DRAYTON VALLEY

GOVERNANCE & PRIORITIES COMMITTEE MEETING
Wednesday, March 2, 2022, 11:30 a.m.
Town of Drayton Valley Council Chambers

AGENDA

Page No.

1.0 Call to Order

2.0 Additions or Deletions to Agenda

3.0 Adoption of Agenda

4.0 Corrections or Amendments

4.1 February 23, 2022, Governance and Priorities Committee Meeting Minutes 2-5

5.0 Adoption of

5.1 February 23, 2022, Governance and Priorities Committee Meeting Minutes

6.0 Closed Session

11:30 a.m. 6.1 CAO & Council Debrief (Standing Item) – FOIP section 24(1)(a)

7.0 Administrative Items

7.1 Urban Beekeeping Program (Mr. Woitt) 6-24

7.2 ART Program North Saskatchewan River Adaptation to Climate Variability Project (Ms. Mohd Isa) 25-62

8.0 Council Items

Council Standing Items

8.1 Upcoming Meetings and/or Conferences 63

8.2 Committee Updates

8.3 What Happened This Week – Various Thoughts and Ideas

8.4 Communications

9.0 Information Items & Correspondence

9.1 Project Tracking Sheet 64-67

9.2 Action Tracking Sheet 68-70

9.3 Letter from Municipal Affairs 71-72

10.0 Motion to Accept All Reports for Information (Standing Item)

11.0 Items for Future Meetings

12.0 Adjournment

GOVERNANCE & PRIORITIES COMMITTEE MEETING
Wednesday, February 23, 2022, 9:00 a.m.
Town of Drayton Valley Council Chambers

MINUTES

Present:

Mayor Dodds
Councillor Ballas
Councillor Clarke
Councillor Evans
Councillor Gammana
Deputy Mayor McGee
Councillor Sherriffs
Robert Osmond, CAO
Elvera Thomson, General Manager of Finance
Owen Olynyk, General Manager of Infrastructure
Ken Woitt, General Manager of Planning and Development
Tom Thomson, Fire Chief
Bree Mastre, Executive Assistant
Nathan Palovcik, Manager of Information Services
Sabine Landmark, Administrative Assistant
Alysia Tiffen, HR Professional
Cody Rossing, CPO
Graham Long, Drayton Valley & District Free Press (Call-In)
Cathy Weetman, Western Review (Call-In)
Members of the Public

Absent:

1.0 Call to Order

Deputy Mayor McGee called the meeting to order at 9:05 a.m.

Deputy Mayor McGee acknowledged Mr. Howard Olsen.

2.0 Additions or Deletions to Agenda

There were no additions or deletions to the Agenda.

3.0 Adoption of Agenda

RESOLUTION G034/22
Councillor Gammana moved to adopt the Agenda for the February 23, 2022, Governance and Priorities Committee Meeting as presented.
CARRIED

4.0 Corrections or Amendments

4.1 February 9, 2022, Governance and Priorities Committee Meeting Minutes
There were no corrections or amendments to the February 9, 2022, Governance & Priorities Committee Meeting Minutes.

5.0 Adoption of

5.1 February 9, 2022, Governance and Priorities Committee Meeting Minutes

RESOLUTION G035/22
Councillor Clarke moved to approve the February 9, 2022, Governance and Priorities Committee Meeting Minutes as presented.
CARRIED

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6.0 Delegations

6.1 Resident Concern (Marie Reid)

Mrs. Reid expressed her concerns about the traffic signage at 50 Avenue and 54 Street. Mr. Olynyk noted that McElhanney completed a traffic study in 2016 and provided recommendations for improvements, which included this intersection.

6.2 Black History Month (Allan Goddard)

In celebration of Black History Month, Mr. Goddard made a presentation to Council highlighting the history in the Drayton Valley area.

Councillor Clarke exited the meeting at 9:27 a.m.
Councillor Clarke returned to the meeting at 9:28 a.m.

7.0 Administrative Items

7.1 Manufactured Home (MFH) Architectural Design Controls (Mr. Woitt)

Mr. Woitt presented Council with a proposal to add Architectural Design Controls to the Town's Land Use Bylaw (LUB) to improve the physical condition, habitability, and the visual appearance of manufactured homes in the existing manufactured homes parks and areas in the Town.

RESOLUTION G036/22
Councillor Sherriffs moved that Council direct administration to engage the MFH Park owners and MFH residents and present a final report at a future Governance & Priorities meeting for approval.
CARRIED

7.2 Community Peace Officer Appointment (Fire Chief Thomson)

Fire Chief Thomson noted that Administration has successfully secured a new CPO officer and, therefore, is requesting that Council appoint Cody Rossing as the Town's Community Peace Officer.

RESOLUTION G037/22
Councillor Clarke moved that Council appoint Cody Rossing as a Community Peace Officer for the Town of Drayton Valley.
CARRIED

Deputy Mayor McGee called a break at 10:13 a.m.
Deputy Mayor McGee reconvened the meeting at 10:33 a.m.

9.0 Council Items

Council Standing Items

9.1 Upcoming Meetings and/or Conferences

Mayor Dodds attended the Speech of the Throne and met with Minister Sahwney.

9.2 Committee Updates

Councillor Clarke provided updates from the Regional Task Force meeting as well as the Homelessness and Poverty Reduction Strategy Committee meeting

Councillor Ballas attended a Physicians Recruitment and Retention Committee meeting and met with MLA Mark Smith for this purpose. He also attended the KeepAlbertaRCMP meeting.

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9.3 What Happened This Week – Various Thoughts and Ideas
Deputy Mayor McGee pointed out that Council toured the ECDC last week.

Councillor Clarke noted that the EBPR Fire & Ice Festival was a success.

Councillor Ballas noted that the census date is available and shows a growth in the area.

9.4 Communications
Ms. Stone presented Council with an update from the Communications department.

10.0 Information Items & Correspondence

10.1 Project Tracking Sheet
There were no comments made under this item.

10.2 Action Tracking Sheet
There were no comments made under this item.

10.3 Letter from Alberta Culture re: Alberta Winter/Summer Games

RESOLUTION G038/22
Councillor Ballas moved that Administration gather further information in regard to the potential of hosting the games and if it can be accommodated in regards to the 55+ Games and the Alberta Winter/Summer Games.
CARRIED

10.4 Letter from National Police Federation
There were no comments made under this item.

10.5 Letter from Noble Growth
There were no comments made under this item.

11.0 Motion to Accept All Reports for Information (Standing Item)

RESOLUTION G039/22
Councillor Evans moved that Council accept all reports for information.
CARRIED

12.0 Items for Future Meetings

- Recognition of community members
- Use of meeting space for non-profit groups
- Delegation: Dana Sharp-McLean

RESOLUTION G040/22
Councillor Gammana moved that the Governance and Priorities Committee move to a Closed Session at 11:10 a.m. for section 8.0 of the February 23, 2022, Governance and Priorities Committee Meeting Agenda, pursuant to sections 21 and 24(1)(a) of the *Freedom of Information and Protection of Privacy Act*.
CARRIED

Mr. Osmond was present for section 8.0 to provide Council advice.
Mrs. Thomson was present for section 8.0 to provide Council advice.
Mr. Olynyk was present for section 8.0 to provide Council advice.
Mr. Woitt was present for section 8.0 to provide Council advice.
Fire Chief Thomson was present for section 8.0 to provide Council advice.
Mrs. Strand was present for section 8.0 to provide Council advice.

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8.0 Closed Session

8.1 RCMP Retroactive Salary Increases (Mrs. Thomson) – FOIP section 21

8.2 CAO & Council Debrief (Standing Item) – FOIP section 24(1)(a)

RESOLUTION G041/22

Councillor Gammana moved that the Governance and Priorities Committee move out of Closed Session at 4:09 p.m.

CARRIED

13.0 Adjournment

RESOLUTION G042/22

Councillor Evans moved to adjourn the Governance and Priorities Committee Meeting at 4:10 p.m.

CARRIED

COMMITTEE CHAIR	CHIEF ADMINISTRATIVE OFFICER

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TOWN OF DRAYTON VALLEY
G&P ADMINISTRATIVE REPORT

DRAYTON VALLEY

SUBJECT:	Urban Beekeeping Program
MEETING:	Mar. 2, 2022 **Governance and Priorities Committee Meeting**
PRESENTED BY:	Ken Woitt, GM, Planning & Growth

1. PROPOSAL AND BACKGROUND:

A request has been submitted to Council to allow "urban beekeeping" as a permitted activity within the Town of Drayton Valley. Urban beekeeping is described as an sustainable and rewarding activity that educates residents about nature and food production. The following information encourages the "best practices" for regulating urban beekeeping to ensure the safety of the beekeepers, their families, neighbors, the bees and their hives.

Town Council wishes to explore this opportunity and have requested that Administration prepare a report that identifies issues for discussion. An advantage of urban beekeeping is that it contributes to a distinctive neighborhood identity, promotes sustainable activities, and enhances the unique setting and character of the Town of Drayton Valley. Alternatively, there are residents who are allergic to bee stings and children are instinctively afraid of bees.

There are two basic approaches to implement this type of program, (see Attachments 1 & 2). Both options have standard components: definitions, general requirements, application process, enforcement, administered by municipal peace officers, but are enacted in different ways. Both options also require a Communications Plan to share information and ascertain community acceptance.

Option 1
The first option is to pass beekeeping regulations by a resolution of Council (see Attachment 1). Requirements are outlined in a decision-making framework. The program can be implemented perpetually or as a temporary "pilot project." Leduc opted to allow a maximum of ten (10) beekeeping permits to be issued and run the program only for two years and then conduct an evaluation.

Option 2
The second option is to enact permanent legislation by adopting bylaws. This regulatory framework can be achieved by Council by either by creating a stand-alone beekeeping bylaw, such as St. Albert did (see Attachment 2), or by amending their existing Animal Control Bylaw. I could not find any municipal examples who chose this tactic, as bees are prohibited in these bylaws.

Administration propose that the temporary pilot program may be the Town's best approach as it could limit the number of beekeeping permits issued and identify a timeframe to evaluate the beekeeping program and gage community acceptance, prior to making a long-term commitment.

2. IMPLICATIONS:

2.1. Financial:

There are minimal to low financial implications of requiring regulations to ensure safety regarding beekeeping activities. There is no charge in Leduc and St. Albert charges $45.00 for a beekeeping permit.

2.2. Legal/Risk:

All Municipalities carry legal risks, the Town cannot ignore upcoming opportunities of providing all forms of activities for its residents. It is recommended that landowners carry liability insurance for beekeeping on their property.

2.3. Organizational:

The adoption of Urban Beekeeping Program/Bylaw provides the Town with a decision-making framework related to the siting, maintenance and safety of beekeeping in the Town.

2.4. Service Levels:

The addition of regulating and monitoring beekeeping activities will have a minimal to low impact on existing service levels in the Town of Drayton Valley.

3. STAKEHOLDER AND COMMUNICATIONS STRATEGY:

The final Urban Beekeeping Program/Bylaw will be the result of consultation with Council, Alberta Health Services, Town Functional Units, and residents. A Communications Plan will be prepared.

4. NEXT STEPS:

At a Governance & Priorities meeting, this report will be presented to Council for discussion. If Council decides to proceed with the initiative; then they will need to select a preferred option to implement it.

5. ALIGNMENT WITH LEGISLATION AND TOWN PLANS:

Type of Document	Comments
Provincial Acts / Regulations	Animal Health Act - to provide for measures to promote animal health and to control animal diseases; to assign executive authority with regard to certain provisions of this Act to provinces; to provide for matters connected therewith.
Municipal Bylaws	Animal Control Bylaw - provides for the licensing, care and control of domestic animals in the Town of Drayton Valley.
Other Plans or Policies	Bee Act - sets out the framework for the beekeeping (apiculture) industry in Alberta and supports response systems to address threats of disease outbreaks or other emergencies.

6. OPTIONS, ALTERNATIVES AND RECOMMENDATIONS:

1. Request the administration revise and/or add information or additional options to the report.
2. Table the report.
3. Direct administration to proceed with Option 1.
4. Direct Administration to proceed with Option 2.

7. ATTACHMENTS:

1. City of Leduc Backyard Beekeeping Guidelines 2019
2. St. Albert's Urban Beekeeping Bylaw 34/2017

Backyard Beekeeping

- General requirements
- The application process
- Building your beehive and nuc
- Inspection and enforcement
- Beehive care and safety

Beekeeping can be an exhilarating, satisfying activity that teaches you a great deal about honey bees, one of nature's wonders. The following information will ensure best practice management for the safety of the beekeepers, their families, neighbours and the bees and their hive.

Definitions:

Nucleus (Nuc) – a smaller hive in which larger bee colonies can expand into. The nucleus provides options for good animal husbandry and hive management to prevent swarming.

Honey super – a honey super consists of a box in which eight to 10 frames are hung. Honey bees collect nectar and store the processed nectar in honeycomb, which they build on the frames.

General requirements

- Applicants must live in a single family home with a fenced backyard.
- Each participant's bee site is limited to one beehive.
- Each site must also keep a nucleus (nuc) hive, in order to prevent swarming. As licence holders may only have one bee colony on their property at a time, if a second

colony forms within the nuc they must notify the Environmental Inspector and work with a bee keeping community to have them relocated as soon as seasonably possible.
- The beehive and nuc must be within your fenced back yard and must be placed at least three metres (m) away from all adjacent property lines unless neighbouring properties are separated by a solid fence or hedge at least two m high.
- The beehive and nuc must be a minimum of three m from public rights-of-way (lanes, pedestrian pathways, sidewalks, etc.) or private roads.
- Your backyard bee site must be located at least 25 m away from public places including schools, playgrounds, sports fields and hospitals.

The application process

All individuals interested in participating in the Backyard Beekeeping Pilot Program must submit a **completed application** and submit the following documents with the completed application:

- Proof of **registration with the provincial apiculturist** as required by the **Alberta Bee Act**.
- **Premises Identification Number** (PID number) as required by the **Alberta Animal Health Act**.
- Proof of training – completion of or registration in an **accredited beekeeping course**. Note training must be completed before the applicant will receive a licence.
- Confirmation of the proposed beehive location in a **site sketch, similar to this sample**, demonstrating compliance with setback and height requirements.
- Proof of support and assistance through an **established relationship with a mentor** by providing the mentor's name and contact number. Applicants can find a mentor by contacting any community listed under **Resources**.
- Confirmation of **neighbour notification**. The applicant must notify neighbours with adjacent back yards including those with back yards that are across an alleyway, in writing, of the intent to participate in the Backyard Bee Keeping Pilot Program. The contact information and addresses of notified neighbours are to be listed in the **application form**. ***Please note:*** During the application review the Environmental Inspector will follow up with adjacent neighbours to provide further information on the pilot program and garner approval, subject to any questions or concerns they may have.

After the application has been submitted:

1. The Environmental Inspector will review each application for completeness and evaluate every submission against the other applications received.
2. The Environmental Inspector will follow up with the neighbours of short-listed applicants to garner approval subject to any question or concerns they may have, and provide more information as needed. If a neighbour brings forward an issue

that cannot be resolved, the application may be rejected at the discretion of the Environmental Inspector. Note if an adjacent neighbour identifies a medical concern such as a bee allergy the application will be rejected.

3. The applications of short-listed applicants will then be sent to the City's Planning and Development Department and Enforcement Services for review. Applicants must be prepared to resolve any additional comments or concerns arising from this review.
4. Next, the Environmental Inspector will select Pilot Program participants and provide them with conditional approvals.
5. With conditional approvals granted, each participant can begin building their beehive and nuc. When complete, participants will schedule an inspection with the Environmental Inspector.
6. After participants have passed the inspection, the Environmental Inspector will grant each participant a beekeeping licence. The licence holders may now keep bees on their properties in accordance with the Beekeeping Guidelines.

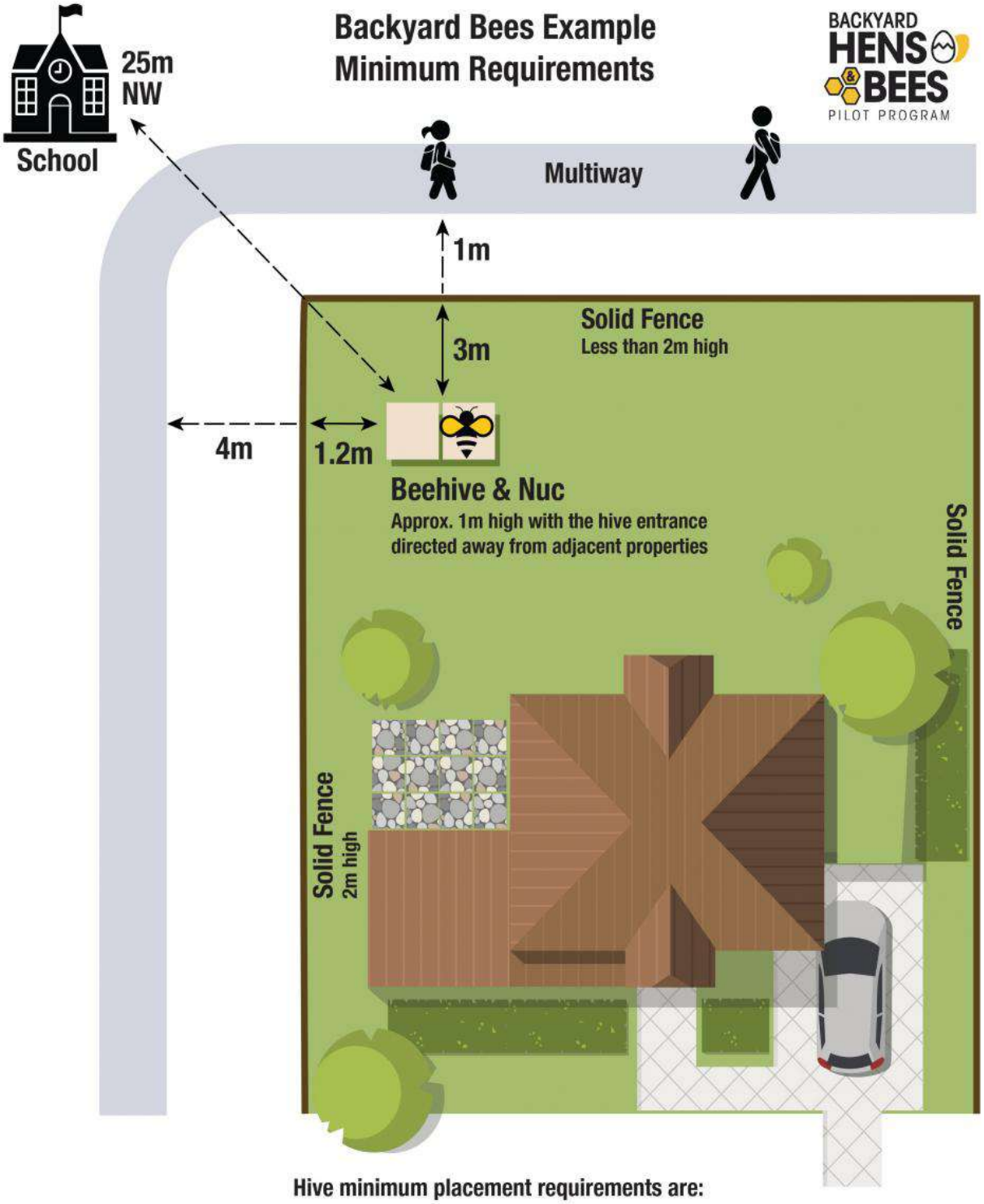
Building your beehive and nuc

Once your application has received initial approval, you may set up your beehive and nuc in accordance with the submitted site plan and the Backyard Beekeeping Guidelines. It is strongly recommended that applicants complete the required Bee keeping course prior to starting construction.

- The beehive and nuc must have a bottom board and a hive top cover.
- The beehive must be situated to allow bees a direct flightpath to the beehive and nuc while controlling the potential for bees to become a nuisance to neighbours.
- The bee flightpath must be higher than two m. This may be done by placing a fence or hedge in front of the hive entrance to encourage bees to fly upward as soon as they exit the hive.
- Direct the hive entrance away from adjacent properties, unless doing so will result in poor sun or excessive wind exposure, which would compromise the healthy function of the beehive and nuc.
- The beehive and nuc may consist of a total of up to six supers recommended to be set up as four for the beehive and two for the nuc.
- **Beehive and nuc dimensions chart** (pdf)

Backyard Bees Example
Minimum Requirements

BACKYARD HENS & BEES PILOT PROGRAM



Hive minimum placement requirements are:

- 25m away from public places such as schools
- 3m away from shared use pathway
- 1.2 m away from the property line where there is a 2m high solid fence
- 3m away from the property line where the solid fence is less than 2m

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Inspection and enforcement

- After the beehive and nuc have been built, the Environmental Inspector will inspect the work to confirm the structures have been built to the outlined criteria. Additional inspections may be conducted if a complaint is made.
- Pilot program participants must be present for inspections of the yard site and/or beehive and nuc upon reasonable request by the Environmental Inspector.
- All complaints will be directed to the Environmental Inspector.

Failure to comply with the guidelines at any time will result in the participant's licence being revoked. Individuals continuing to keep bees without a licence will be subject to further enforcement action by City of Leduc Enforcement Services under the **Animal Licencing and Control Bylaw 1019-2019** for keeping a prohibited animal. Participant licences may become void or be revoked in the following circumstances:

- A licence becomes void when any information such as the Applicant information or Site Information changes, as per the the Backyard Beekeeping Pilot Project Licence Application. In this case, a new application process must be initiated.
- A licence will be revoked if neighbours with adjacent backyards identify a medical concern such as a bee allergy.
- Should the Environmental Inspector find a backyard site, beehive or licence holder to be non-compliant with the guidelines at any time, the Environmental Inspector has the authority to revoke the beekeeping licence. A 14-day written notice will be provided within which time bees, the beehive and nuc must be removed from the property. The timeframe for removal may be extended at the discretion of the Environmental Inspector. All costs and associated expenditures related to the removal of beekeeping structures are the responsibility of the participant. The beekeeper will work with the Environmental Inspector to relocate the bees to a location outside city boundaries and dismantle the associated hive and nuc.
- The city has the authority to cancel the Backyard Beekeeping Pilot Program with 14 days' written notice within which time bees, the beehive and nuc must be removed from the property. The timeframe for removal may be extended at the Environmental Inspector's discretion. All costs and associated expenditures related to the removal are the responsibility of the participant. The beekeeper will work with the Environmental Inspector to relocate the bees to a location outside city boundaries and dismantle the associated hive and nuc.

Beehive care and safety

- Beekeepers must engage in good management and husbandry practices to prevent aggressive behaviour and disease.
- All bees must be obtained from reliable sources. Aggressive bees must be returned safely to a bee distributer and replaced.

- Beekeepers must provide a constant source of water for the bees from before spring snowmelt until late fall to deter the bees from seeking water from alternate sources such as neighbouring pools, hot tubs, bird baths or dog dishes.
- The Environmental Inspector must be notified of any unusual bee behaviours such as swarming, signs of disease or any unusual situation.
- Beekeepers must carry liability insurance (valued at not less than $2,000,000 Canadian dollars) to cover accidents related to their bees and beekeeping activities. Insurance may be obtained through the Edmonton& District Beekeepers Association or by speaking to a reputable insurance provider.
- The area around the beehive and nuc must be kept free of hive scrapings or other debris to minimize the likelihood of attracting other bees, wasps or other unwanted visitors.
- Beekeepers must make arrangements and designate someone to monitor the beehive and nuc if they will be away for more than one week. It is recommended that a designated person visit and monitor the beehive, nuc and property at least once a week.

Consolidated Version

of

the Urban Beekeeping Bylaw

(being Bylaw No. 34/2017 of the City of St. Albert, as amended by Bylaw No. 5/2019, and 51/2021 consolidated and printed under the authority of the Chief Administrative Officer of the City of St. Albert)

This is certified to be a true copy of consolidated Bylaw No. 34/2017 of the City of St. Albert.

David S. Leflar
Director of Legal and Legislative Services
Chief Legislative Officer

URBAN BEEKEEPING BYLAW

	NUMBER	1ST READING	2ND READING	3RD READING
PASSED	34/2017	September 5, 2017	September 5, 2017	September 5, 2017
AMENDMENT #1	5/2019	January 21, 2019	January 21, 2019	January 21, 2019
2	51/2021	August 30, 2021	September 13, 2021	September 13, 2021

The text shown in parentheses in various locations throughout this document identifies the corresponding amending bylaw which authorized the change. For example (BL 5/2019) refers to Bylaw No. 5/2019.

CITY OF ST. ALBERT

BYLAW 34/2017

A bylaw to regulate the keeping of bees in urban areas

WHEREAS, pursuant to section 7(a) of the Municipal Government Act, a council may pass bylaws for municipal purposes respecting the safety, health, and welfare of people and the protection of people and property; AND

WHEREAS, pursuant to section 7(h) of the Municipal Government Act, a council may pass bylaws for municipal purposes respecting wild and domestic animals and activities in relation to them; AND

WHEREAS, pursuant to section 7(i) of the Municipal Government Act, a council may pass bylaws for municipal purposes respecting the enforcement of bylaws made under the Municipal Government Act or any other enactment including any or all of the matters listed therein; AND

WHEREAS, pursuant to section 8 of the Municipal Government Act, a council may by bylaw regulate, prohibit, or provide for a system of licences, permits, or approval including any or all of the matters listed therein.

The Council of the City of St. Albert, duly assembled, hereby ENACTS AS FOLLOWS:

PART 1

TITLE

1. This Bylaw may be referred to as the “Urban Beekeeping Bylaw”.

DEFINITIONS

2. In this Bylaw:

    a. “Adjoining Neighbours” means a site that is contiguous to another site along a common property line. If the subject site is located on a corner, an adjoining site includes a site that is adjacent across a rear lane, but not across a street;

b. *"Animal Health Act"* means the *Animal Health Act*, SA 2007, C A-40.2, and any amending or succeeding legislation, and associated regulations;

c. "Bee" means the insect *Apis mellifera L*., also known as honey bees;

d. *"Bee Act"* means the *Bee Act*, RSA 2000, c B-2, and any amending or succeeding legislation, and associated regulations;

e. "Beekeeper" means a person who owns and possesses Bees or beekeeping equipment or both;

f. "Business Licence" means a licence pursuant to the Business Licence Bylaw 43/2000 and includes any amendments thereto or replacements thereof;

g. "Bylaw" means a bylaw of the City of St. Albert, and includes amendments thereto;

h. "Bylaw Enforcement Officer" means an individual appointed as such in accordance with the Bylaw Enforcement Officer Bylaw 21/2003;

h.1 "Chief Administrative Officer" or "CAO" means the individual appointed by Council to the position of Chief Administrative Officer under section 205 of the *Municipal Government Act* and pursuant to the Chief Administrative Officer Bylaw; **(BL 5/2019)**

i. "City" means the City of St. Albert, a municipal corporation of the Province of Alberta, and includes, where the context so requires, the area contained within the boundaries of the City of St. Albert;

j. DELETED **(BL 5/2019)**

k. "Council" means the City's municipal council;

l. "Hive" means beehive equipment inhabited by live Bees;

m. "Licensing Authority" means the CAO or an individual appointed by the CAO to issue Urban Beekeeping Licences; **(BL 5/2019)**

n. "Municipal Violation Tag" means a City-issued notice that alleges a Bylaw offence and provides a person with the opportunity to pay an amount to the City in lieu of prosecution for the offence;

o. "Peace Officer" is as defined in the *Provincial Offences Procedure Act,* RSA 2000, c P-34, and any amending or succeeding legislation;

p. “Pedestrian Walkway” means a path, trail or sidewalk for pedestrian circulation that cannot be used for motorized vehicular use;

q. “Provincial Apiculturist” means the individual designated as the Provincial Apiculturist in accordance with the *Bee Act*;

r. “Super” means a Bee Hive box which holds frames used for brood rearing or storing honey;

s. “Urban Beekeeping Licence” means a licence issued pursuant to the Urban Beekeeping Bylaw; and

t. “Violation Ticket” is as defined in the *Provincial Offences Procedure Act* and any amending or succeeding legislation.

PART 2

URBAN BEEKEEPING LICENCE

Requirement for Licence

3. This Bylaw enables beekeeping as urban agriculture and no person shall own or keep Bees unless properly licensed in accordance with this Bylaw.

4. An Urban Beekeeping Licence may not be issued to an individual under the age of eighteen (18) years.

Urban Beekeeping Licence Application and Information

5. Before the issuance or renewal of a licence pursuant to this part, the owner of the Hive must submit to the Licensing Authority:

    a. a completed Urban Beekeeping Licence application form;

    b. the appropriate licence fee prescribed in Schedule A; and

    c. any other additional information required by the Licensing Authority, including, but not limited to:

        i. the name, address, and contact information of the Beekeeper;

        ii. written permission from the registered property owner to install Hives on the property, where the Beekeeper is not the registered property owner;

iii. written permission from the authorized property leaseholder or licence holder to install Hives on property, where the Beekeeper is not the authorized leaseholder or licence holder of the property;

iv. a drawing that shows the Hive location on the property, and associated setbacks if there is no solid fence and/or the property is adjacent to a Pedestrian Walkway;

v. proof of success in urban beekeeping training from an accepted organization or association;

vi. proof of support and assistance from a qualified mentor for the first year of beekeeping;

vii. a disease and swarm control plan;

viii. proof of registration with the Provincial Apiculturist every year by June 30; and

ix. a copy of the premises identification number pursuant to the *Animal Health Act.*

5.1 Notwithstanding Section 5, at the time of initial application for an Urban Beekeeping Licence, the applicant must submit to the Licensing Authority written permission from all Adjoining Neighbours to install Hive(s) on the property.

6. An Urban Beekeeping Licence is required for each property that has a Hive.

7. Urban Beekeeping Licences are valid for one (1) year following the date of issuance.

8. No person shall give false information when applying for an Urban Beekeeping Licence pursuant to this Urban Beekeeping Bylaw.

9. The Licensing Authority may refuse to issue an Urban Beekeeping Licence or may revoke an Urban Beekeeping Licence by providing written notice to the applicant or licensee.

Licence Transfers

10. Urban Beekeeping Licences issued under this Bylaw shall not be transferable from one person or property to another.

PART 3

RESPONSIBILITIES OF THE URBAN BEEKEEPER

11. Beekeepers must comply with the *Bee Act* and the *Animal Health Act*.

12. Beekeepers, or the owner of any parcel of land on which the Bees are kept, must ensure:

    a. good husbandry practices and maintenance to prevent swarming, aggressive behaviour, and disease; and

    b. that adequate water is provided at all times for the Bees to deter the Bees from seeking water from alternate sources.

PART 4

URBAN BEEKEEPING GENERAL REGULATIONS

13. Beekeeping in parks, reserve land, or on open spaces occupied or managed by the City is not permitted under this Bylaw.

14. Notwithstanding section 13, applications to keep Bees may be considered for open spaces that are leased from the City, subject to permission from the lessee and the City.

15. This Bylaw applies to the activity of beekeeping for personal use only. A Business Licence is required for the commercial sale of bee products.

16. This Bylaw does not relieve a person from complying with any Federal or Provincial law or regulation, other City Bylaw, or any requirement of any lawful permit, order or licence.

PART 5

HIVE REQUIREMENTS FOR URBAN BEEKEEPING

General Hive Requirements

17. A Hive must include a bottom board, a Hive cover, and a maximum of four (4) Supers. The Hive must not measure more than 127 cm (50 in.) x 51 cm (20 in.) x 51 cm (20 in.).

18. Hives are restricted to the rear yard of a property.

19. Hive entrances are to be directed away from adjoining properties.

20. Hives are to be located:

    a. a minimum of three (3) metres (10 feet) from all property lines; or

    b. within a rear yard enclosed by a solid fence or hedge a minimum of 1.8 metres (6 feet) in height.

21. Hives on properties located adjacent to Pedestrian Walkways must be located a minimum of three (3) metres (10 feet) from the property line adjacent to the Pedestrian Walkway and within a rear yard enclosed by a solid fence or hedge a minimum of 1.8 metres (6 feet) in height.

Hives Located on Residential Properties

22. A maximum of two (2) Hives are permitted on one (1) parcel of residential land.

Hives Located on Non-Residential Properties

23. A maximum of two (2) Hives are permitted on one (1) parcel of non-residential land with an area less than 929 m^2 (10,000 ft^2).

24. A maximum of four (4) Hives are permitted on one (1) parcel of non-residential land with an area equal to or greater than 929 m^2 (10,000 ft^2).

25. Hives located in open spaces, without defined rear yards, must be located a minimum of three (3) metres (10 feet) from all property lines and be located within a secure enclosure a minimum of 1.8 metres (6 feet) in height.

PART 6

ENFORCEMENT

Offence

26. At any reasonable time, the Licensing Authority or a Peace Officer may enter upon any property in order to ascertain whether or not the provisions of this Bylaw are being observed.

27. Should a beekeeping site, Hive, or Beekeeper be found to be non-compliant with this Bylaw at any time, the Urban Beekeeping Licence may be revoked. Should

Hive(s) and Bees need to be relocated, all costs and associated expenditures related to the removal shall be the responsibility of the property owner.

28. A person who contravenes any provision of this Bylaw is guilty of an offence.

Continuing Offence

29. In the case of an offence that is of a continuing nature, a contravention of a provision of this Bylaw constitutes a separate offence with respect to each day, or part of a day, during which the contravention continues. A person guilty of such an offence is liable to a fine in an amount not less than that established by this Bylaw for each such separate offence.

Fines and Penalties

30. A Person who is guilty of an offence under this Bylaw is liable:

    a. to a fine of $250.00; or

    b. on summary conviction, to a fine not exceeding $10,000.00 or to an order of imprisonment for not more than 1 year, or both.

Municipal Violation Tag

31. A Peace Officer may issue, with respect to an offence under this Bylaw, a Municipal Violation Tag specifying the fine amount (including any Early Payment fine amount) established by this Bylaw.

32. Where a Municipal Violation Tag is issued, the fine amount indicated thereon may be paid as directed in lieu of prosecution.

Violation Ticket

33. A Peace Officer may issue, with respect to an offence under this Bylaw, a Violation Ticket:

    a. specifying the fine amount established by this Bylaw; or

    b. requiring an appearance in court without the option of making a voluntary payment.

34. Where a Violation Ticket specifies a fine amount, a voluntary payment equal to the specified fine amount may be made as directed.

Severability

35. In the event that any provision of this Bylaw is found to be contrary to law by any Court of competent jurisdiction then that provision shall be severed and the remainder of the Bylaw shall be of full force and effect.

Certified Copy of Record

36. A copy of a record of the City, certified by the CAO as a true copy of the original, shall be admitted in evidence as prima facie proof of the facts stated in the record without proof of the appointment or signature of the person signing it. **(BL 5/2019)**

Urban Beekeeping Bylaw 34/2017
SCHEDULE "A" – FEES

Effective January 1, 2022

Fee Description	2022
Urban Beekeeping License Fee	
Urban Beekeeping Licenses are valid for one (1) year following the date of issuance	$45.00

(BL 51/2021)

TOWN OF DRAYTON VALLEY
G&P ADMINISTRATIVE REPORT

DRAYTON VALLEY

SUBJECT:	ART Program North Saskatchewan River Adaptation to Climate Variability Project
MEETING:	March 2nd, 2022 **Governance and Priorities Committee Meeting**
PRESENTED BY:	Michelle Tran Project Assistant

1. PROPOSAL AND BACKGROUND:

The Adaptation Resilience Training (ART) Program is funded by the University of Alberta and Associated Engineering for training recent graduates to develop a basic awareness of climate change adaptation and build capacity to integrate adaptation into their professional practice. The Town applied to become a host organization in June 2021. After the recruitment and interview processes, Michelle Tran was hired in September 2021 as a Project Assistant to conduct an adaptation study for the Town. The ART program will run for 8 months, ending in May 2022.

The adaptation problem identified was related to the Town's Water Treatment Plant (WTP). The WTP sources its feedwater from the North Saskatchewan River but water levels in the reservoir have been decreasing. This could be linked to climate impacts like rising temperatures and shifting precipitation patterns, river migration, and human development. Changes in river patterns can have a dramatic impact on the community - limiting affordable access to water resources, risking public health, weakening the economy, and threatening the wildlife species in the area.

The objective of the project is to identify the potential causes for water level changes at the reservoir and to research adaptation strategies/opportunities to build water resiliency for Drayton Valley that meet provincial regulations.

Deliverables from the North Saskatchewan River Migration Project include:

1) Baseline hydrological and climate data relevant to the North Saskatchewan River.
2) A historical model and a 5-year and 30-year model predictive model covering 0.7km downstream of the intake weir.
3) Potential adaptation strategies, their legal implications, and several case studies of municipalities that have faced similar problems.
4) Possible sources of funding for infrastructure projects for river adaptation.

The project deliverables have been met. The project report is presented for Council's information.

2. IMPLICATIONS:

2.1. Financial:

The ART program is fully funded by Alberta Environment and Parks and Natural Resources Canada and delivered by University of Alberta and Associated Engineering. As host organization, the Town provides mentorship, workspace for the Project Assistant and access to the Town's knowledge base.

2.2. Legal/Risk:

N/A

2.3. Organizational:

The Project Assistant collaborates closely with the Utilities Supervisor and the Energy Program Coordinator during the study, with support from the other departments as and when required.

2.4. Service Levels:

The ART program does not affect service levels.

3. STAKEHOLDER AND COMMUNICATIONS STRATEGY:

N/A

4. NEXT STEPS:

- Finalize an Emergency Response Plan to coordinate resources in the event of a water emergency.
- Prepare a final report summarizing overall experience with the Town of Drayton Valley as part of the ART program requirements.

5. ALIGNMENT WITH LEGISLATION AND TOWN PLANS:

Type of Document	Comments
Provincial Acts / Regulations	N/A
Municipal Bylaws	N/A
Other Plans or Policies	N/A

6. OPTIONS, ALTERNATIVES AND RECOMMENDATIONS:

That Council accepts this report as information.

7. ATTACHMENTS:

1. The Town of Drayton Valley North Saskatchewan River Adaptation to Climate Variability Project - Report to Council

University of Alberta:
Adaptation Resilience Training (ART) Program

The Town of Drayton Valley North Saskatchewan River Adaptation to Climate Variability Project

G&P Report to Town Council

Prepared by Michelle Tran for Town of Drayton Valley
Date: Mar 2, 2022

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Project Description

Background

Changes in river patterns can have a dramatic impact on the community - limiting access to water resources, risking public health, weakening the economy, and threatening the fish and wildlife species in the area.

Problem

The water treatment plant in Drayton Valley draws its water from the North Saskatchewan River (NSR). Recently, the water flow into the intake has decreased. The suspected cause is that the river is migrating away from the existing water intake infrastructure. This migration could be linked to climate impacts like rising temperatures and shifting precipitation patterns as well as human development.

Project Objectives

The project will model the historical water flow pathway of the river to identify how to the river is shifting and identify potential causes of the river migration. A predictive model will be synthesized to guide future decisions. Stakeholder interviews and literature reviews will be used to assess vulnerabilities to the overall system. The findings will be used to identify adaptation strategies/opportunities to build water resiliency for Drayton Valley that meet provincial regulations.

Adaptation Resilience Training (ART) Program Background

The ART Program is funded by the University of Alberta and Associated Engineering for training recent graduates to develop a basic awareness of climate change adaptation and build capacity to integrate adaptation into their professional practice.

Area of Concern

September 2002
(19 years ago)

September 2021
(Present)

Source: Google Earth Pro

Project Background

Sept 2002
Source: Google Earth Pro

Sept 2021
Source: Google Earth Pro

Rivers naturally shift sediments and meander over time due to the power of the water. The sandbars have shifted at different rates to the Northwest in this location while the banks have shifted a negligible amount in 19 years.

Concern

The Western Sandbar [1] is pushing further North and may connect with the mid-channel bar [2], cutting off water access to the intake weir. This is especially concerning during times of low flow. The lower mid-channel bar [3] may also connect with the Western Sandbar in the future, increasing its size.

Limitations

These photos do not have an exact timestamp so referencing with real time water levels are impossible. Water levels in the NSR can fluctuate up to a meter daily depending on the water release from the dams and the season. These images are broad references.

Baseline Data for North Saskatchewan River

Collecting baseline data enables us to identify the factors (hydrological, climate, & infrastructure impact) that may contribute to the problem and its severity.

Baseline Data on Hydrological Information

Background

This section contains hydrological information for the NSR. There are 2 major sources of water input into the NSR, the ***snowpacks/glaciers*** and ***precipitation*** that occurs within the watershed. Both of these sources feed into the smaller rivers which in turn flow into the NSR. The water level fluctuates daily due to the Brazeau and Big Horn Dams based on the energy demand at the time in addition to the seasonal variation. This information can be used to predict when problems may arise due to low water flow conditions.

Major Findings

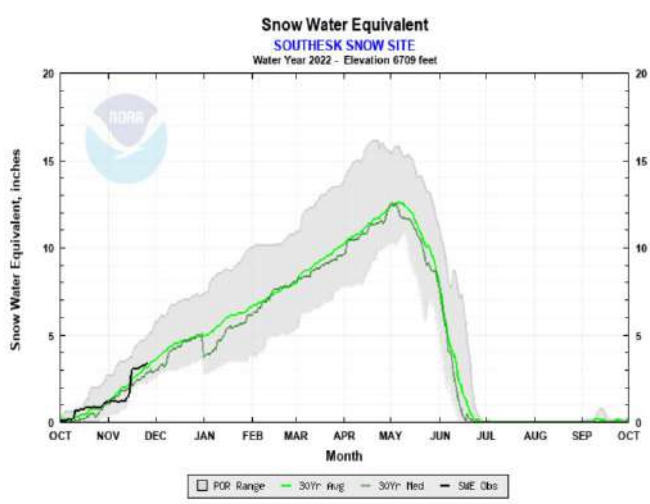
- Most of the water input into the NSR occurs between June and July.
- Peak flow of the NSR occurs between June and July before decreasing. Yearly lows occur in February.
- Sediment load of the river is highest during June and July.

Possible Impacts on the Water Intake Weir

- Low water levels in the later parts of the year may affect water access to water intake weir.
- High flow periods can cause large shift in the sediments that will not be immediately apparent but can cause problems when the water level drops in the later parts of the year.

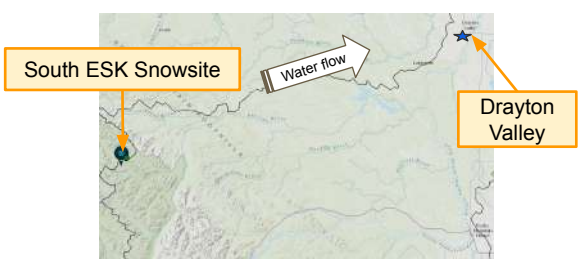
Hydrological data:

Snowpack Trends



Source: National Oceanic and Atmospheric Administration

Snowpack Water Equivalent are conversion of how much liquid is within a snowpack.



Source: Alberta Environment and Parks

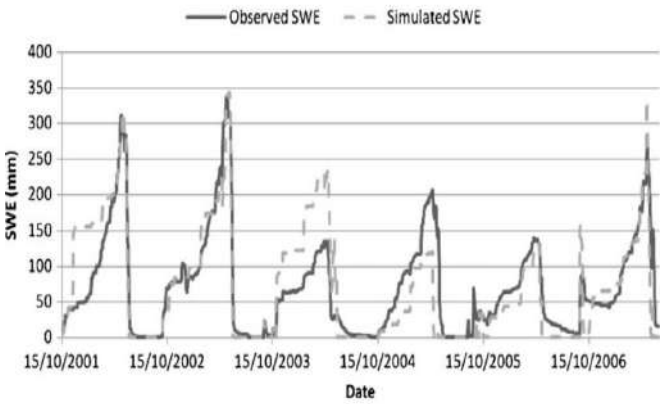
The South ESK snowsite is located in Jasper National Park and feeds into the Brazeau river which connects with the NSR downstream of the Brazeau dam.

The snowpack at the South ESK snowsite starts accumulating in October and grows throughout the winter. Melting starts in May and the snowpack completely disappears by late June due to the increasing temperatures throughout the year. After the snowpack is gone, the water flowing the into the NSR switches from primarily snowmelt to rain and groundwater discharge.

With increasing temperatures in recent years, the **snowpack melts quicker and earlier** in the year.

Hydrological data:

Snowpack Trends



Limestone Ridge Snowpack SWE

Source: Macdonald et al., 2012

Saskatchewan Glacier, AB

Dec 1984 Dec 2000 Dec 2020

Source: Google Earth Pro

The Limestone Ridge Snowsite and Saskatchewan Glacier are other sources that supply water to the NSR. They also follow a similar trend to the South ESK Snowsite.

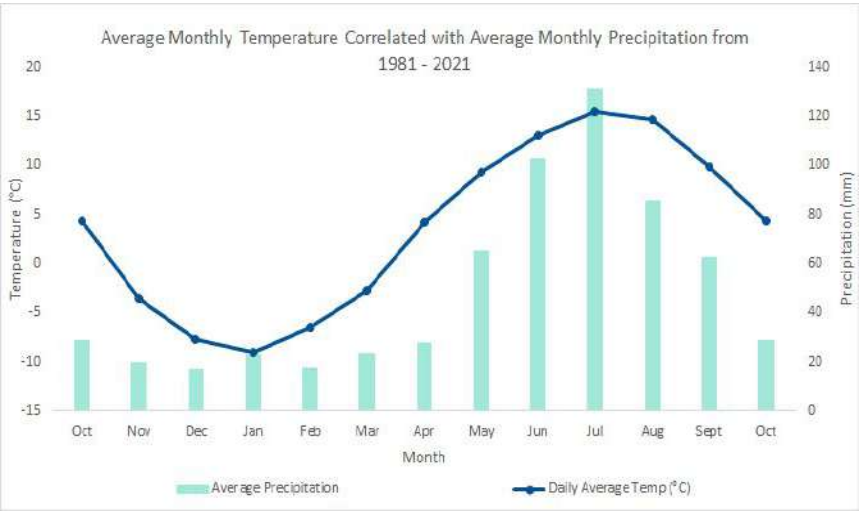
Increasing temperatures, precipitation pattern changes, and rain on snow events have caused smaller snowpacks to form during the winters.

This pattern holds true for all the snowpacks and glaciers that eventually feed into the NSR.

This will result in a the **amount of water entering the NSR decreasing over time.**

Hydrological data:

Precipitation Trends



Source: Winfield Climate Station

This is the precipitation data from the Winfield climate station combined with the average temperature in the area.

This precipitation is mostly in the form of rain which will flow into the river.

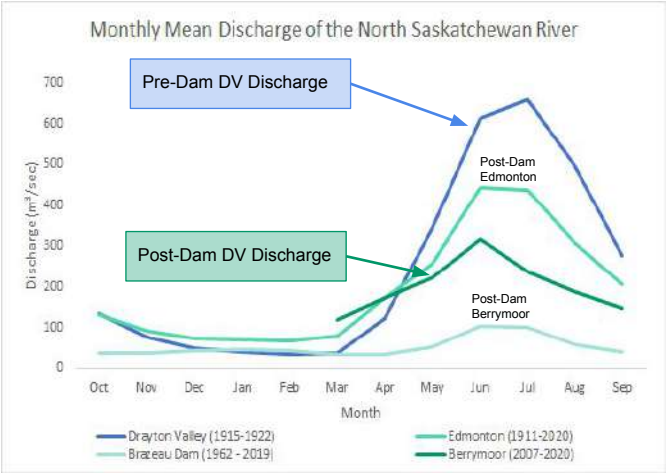
Precipitation peaks occur during the months of June and July. This contributes to the timing and amount of water in the NSR.

This pattern would be similar to those found in Drayton Valley and the surrounding area.

Precipitation is expected to increase in the winter and decrease in the fall due to the intensification of the hydrological cycle.

Hydrological data:

Discharge Patterns of The NSR



Source: Water Survey of Canada

The dams make **winter flow levels higher** and **summer flow levels lower** than the natural patterns.

This is consistent with the graph. The natural river pattern from the discontinued Drayton Valley water level station (1915-1922) shows lower discharge in winter and higher in the summer. **The introduction of Brazeau Dam (1965) and Big Horn Dam (1972) has changed this flow.**

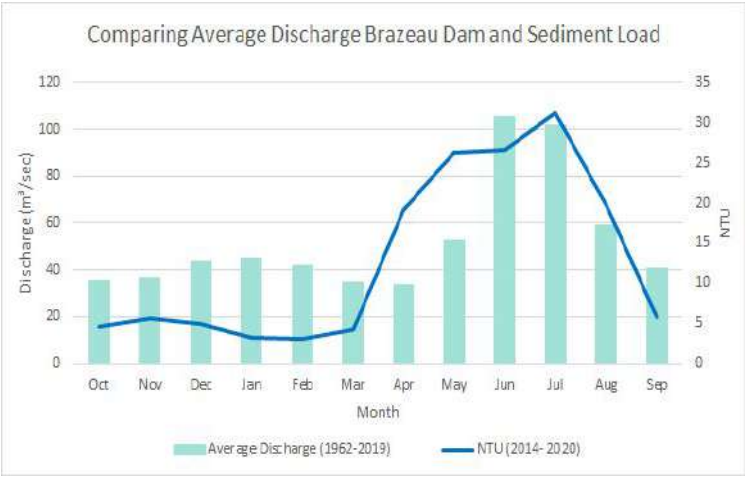
Drayton Valley's water flow pattern is consistent with other locations along the NSR. The Berrymoor Water Station has the most accurate representation of the current day discharge of Drayton Valley.

Peak discharge would now occur in June at about 300m³/ sec and a low in February between 41m³/sec and 60m³/sec.

This will tell us when the sandbars could become impassable due to low water levels and thus block access to the water intake weir.

Hydrological data:

Sediment Trends



Source: Drayton Valley Water Treatment Plant

The sandbar that is building up is composed of cobble sized sediments that can only be moved during high flow events. Monitoring sediment patterns can help predict when the sandbar can potentially build up and might block access to the intake pipe.

The **Nephelometric Turbidity unit** (NTU) is used to measure the amount of particles in the water. NTU measurements were gathered from the reservoir but will be used as a substitute to imply the amount of sediments in the river itself. These measurements do not include large gravel or cobble which can be found in the river.

The sediment load and sediment size rises as the discharge from the river increases and this can build up on the sandbars.

Baseline Climatic Data

Background

The graphs indicate future temperature trends for different climate scenarios up to the year 2060. Attention should be placed on the green line (RCP 4.5) and red line (RCP 8.5), which focuses on the lower carbon pathway and the the business-as-usual pathway respectively. These graphs are specific to Drayton Valley. This information can be used to predict water flow patterns and inform future water management strategies.

Major Findings

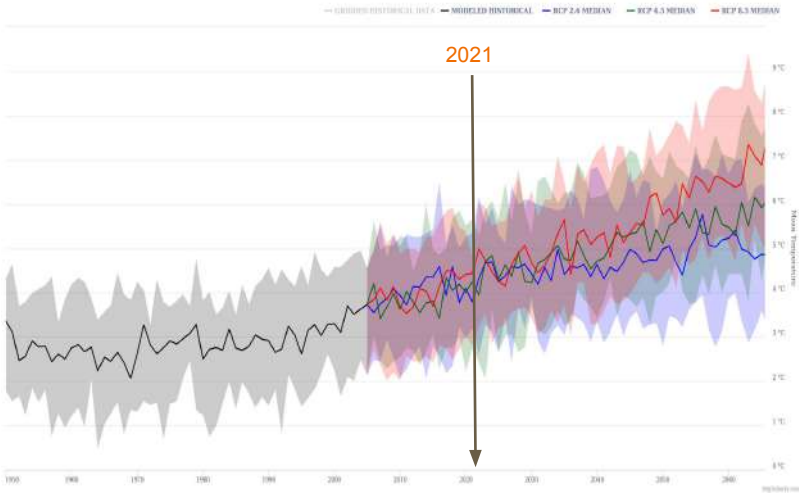
- Temperatures are expected to increase, mostly during the winter (Nov-Feb)
- The growing season is expected to be extended by about a month.
- Precipitation is expected to increase in winter and spring and decrease during summer and fall
- Drayton Valley is expected to be less humid.

Possible Impacts on Water Intake Weir

- Increasing temperatures will make the snowpack and glaciers melt sooner. More precipitation is expected to fall in the winter, some as rain. Together, the major input of water into the NSR will be earlier in the year causing a larger and earlier peak in spring and overall water levels decrease in the fall and winter.
- Water demand is expected to increase because of longer growing seasons.
- Lower water levels in the future will become a concern as the area where the sandbar resides is shallow and may prevent water from flowing over the bar especially in the face of possible sediment buildup.

Climate data:

Annual Mean Temperature



Source: Climate Data Canada

Climate Data Canada predicts that Drayton Valley will experience an **increase of approximately 1.8°C by 2050 for RCP 4.5 and 2°C for RCP 8.5.**

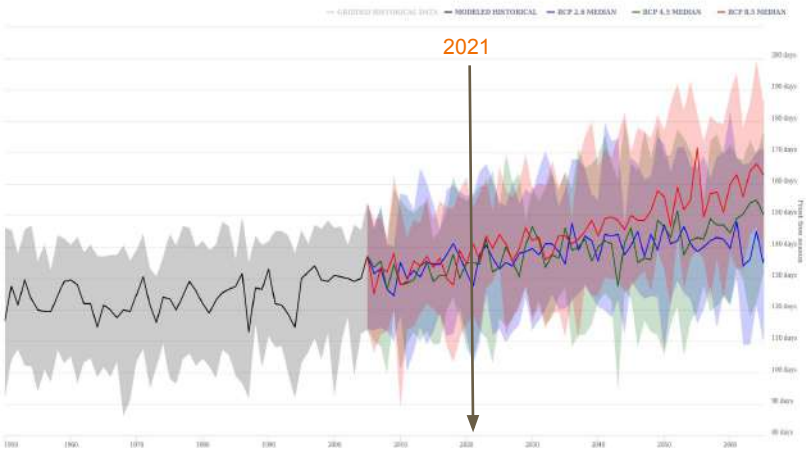
The temperature increase is not even throughout the year. Most of the warming is expected to occur during the winter.

The warming during the winter will make more precipitation fall as rain. This leads to higher mean water input in the winter.

Increasing temperatures also lead to a decrease in snowpack growth which will affect the amount of water inputted into the NSR during melt.

Climate data:

Frost Free Days



Source: Climate Data Canada

With warming ambient temperatures, the amount of frost free days is expected to increase.

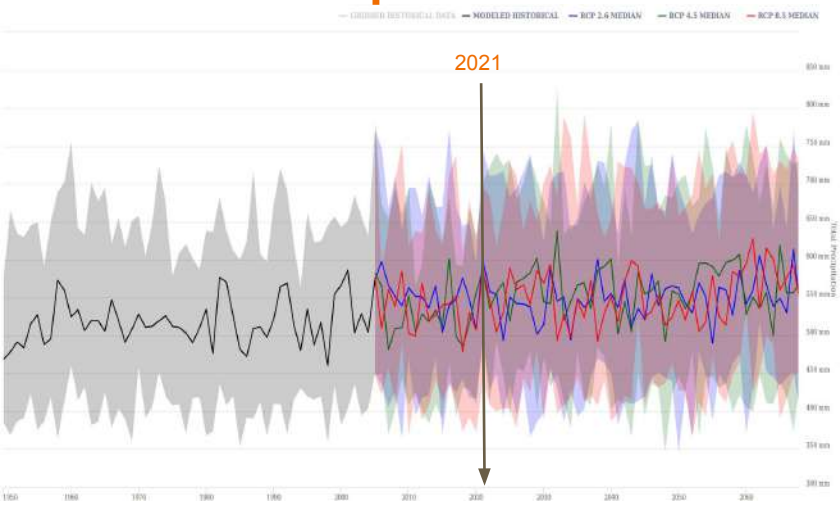
This leads to a longer time period that plants can survive in.

Climate Data Canada predictions indicate that the spring melt is expected to occur earlier in the year. Frost is expected to be gone by the start of May by 2050 and its appearance delayed till the end of September resulting in about an **additional month of frost free days**.

There will be more agricultural withdrawal of water for irrigation resulting in lower water levels (assuming water licenses are subject to change). This likely means lower water levels in the NSR.

Climate data:

Total Annual Precipitation



Source: Climate Data Canada

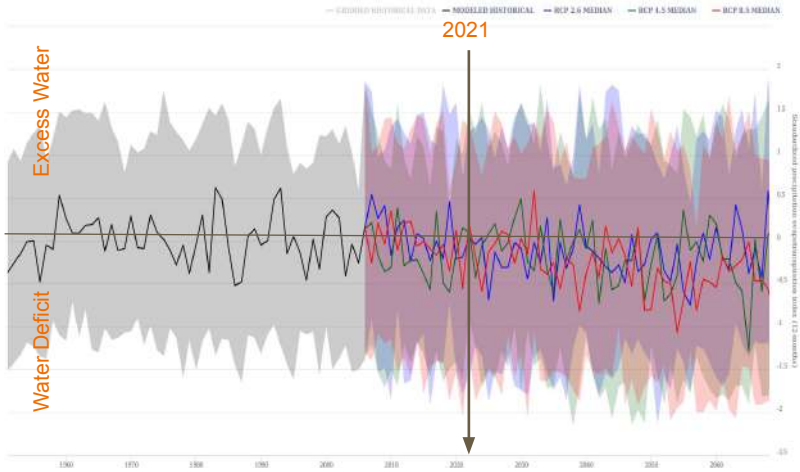
Climate Data Canada predictions are only moderately confident that there will be an increase in total annual precipitation.

The timing of when the precipitation will occur is expected to shift; **winters will receive more rain/snow and summers will be drier.**

Rain on snow events are expected to occur more often resulting in higher water levels during the winter and decreased snow depth.

Climate data:

Standardised Precipitation Evapotranspiration Index



Source: Climate Data Canada

The standardized evapotranspiration index is used to measure the difference between precipitation and potential evapotranspiration (PET).

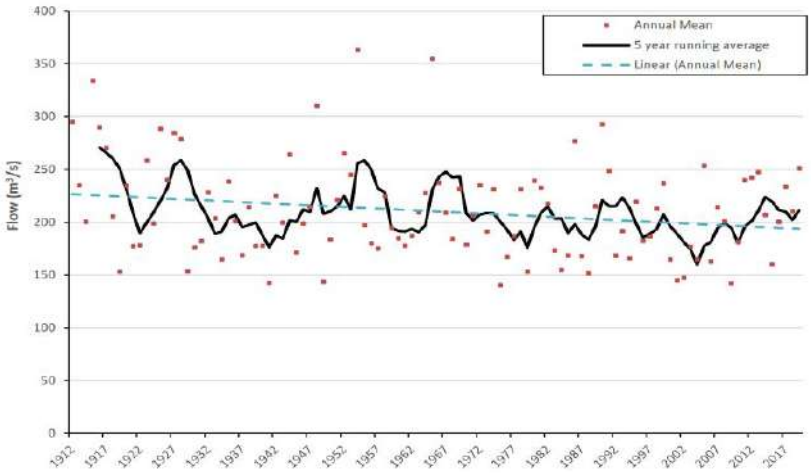
Evapotranspiration is dependent on humidity, air temperature, and plant respiration.

A negative value indicates a water deficit and vice versa for a positive value.

The amount of increased precipitation is offset by the greater amount of evaporation and transpiration resulting in a negative value. This means **droughts are more likely to occur** which will affect the amount of water in the NSR.

Climate data:

Historical Water Level



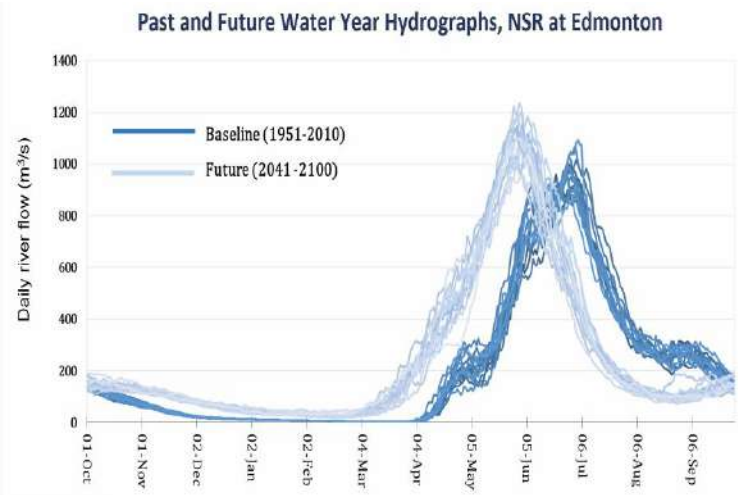
Source: EPCOR 2020 Source Water Protection Plan

EPCOR has already measured an overall decrease in the river flow in the main stem of the North Saskatchewan River. This is mainly attributed to the previous factors indicated in the report.

Climate trends are expected to exacerbate the observed effects.

The **amount of water flowing through the NSR is decreasing** which may pose a problem for water access to the intake weir.

Predictive NSR Discharge Model



Source: Anis and Sauchyn, 2021

Predictive models show that snowmelt is expected to occur earlier and quicker resulting in a higher peak earlier in the year. The higher water discharge in the winter is partially from rain on snow events and warmer winters.

In comparison with the baseline, water levels in late summer and fall are much lower due to all the snowpack having melted earlier and the shift in precipitation patterns. This pattern is assumed to be similar to the pattern at Drayton Valley.

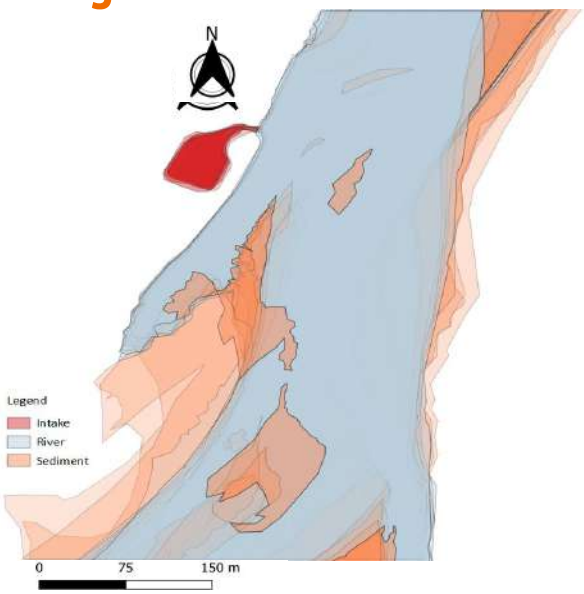
The increase water flow during the high flow season makes the river more likely to erode material upstream and deposit it further downstream. This could increase the rate of deposition on the sandbar or it could increase the rate of erosion of the sandbar.

This is most likely to occur during the high flow season when the water is highest and larger sediments can be moved. The problem wouldn't be seen until lower flows return in the autumn.

Models of the North Saskatchewan River

Building a historical model of the NSR allows us to see where the river has been and how it has changed over the years. The rate of change can also be inferred from this model to build a predictive model. From the historical model, two predictive models were built allowing us to see what possible changes to the river could look like. These models can be used to help inform decisions.

Building the Historical River Model



Source: Google Earth Pro

This model was built in QGIS by digitizing and layering satellite photos from multiple years, from September 2002 to September 2021, on top of each other. This shows where the river banks were initially and where they are at present and can be used to predict the rate of change to where they could be in the future.

The images were extracted from the Google Earth Pro and do not contain exact dates and times so the water level at the time cannot be referenced.

A simplified predictive model that shows what the area may look like in the future can be constructed from this historical information by assuming conditions remain the same.

What Erosion Looks Like in Drayton Valley Area

Sediments can enter the river in many ways. Excluding general overland flow during rain events and large flood events, areas that show these characteristics are good contenders for where most of the in river sediments are coming from.

Steep & Exposed Banks
Exposed areas that are steep, and already have toe scouring are easier to erode. There is not much root protection here to hold the soil together in the event of a high flow event.

Unvegetated Areas
Large areas in the floodplain that are unvegetated or do not have embedded cobble are easily eroded by moving water.

Narrow Channel Sections
Man made structures that constrict water flow can cause downward erosion of the river bed. This can introduce sediments to the river.

The Highway 22 Bridge has rip rap to protect the banks but where the riprap ends there is lots of erosion of the Willey-West Banks which is unprotected.

Potential Locations of Erosion

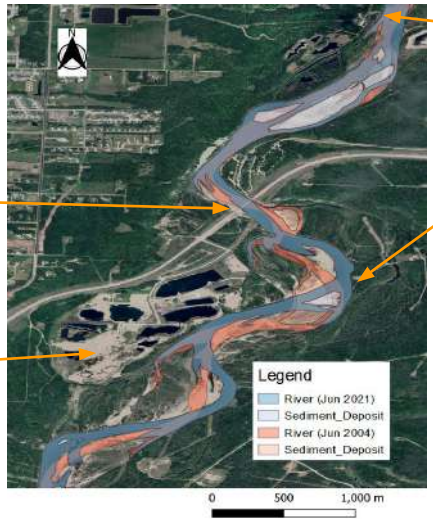
Sediments can be carried from very far upstream. There does not seem to be a point source location for where the majority of the sediments come from but there are locations that you are more likely to find the highly eroded sites. Protecting these areas may slow down the rate of sediment buildup.

Location of Intake

Areas where there is a narrowing of the river can lead to downward incisement of the riverbed.

The outer bend of the river because the water is hitting the banks perpendicularly. This is also where the water moves the fastest and where the water is deepest

Areas of construction that leave large swathes of land exposed can cause overland runoff during rain events and make it easier during times of high flow for the river to pick up sediments.



Changes in River Structure from 2002-2021

Moving West
~0.05m/year
- Sediment Loss

Sandbar has been pushed North
~28m/year
- -85% area exposed

This mid-channel bar has an inconsistent appearance and size throughout the years, visible area ranges from undetectable to 900m². It is only visible during low water flow seasons.

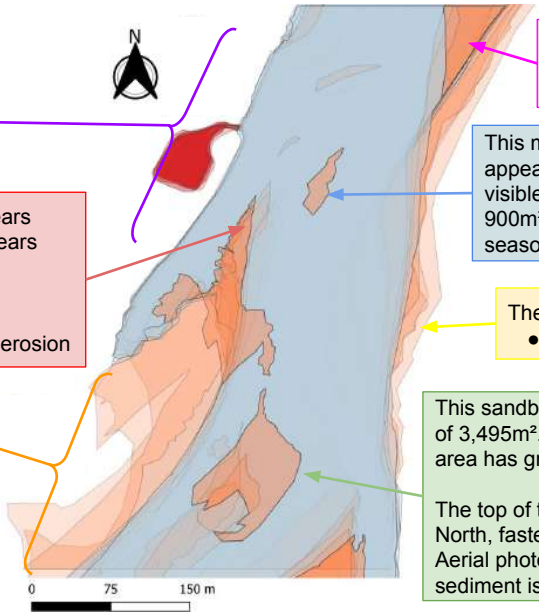
68m South and 6m West in 30 years
- Slower erosion in recent years towards the SW
- -37% area over 30 years
- The Western Sandbar is protecting west bank from erosion

The bank is moving West ~0.5m/year
- Vegetation Growth

Moving East ~1.1m/year
- Sediment Deposition
- Vegetation growth

This sandbar became visible in 2016 with an area of 3,495m². It is now 10,018m² in June 2021. The area has grown 65% in area over 5 years.

The top of this sandbar is moving, ~50m/year North, faster than all the others in recent years. Aerial photos indicate that accumulation of sediment is occurring at the northern tip.



Summary of Future Predictive Models

Methodology

The rate of change over the course of 19 years was calculated for this section of the river. These rates were then used to create predictive models on what the river could look like in 5 and 30 years.

Assumptions

- Erosion and sedimentation rates remain the same
- Average water levels remain the same over time
- There is no major flood event in the intervening years

Possible Impacts on the Water Intake Weir

The lower western sandbar, at the rate it is moving, may block off the area between the western sandbar and the mid-channel bar within 5 years. This blockage will stop water flow into the reservoir. These impacts may be exacerbated by previously explored climate trends.

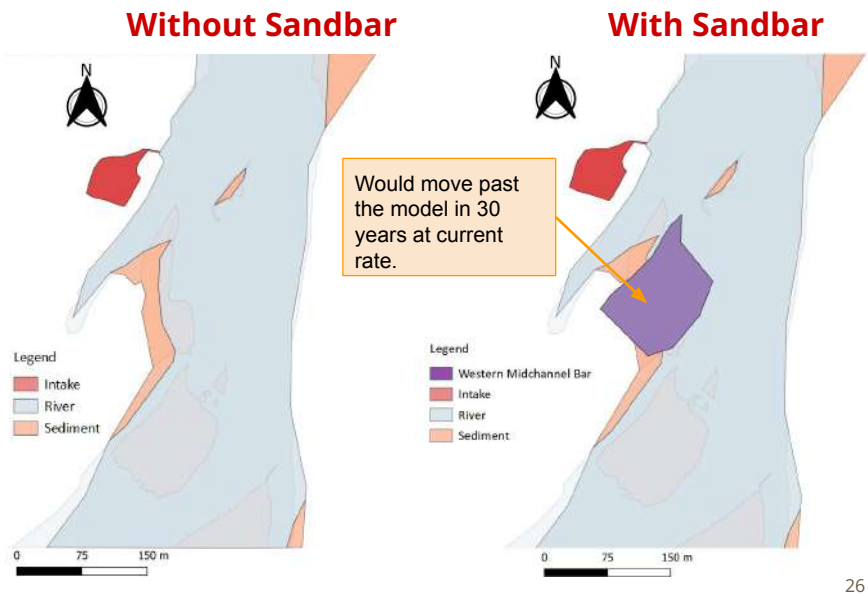
30 Year Future Predictive Model

This model represents a possibility of what the North Saskatchewan River could look like in 30 years assuming autumn conditions remain the same as now.

The 30 year predictive layer is on top of the present day.

Trends towards lower water levels and higher spring discharge could exacerbate the situation.

A five year model was made to account for the fast moving sandbar.



5 Year Future Predictive Model

This model represents what the NSR could look like in September 2026.

The top layer represents September 2026 and the bottom layer represents September 2021.

The space between the sandbars decreasing will prevent water from accessing the intake weir.

The probability of this happening depends on the occurrence of a flood event, vegetation growth on the sandbar, and embedding of the gravel, all of which will change the rate of movement.

The space between the sandbars could decrease from 40 m to 16 m in five years. This will further restrict water flow.

The upper portion of this sandbar will have extended further than it has been in the 19 years of satellite photos available.

There is a large build-up of sediments here that is similar to that in the 2002 satellite photos.

Interviews

Information gathering interviews were conducted with local and government experts. In the future, the Town could continue to leverage on their knowledge and support, as well as their network to access other experts in the field.

Interview Highlights

Meeting Details	Organization	Discussion Points	Potential Support
Date: Oct 4, 2021 Location: Drayton Valley Water Treatment Plant Attendees: Shelley George	Town of Drayton Valley Water Treatment Plant	• How the water treatment plant functions and sustainable design strategies within the building • Tour of water intake weir • Data on Drayton Valley water use	• Data on past and future water usage for Drayton Valley • Potential future contacts
Date: Oct 7, 2021 Location: Online Attendees: Mary-Ellen Shain; Greg Piorkowski	Government of Alberta	• Legislation/Regulation for Shoreline Modification • Data Required for iRIC Model	• Data acquisition for modelling • Further contacts with legislation experts
Date: Oct 19, 2021 Location: Online Attendees: Mary-Ellen Shain	North Saskatchewan Watershed Alliance	• North Saskatchewan Watershed Alliance Mandate • The Headwater Alliance Mandate • Previous projects by NSWA	• Letter of Support • Further contacts watershed experts

Interview Highlights (continued)

Meeting Details	Organization	Discussion Points	Potential Support
Date: Nov 9, 2021 Location: In-person Attendees: Sandra Bannard; Kathy Schwengler	Eagle Point- Blue Rapids Park Council	• Presence of species of concerns • Locations of erosion and sedimentation in the provincial parks • Community Outreach	• Further contacts watershed/wildlife experts • Support for community outreach
Date: Nov 10, 2021 Location: North Saskatchewan River Attendees: Wayne Stec	Drayton Valley River Boat Association	• Tour of the NSR banks to view erosion and sedimentation and that water intake • Anecdotal NSR history • Daily and seasonal fluctuation of the NSR	• Access to a boat for more data gathering • Further information about the NSR
Date: Nov 24, 2021 Location: Phone Call Attendees: Joe	The City of North Battleford	• Sediment build-up timeline • Dredging effectiveness to solve sediment build-up • Regulation related to dredging • Alternative solutions considered	• Case study of potential solution

Interview Highlights (continued)

Meeting Details	Organization	Discussion Points	Potential Support
Date: Jan 7, 2022 Location: Phone Call Attendees: Hassan Said	The Town of Westlock	• Groyne effectiveness to solve sediment build-up • Potential visit to view the groyne • Issues about the groyne after construction • Groyne and intake pipe maintenance	• Case study of potential solution
Date: Jan 27, 2022 Location: Online Attendees: Tyler Peat	Department of Fisheries and Oceans (DFO)	• Similar case studies to Drayton Valley • DFO mandate • Request for review procedure • Code of Practice for routine maintenance dredging	• Compliance with DFO regulations

*Details on the full interviews can be found in Appendix C of this report.

Solutions, Case Studies, & Associated Legislation

This section reports on the solutions identified and the regulations that are associated with them. Several stopgap methods are included as these may be effective in conjunction with the other solutions. Case studies of municipalities who have implemented some of these solutions are provided.

Solutions:

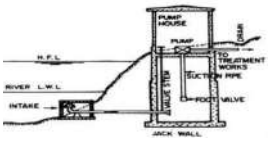
Potential Temporary Solutions Identified

Further details on these viable solutions are included in Appendix E of this report.
The temporary and permanent solutions will solve the problem while sediment control solutions can be implemented as a stopgap.

Potential Solutions	Description	
No Action Alternative		No mitigation or adaptation solutions are implemented. Monitoring of the sandbar should be implemented as well as the development of a plan of action should the water intake be blocked off.
Dredging		Dredging uses heavy machinery to remove sediments blocking the water. This is a common method to solve the problem. With the larger gravel size of the NSR, mechanical excavation seems like the best solution. This is not a permanent solution as the river could naturally fill back whatever was removed. Also, the removal of the west sandbar will leave he western bank exposed for erosion.

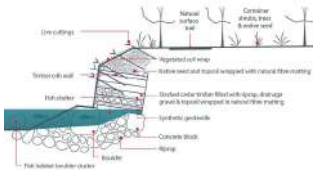
Solutions:

Permanent Engineering Solutions

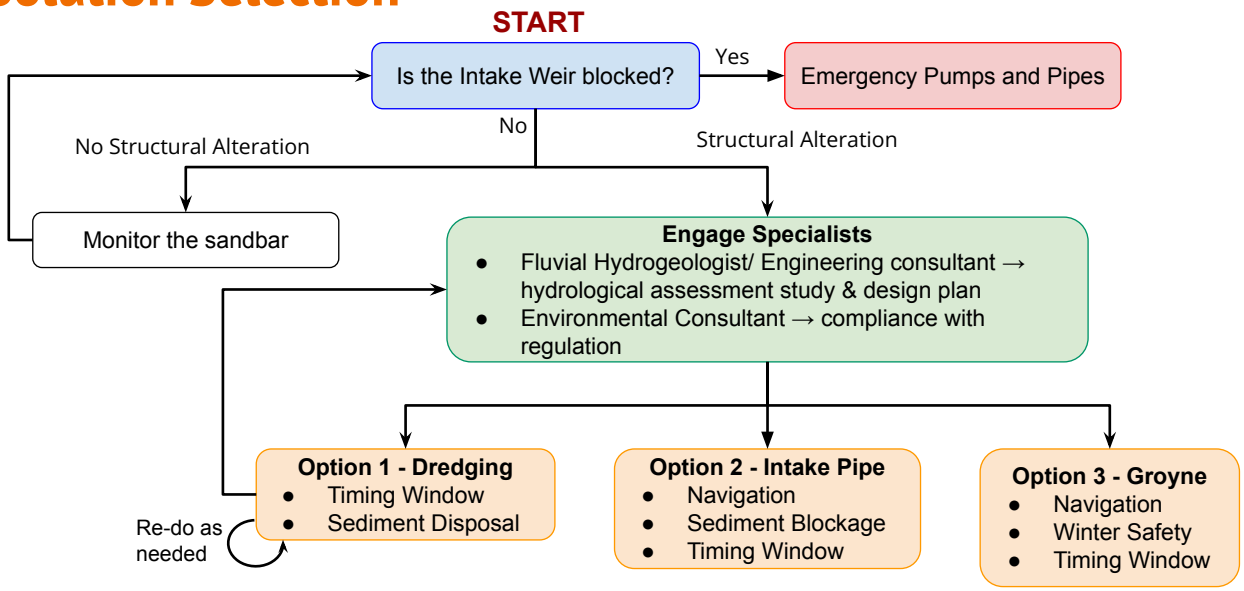
Potential Solution	Description	
Intake Pipe Extension		A pipe is placed into a portion of the river that has a more consistent flow than the previous location. Intake pipes are a common form of water intake and their problems are often easily solved as long as forethought is put into place. Intake pipes are prone to being clogged by sediments so placement and maintenance is very important. Pipes can also impede river users. ● Edmonton, AB
Groyne		A groyne is a rigid structure built either from the shore or bank and it protect the banks from erosion by deflecting the water and dissipating the energy in the water. They also trap sediments and are designed to slow down the water flow. This option may interfere with river navigation. It also requires regular maintenance.

Solutions:

Sediment Control Solutions Identified

Potential Solution	Description	
Rip Rap		Riprap is a permanent layer of large stone, cobbles, or boulders used to armor, stabilize, and protect the soil surface against erosion and scour It is commonly used in North America as armoring along the banks. This is a band-aid solution to help slow down erosion and stabilize the banks in the areas where this is occurring and prevent sediment entry into the river.
Soft Engineering Solutions		This solution relies on natural processes, such as re-vegetation and the development of root systems, to stabilize the bank and prevent sediment entry into the river. These solutions also provide fish habitat. The soft engineering solutions for bank stabilization have been employed in Alberta since 1986 and were deemed successful. Again, this solution is not a permanent solve to the point bars growth but can slow the rate of growth.

Solution Selection



*In-depth descriptions of solutions can be found in the Appendix E

Case Study Highlights

Location	Cause	Effects	Solution
North Battleford, SK, CAN	• Shifting Sediments • Low Water Levels	• Blocked Intake Pipe	• Dredging of Sandbar • Backup Pumps
Saskatoon, SK, CAN	• Shifting Sediments	• Blocked Intake Pipe • Environmental Impact Assessment	• Dredging • New Intake Pipe Location
Standing Rock Sioux Tribe, ND, USA	• Shifting Sediments • Low Water Levels	• Blocked Intake Pipe • Public Service Shutdown • Boil Water Advisories • Construction in Winter	• Intervention of the Environmental Protection Agency and Bureau of Reclamation • New intake Pipe Location • Back-up Pumps
Town of Westlock, AB, CAN	• Shifting Sediments	• Blocked Intake Pipe • Environmental Impact Assessment	• Groyne • Backwashing

*Further details for each of the case studies can be found in the Appendix D of the report.

Legislative Review:

Federal

Regulation	Administering Agency	Triggering Action
Impact Assessment Act	**Impact Assessment Agency of Canada**	An Environmental Impact Assessment may be required if the project could result in long-term negative environmental effects. The most likely effects would be disturbance of fish habitat. • Groyne • Intake Pipe
Navigable Waters Protection Act	**Transport Canada**	Any activity/work that could affect the navigability in full or in part, for any part of the year as a means of transport or travel for commercial or recreational purposes, or as a means of transport or travel for Indigenous peoples of the North Saskatchewan River will require a permit from Transport Canada. • Groyne • Dredging
Fisheries Act	**Department of Fisheries and Oceans**	Any activity/work that can affect fish populations including disturbance of spawning grounds, habitat or introduction of pollution will need a permit from the Department of Fisheries and Oceans • All Solutions

Legislative Review:

Wildlife

Regulation	Administering Agency	Triggering Action
Migratory Birds Convention	**Canadian Wildlife Services**	If the construction area can disturb any migratory birds you will need to explain what you will do to mitigate the impact on these species. ● Common Goldeneye ● Sandhill Cranes
Species at Risk & Alberta Wildlife Act	**Canadian Wildlife Services**	If there are any species listed under the species at risk act you cannot disturb them so precautionary measures have to be taken if they are present. ● Peregrine Falcons ● Northern Leopard Frogs ● Sturgeon

* A survey of which species can be found in the construction area will be required to complete the permit

Peregrine Falcon

Sturgeon

Common Goldeneye

Legislative Review:

Provincial

Regulation	Administering Agency	Triggering Action
Public Lands Act	Alberta Environment and Parks	Any project occurring on the banks of the NSR will require a permit under the Public Lands Act as they regulate public land allocations, the sale or transfer of public land to other levels of government or private entities for recreational, commercial, or industrial use. This permit will cover all the following legislation. ● All Solutions
Environmental Protection and Enhancement Act	Alberta Environment and Parks	This will include any project that could result in the introduction of pollution, including sediments, into the river as it will affect the habitat quality of aquatic ecosystems.
Water Act	Albert Environment and Parks	Any project that could introduce sediments into the river will have to specify how they will mitigate the sediment input as it will affect the water quality.
Albert Land-use Framework & North Saskatchewan Regional Plan	Alberta Environment and Parks	Management frameworks for air quality, surface water quality and quantity, groundwater and biodiversity management are intended to provide context within which decisions about future activities and management of existing activities should occur. Projects will have to comply with these frameworks when they are complete.

Possible Funding Sources

These are possible sources of funding at the provincial level. These can be applied to the permanent solutions previously proposed.

Grant/Loan	Description	Dredging	Groyne	Intake Pipe	Borehole
Alberta Municipal Water/ Wastewater Partnership	Cost-shared funding to help build municipal facilities for water supply and treatment, and wastewater treatment. **Application Date**: Feb 28, 2022; renews every budget cycle			✔	✔
Municipal Sustainability Initiative	Fund capital projects including water and wastewater facilities and associated infrastructure. **Application Date**: Rolling Intake		✔	✔	✔

*Further details on funding sources can be found in the Appendix F

Project Summary and Next Steps

Sediment shifting and river meander is a natural process. The sediments building up at the water intake may block access to the river in the future.

The models predict a 5-year timeline for this build-up but this problem may be exacerbated by the decreasing water levels caused by shifting climate patterns.

Dredging is the most common solution to this problem, although several other municipalities have implemented alternatives like moving intake location or building groynes.

Funding options are available for permanent capital projects to build a resilient and sustainable water system.

The next step is for the Town of Drayton Valley to conduct a hydrological survey to build a cross river profile. This would enable the Town to select the best engineering solution that fits the Town's needs.

An Emergency Response Plan is being developed to specifically prepare for the event that water intake level falls below the 0.4m level.

Appendix

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Appendix A:

Project Background

The Adaptation Resilience Training (ART) Program is funded by the University of Alberta and Associated Engineering for training recent graduates to develop a basic awareness of climate change adaptation and build capacity to integrate adaptation into their professional practice.

Drayton Valley North Saskatchewan River Adaption Purpose

The goal is to build a solid foundation of knowledge and recommendations for decision decision makers on possibilities of how to address the issue of the sandbar encroaching on the water intake weir and their ramifications.

Objective 1

Identify causes for the North Saskatchewan River migration away from the water intake system.

- Created a database of localized climate and hydrological data and built a baseline model.
- Compiled historical topology surveys to identify man-made structures that may have impacted water flow.
- Completed site assessment and field interviews.

Objective 2

Identify high-level adaptation strategies/opportunities to build Drayton Valley's water resiliency.

- Literature review of integrated water management best practices, water resiliency and adaptation, regulatory requirements, etc.
- Vulnerability assessment with water flow model projections.
- Stakeholder engagement with Town employees, site consultants, experts, regulatory bodies, and others.

Appendix B:

Climate Database Sources

Climate Database	Description
Climate Atlas	Climate data from 24 different climate models for RCP 8.5 and 4.5 for years 1950 - 2095. Built on data from Natural Resources Canada from 1950-2013.
Climate Data	Collaboration between several Canadian Environmental and Climate Agencies to compile climate data and run models on a fine scale 10km x 10km grids
Brazeau County: Climate Resilience Express Action Plan	A climate action plan for Brazeau County aiming to aid communities in preparing for climate impacts baseline data is from 1961 -1990, and all predictions are for the time range of 2014-2070 -data was obtained by averaging the results of a 10km x 6 km box covering Brazeau County

Appendix C:

Interviews

This section includes details of relevant interviews conducted throughout the project and further support that they were willing to provide.

Appendix C: Interview Highlights

North Saskatchewan Watershed Alliance

Oct 19, 2021

The North Saskatchewan Watershed Alliance (NSWA) is a not-for-profit organization collaborating with a diverse range of stakeholders to find practical solutions to watershed issues.

Contact: Mary-Ellen Shain

Discussion Topics:

- North Saskatchewan Watershed Alliance Mandate
- The Headwater Alliance Mandate
- Previous projects that the North Saskatchewan Watershed Alliance has supported or has participated in

Potential Support:

- The North Saskatchewan Watershed Alliance can write a letter of support if we present them with a plan that fits within their mission statement.
- Can provide more contacts once further plans have been made to experts in the field

Appendix C: Interview Highlights

Government of Alberta

Oct 7, 2021

Contact: Greg Piorkowski

Discussion Topics:

- Permitting the Public Lands Act turnaround time 90 days assuming all no further information requests before COVID.
- Talked about gathering information for the model

Potential Support:

- He can assist in reaching other contacts in the Government of Alberta for more detail on legislation/ regulation requirements and permits.
- He also has access to field data in the area assuming for building a more detailed model in the future.

Appendix C: Interview Highlights

Eagle Point - Blue Rapids Park Council

Nov 9, 2021

Eagle Point - Blue Rapids Park Council

The Eagle Point – Blue Rapids Parks Council is a grassroots non-profit organization responsible for the planning, funding, and management of the Eagle Point Provincial Park and the Blue Rapids Provincial Recreational Area in partnership with Alberta Parks.

Contact: Sandra Bannard; Kathy Schwengler

Discussion Points:

- The Willey-West boat launch has had to dredge the area for a while due to sediment build-up
- There are several species of concern that can be found within the Eagle Point Blue Rapids provincial Parks and thus could possibly be found in the construction site.
- Several lease roads and hiking pathways along the river have already been eroded away during high flow events.
- Possible interest in community outreach for riparian health work

Appendix C: Interview Highlights

Eagle Point - Blue Rapids Park Council

Potential Support:

- Contact them for more information on collaboration on public engagement or education
- Kathy is also very knowledgeable about the plants and animals in the area and can put us in contact with other people

Potential Contacts:

- Kris Kendall
  - A reptile and amphibian expert for the area contact when further along in project and have a more solid idea of which solution will be implemented.
- Avalie
  - A entrepreneur and resident who is planning on building a water resort in the future. Can be a possible contact in the future when an doing the vulnerability assessment based on the water demand and location of the resort.

Appendix C: Interview Highlights

West Central River Boat Association

Nov 10, 2021

Contact: Wayne Stec

He is a member of the West Central River Boat Association and is knowledgeable about the river flow and level patterns, shape of the river, and the history of the area. Wayne is also willing to share his anecdotal evidence.

Discussion Topics:

- The area of concern has not changed much over the past 20 years as it is in a relatively straight stretch of the river.
- The river rarely floods over the banks because it is so deeply entrenched into the channel
- The mid-channel bar and point bar have always been there and appears and disappears based on the water level
- Daily fluctuations of the river are dependant on the energy demands causing the release/ closure of the brazeau and big horn dams, daily high water levels generally occur during the early evenings and and are lowest the mornings
- The erosion/ exposed soil on the banks has always been that way.

Potential Support:

Wayne has access to a boat and is willing to help us get access to the site of interest through the water. He is also willing to answer more questions about the river.

Appendix C: Interview Highlights

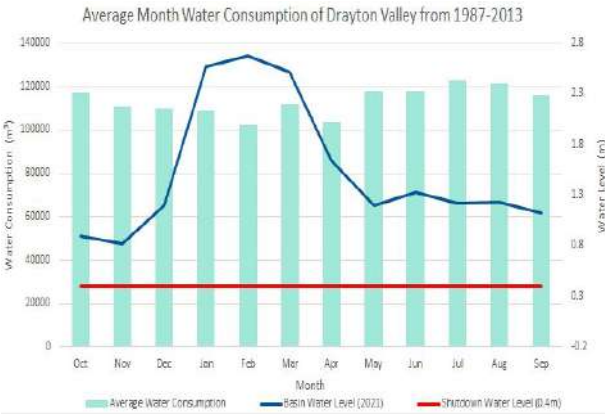
Drayton Valley Water Treatment Plant

Contact: Shelley George; Bre Haskill

Oct 4, 2021

Discussion Points:

- Intake of water is done through the intake weir which is fully open from the river to the settling basin. Whatever water that enters is as much as can be received unless the Big Horn or Brazeau Dam increases their flow rates into the North Saskatchewan River.
- Water consumption levels remain steady throughout the months but the reservoir level drops with a low in November. The system is designed to shut down when there is 0.4m of water in the reservoir.
- Since 2010 the annual water demand pattern has become increasingly skewed towards peaks in the autumn months even if overall water consumption has remained relatively stable.



Source: Drayton Valley Water Treatment Plant

There have been days where the average water level has dropped to 0.59m

Appendix C: Interview Highlights

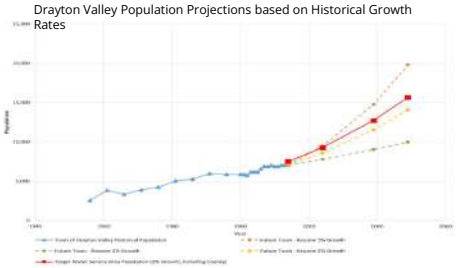
Drayton Valley Water Treatment Plant

Oct 4, 2021

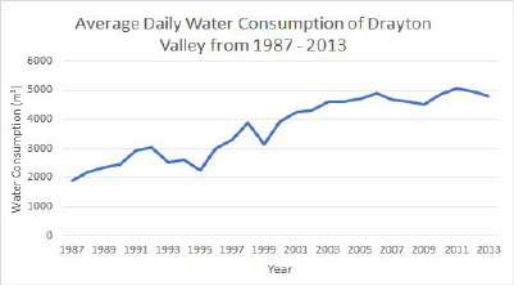
Discussion Points cont.

- Average daily water demands have stabilized in past years due to water conservation initiatives but is but is expected to increase as the population grows.
- As of 2014 the water treatment plant services 7515 people including Drayton Valley, Poplar Ridge and the River Ravine Estates. The service population is expected to increase as time goes on to 16,320 by 2049 from the existing 8161.
- The Water Treatment Plant uses Zeeweed500D membrane filtration to remove the sediments from the water. They have a predicted lifetime of 15 years but if sediment load increases then the lifespan will be shortened.

Drayton Valley Population Projections based on Historical Growth Rates



Source: Drayton Valley Water Treatment Plant



Source: Drayton Valley Water Treatment Plant

Appendix C: Interview Highlights

Drayton Valley Water Treatment Plant

Discussion Points cont:

- The main concern for the water treatment plant is that there won't be enough water in the reservoir to meet the demands of the Town of Drayton Valley. Even with the water conservation measures causing the consumption of water to drop from 360L/person/day, the increasing industrial demand and growing population will cause the water demand to increase.

Potential Support:

- Shelley is in charge of the Water treatment plant for Drayton Valley. Anything relating to the water intake is under her jurisdiction.
- She also has data regarding future water demand and historical water data.

Future Contacts:

- Michael Smilski
  - Shelley's contact within TransAlta with access to water sediment data. Can be contacted if building a more detailed model.

Appendix D:

Case Studies

This section provides a summary of four case studies where different solution options were implemented.

Appendix D: Case Study

North Battleford

North Battleford, SK uses the North Saskatchewan River as a water source. The city has the Water Treatment Plant No.1 in addition to the F.E.Holliday Water intake which together serve a population of approximately 19 500 as neither can keep up with high demand by themselves. In 2008 they also had concerns over sediment buildup at the F.E Holliday Intake but a strong spring run-off washed it away.

Cause

They noticed in 2015 that there was fine sediment buildup at the intake pipe. The spring run-off was not enough to push the sediments away. Over the course of the year a sandbar, with finer sediments than in Drayton Valley, grew and blocked off the intake pipe. That particular year had low water flow and shifting sediments.

Solutions Implemented

- Dredging
- Backup Floating Pumps

Appendix D: Case Study

North Battleford

Solutions Implemented

- Dredging
- Backup Floating Pumps

Effect

The intake was eventually plugged as the sand was pushed further into the intake structure in April and May but they still had other water intakes to provide water in the short term.

Resolution

- A 2.5mx2.5m hole was dug around the intake pipe and sandbags were then placed around the intake pipe. Contractors were hired to pumped out the sediments blocking the pipe. This solution lasted for a month (approximately $107 895).
- The sandbar was dredged over the course of 14 days ($124 104.75). They had to get permitting from the Water Security Agency for the dredging.
- Backup floating pumps that can pump at 700-800 gallons were installed in case of the intake pipe getting clogged again. This required permitting from the Department of Fisheries and Oceans.

Once the sandbar was removed no further problems arose but in the case of a big flow event or a particularly dry year they might have to re-dredge.

Appendix D: Case Study

Saskatoon

Solutions Implemented

- Dredging
- Location Change for the Raw Water Intake

Saskatoon draws water from the South Saskatchewan River and their plants serve a population of approximately 331,051.

Saskatoon has been dredging their river whenever there was a build up of sediments that threatened the integrity of their water intake for many years. Eventually the city decide to build a new water intake using the twinned water pipeline method, a new supply facility in a different location, expand the existing artificial peninsula/deflection spur in the river, and supporting infrastructure requiring the excavation of a portion of the river valley wall.

The project triggered an Environmental Impact Assessment that was to be submitted to the Department of Oceans and Fisheries as well as Transport Canada because the construction process would affect fish habitat and could affect the navigability of the river. This was due to the Fisheries Act and the Navigable Waters Act.

The City of Saskatoon only had to complete the the first portion of the Environmental Impact Assessment , the screening process, as the regulatory authorities determined that the project would not have any significant adverse environmental effects.

Appendix D: Case Study

Standing Rock Sioux Tribe Reservation

The Standing Rock Sioux Reservations is located between the border of North and South Dakota, USA and draws water from the Missouri River. At the time of the incident they had a population of approximately 3400 people relying on this intake. This case study would represent the no action/business as usual alternative and the consequences for a worse case scenario situation.

Cause

The area was experiencing low water conditions caused by drought and the natural patterns of shifting sediments resulted in the formation of a river delta where the intake pipe was located. This disabled the intake pipe completely during November.

Solutions Implemented

- No Action Alternative
- Location Change for the Raw Water Intake

Appendix D: Case Study

Standing Rock Sioux Tribe Reservation

Effect

They ended up having to close schools, hospitals, and public offices when the reserve ran out of water. It took about 2 days to restore water using temporary pumps and above ground piping. In the meantime, a boil water advisory was put into effect after consultation with the Environmental Protection Agency to flush the distribution system even after the implementation of the temporary pumps. Maintenance of the temporary pipes and construction issues were caused by winter conditions.

Resolution

They worked with the Bureau of Reclamation to devise a plan to prevent this from happening again. An intake sump structure with a submersible pump assembly was installed. In addition, they developed a backup water supply plan involving back up pumps. This system remains operation to the present day and no further problems occurred.

Solutions Implemented

- No Action Alternative
- Location Change for the Raw Water Intake

Appendix D: Case Study

Westlock

The Town of Westlock, AB sources its water from the Pembina River. The Westlock Regional Water Service Commission provides water for a population of over 5100. Sediment buildup was noticed at the raw water intake location.

Cause

Sand sedimentation build-up was occurring at the intake location.

Effect

The town of Westlock and ISL Engineering designed a new groyne system to solve the problem and replace the old vertical riser pipes in the river and a gravity fed pumphouse. a solution to solve the problem.

Resolution

- The new proposed intake will consist of a groyne extending into the river, with a concrete structure on the end, housing a screened intake chamber.
- An Environmental Impact Assessment was determined to be necessary under the jurisdiction of the Department of Fisheries and Oceans.

Presently, the new intake and groyne are working well. There are some problems with snowmobiles in the winter when the exact location of the groyne is obscured.

Solutions Implemented

- Groyne
- Backwashing

Appendix E:

Solution Options

This section includes details of the solution options identified.

Appendix E: Solution Options

Dredging

Considerations

- Timing required for dredging (can vary from 2-14 days depending on equipment, substrate, ground conditions) if not implemented immediately
- Studies needed to be completed to maintenance compliance (PCB, SARA-listed species,ect)
- Timing windows and how to limit the impact on riparian areas and fish habitats
- Maintenance required when sediments build-up again
- Sediment Disposal

Mechanical Dredging

Recommendation

- Engage consultant to ensure compliance with Fisheries and Oceans code of practice for routine maintenance dredging and identify which locations need to be dredged
- Develop a long term preventive maintenance plan involving periodic monitoring of sedimentation to predict when another dredging exercise is required

Approval by the Department of Fisheries and Oceans is required for first dredging. Subsequent routine maintenance dredging can follow the standard code of practice.

Hydraulic Dredging

Appendix E: Solution Options

Groyne

A groyne is a rigid structure that protect the banks from erosion by deflecting the water. They trap sediments and are designed to slow down water flow. Groynes can be made from wood, concrete, gravel or stone. In this case a repelling groyne is probably the best groyne to solve the problem.

Maintenance

Groynes are permanent structures that require minimal maintenance after construction is complete. Depending on the material used maintenance requirements vary.

Ex. Steel → 25+ years vs Rocks → after high flow events

Cost

Rock groynes are common in Alberta and more cost effective than other types of groynes. Costs are highly dependent transportation costs and the materials used.

Ex. $1500 - $7500/linear foot for rock groynes.

Appendix E: Solution Options

Groyne

Considerations

- Timing Window → ground conditions, fish spawning times, ect.
- Navigability of the river during/after groyne construction→ shallow waters, accessibility by vessels
- Safety once the groyne is installed during all seasons
- Sediment starvation further downstream

Next Steps

- Engage a consultant for structural design plan
  - Study how the river flows in the area to determine feasibility and optimal location for the groyne
- Engage a consultant to ensure compliance with legislation
  - Local fauna and flora survey for completion of permitting required by legislation

Appendix E: Solution Options

Intake Pipe

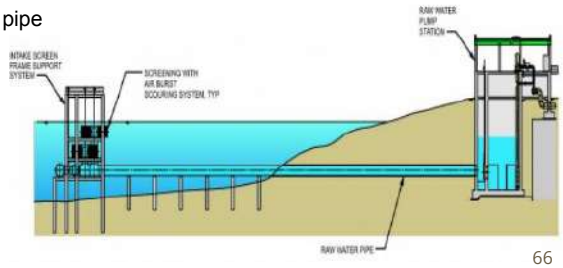
A pipe will be extended into the river onto the other side of the mid channel bar where there is a more consistent flow than the previous location. Intake pipes are a common form of water intake in Canada.

Maintenance

These are permanent structures that require little maintenance. Filters and screens will need to be monitored and replaced periodically based on the sediment load in the water. Backwashing is also a common method to clear finer sediments from the pipe.

Considerations

- Pipes may affect the navigability of the the river due to the shallow nature of this section
- Collisions with boats may result in damages to the vessel and the pipe
- Keeping the pipe clear of sediments



Next Steps

- Hire a contractor to survey the site and do the engineering design
  - Location and prevention of fine sediment blockage
- Hire a consultant to ensure compliance with legislation

Appendix E: Solution Options

Boreholes/Wells

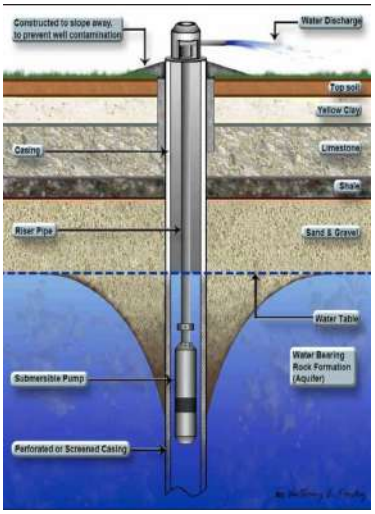
Boreholes are narrow shafts drilled either vertically or horizontally into the earth and can be used to access **groundwater** that are drawn up through pumps.

Maintenance

They are permanent structures that require little maintenance and are generally only susceptible to earthquakes.

Cost

Case studies suggest costs of $50,000 to $100,000 solely for the drilling component but costs are highly dependent on location and width and depth of drilling. Additional costs will be incurred via casing materials, permitting, and ground conditions, and labour.



Appendix E: Solution Options

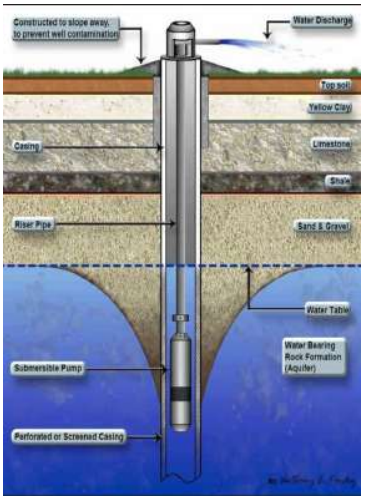
Boreholes/Wells

Considerations

- Subsoil stratigraphy
- Watertable in the area
- Location of pre-existing underground infrastructure
- Protect against contamination; both land overflow and groundwater sources
- Timing window and effect of construction on riparian and fish habitat

Recommendation

- This method is **not** recommend for accessing surface water.



Appendix E: Solution Options

Dredging

Dredging uses heavy machinery to remove sediments blocking the water. This is a common method to solve the problem. With the larger gravel size of the NSR, mechanical excavation seems like the best solution. The removal of the west sandbar will leave he western bank exposed for erosion.

Maintenance

This is not a permanent solution as the river could naturally fill back whatever was removed. This is dependent on rate of sedimentation and will need to be monitored and redone if the area is filled back up

Cost

The cost varies based on method selected but case studies suggests costs can reach up to $100 000/dredging

Mechanical Dredging

Hydraulic Dredging

Appendix F:

Funding Options

This section includes details and application information for the major funding sources available for capital projects regarding municipal water systems.

Appendix F: Funding Options

Alberta Municipal Water/Wastewater Partnership

This grant provides cost-shared funding to eligible municipalities to help build municipal facilities for water supply and treatment, and wastewater treatment and disposal.

Ex. Northern Sunrise County, AB → move intake to deeper water and upgrade fish screen. construction costs

What the Grant Covers

This grant can be applied to anything but labour and equipment costs, Administration costs, GST, and water licensing costs.

How to Apply

1. Contact Alberta Transportation to discuss eligibility
2. Municipal Council must make a motion to apply for funding
3. Complete & submit application package

Amount of Funding

The percent of total costs covered is based on population

Percent of Project Costs = [(0.25 x Population) + 1,000] X 100 / Population

Deadline: open until February 28, 2022 for funding for the 2022 year, but is renewed every budget cycle

Appendix F: Funding Options

Municipal Sustainability Initiative (MSI)

The MSI is the Government of Alberta (GOA's) commitment to work in partnership with municipalities to manage growth pressures, provide municipalities with sustainable funding, and support infrastructure needs. After 2024 the program will be replaced with the Local Government Fiscal Framework.

What the Funding Covers

Expenditures must clearly align with the objectives and criteria set out in the guidelines. Basically it has to support the long term sustainability of the municipality.

How to Apply

All municipalities in Alberta are eligible for funding based on the terms set out in their long-term MSI funding agreement. All documents must be submitted through the must be submitted through the MSI online system.

Amount of Funding

Based on the population and dependent on the ministerial authorization of the program budget.

Deadline: Rolling Intake

Upcoming Meetings and/or Conferences

Event	Organization	Date	Time	Attendee(s)	Cost
37th Annual Central Municipal Law Seminar - Edmonton	RMRF	February 4	8:00 a.m.-5:00 p.m.	Dodds	$187.25
Emerging Trends in Municipal Law	Brownlee Law	February 17	8:30 a.m.-3:30 p.m.	Ballas, Gammana, Sherriffs	$85
KeepAlbertaRCMP Community Engagement Tour	National Police Federation	February 18	10:00 a.m.	Dodds, McGee	Free
Asset Management Fundamentals	Canadian Association of Government Finance Officers	March 8-9	9:00 a.m.-1:00 p.m.	Dodds	$493.50
CPAA - Municipal Planning - Webinar 4: Land Use Bylaws	Community Planning Association of Alberta	March 9	3:00-4:30 p.m.	Dodds	$200.00
Spring Municipal Leaders' Caucus	Alberta Municipalities	March 9-10		Clarke, Dodds, Evans, Sherriffs	$165
Reconciliation Workshop	RMA	March 25	1:30-4:00 p.m.	Dodds	$25
Globe Forum	FCM/Globe	March 29-31		Ballas, Sherriffs	$195
Alberta Hemp Alliance Conference:	Alberta Hemp Alliance/KEI	April 21-22		Ballas	$147.50
FCM Annual Conference	FCM	June 2-5		Sherriffs	$895/$480
Alberta Municipalities Annual Conference	Alberta Municipalities	September 21-23			Approx. $800

Project/Initiative	Lead	Target Date	Status	Notes
Aquatic Facility IPD process (CP No. 95)	Community Services/Recreation (Annette Driessen)	November 2022	In Progress	The Investing In Canada Infrastructure Program Grant of $7,584,956 was approved. On October 28,2020, Council approved the Re-Validation Report for a total revised budget of $21,936,935.00. Targeting construction completion by November, 2022. Capital budget approved for waterslide and bouldering traverse wall.
Bouldering Wall (CP No. 426)	Community Services/Recreation (Annette Driessen)	October 2022	In Progress	IPD team reviewing quotes/submissions from climbing companies.
Water Slide (CP No. 355)	Community Services/Recreation (Annette Driessen)	October 2022	In Progress	PD team has reviewed submissions and is establishing a contract with Westwind (Polin Waterparks) for supply and installation of waterslide.
Shelter Pods	Community Services (Lola Strand, Emily Hickman)	2022-03-31	In Progress	Securing oilfield shack purchase and preparing for rennovation. Business's in the area have been visited to ensure they are aware of the program.
Phone Booths - Rotary House and Civic Centre	Community Services (Lola Strand)	Feburary 15, March 15, 2022	In Progress	Development underway for Rotary House booth. Location under considertion for Civic Centre booth and determing instalation process.
RFP Affordable Housing	Community Services (Lola Strand)		In Progress	Deadline for proposals extended to February 18th, 2022 for services beginning April 4, 2022.
Ice Plant Ventilation (OP No. 25)	Community Services/Recreation (Derek Starnes)		In Progress	Ken is working with Local contractors to keep prices down.
Splash Park Controller (CP No. 356)	Community Services/Recreation (Derek Starnes, Lana Holmes)	Spring 2022	In Progress	Lana has signed contract, equipment has been ordered, will be installed this Spring.
Controll Processor - MCC Audio/Visual System (CP No. 456)	Community Services/Recreation (Derek Starnes, Nathan Palovcik)	Spring 2022	In Progress	components ordered, awaiting delivery and installation schedule from service provider; Update-parts will not be in until August

Project/Initiative	Lead	Target Date	Status	Notes
Asset Management Project (OP No. 22)	Planning and Growth (Ken Woitt)		In Progress	
Municipal Development Plan (MDP) (OP No. 21)	Planning and Growth (Ken Woitt)	Spring 2023	In Progress	Phase 1 (population projections, Gap Anaylsis) and first online survey completed. Remaining MDP work deferred to 2022 and to be included in 2022 budget.
Labour Gap Market Study	Enterprise and Growth	2022-02-28	In Progress	This project is comprised on several stakeholders, the Town/County/Chamber of Commerce/GovAB to evaluate the labor gap shortage in the region.
Clean Energy Improvement Program (CEIP)	Energy Program Coordinator (Aishah Mohd Isa)	Winter 2022/2023	In Progress	Council passed the CEIP Bylaw on 15th September 2021. Application submitted for FCM Community Efficiency Financing stream. Expected program launch in Spring 2023.
Adaptation Resilience Training Program (North Saskatchewan River Adaptation to Climate Variability)	Energy Program Coordinator (Aishah Mohd Isa)	Program ends in May 2022	In Progress	Project Assistant (funded by University of Alberta) is scheduled to present overall project to Council during March 2 G&P.
Municipal Energy Manager (MEM) Program	Energy Program Coordinator (Aishah Mohd Isa)	Program ends in May 2022	In Progress	MEM Program application for Year 2 approved. Drafting RFP for energy performance contracting.
Partners for Climate Protection (PCP) Milestone Framework	Energy Program Coordinator (Aishah Mohd Isa)		In Progress	Collecting data for 2021 energy & emissions inventory report.
FoodCyler Program	Energy Program Coordinator (Aishah Mohd Isa)	Program ends in September 2022	In Progress	Project to start in March 2022. Working on program design and promotional strategies.
Sub-metering Project at Civic Centre & Omniplex	Energy Program Coordinator (Aishah Mohd Isa)	Project ends in August 2023	In Progress	Approved for FCM Building Monitoring Grant.
CETC Conference Room Audio Visual Equipment (CP No. 430)	Economic Development (Jennifer Stone, Nathan Palovcik)		In Progress	components ordered, awaiting delivery and installation schedule from service provider.
Off-Site Levy Review (OP No. 23)	Infrastructure (Owen Olynyk)/Planning and Growth (Ken Woitt)	Q2 2022	In Progress	Department will be seeking quotes on cost of doing a Off-site Levy Bylaw review and bringing to Council for future Budget Deliberations.

Project/Initiative	Lead	Target Date	Status	Notes
Asset Planning - Roadways	Infrastructure (Owen Olynyk)	Winter 2023	In Progress	Once Asset Management is implemented, Administration will bring forward proposal to engage a assessment study for roadway condition and integrate into Asset Management for budget forecasting.
Water Distribution Upgrade Project	Infrastructure (Owen Olynyk)	Winter 2022	In Progress	Replacement pump for 201 on order from supplier and then cycle the rest through as they are replaced (if they cannot be rebuilt). PRV and Water Grid integration will commence in spring/summer of 2022 and completion will be contingent on the proposal received through the RFP process.
Infrastructure Assessment (OP No. 26)	Infrastructure (Owen Olynyk)		Not Started	
Storm Water Assessment (OP No. 27)	Infrastructure (Owen Olynyk)		Not Started	
Controlled Crossings (OP No. 28)	Infrastructure (Owen Olynyk)		Not Started	
De-Sludging Lagoon 1 (OP No. 29)	Infrastructure (Owen Olynyk)		In Progress	Department has begun drafting tender documents to prep for going out on APC
Sidewalks & Trails Program (CP No. 419)	Infrastructure (Owen Olynyk)		In Progress	Department has begun drafting tender documents to prep for going out on APC
50 Avenue East Improvements (CP No. 392)	Infrastructure (Owen Olynyk)			
Common Services Mobile Equipment (CP No. 9)	Infrastructure (Owen Olynyk)		In Progress	Department has begun drafting tender documents to prep for going out on APC
New Cell (4E) - Construction, Material, Lining (CP No. 448)	Infrastructure (Owen Olynyk)		In Progress	Department has begun drafting tender documents to prep for going out on APC
Meraw Pond Expansion (CP No. 431)	Infrastructure (Owen Olynyk)		In Progress	Department has begun drafting tender documents to prep for going out on APC

Project/Initiative	Lead	Target Date	Status	Notes
Landfill - Tipping Fees	Infrastructure (Owen Olynyk)	Fall 2022	Not Started	Administration will make recommendations of necessary tipping fee changes contingent on overseeing the progress of the landfill with a newly signed contract and incoming tonnage at 2023 fee schedule deliberations.
Distribution Replacement Program (CP No. 433)	Infrastructure (Owen Olynyk)		In Progress	Pre-liminary design and PRV acquisitions are underway
Telephone System Upgrade (OP No. 20)	IT (Nathan Palovcik)		In Progress	investigating alternative service/equipment providers
Server Replacement (CP No. 429)	IT (Nathan Palovcik)		In Progress	components have been ordered, awaiting delivery of equipment
Command Truck (CP No. 427)	Protective Services (Tom Thomson)			
Self-Contained Breathing Aparatus Upgrade (CP No. 4)	Protective Services (Tom Thomson)			
Canada Day RFP	Community Services/FCSS (Lola Strand, Jennifer Fynn)	2022-02-28	In Progress	request for proposals for Canada Day
Volunteer Income Tax Program	Community Services/FCSS (Lola Strand, Emily Hickman)	2022-03-01	In Progress	volunteers recruited - tax program for low income individuals - tax drop off location at Rotary House
Volunteer Appreciation Banquet	Community Services/FCSS (Lola Strand/Jennifer Fynn)	April, 2022	In Progress	date and details TBA
Community Event Grant	Community Services (Lola Strand)	2022-04-01	In Progress	deadline April 1, 2022
Good Neighbour Program	Community Services/FCSS (Lola Strand/Jennifer Fynn)		In Progress	Nominate your neighbour for their kind deeds - all entries reciieve a FCSS toque and an entry to win the grand prize!
Snow Angels	Community Services/FCSS (Lola Strand/Jennifer Fynn)		In Progress	volunteers help seniors with snow removal
Community Mat Program	Community Services (Lola Strand/Emily Hickman)	2022-03-31	In Progress	running 7 nights per week until the end of March.

Council Action Tracking Sheet

Number	Meeting Date	Resolution	Assigned to	Target Date	Remarks
G045/21	15-Sep-21	moved that Administration do a report on our crossroads in our community and bring back a plan to Council			
G048/21	15-Sep-21	moved to conduct a review on the utility bylaw and rates for water and sewer	Owen Olynyk	Summer 2022	Will work with Utilities Department and update language and processed
G055/21	27-Oct-21	moved that Council direct Administration to continue with the presented timeline and steps for the Combative Sports Commission Bylaw 2021/12/C	Derek Starnes		**This has been put into the Local groups hands to pursue an event Commissioned by the Grande Praire Sports Commission before moving the Bylaw forward**
G056/21	27-Oct-21	moved that Council direct Administration to proceed with an internally facilitated strategic planning process and reschedule budget deliberations for early 2022. *Councillor Ballas proposed a friendly amendment to reschedule budget deliberations to when strategic planning is completed.* *Mayor Dodds accepted the friendly amendment.*	Rob Osmond, Elvera Thomson	Jan 2022	In Progress; first draft of the corporate business plan is being presented Jan 19th and final Strategic and Corporate Business plans are expected in February 2022. Budget Deliberations dates are scheduled for January.
G065/21	03-Nov-21	moved that Council direct Administration to gather additional information regarding the combative sports commission and to include information on the following items: • impact of MGA section 535.1(1); • access to economy of scale and partnerships by reaching out to other municipalities that have commissions; • waivers of subrogation and hold harmless waivers; • total insurance costs to sanction an invent.	Rob Osmond, Derek Starnes	Feb-22	**This has been put into the Local groups hands to pursue an event Commissioned by the Grande Praire Sports Commission before moving the Bylaw forward**
G066/21	03-Nov-21	moved that Council direct Administration to pursue the preparation of a resolution for the AUMA for the next resolution session in support of a provincial combative sports commission and reach out to a neighbouring municipality to find a rural municipality that would be willing to submit the same resolution to RMA	Rob Osmond, Derek Starnes	Fall 2022	In Progress
222/21	24-Nov-21	moved that Council approve the Water Distribution Upgrade Project using $475,000 from the Water Capital Reserve, $852,000 from the MSI fund, and the remaining $73,000 from Town reserves	Owen Olynyk, Elvera Thomson	Winter 2022	Complete, construction to be completed by winter
223/21	24-Nov-21	moved that Administration apply for funding for this project through the Alberta Municipal Water and Wastewater Program	Owen Olynyk		In Progress
G078/21	08-Dec-21	moved that Council receive the report for information and that we will look at our Land Use Bylaw to incorporate architectural design standards when it comes to the replacement of homes in mobile home parks	Ken Woitt	23-Feb-22	In Progress
G080/21	08-Dec-21	moved to have Administration give us the latest updated information on the requirements for storm water retention from Alberta Environment for review so we can go above and beyond going forward	Ken Woitt, Owen Olynyk	16-Mar-22	In Progress

Council Action Tracking Sheet

Number	Meeting Date	Resolution	Assigned to	Target Date	Remarks
237/21	22-Dec-21	moved that Council approve Lot 2 Block -10 Plan 1149KS (5309 54) Street as the location for the Shelter Pods	Lola Strand		
238/21	22-Dec-21	made a motion to provide the guarantee that the Town of Drayton Valley will cover the operational costs of the Shelter Pod program for the first five years of operation and to send the letter as written stating as much to the grant administrators/providers	Lola Strand		
G001/22	12-Jan-22	moved that Council direct Administration to proceed with the FoodCycler pilot program with 100 units	Aishah Mohd Isa	15-Jan-22	In Progress
G002/22	12-Jan-22	moved that Council approve the request to install an FCSS phone booth outside of the Drayton Valley Civic Centre and further details be brought to Council, as well as the FCSS office	Lola Strand		In Progress
G006/22	12-Jan-22	moved to direct Administration to gather information in regards to an asset management and infrastructure committee	Rob Osmond, Owen Olynyk, Ken Woitt		In Progress
G010/22	19-Jan-22	moved that Council accept the draft Corporate Business Plan report for information	Rob Osmond		In Progress
G012/22	19-Jan-22	moved that Council direct Administration to review the Council Code of Conduct Bylaw	Rob Osmond		
G016/22	19-Jan-22	moved that Council direct Administration to prepare a report on urban beekeeping			
G018/22	02-Feb-22	moved that Council agree to share the costs of the developer's request for financial support to bring services to his property line, based on the estimated quote given at $110,800 and that the Town will be willing to split that cost at 75/25%, at the Town's expense of a maximum of $83,100, and the rest is up to the developer	Ken Woitt	30-Apr-22	In Progress
G020/22	02-Feb-22	moved that Council accept the report as information and direct Administration to reallocate efforts on the Combative Sports Commission Bylaw to pursuing a partnership with the mutually interested Commission to host an MMA event in Drayton Valley hosted by a local group	Derek Starnes		**Complete**
022/22	09-Feb-22	moved that Town Council approve that September 30 be observed annually as a National Day for Truth and Reconciliation, to recognize and commemorate the legacy of residential schools. Further, that Administration be directed to, in partnership with our First Nations partners, offer informational programming events to help advance truth and reconciliation on this day annually	Rob Osmond		
023/22	09-Feb-22	moved that Town Council approve the Internal Sustainability Committee Terms of Reference with the amendment that the appointment of the chair will be made by motion of the Committee	Rob Osmond		
024/22	09-Feb-22	moved that Town Council approve the Internal Community Safety Committee Terms of Reference with the amendment that the chair be appointed by selection of the Committee	Rob Osmond		
025/22	09-Feb-22	moved that the Terms of Reference for the Internal Education and Economic Development Committees be amended to have their chair be selected by the Committee at their first meeting	Rob Osmond		

Council Action Tracking Sheet

Number	Meeting Date	Resolution	Assigned to	Target Date	Remarks
G028/22	09-Feb-22	moved that Council approve the closure of the Civic Centre, CETC, Public Works, Utilities, and Rotary House for a Christmas closure starting Wednesday, December 28, 2022, to January 3, 2023, with staff to use vacation time, banked time in lieu, or flex days for days that are not statutory holidays	Rob Osmond		
G032/22	09-Feb-22	moved that Council direct Administration to finalize a contract with Metalnecks for concrete and metal recycling	Owen Olynyk		
G036/22	23-Feb-22	moved that Council direct administration to engage the MFH Park owners and MFH residents and present a final report at a future Governance & Priorities meeting for approval	Ken Woitt		
G037/22	23-Feb-22	moved that Council appoint Cody Rossing as a Community Peace Officer for the Town of Drayton Valley	Tom Thomson		
G038/22	23-Feb-22	moved that Administration gather further information in regard to the potential of hosting the games and if it can be accommodated in regards to the 55+ Games and the Alberta Winter/Summer Games	Derek Starnes		

ALBERTA
MUNICIPAL AFFAIRS
Office of the Minister
MLA, Calgary-Hays

February 24, 2022

Dear Chief Elected Officials:

I am writing to share information with you about *Budget 2022*, which my colleague, the Honourable Travis Toews, has tabled in the Alberta legislature. You will find below some details about Budget 2022 that are most closely related to Alberta Municipal Affairs and the Alberta municipalities that we all continue to serve.

Alberta's government is investing approximately $980 million overall to build stronger communities across our province. These funds will continue to deliver important programs and services, support effective governance, and protect public safety. Alberta is moving forward to a time of economic recovery and prosperity, where Albertans have opportunities to build their skills, pursue their passions, and support themselves and their families. That's why we are continuing to provide significant infrastructure funding in the near term to support our economic recovery, even as we help municipalities adjust to new funding levels.

As we discussed last year, Municipal Sustainability Initiative (MSI) capital funding is averaging $722 million a year for three years, from 2021-2024. We front-loaded MSI funding for 2021-22 to a total of approximately $1.2 billion, to help municipalities recover from the pandemic and provide flexibility to ensure priority capital projects could continue. As a result, MSI funding for 2022 and 2023 has been reduced proportionately to $485 million each year. Additionally, municipalities and Metis Settlements will continue to receive $30 million under the operating component of the MSI program.

The goal of this strategic, multi-year funding approach is to prepare for implementation of the Local Government Fiscal Framework in 2024-25. Our government passed the *Local Government Fiscal Framework (LGFF) Act*, paving the way for Municipal Affairs to establish a predictable, reliable, long-lasting funding arrangement with Alberta municipalities that is tied to provincial revenues. Baseline funding for the first year of the LGFF in 2024-25 will remain at $722 million, equivalent to the current three-year average funding level of MSI. The estimated 2022 MSI allocations are available on the program website here.

As you are also aware, the federal Gas Tax Fund changed its name and is now called the Canada Community-Building Fund (CCBF). Fortunately, the level of funding for Alberta has not changed, and we anticipate receiving approximately $255 million from this federal fund again this year. The estimated 2022 CCBF allocations are available on the program website here.

…/2

320 Legislature Building, 10800 - 97 Avenue, Edmonton, Alberta T5K 2B6 Canada Telephone 780-427-3744 Fax 780-422-9550

Classification: Protected A

MSI and CCBF program funding is subject to the Legislative Assembly's approval of Budget 2022. Individual allocations and 2022 funding are subject to ministerial authorization under the respective program guidelines. Federal CCBF funding is also subject to confirmation by the Government of Canada. You should anticipate receiving letters confirming MSI and CCBF funding commitments in April.

I am pleased to inform you that funding in support of local public library boards will continue to remain stable, helping to deliver important literacy resources to Albertans. We are also maintaining equivalent levels of operational funding for other services, such as the Land and Property Rights Tribunal.

As we all look to the time ahead, I can tell you that Alberta's government understands the challenges and the opportunities that are facing Alberta communities. As we continue to recover from the pandemic and prepare for economic growth, Municipal Affairs remains committed to providing sustainable levels of capital funding, to promoting economic development, and to supporting local governments as they deliver programs and services that Albertans need.

Alberta is moving forward to a prosperous financial future, and Albertans are doing their part to get us there. Alberta's government will do its part by sticking to our fiscal plan. We will continue our disciplined spending to maintain balance, and we will continue to respect Albertans' tax dollars by keeping our spending in line with other provinces.

With our eyes on these goals, we will move forward to a bright, thriving, and prosperous future where Alberta firmly secures our place as the economic engine of our nation.

Sincerely,

Ric McIver
Minister