end of the Assessment Review Period.

Administration feels the attached sample creates a streamlined and straight forward Assessment Notice for residents while still meeting the requirements of the MGA.

REVIEWED AND APPROVED BY

Summer Village of Ghost Lake
Box 19554 RPO South Cranston
Calgary, AB T3M 0V4
Email: finance@ghostlake.ca

2023 PROPERTY ASSESSMENT NOTICE

Mail Date: March 10, 2023
Notice Date: March 20, 2023

Suzanne Gaida
72 Tuscany Blvd
Calgary, AB
T2G 1Z3

Roll No.	29000	Taxation Status	Taxable
Legal Description	Lot 78 Blk 4 Plan 6490 EL	Civic Address	2900 Ghost Lake Village
School Support	50 % Public	50 % Separate	

Assessment Class	Assessed Value
Residential Improved	**$567,000**

Your property assessment for 2023 reflects the estimated market value of your property on July 1, 2022 and the physical condition as of December 31, 2022.

ASSESSMENT REVIEW PERIOD
March 10, 2023 – May 19, 2023

FINAL DATE OF COMPLAINT
May 19, 2023

Review your assessment notice for accuracy, if there are mistakes in address, name or school support contact Suzanne Gaida, Finance Manager at finance@ghostlake.ca

Review your assessment value. As per the Municipal Government Act sections 299 and 300, you have the right to access information as it relates to your assessment. If you have any questions on the assessment, the Assessor, Chris Snelgrove, is available to discuss your assessment with you. Please contact Benchmark Assessment Consultants at 1-800-633-9012 between 8am – 4:30pm Mon-Fri to discuss your assessment.

If after discussions with the Assessor you still wish to file a complaint to the Assessment Review Board please download a Complaint Form from: Filing a Property Assessment Complaint – Summer Village of Ghost Lake and forward the form along with a $50 filing fee to Mustafa Hashimi, CAO on or before **May , 2023** at the Summer Village of Ghost Lake, Box 19554 RPO South Cranston, Calgary, AB T3M 0V4.

Summer Village of Ghost Lake
Box 19554 RPO South Cranston
Calgary, AB T3M 0V4
Email: finance@ghostlake.ca

2023 PROPERTY ASSESSMENT NOTICE

More Assessment Information

Want to see a copy of the assessment information submitted by the assessor? You can access the publicly available information at this link:

https://vps.camalot.ca/AsmtInfo/CAMAlot_AsmtInfo_ISAPI.dll/ and follow these directions.

- Click agree to the disclaimer.
- Select Summer Village of Ghost Lake from the dropdown list.
- Select "General Public" from the dropdown list & then click submit.
- From there you find your property using either your Roll number, your civic address, or your legal description. The search results will give you some options if there are others with similar numbers so select your property from the results by clicking "select".
- From there you can download or view in your browser a pdf document showing your Assessment.
- You can also use this site to search for other property assessments in the Summer Village of Ghost Lake.

More details on Property Tax Assessments and Appeals can be found on the Summer Village website at Filing a Property Assessment Complaint – Summer Village of Ghost Lake

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Tax Notices will be mailed in May 2023.

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.6
Meeting Date: February 11, 2013

TO: **Council**

FROM: **Suzanne Gaida, Finance Manager**

Subject: **2023 – 2027 Capital Budget Update**

RECOMMENDATION:
That Council approves the revised 2023-2027 Capital Budget as presented.

REPORT SUMMARY

Administration has updated the 2023-2027 Capital Budget to reflect appropriate grant funding for each project.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

Council approved the 2023-2027 Capital Budget in December 2022. Administration submitted the projects to the funders and was advised that some projects did not fit the grants as approved. The updated 2023-2027 Capital Budget changes the funding as follows:

- Playground $75,000 funded from CCBF
- Bear Proof Bins $10,000 funded from MSI
- Water Reservoir $40,000 funded from MSI
- Community Sign $3,000 funded from MSI
- Shoreline Rip Rap $10,000 funded from MSI
- Community Hall upgrades increased to $125,000 still funded from MSI

All projects have been submitted. Administration spoke to the funders and anticipate approval for the projects by end of March or sooner.

REVIEWED AND APPROVED BY

2023- 2027 Capital Budget

Project	2023 Budget	2024 Plan	2025 Plan	2026 Plan	2027 Plan
Bear Proof Bins	$10,000 MSI				
Water Reservoir	$40,000 MSI				
Community Sign	$3,000 MSI				
Playground	$75,000 CCBF				
Community Hall Upgrades	$125.000 MSI				
Shoreline Rip Rap	$10,000 MSI				
Tennis Court Resuface			$50,000 MSI		
Dock Upgrades				$100,000 MSI	
Equipment Upgrades					$50,000 MSI
West End Road Upgrades					$150,000 MSI
Total	**$75,000 CCBF $188,000 MSI**		**$50,000 MSI**	**$100,000 MSI**	**$200,000 MSI**

	2022 Balance	2023 Grant	2024 Grant	2025 Grant	2026 Grant	2027 Grant	Total
CCBF	$ 67,211	$ 9,300	Agreement Expires in 2024				$ 76,511
MSI Capital	$ 463,900	$ 39,541	New Program begins in 2024				$503,441

*$159,691 MSI must be spent by end of 2023

Report Date: February 11, 2023
Contact: Suzanne Gaida
Agenda Item Number: 6.7
Meeting Date: February 11, 2013

TO: **Council**

FROM: **Suzanne Gaida, Finance Manager**

Subject: **Tax Roll 4030 Tax Penalty**

RECOMMENDATION:
That Council direct Administration to waive the 2021 and 2022 penalties for Tax Roll 4030.

REPORT SUMMARY

Tax Roll 4030 had outstanding taxes for 2021 and 2022. Administration applied penalties and contacted the banking institute responsible for paying the taxes for the home owner. It became apparent that the situation was unique and while not a normal recommendation, Administration would like Council to consider waiving the penalties associated with this account.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

Tax Roll 4030 taxes are paid through a Financial Institution as the resident makes payment monthly on their mortgage. The tax notices for 2021 and 2022 were sent out and received by the Financial Institution. They proceeded to pay the 2021 tax bill and 2022 tax bill on time. Both the 2021 and 2022 cheques were cashed in September of the each year. Unfortunately they were not cashed by the Summer Village of Ghost Lake.

Due to taxes not being paid, in September of 2022 Administration applied penalties and contacted the Financial Institutution responsible for paying the taxes for the home owner. It became apparent that something was not right. Through further review it was noted that the cheques were sent to an old mailbox in High River. Rather then the cheques being returned as it was the wrong address the cheques were cashed.

Once Administration proved that they were not cashed by the Summer Village, the Financial Institution paid the outstanding taxes in full and launched a fraud investigation. Due to the uniqueness of the situation, being that the payer believed the taxes were paid as the cheques were cashed and, due to change in Administration and accounting software history not being available, the Summer Village of Ghost Lake did not contact them until fall of 2022 to seek payment, Administration believes that the circumstances warrant a waiving of the penalties.

REVIEWED AND APPROVED BY

Summer Village of Ghost Lake

Provide your feedback to the following questions:

* Required

1. 1. Should we implement a seasonal compost pickup service?

   Ghost Lake currently does not have an organic waste collection service. We are exploring the option of implementing a seasonal compost pickup where we can acquire a large bin that villagers can dump their organic waste into, before it is hauled away for a fee.

   Mark only one oval.

   - ◯ Yes
   - ◯ No
   - ◯ Other: _____

2. We are working to upgrade the community playground. Please rank your choice of playground equipment we should install from the list below: *

Mark only one oval per row.

	Slide	Swings	Seesaw	Merry go round	Spring rider	Spiral Slide	Climbers (Mini Climbing Wall)	Balance Beam
1	◯	◯	◯	◯	◯	◯	◯	◯
2	◯	◯	◯	◯	◯	◯	◯	◯
3	◯	◯	◯	◯	◯	◯	◯	◯
4	◯	◯	◯	◯	◯	◯	◯	◯
5	◯	◯	◯	◯	◯	◯	◯	◯
6	◯	◯	◯	◯	◯	◯	◯	◯
7	◯	◯	◯	◯	◯	◯	◯	◯
8	◯	◯	◯	◯	◯	◯	◯	◯

3. Additional Comments/Feedback

Report Date: February 11 2023
Contact: Mustafa Hashimi
Agenda Item Number: 7.3
Meeting Date: February 16 2023

TO: **Council**

FROM: **Administration**

Subject: **Waste and Recycling Services 2023**

RECOMMENDATION: THAT Council direct administration to acquire a contract with Waste Management as they provide the most cost-effective option for waste and recycling services.

REPORT SUMMARY

Administration was recently informed that Ghost Lake's current agreement with Blu Planet for waste and recycling will be ending in March 2023. This report outlines costs for waste and recycling services from vendors including BluPlanet Recycling, Waste Management Canada and Contain-A-Way.

Administration recommends that Council direct them to acquire a contract with Waste Management Canada, as they provide the most cost-effective option for bear proof waste and basic recycling bin pickup services compared to the other available vendors.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

REPORT

BACKGROUND/CONTEXT

Administration has been working to acquire new quotes for waste and recycling services after being informed by BluPlanet Recycling that Ghost Lake's current service will be ending on March 13th, 2023 given the current economical climate and their inability to function due to a rising cost of operation in the area.

DISCUSSION

Administration worked to acquire quotes from Waste Management Canada, Contain-A-Way and asked BluPlanet for updated pricing. We also reached out to other companies such as GFL Environmental, but they did not offer services in the area.

Below is a summary of quotes from Waste Management Canada, Contain-A-Way and BluPlanet Recycling.

These costs are based on a 3 year term

Waste Management Canada

Service	Monthly Fee	Collection Frequency	Bin Type	No. of Bins
Mixed Recycling	$585	1x per week	4 yd	2
Garbage	$690	1x per week	4 yd Bear proof	3
Other Fees	53.19			
Total Monthly Cost	$1,328			

Initial One Time Service Charges*

Initial Delivery	$	1075.00

Annual Price Increase: 5%

Costs over 3 yr term		
Yr 1	$15,939	1075 (Delivery)
Yr 2	16,735	
Yr 3	17571	
Total	**$51,320**	

The waste bins are 4-yd bear proof bins as shown in the image below:

Note: Only the Garbage bins will be bearproof, and the mixed recycling will be regular lidded bins as food waste is not meant to go into the recycling bins, therefore they wouldn't attract bears or any other animals

BluPlanet Recycling

Mixed Recycling and Garbage

Service	Monthly Fee	Collection Frequency	Bin Type	Bin Count
Mixed Recycling	$962.80	Bi-Weekly	4-Yard	4
Garbage	$1236.99	Bi-Weekly	6-Yard (Bear Proof)	4
GST (5%)	$109.99			
Total Monthly Cost	**$2309.78**			

Bin Delivery and Removal

Service	One Time Fee	Delivery or Removal	Bin Type	Bin Count
Mixed Recycling	$250.00	Delivery	4-Yard	2 (2 already on site)
Garbage	$600.00	Delivery	6-Yard	4
GST (5%)	$42.50			
Total One Time Cost	**$892.50**			

Bin Purchase

The 4 x 6-yard bearproof bins must be purchased. The current price per 6-yard bearproof bin is $2950.00 so the total cost will be around $12,000 to purchase these bins. By purchasing these bins, Ghost Lake will own them, and they will keep bears out of the garbage. We might be able to get the company to send the directly to Ghost Lake which will eliminate the garbage delivery fee as quoted above.

Costs over 3 yr term		
Yr 1	$27,717	892.50 (delivery)
Yr 2	$27,717	
Yr 3	$27,717	
Total	**$85,119**	

Contain-A-Way

Contain-A-Way only services bins with Hook Lift or Roll Off bins and does not provide suitable bins for the service. The recommended 12-yard bear proof bins would have to be purchased from a separate vendor.

12-yard roll off bins are offered for rentals by various vendors, and will cost approximately $300-350 for a 2 week rental.

The service offered by Contain-A-Way will be an on-call based system, and the prices are mentioned below:

12 Yard Waste - $150 per haul & return and $162/Metric Ton disposal
12 Yard Mixed Recycle - $225 per haul & return and $75 disposal per load.

All rates are subject to Fuel Surcharge/Environmental (FSE) fee. Currently 19.6%.... reviewed monthly and GST.

CONCLUSION

Administration recommends that Council direct them to acquire a contract with Waste Management Canada, as they provide the most cost-effective option for bear proof waste and basic recycling bin pickup services compared to the other available vendors.

REVIEWED AND APPROVED BY

Mustafa Hashimi, CAO

Report Date: February 11 2023
Contact: Mustafa Hashimi
Agenda Item Number: 7.7
Meeting Date: February 16 2023

TO: **Council**

FROM: **Administration**

Subject: **Bylaw #2022-07 Short-term Rental Bylaw**

RECOMMENDATION: That council review and adopt the proposed bylaw regarding short-term rentals if no additional changes are required.

REPORT SUMMARY

Administration has worked to draft a short-term bylaw under council's directions which states that short-term rentals within the Summer Village of Ghost Lake are strictly prohibited, along with advertisement of any kind. The bylaw is attached with this report for Council's approval and adoption.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

SUMMER VILLAGE OF GHOST LAKE

BYLAW NUMBER 2022-07

Being a bylaw of the Summer Village of Ghost Lake in the Province of Alberta, Canada with respect to Short Term Rentals.

WHEREAS the Council of the Summer Village of Ghost Lake wishes to exercise its authority pursuant to the Municipal Government Act by establishing the use of property for short-term rentals.

NOW THEREFORE the Council of the Summer Village of Ghost Lake, in the Province of Alberta, duly assembled hereby enacts as follows:

1. TITLE

1.1 This Bylaw may be cited as the "Short-Term Rentals Bylaw"

2. INTERPRETATION AND DEFINITIONS

2.1 In this Bylaw:

(a) "Short-Term Rental" means the business of providing temporary accommodation for compensation for periods of up to 30 consecutive days

(b) "Dwelling" means a building, or part thereof, designed, intended and occupied as one or more dwelling units

(c) "Dwelling unit" means one or more rooms used or designed to be used as a residence by one or more persons and containing kitchen, living, sleeping areas and includes access to sanitary facilities;

(d) "Summer Village" means the Summer Village of Ghost Lake, a municipal corporation in the Province of Alberta, and includes the area contained within the boundaries of the Summer Village of Ghost Lake where the context requires

(e) "Council" means the Council of the Summer Village of Ghost Lake

(f) Affected Lands:

a. The lands directly affected by this By-law can be described as consisting of all properties lying wholly or partly within the corporate limits of the Summer Village of Ghost Lake.

3. ADVERTISING

3.1 There shall be no external display of goods, materials, wares or merchandise, or exterior advertising outside a person's dwelling.

3.2 There shall be no advertising by any form of conventional or electronic media (including but not limited to social media platforms, AirBnB, VRBO, etc.)

4. SHORT-TERM RENTALS

4.1 Council hereby establishes that all short-term rentals of dwelling units within the Summer Village are prohibited.

5. VIOLATION AND PENALTY

5.1 Those who are operating or advertising a Short-Term Rentals are in contravention of this bylaw and are subject to the following penalty under Section 7 of the Municipal Government Act:

5.1.1 A fine of $500 each day of the infraction, plus any legal expenses incurred; and up to a maximum of $10,000 per infraction

5.2 If a person is operating a short-term rental, they must bring their property into compliance immediately, as active enforcement of Bylaw 2022-07 will be administered.

Read a first, second and third time this 16th day of February 2023

_____ _____

John Walsh, Mayor Mustafa Hashimi, CAO

Report Date: February 11 2023
Contact: Mustafa Hashimi
Agenda Item Number: 7.8
Meeting Date: February 16 2023

TO: **Council**

FROM: **Administration**

Subject: **Purchasing Policy**

RECOMMENDATION: That council review and adopt the proposed purchasing policy if no additional changes are required.

REPORT SUMMARY

Administration has worked to draft an updated version of the Purchasing Policy for Ghost Lake. Once the new policy has been adopted, the previous purchasing policy be null and void.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

The Chief Administrative Officer has reviewed and approved this report.

1. POLICY STATEMENT

It is the policy of the Summer Village of Ghost Lake to foster open, transparent, and accountable purchasing practices that comply with provincial legislation and relevant agreements such as CFTA and NWPTA.

2. PURPOSE

The purpose of this policy is to establish the practices under which the Summer Village conducts purchasing activities.

3. DEFINITIONS

"***Best value for money***" means the most advantageous balance between performance, price and quality;

"***CFTA***" means the Canadian Free Trade Agreement, an intergovernmental Canadian trade agreement established to replace the Agreement on Internal Trade (AIT, developed to reduce and eliminate, to the extent possible, barriers to the free movement of persons, goods, services, and investments within Canada by establishing an open, efficient, and stable domestic market that enhances the flow of goods and services, investment, and labor mobility, eliminates technical barriers to trade, greatly expands procurement coverage, and promotes regulatory cooperation within Canada;

"***Employee***" means any regular or contract employee, or volunteer providing services under the authority of the Chief Administrative Officer or the Council of the Summer Village;

"***NWPTA***" means the New West Partnership Trade Agreement, an agreement between British Columbia, Alberta and Saskatchewan to form a barrier-free interprovincial market;

"***Procurement value***" means the total estimated cost, net of Federal and Provincial taxes, of the goods or services that are or will be procured over the longer of:

a) the term of a procurement contract, including any extension options, or
b) the period commencing with the first procurement from a vendor or service provider and ending 12 months from that date.

"***Purchase***" means to acquire goods, services, or construction in response to a business need;

"***Request for proposal***" means an invitation for a supplier to propose a solution to a problem, requirement or objective. It defines the scope of the project, deliverables or supplies and the criteria that will be used to identify the successful proposal;

"***Request for quotation***" means a request for a supplier to provide prices on specific products and/or services;

"***Tender***" means a formal public invitation to suppliers to bid on the provision of a service at a specific price, based on detailed specifications.

4. PURCHASING AUTHORIZATION

The Chief Administrative Officer is authorized to approve expenditures within the capital and operating budgets approved by Council, in accordance with the Signing Authority Policy and Employee, Council & Volunteer Expense Policy.

5. UN-BUDGETED PURCHASES

Expenditures that are not approved in the operating budget, interim budgets or capital budget that are of an emergent matter, as deemed by Council to be important and timely for the community or are legally required to be paid must be presented to Council and approved for payment by Council.

Council recognizes that individual budget lines within the approved budget may go higher or lower without Council approval, so long as Administration stays within the budget as a whole.

In the case of an Emergency, Council has the authority to enter into agreements and authorize unbudgeted expenditures required for the operation of the Municipal Emergency Services Agency.

6. PURCHASING GUIDELINES

All purchasing decisions shall be based on the principles of transparency and obtaining the best value for money, considering any of the following criteria, as applicable:

a) fitness for purpose,
b) quality,
c) reliability,
d) price competitiveness,
e) lifetime costs and transaction costs,
f) useful-life expectancy,
g) sustainability,
h) assurance of supply and deliverability,
i) anticipated customer service,
j) past performance, and
k) experience.

The lowest price will normally be accepted but shall not be the sole determinate of best value for money.

Purchases from a business based in the Summer Village of Ghost Lake or owned by a resident of the Summer Village may be preferred if:

a) in the case of goods and services, the value is below $75,000, or
b) in the case of construction contracts, the value is below $200,000, and
c) best value for money is obtained, and
d) the quotation, proposal or tender is within 5% of the lowest qualified alternative.

Joint purchasing with other agencies and municipalities is encouraged whenever it is in the interest of obtaining best value for money.

7. PURCHASING PROCESS

For purchases of construction, goods and services of $25,000 or less:

a) no competitive quote is required, and
b) where more than one supplier has been considered, the CAO or employee making the purchase must record the reason for their selection.

For purchases of goods and services between $25,001 and $75,000:

a) a minimum of three written quotations or proposals must be solicited.

For purchases of construction between $25,001 to $200,000:

a) a minimum of three written quotations or proposals must be solicited

For purchases of goods and services with a procurement value of $75,000.01 or greater:

a) a request for quotations, request for proposals or tender must be issued, advertised, and posted through an electronic tendering system such as the Alberta Purchasing Connection, in accordance with NWPTA and CFTA,
b) a minimum of three written quotations or proposals must be received, and
c) in accordance with the requirements of articles 516 and 517 of the CFTA, a detailed public disclosure of the contract award, including the name of the supplier and value of the contract, be made.

For purchases of construction of $200,000.01 or greater:

a) a request for quotations, request for proposals or tender must be issued, advertised, and posted through an electronic tendering system such as the Alberta Purchasing Connection, in accordance with the NWPTA and CFTA,
    a. a minimum of three written quotations or proposals must be received, and
    b. in accordance with the requirements of articles 516 and 517 of the CFTA, a detailed public disclosure of the contract award, including the name of the supplier and value of the contract, be made

If the number of responses received are insufficient to meet the requirements in this policy, the employee initiating the purchase has the discretion to:

a) extend the deadline for responses, or
b) select from among the responses received, if this is approved by Council.

Exceptions to the purchasing process may be authorized by Council:

a) where the compatibility of a purchase with existing equipment, facilities, or service is a paramount consideration,
b) where the purchase can only be made from a sole source,
c) where an item is purchased for testing or trial use,
d) where the only supplier is a department, agency, or utility of the federal, provincial, regional, or municipal government,
e) where the purchase is of a highly specialized nature and/ or is available from only one supplier,
f) where professional qualifications are a paramount consideration, or
g) in an emergency.

Purchases may be combined into a single purchase if this results in best value for money. This policy will apply as if the combined purchases were one purchase.

Contracts may be extended:

a) where there is a continuing need for the product or service being supplied, and
b) where the additional obligations would be contained within a normal operating or capital budget approved by Council, and
c) where the extension was either provided for in the original request for quotations, request for proposals or tender, or was offered through a purchasing process approved in this policy.

8. PROHIBITIONS

Employees may not seek or receive personal gain when engaging in purchasing activities for the Summer Village.

The Employee responsible for the managing or supervising of contracts:

a) is prohibited from providing goods or services related to that contract,
b) may not participate in the arrangement of a contract involving a business in which a member of the employee's immediate family has a financial interest or holds a position of influence or authority.

Purchases may not be split to avoid the requirements of this policy.

9. RESPONSIBILITIES

The Chief Administrative Officer must ensure:

a) all employees are aware of and understand this policy,
b) all employees comply with this policy, and
c) the policy is reviewed once every five years, or when a practice change.

Any employee engaged in purchasing for the Summer Village must ensure:

a) all purchases are performed in accordance with this policy,
b) all providers are given the same information and equal opportunity,
c) the selection process is carried out honesty and impartially, and
d) They can account for all decisions and provide evidence that this Policy was followed.

Approved by Council this day of 2023

_____ _____

Mayor Chief Administrative Officer