AGENDA
COUNCIL MEETING
MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
November 22, 2022 6:00 pm
Council Chambers

A. PUBLIC HEARING BYLAW 1337-22 (Blak Star Globes)

a) Agenda
b) Bylaw 1337-22
c) Proposal
d) Letters

B. PUBLIC HEARING BYLAW 1345-22 (River Bend Houses)

a) Agenda
b) Bylaw 1345-22
c) Proposal
d) Letters

C. ADOPTION OF AGENDA

D. MINUTES/NOTES

1. Committee Meeting Minutes
   - October 25, 2022
2. Council Meeting Minutes
   - October 25, 2022
3. Organizational Meeting Minutes
   - October 25, 2022
4. Special Council Meeting Minutes
   - November 1, 2022
5. Special Council Meeting Minutes
   - November 15, 2022

E. UNFINISHED BUSINESS

a) Bylaw 1342-22 Alberta Rocks Ltd - Extraction Pit
   - Presented for 2nd & 3rd Reading

F. BUSINESS ARISING FROM THE MINUTES

G. COMMITTEE REPORTS / DIVISIONAL CONCERNS

1. Councillor Tony Bruder – Division 1
   - ORRSC Meeting Minutes July 14, 2022
   - ORRSC Meeting Minutes October 13, 2022
   - Waterton Biosphere Newsletter
   - Remembrance Day Representation at Twin Butte
     - **resolution needed for attendance*
2. Reeve Rick Lemire – Division 2
3. Councillor Dave Cox– Division 3
   - Remembrance Day Representation at Town of Pincher Creek
     - **resolution needed for attendance*
4. Councillor Harold Hollingshead - Division 4
5. Councillor John MacGarva – Division 5
   - Crowsnest/Pincher Creek Landfill Meeting September 14, 2022

H. ADMINISTRATION REPORTS

1. Operations

a) Operations Report
   - Report from Public Works dated November 16, 2022
   - Public Works Call Log
   - 2022/2023 Snow Plow Map
b) Dam Safety Review
   - Report from Administration dated November 5, 2022

c) Utility Bylaw 1344-22
   - First Reading and Schedule Public Hearing for January 10, 2023
d) Regional Wastewater Treatment Feasibility Assessment; Alberta Community Partnership Grant
   - Report from Administration, dated November 16, 2022

2. Finance

a) Request to Waive Finance Charges – Castle Mountain Community Association
   - Report from Administration dated November 15, 2022
b) 2022 November Financial Update
   - Report from Administration dated November 16, 2022
c) 2023 Budget
   - Presented for Approval

3. Planning and Community Services

a) AES Report
   - Report for November 2022

4. Municipal

a) Chief Administrative Officer Report
   - Report from CAO, dated November 15, 2022
b) Appointment to Boards
   - Report from Administration, dated November 14, 2022
c) Cancellation of December Meeting
   - Report from Administration, dated November 14, 2022

I. POLICY REVIEW

J. CORRESPONDENCE

1. <u>For Action</u>

a) Pincher Creek Huskies
   - Request for Donation

2. <u>For Information</u>

a) Victim Services Redesign
   - Letter from Fox Creek
b) Grant Specialist Report
   - August/September 2022
c) Tree of Life Campaign

K. NEW BUSINESS

L. CLOSED MEETING SESSION

a) ICF Recreation Agreement – FOIP Sec. 24
b) Water/Wastewater Meeting – FOIP Sec. 24
c) PCESC Membership Agreement – Article 10 – Disestablishment of the Commission – FOIP Sec. 24

M. ADJOURNMENT

MINUTES
REGULAR COUNCIL COMMITTEE MEETING
MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
Tuesday, October 25, 2022 2:00 pm
Council Chambers

Present: Reeve Rick Lemire, Deputy Reeve Tony Bruder (attended virtually), and Councillors Dave Cox, Harold Hollingshead, and John MacGarva.

Staff: CAO Roland Milligan, Director of Finance Meghan Dobie, Utilities & Infrastructure Supervisor David Desabrais and Executive Assistant Jessica McClelland.

Deputy Reeve Tony Bruder called the meeting to order, the time being 2:11 pm.

1. Approval of Agenda

Councillor Dave Cox

Moved that the agenda for Council Committee Meeting on October 25, 2022 be approved as presented.

Carried

2. Delegations

3. Closed Session

Councillor Harold Hollingshead

Moved that Council move into closed session to discuss the following, the time being 2:12 pm:

a) Draft Utility Bylaw 1344-22 – FOIP Sec. 24
b) PCESC Reserves – FOIP Sec. 24

Carried

Reeve Rick Lemire arrived at 2:16 pm and assumed the chair.

Councillor Dave Cox

Moved that Council move out of closed session, the time being 4:16 pm.

Carried

4. Round Table

5. Discussion: Touring Castle Mountain Resort

Council was invited by Castle Mountain Resort to go out to the area for a tour. Administration will make arrangements for dates/times.

6. Discussion: Art for Municipal Building

Council directed administration to look into purchasing art from local artists for display in the Municipal Building.

7. Discussion: Joint Council Meeting Dates/Topics

Council directed administration to suggest to the Town a date the week of November 14, 2022 for a future Joint Council meeting as well that the MD would like the topics of Joint Budgets and Physician Recruitment added to the agenda.

8. Adjournment

Councillor Harold Hollingshead

Moved that the Committee Meeting adjourn, the time being 5:00 pm.

Carried

_____
REEVE

_____
CHIEF ADMINISTRATIVE OFFICER

MINUTES
MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
REGULAR COUNCIL MEETING
OCTOBER 25, 2022

The Regular Meeting of Council of the Municipal District of Pincher Creek No. 9 was held on Tuesday, October 25, 2022, at 6:00 pm, in the Council Chambers of the Municipal District Administration Building, Pincher Creek, Alberta.

PRESENT Reeve Rick Lemire, Deputy Reeve Tony Bruder (attended virtually), Councillors Dave Cox, Harold Hollingshead and John MacGarva.

STAFF CAO Roland Milligan, Director of Finance Meghan Dobie, Public Works Superintendent Eric Blanchard, Utilities & Infrastructure Supervisor David Desabrais, and Executive Assistant Jessica McClelland.

Reeve Rick Lemire called the meeting to order at 6:00 pm.

A. DELEGATION

Member Dick Burnham from the Royal Canadian Legion of Pincher Creek Branch #43 attended the meeting at this time to present a poppy to Reeve and Council.

Dick Burnham left the meeting at this time, the time being 6:05 pm.

B. PUBLIC HEARING BYLAW 1342-22

In order to receive public input on proposed Bylaw No. 1342-22, a Public Hearing, conducted by the Council of the Municipal District of Pincher Creek No. 9, was held on Tuesday, October 25, 2022.

1. Call Public Hearing to Order

Reeve Rick Lemire recessed the Council meeting and called the Public Hearing to order, the time being 6:06 pm.

A Public Hearing is Council's opportunity to hear from anyone who is affected by the proposed bylaw. General rules of conduct when a Public Hearing is held are as follows:

- The developer and/or proponent is given the first opportunity to present to Council and the public. After the public has made their statements, the developer has the opportunity to rebut or answer any questions.
- Members of the public will be invited to speak to the subject matter. We will ask members of public who wish to speak to state their name for the record. The speaking time limit is 5 minutes per speaker. If you have previously submitted a written response, unless you have new information to present, be assured that Council has read your letter. Please do not come to the podium to read your submitted response.
- The Reeve will call for any additional speakers to make sure everyone wishing to speak has had the opportunity to do so. As this is not a situation for debate, speakers may come up one time only.
- Following all presentations from members of public, the developer has the opportunity to rebut or answer any questions, Council may ask questions to Administration and/or developer.
- Council will then close the Public Hearing. This ends the opportunity for the public or Administration to provide information on the matter.

2. Advertising requirement

Reeve Rick Lemire stated that this Public Hearing had been advertised in accordance with Section 606 of the Municipal Government Act. This Public Hearing was advertised in the Shootin the Breeze and Pincher Creek Echo on October 12 and October 19, 2022, as well as the MD website and MD Social Media pages.

3. Purpose of the hearing

The purpose of Bylaw No. 1342-22 being the bylaw to amend Bylaw 1289-18 (being the Land Use Bylaw) to change the land use designation of lands legally described A portion of Lot 14, Plan 971 0740 within SE 18-7-2 W5M from "Agriculture - A" to "Direct Control - DC" with the purpose of the proposed amendment is to allow for the development of a 12.1 acre (4.9ha) gravel pit.

Planner Gavin Scott provided an overview of the bylaw.

4. Presentations:

VERBAL:

Developer Craig Anderson and Rick Casson spoke regarding landowner concerns from the letters presented to Council:

- Alberta Rocks has been operating at their current location for 15 years with no complaints
- Development will be to eventually allow the business to proceed with resource extraction
- Plans are for no retail sale, or crushing, at this location
- Hours can be negotiated with Council to ensure least amount of disturbance to residents
- Geo Technical data is available
- Have dug test holes 6 meters down and has not found water or hit the aquafer

Reeve Rick Lemire asked if anyone wanted to present a verbal submission:

Randy Baker:

- Year round resident
- Gravel pit would be very close to his home
- Anderson's should have taken the gravel and reclaimed the area prior to subdividing
- Noise/dust/water concerns are apparent
- Direct control is very unusual as due diligence to prevent issues and risks
- 12 of the 16 letters of support are form letters from business partners and only 1 letter is from a resident in the area

Leo Reedyk:

- Lives full time at lot 9 adjacent to the proposal
- Bought here for the quiet enjoyment of the area
- Application for direct control should be denied
- Gravel pits in this area are a problem
- Council should put a moratorium on new gravel pits within the Municipality until the issues are fixed
- Understands that various pits in the MD are beneficial to the Municipality but shouldn't be allowed in the Burmis Lundbreck Corridor
- MD should look at having gravel operators pay fees to maintain roads

Greg Townsend:

- Historical Resources
    - All pits on both public and private land are subject to the requirements of the Historical Resources Act. Historical resources are significant pieces of Alberta's history that must be recognized and conserved.
    - For operations that are less than 5 hectares (12.4 acres) in size, the pit operator must consult Alberta Culture's Listing of Historic Resources prior to initiating any development activities. Development activities may not proceed until Historical Resources Act approval has been obtained
- Water
    - operator of a pit must obtain the appropriate authorizations under the Water Act. This includes any authorization needed for dewatering, altering surface drainage, constructing an end pit lake, disturbing ground wate ror using water.
    - Adjacent landowners may be concerned about erosion and siltation of water bodies and other potential impacts.
    - General provisions of both the Water Act and Environmental Protection and Enhancement Act prohibit siltation and erosion and releases that may degrade water quality.

- Fish and Wildlife
    - Various legislation exists to protect fish and wildlife features and habitats.

- Reclamation

  - Goal of reclamation is to bring land back to "equivalent land capability," which refers to the ability of the land to support uses similar to before it was developed.
  - All sand and gravel pits on private land - regardless of their size or class - are required to abide by the Conservation and Reclamation Regulation and require a Reclamation Certificate from Alberta Environment and Parks (AEP).
  - pre-plan the reclamation intended at the end of the life of the pit.

- Safety
  - Safety considerations should be addressed for foot/bicycle traffic, and anglers accessing/leaving the Crowsnest River at or near the bridge.
  - Total distance from Highway 3 to pit access road on 507: 2.1 km. one level RR crossing, one RR access road, one bridge over the Crow, one "pullout" where anglers access the Crow, 12 driveways/road intersections. A busy little road section accommodating well over 100 residential home owners.
  - Should not to add gravel trucks to the mix, at a minimum of 8 hours a day 5 days a week.

- Find this entire process to be aggravating, frustrating, and really not necessary given the previous application was turned down unanimously, and the current proposal is equally unjustifiable. The changes this time are minor, and our litany of concerns last time are not mentioned, never mind addressed. But here we are.
- If approved - Horrifying Precedence. This area has the most clearly defined sensitive habitat.
- Personal affects - of our remaining years, lead to erosion of our quiet wildlife filled environment during retirement.

Tom Penner:
- Owns property directly East of development
- Development will cause access issues
- It's a beautiful area and a gravel pit will distract from that
- Conservation easement on his parcel has a defined location for future residential development adjacent to the proposed pit

Richard McCowan:
- The letters of support are form letters
- The crowd of people attending tonight are worried about their lifestyle
- Unauthorized pit caused issues
- Owners want to enjoy the outdoors

Craig Anderson and Rick Casson:
- Direct control would put rules in the hands of Council
- Dust can be controlled with products

Reeve Rick Lemire asked if anyone else wanted to present a verbal submission, no one else requested to speak.

WRITTEN:

Reeve Rick Lemire asked if any written submissions were received, the following were received and part of the public package:

- Craig Anderson
- Vince Anderson
- Sandra & Randall Baker
- John Cervo
- Liam Connelly-Engel
- Rowena Cromwell
- Richard & Lorna Erickson
- Duncan & Sandra Gano
- Margaret, Joshua & Benjamin Haag
- Theresa Hann (Three Rivers Rentals Ltd)
- Will Hebenik (Quality Excavating)
- JRT Contracting
- Jura Creek Enterprises Ltd
- KT Contracting
- Claudette Landry & Randy Axani
- Richard & Susan McCowan
- Ryan & Kayla Menzies
- Lucas Michalsky
- Glen & Lois Mumey
- Brandon Naumczyk
- Jana Naumczyk

- Bill Ogertschnig
- Leo Reedyk & Ruth Skene-Reedyk
- Randy Rinaldi
- Thomas Penner
- Sage Management
- Southwest Concrete
- TIG Contracting
- Greg & Lori Townsend
- Two Feathers Contracting
- Vicary Resources
- Kevin & Sandy Watson
- Lucas Weatherbee
- General Letter

Reeve Rick Lemire asked if any written submissions were received, a late submission from Silvertone Services was read out by the CAO

"We have been customers of Alberta Rocks for many years and consider them to be an important part of our area infrastructure; they supply necessary products for continuing development and growth in our region. They are a very reputable company that can be counted on to produce and deliver top quality gravel and related products in a timely and cost effective manner. They operate at their present location in the most unobtrusive manner possible, and approving the necessary amendments and permits to allow the proposed extraction only operation would allow this service to continue to be provided.

Alberta Rocks service a wide area of south west Alberta, without them our options as customers would be severely restricted and necessitate transporting product from a much greater distance. This extra trucking would put further stress on our roads and highways and would create unnecessary adverse environmental issues while increasing costs. We would very much like to continue to support this local, multi-generational family owned operation.

Please consider these issues as you debate the requested Land Use By-law Amendment and subsequent licensing and permits."

5. Closing Comments

Reeve Rick Lemire asked if Council had any further questions, Council discussed aquafer depth (it was unknown) and what kind of volume Alberta Rocks is looking at for this pit (unknown at this time).

6. Adjournment from Public Hearing

Councillor Dave Cox adjourned the Public Hearing, the time being 6:55 pm.

C. ADOPTION OF AGENDA

Councillor Harold Hollingshead 22/410

Moved that the Council Agenda for October 25, 2022 be amended to include:

Finance:

- PCESC Reserves

And that the agenda be approved as amended.

Carried

D. MINUTES

1. Committee Meeting Minutes – October 11, 2022

Councillor Dave Cox 22/411

Moved that the Committee Meeting Minutes of October 11, 2022 be approved as presented.

Carried

2. Council Meeting Minutes – October 11, 2022

Councillor John MacGarva 22/412

Moved that the Council Meeting Minutes of October 11, 2022 be approved as presented.

Carried

E. BUSINESS ARISING FROM THE MINUTES

a) Pincher Creek Climate Risk Assessment and Adaption Plan

Councillor Harold Hollingshead 22/413

Moved that the Pincher Creek Climate Risk Assessment and Adaption Plan be received as information.

Carried

F. UNFINISHED BUSINESS

F. COMMITTEE REPORTS / DIVISIONAL CONCERNS

a) Councillor Tony Bruder – Division 1
   - Strategic Plan online workshop
   - Waterton Biosphere
   - ALUS

b) Reeve Rick Lemire – Division 2
   - Thank you to Councillor John MacGarva for attending the Awards ceremony on behalf of Council

c) Councillor Dave Cox– Division 3
   - Strategic Plan online workshop
   - Castle Community Association

d) Councillor Harold Hollingshead - Division 4
   - Strategic Plan online workshop
   - RCMP Open House
   - Solicitor Generals

e) Councillor John MacGarva – Division 5
   - Strategic Plan online workshop
   - RCMP Open House
   - Crowsnest Pincher Creek Landfill Association
   - Pincher Creek Chamber awards night

Councillor Dave Cox 22/414

Moved to accept the Committee Reports as information.

Carried

H. ADMINISTRATION REPORTS

1. Operations

a) Operations Report

Councillor John MacGarva 22/415

Moved that Council receive the Operations report, which includes the call log, for the period October 6, 2022 to October 19, 2022 as information.

Carried

b) 150M Grader Purchase Timing

Councillor Tony Bruder 22/416
Moved that Council approve $675,000 in funding for the CAT 150M grader in 2022, through the Municipal Sustainability Initiative (MSI) grant.

Carried

2. Finance

a) PCESC Reserves

Councillor Tony Bruder 22/417

Moved that Council direct Administration to provide Pincher Creek Emergency Services Commission (PCESC) with a reserve contribution of $140,631, as requested and levied by PCESC in 2021, with said funds coming from the PCESC Equipment Reserve (6-12-0-761-6740)

Carried

3. Development and Community Services

a) Bylaw 1340-22 (Silo's)

Councillor Dave Cox 22/418

Moved that Bylaw 1340-22, being the Bylaw to change the land use designation of lands legally described as Portion of SW16 3-29 W4M to allow for a recreational accommodation, be given second reading.

Carried

Councillor Tony Bruder 22/419

Moved that Bylaw 1340-22 be given third reading.

Carried

4. Municipal

a) Chief Administrative Officer Report

Councillor John MacGarva 22/420

Moved that Council receive for information, the Chief Administrative Officer's report for the period of October 7, 2022 to October 20, 2022.

Carried

I. POLICY REVIEW

J. CORRESPONDENCE

1. For Action

2. For Information

Councillor Tony Bruder 22/421

Moved that the following be received as information:

a) A round table presentation of Addiction and Mental Health Resources in the South Zone
- Invitation from Oldman River Health Advisory Council

- Councillor Dave Cox indicated he wishes to attend, administration will register him.

b) Health Engagement Tour Update
- Newsletter from Alberta Health Services

c) D56 Notification Update 10-07 to 07-07-006-02 W5M (Pieridae)
d) Harvest Gala Invitation
e) KBPV Spooky Town
f) Pincher Planters Letter to MD/Town
- Request for Water to Blue Mouse Greenhouse

Carried

K. NEW BUSINESS

L. CLOSED SESSION

Councillor Dave Cox 22/422

Moved that Council move into closed session to discuss the following, the time being 7:43 pm:

a) Beaver Mines Water Distribution & Collection – FOIP Sec. 24

Councillor Dave Cox 22/423

Moved that Council move out of closed session, the time being 8:15 pm.

Carried

a) Beaver Mines Water Distribution & Collection

Councillor Harold Hollingshead 22/424

Moved that Council deny the extension request to December 15, 2022 from BYZ Enterprises Inc. on the Substantial Performance Date for Schedule A & B of the Hamlet of Beaver Mines Potable Water Distribution & Collection Project,

AND THAT the MD enforces the contractual penalties starting November 1, 2022 on schedule A and schedule B until completion.

Carried

M. ADJOURNMENT

Councillor Dave Cox 22/425

Moved that Council adjourn the meeting, the time being 8:21 pm.

Carried

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REEVE

_____
CHIEF ADMINISTRATIVE OFFICER

MINUTES
MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
ORGANIZATIONAL COUNCIL MEETING
OCTOBER 25, 2022

The Organizational Meeting of Council of the Municipal District of Pincher Creek No. 9 was held on Tuesday, October 25, 2022, following the regular Council meeting, in the Council Chambers of the Municipal District Administration Building, Pincher Creek, Alberta.

PRESENT Reeve Rick Lemire, Deputy Reeve Tony Bruder (attended virtually), Councillors Dave Cox, Harold Hollingshead and John MacGarva.

STAFF CAO Roland Milligan, Director of Finance Meghan Dobie, Utilities & Infrastructure Supervisor David Desabrais, and Executive Assistant Jessica McClelland.

A. CALL TO ORDER

CAO Roland Milligan called the Council Meeting to order, the time being 8:21 pm.

B. ELECTION OF REEVE

CAO Roland Milligan asked Council for nominations for the position of Reeve, Councillor Dave Cox nominated Councillor Rick Lemire for the position of Reeve.

CAO Roland Milligan asked for other nominations three times. No other nominations were received; Councillor Rick Lemire, by acclamation, was declared Reeve.

Reeve Rick Lemire assumed the chair.

C. ELECTION OF DEPUTY REEVE

Reeve Rick Lemire asked Council for nominations for the position of Deputy Reeve, Councillor Harold Hollingshead nominated Councillor Tony Bruder for the position of Deputy Reeve.

Reeve Rick Lemire asked for other nominations three times. No other nominations were received; Councillor Tony Bruder, by acclamation, was declared Deputy Reeve.

D. REVIEW OF CODE OF CONDUCT

Code of Conduct was discussed. All of Council confirmed the Code of Conduct.

E. ADOPTION OF AGENDA

Councillor John MacGarva 22/426

Moved that the Organizational Agenda for October 25, 2022 be approved as presented.

Carried

F. APPOINTMENT OF SIGNING AUTHORITIES

Councillor Dave Cox 22/427

Moved that Reeve Rick Lemire, or Deputy Reeve Tony Bruder, and the CAO, or the Director of Finance, are authorized to have signing authority for general cheques of the Municipal District of Pincher Creek No. 9;

Carried

G. APPOINTMENT OF AUDITORS

Councillor Tony Bruder 22/428

Moved that Avail LLP be appointed as the Municipal District of Pincher Creek No. 9 Auditors for 2023.

Carried

Minutes
Organizational Meeting
Municipal District of Pincher Creek No. 9
October 25, 2022

H. MEETING TIMES AND DATES

Councillor Dave Cox 22/429

Moved that, unless altered by resolution:

- Subdivision Authority Meetings be held the first Tuesday of each month, starting at 6:00 pm
- Municipal Planning Commission Meetings be held the first Tuesday of each month, starting at 6:30 pm
- Council Committee Meetings be held the third Tuesday of each month, starting at 5:00 pm
- Council Meetings be held the second and fourth Tuesday of each month, starting at 5:00 pm

Carried

All of Council are sitting members of the following Committees, Boards and Commissions. A resolution is not required to appoint Council members.

- Foothills Little Bow
- Joint Cowley and MD Council Meetings
- Joint Crowsnest Pass and MD Council Meetings
- Joint Funding Meetings
- Joint Town and MD Council Meetings
- Municipal Planning Commission
- Regional Council Meetings
- RMA (Rural Municipalities of Alberta)
- Regional Emergency Management Organization
- Subdivision Authority

I. COMMITTEES/ BOARDS APPOINTMENTS

(1) Agricultural Service Board
   a. Councillors Tony Bruder and Harold Hollingshead
   b. Alternate – Councillor Dave Cox
   c. Members at Large:

Councillor Harold Hollingshead 22/430

Moved that David Robbins, and Anna Welsch be appointed as the members at large for the Agricultural Service Board for 2023,

AND THAT Martin Puch and Frank Welsch be appointed as members at large for the Agricultural Service Board until such time other residents apply to sit on the board.

Carried

(2) Airport Committee
   a. Reeve Rick Lemire and Councillor John MacGarva
   b. Alternate – Councillor Harold Hollingshead
   c. Member at Large:

Councillor John MacGarva 22/431

Moved that Leo Reedyk be appointed as a member at large for the Airport Committee for 2023.

Carried

(3) Alberta Southwest Regional Alliance
   a. Shared between Reeve Rick Lemire and Councillor Dave Cox
   b. Alternate – Councillor Tony Bruder

(4) Assessment Review Board
   a. Councillor Harold Hollingshead

(5) Beaver Mines Community Association
   a. Councillor Dave Cox

(6) Castle Mountain Community Association
   a. Councillor Dave Cox

(7) Chinook Arch Regional Library Board/Pincher Creek Library Board
   a. Councillor Dave Cox

(8) Crowsnest Pincher Creek Landfill Association
   a. Councillor Tony Bruder
   b. Alternate – Councillor John MacGarva Tony Bruder

(9) Pincher Creek Joint Emergency Management Committee (EAC)
   a. Councillor John MacGarva and Councillor Tony Bruder
   b. Alternate – Councillor Dave Cox

(10) Family and Community Support Services (FCSS)
   a. Councillor Harold Hollingshead
   b. Alternate – John MacGarva

(11) Intercollaborative Framework Committee with the Town of Pincher Creek (ICF)
   a. Councillors Dave Cox and Harold Hollingshead
   b. Alternate – Councillor Tony Bruder

(12) Intermunicipal Development Committee (IDP)
   a. Reeve Rick Lemire and Councillor Tony Bruder
   b. Alternate – Councillor Dave Cox

(13) Joint Health and Safety Committee
   a. Councillor John MacGarva
   b. Alternate – Councillor Tony Bruder

(14) Lundbreck Citizens Council
   a. Councillor John MacGarva

(15) Mayors and Reeves
   a. Reeve Rick Lemire
   b. Alternate - Deputy Reeve Tony Bruder

(16) Municipal Planning Commission (Members at Large)

Councillor John MacGarva 22/432

Moved that Jim Welsch and Jeff Hammond be appointed to the Municipal Planning Commission for 2023.

Carried

(17) Oldman River Regional Services Commission (ORRSC)
   a. Councillor Tony Bruder
   b. Alternate – Councillor Dave Cox

(18) Pincher Creek Foundation
   a. Councillors Dave Cox and Harold Hollingshead
   b. Alternate – Reeve Rick Lemire

(19) Pincher Creek Emergency Services Commission
   a. Reeve Rick Lemire and Councillor Dave Cox
   b. Alternate – Councillor Tony Bruder

(20) Pincher Creek and District Public Library Board
   a. Councillor Dave Cox
   b. Members at Large

Councillor Dave Cox 22/433

Moved to appoint Blanch Lemire and Michael Barkwith to the Pincher Creek and District Public Library Board for 2023.

Carried

(21) Police Advisory Committee
   a. Councillor Harold Hollingshead

(22) Waterton Biosphere Reserve Association
   a. Councillor Tony Bruder

(23) Highway 3 Twinning Development Association
   a. Councillor Dave Cox
   b. Alternate Councillor John MacGarva

J. ADJOURNMENT

Councillor John MacGarva 22/434

Moved that Council adjourn the meeting, the time being 9:13 pm.

Carried

_____
REEVE

_____
CHIEF ADMINISTRATIVE OFFICER

MINUTES
MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
SPECIAL COUNCIL MEETING
NOVEMBER 1, 2022

The Special Meeting of Council of the Municipal District of Pincher Creek No. 9 was held on Tuesday November 1, 2022 in the Council Chambers.

Notice of this Special Council Meeting was posted on the MD website and social media.

PRESENT Reeve Rick Lemire, Deputy Reeve Tony Bruder, Councillors Dave Cox, Harold Hollingshead and John MacGarva.

STAFF CAO Roland Milligan

Reeve Rick Lemire called the meeting to order at 1:32 pm.

A. ADOPTION OF AGENDA

Councillor Harold Hollingshead 22/435

Moved that the Council Agenda for November 1, 2022 be approved as presented.

Carried

B. CLOSED SESSION

Councillor Dave Cox 22/436

Moved that Council move into closed session to discuss the following, the time being 1:33 pm:

a) DRAFT Operation Budget for 2023- FOIP Sec. 24

Carried

Councillor Harold Hollingshead 22/437

Moved that Council open the meeting to the public, the time being 5:15 pm.

Carried

C. ADJOURNMENT

Councillor Dave Cox 22/438

Moved that Council adjourn the meeting, the time being 5:15 pm.

Carried

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REEVE

_____

CHIEF ADMINISTRATIVE OFFICER

MINUTES
MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
SPECIAL COUNCIL MEETING
NOVEMBER 15, 2022

The Special Meeting of Council of the Municipal District of Pincher Creek No. 9 was held on Tuesday November 15, 2022 in the Town of Pincher Creek Council Chambers.

Notice of this Special Council Meeting was posted on the MD website and social media.

PRESENT MD of Pincher Creek: Reeve Rick Lemire, Deputy Reeve Tony Bruder, Councillors Dave Cox, Harold Hollingshead and John MacGarva.

Town of Pincher Creek: Mayor Don Anderberg, Councillors Mark Barber, David Green, Wayne Oliver, Brian Wright and Garry Cleland

STAFF MD of Pincher Creek: CAO Roland Milligan, Executive Assistant Jessica McClelland

Town of Pincher Creek: CAO Laurie Wilgosh and Administration Assistant Kristie Green (attended virtually)

Reeve Rick Lemire called the meeting to order at 5:50 pm.

A. ADOPTION OF AGENDA

Councillor Tony Bruder 22/439

Moved that the Special Council Meeting Agenda for November 15, 2022 be amended to include under New Business:

d) Christmas Tree Disposal at Eco Centre
e) Funding for Columbarium
f) Housing

Carried

B. NOTES OF LAST MEETING

Councillor Dave Cox 22/440

Moved that the notes from the Joint Council Meeting of May 10, 2022 be approved as presented.

Carried

C. NEW BUSINESS

a) Sewage Disposal Facilities

The Town of Pincher Creek Council discussed the issue of vac trucks disposing of septic waste at the disposal site in the Town limits. On various occasions incorrect liquids have been discarded causing damage to the septic system by altering the bacteria. At present time there is no financial benefit to the Town to provide this service, only cost and liability. The Town is requesting assistance to look at ideas to mitigate future issues. CAO Roland Milligan will contact other Municipalities with similar issues to look at possible solutions.

b) Commercial Recycling Eco Centre

Town of Pincher Creek Council questioned the issue of adding commercial recycling to the Eco Centre, at present time commercial businesses are not allowed to use this service even though they pay for recycling on their utility bill. By adding commercial use to the Eco Centre, the cost will increase for both Municipalities as it would mean more frequent emptying for the bins.

CAO Roland Milligan will contact the Crowsnest/Pincher Creek Landfill Manager to discuss how full the recycle bins are now and if something can be arranged to allow for smaller commercial businesses to utilize the Eco Centre.

c) Physician Recruitment

Both Town and MD Councils have concerns regarding the lack of physicians in our community. Currently the group for physician recruitment (RPAP) is starting back up after COVID,

administration for the MD of Pincher Creek will reach out to the chair for the committee to request meeting dates and if an MD Councillor can sit on that committee.

d) Christmas Tree Disposal at Eco Centre

In past years the Town of Pincher Creek has made a bin available for Christmas Tree disposal. MD Administration will contact the manager at the Crowsnest/Pincher Creek Landfill to request a way to allow this to happen through the Eco Centre.

e) Funding for Columbarium

Councillor Harold Hollingshead 22/441

Moved that Council for the MD of Pincher Creek, as a funding partner, authorize the expenditure through the Cemeteries "Perpetual Care Reserve" to purchase a columbarium.

Carried

f) Housing

The Pincher Creek Foundation has been discussing the lack of long term rentals in the community, without proper housing businesses are struggling to find employees. The Town of Pincher Creek has a housing committee that MD Council would be interested in providing a member on.

g) Joint Budget – Museums and Grant Specialist

Councillor Tony Bruder 22/442

Moved that Council move the Oldman River Antique Equipment and Threshing Club (Heritage Acres Farm Museum), Pincher Creek and District Historical Society (Kootenai Brown Pioneer Village) and the Grant Writer from the joint funding process to the joint budget process;

AND THAT Council request a four year budget (including financial ask) as part of all joint budget presentations;

AND FURTHER THAT in an effort to provide stable and predictable funding to all parties involved in the joint budget process, Council may agree in principal to fund joint budgets for their current term or require a presentation annually.

Carried

Joint Funding Sub Committee

Councillor Tony Bruder 22/443

Moved that the following MD Councillors form a Joint Funding Sub Committee with the Town of Pincher Creek Councillors, Tony Bruder, Dave Cox and Reeve Rick Lemire as alternate.

Carried

D. ADJOURNMENT

Councillor John MacGarva 22/444

Moved that Council adjourn the meeting, the time being 7:41 pm.

Carried

_____

REEVE

Minutes
Special Council Meeting
Municipal District of Pincher Creek No. 9
November 15, 2022

_____
CHIEF ADMINISTRATIVE OFFICER

MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
BYLAW NO. 1342-22

Being a bylaw of the Municipal District of Pincher Creek No. 9 in the Province of Alberta, to amend Bylaw No. 1289-18, being the Land Use Bylaw.

WHEREAS Section 639 of the Municipal Government Act, Revised Statutes of Alberta 2000, Chapter M-26, as amended, provides that a municipality must pass a Land Use Bylaw; and

WHEREAS The Municipal District of Pincher Creek No. 9 has decided to amend the land use designation of lands legally described as:

A portion of Lot 14, Plan 971 0740 within SE 18-7-2 W5M

And as shown on Schedule 'A' attached hereto, from "Agriculture - A" to "Direct Control - DC"; and

WHEREAS The purpose of the proposed amendment is to allow for the development of a 12.1 acre (4.9ha) gravel pit;

NOW THEREFORE, under the authority and subject to the provisions of the *Municipal Government Act*, Revised Statutes of Alberta 2000, Chapter M-26, as amended, the Council of the Municipal District of Pincher Creek No. 9, in the Province of Alberta, duly assembled does hereby enact the following:

1. This bylaw shall be cited as "Land Use Bylaw Amendment No. 1342-22".

2. Amendments to Land Use Bylaw No. 1289-18 as per "Schedule A" attached.

3. This bylaw shall come into force and effect upon third and final passing thereof.

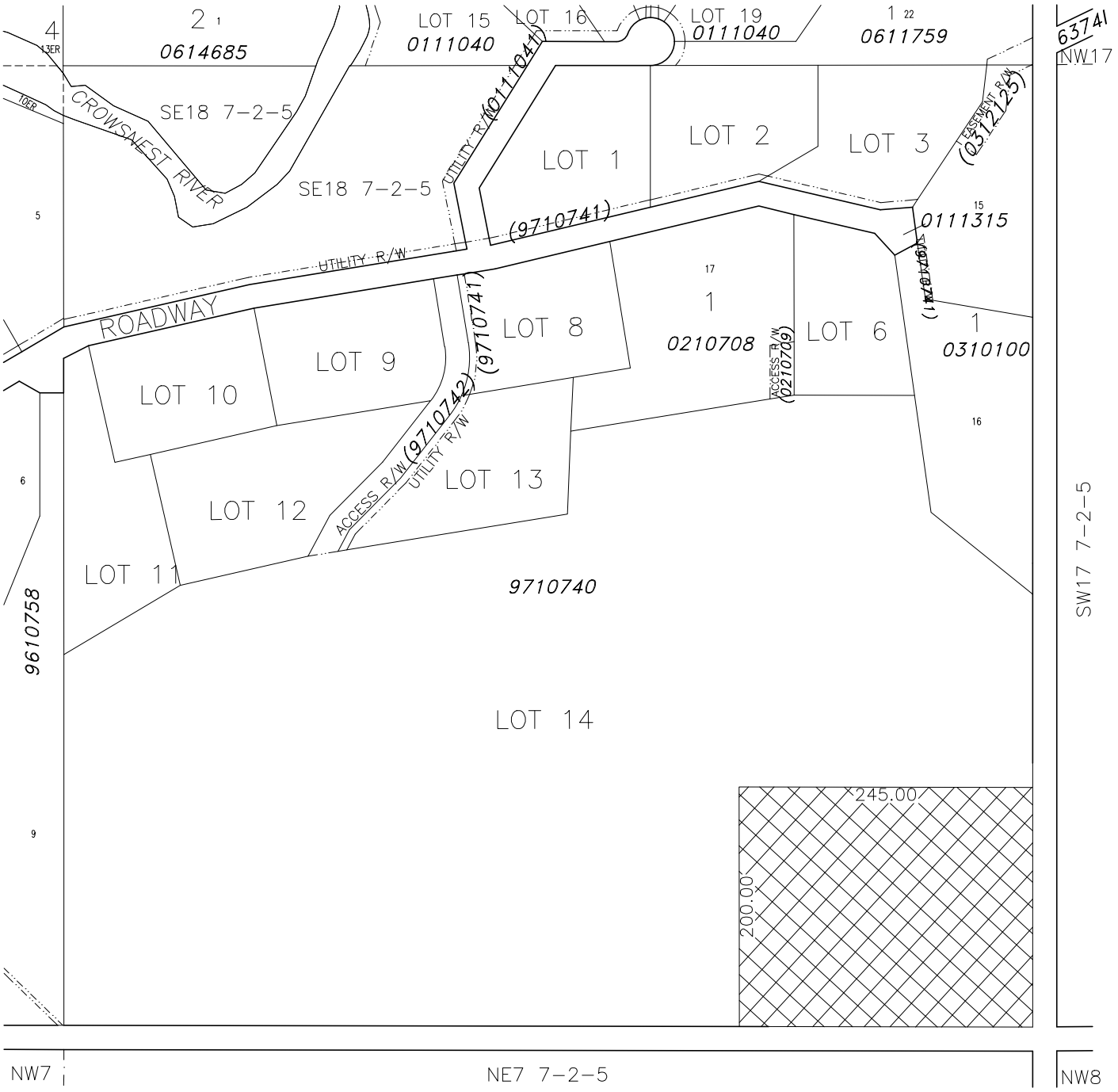
READ a first time this 13 day of September , 2022.

A PUBLIC HEARING was held this ____ day of _____, 2022.

READ a second time this ____ day of _____, 2022.

READ a third time and finally PASSED this ____ day of _____, 2022.

_____	_____
Reeve	***Chief Administrative Officer***
Rick Lemire	*Roland Milligan*



LAND USE DISTRICT REDESIGNATION
SCHEDULE 'A'

FROM: Agriculture 'A'
TO: Direct Control 'DC'

PORTION OF LOT 14; PLAN 9710740
WITHIN SE 1/4 SEC 18, TWP 7, RGE 2, W 5 M
MUNICIPALITY: M.D. PINCHER CREEK NO. 9
DATE: AUGUST 26, 2022

Bylaw #: 1342-22
Date: _____

OLDMAN RIVER REGIONAL SERVICES COMMISSION

0 Metres 100 200 300 400

MAP PREPARED BY:
OLDMAN RIVER REGIONAL SERVICES COMMISSION
3105 16th AVENUE NORTH, LETHBRIDGE, ALBERTA T1H 5E8
TEL. 403-329-1344
"NOT RESPONSIBLE FOR ERRORS OR OMISSIONS"

August 26, 2022 N:\Pincher-Creek-MD\Pincher-Creek-MD LUD & Land Use Redesignations\MD of Pincher Creek - Bylaw No. 1342-22 Lot 14, Plan 9710740.dwg

OLDMAN RIVER REGIONAL SERVICES COMMISSION

EXECUTIVE COMMITTEE MEETING MINUTES
October 13, 2022; 6:00 pm
ORRSC Conference Room (3105 - 16 Avenue North, Lethbridge)

The Executive Committee Meeting of the Oldman River Regional Services Commission was held on Thursday, October 13, 2022, at 6:00 pm, in the ORRSC Administration Building, and virtually via Zoom.

Attendance:
Gordon Wolstenholme, Chairman
Jesse Potrie
Neil Sieben
Brad Schlossberger

Absent:
Don Anderberg, Vice Chairman
Christopher Northcott

Staff:
Lenze Kuiper, Chief Administrative Officer
Raeanne Keer, Executive Assistant

Chairman Wolstenholme called the meeting to order, the time being 6:00 pm.

1. Approval of Agenda

Moved by: Neil Sieben

THAT the Executive Committee approves the October 13, 2022 Executive Committee Meeting Agenda, as presented.

CARRIED

2. Approval of Minutes

Moved by: Jesse Potrie

THAT the Executive Committee approve the July 14, 2022 Executive Committee Meeting Minutes, as presented.

CARRIED

3. Business Arising from the Minutes

There was no business arising from the minutes.

4. Official Business

a. Budget Discussion

L. Kuiper, CAO, presented the proposed 2023 Operating Budget to the Committee.

The Committee discussed inflation, subdivision fees, and membership fees.

b. Palliser Regional Municipal Services

L. Kuiper provided a status update on the Palliser Regional Municipal Services Agency, who provides municipal services to the southeastern Alberta such as Starland County, the Town of Drumheller, and the Village of Rockyford.

c. Parkland Community Planning Services

L. Kuiper provided a status update on the Parkland Community Planning Services, who provides municipal services to central Alberta such as Clearwater County, the Town of Olds, and the Village of Big Valley.

d. 2023 Executive Election

L. Kuiper advised that the Board of Directors Organizational Meeting will be held on Thursday, December 1, 2022, and as usual the election for the Executive Committee will take place that evening as well. CAO Kuiper noted that nomination forms would be sent out to the Board Members in early November for those who will to put their name forward.

e. Subdivision Activity
   - As of August 31, 2022
   - As of September 30, 2022

L. Kuiper presented the Subdivision Activity statistics to the Committee.

f. CAO Annual Performance Evaluation

Chair Wolstenholme stated that previous practice has been that the Chair collects the completed Performance Evaluation forms from the Committee and compiles them into a report, then reviews the results with the CAO.

The Committee agreed to the previous years practice.

g. Staff Update

L. Kuiper advised the Committee that Madeleine Baldwin, Planner, is currently on maternity leave has advised that she will not be returning to the organization after the maternity leave is completed. CAO Kuiper advised that a posting for the vacancy would be out shortly.

5. Accounts

a. Office Accounts
   (i) Monthly Office Accounts
      - June 2022
      - July 2022
      - August 2022
   (ii) Payments and Credits
      - May 2022
      - June 2022
      - July 2022

Moved by: Brad Schlossberger

THAT the Executive Committee accepts the documentation regarding the Monthly Office Accounts, June 2022, July 2022 and August 2022 as information; and,

THAT the Executive Committee accepts the documentation regarding the Payments and Credits, May 2022, June 2022 and July 2022 as information.

CARRIED

b. Financial Statements
   (i) Balance Sheet
      - As of June 30, 2022
      - As of July 31, 2022
      - As of August 31, 2022
   (ii) Comparative Income Statement
      - Actual to June 30, 2022
      - Actual to July 31, 2022
      - Actual to August 31, 2022
   (iii) Details of Account:
      - As of June 30, 2022
      - As of July 31, 2022
      - As of August 31, 2022

Moved by: Gordon Wolstenholme

THAT the Executive Committee accepts the documentation regarding the Balance Sheet, as of June 30, 2022, as of July 31, 2022 and as of August 31, 2022 as information;

THAT the Executive Committee accepts the documentation regarding the Comparative Income Statement, actual to June 30, 2022, actual to July 31, 2022 and actual to August 31, 2022 as information; and,
THAT the Executive Committee accepts the documentation regarding the Details of Account, as of June 30, 2022, as of July 31, 2022, and as of August 31, 2022, as information.

CARRIED

6. New Business

There was no new business for discussion.

7. CAO's Report

The CAO provided his CAO Report to the Committee.

8. Round Table Discussions

Committee members reported on various projects and activities in their respective municipalities.

9. Next Meeting – November 10, 2022

10. Adjournment

Following all discussions, Chair Gordon Wolstenholme adjourned the meeting, the time being 7:07 pm.

CHAIR

CHIEF ADMINISTRATIVE OFFICER

OLDMAN RIVER REGIONAL SERVICES COMMISSION

EXECUTIVE COMMITTEE MEETING MINUTES
July 14, 2022; 6:00 pm
ORRSC Conference Room (3105 - 16 Avenue North, Lethbridge)

The Executive Committee Meeting of the Oldman River Regional Services Commission was held on Thursday, July 14, 2022, at 6:00 pm, in the ORRSC Administration Building, as well as virtually via Zoom.

Attendance:

Executive Committee:
Gordon Wolstenholme, Chairman
Don Anderberg, Vice Chairman
Jesse Potrie
Christopher Northcott, Virtual
Neil Sieben
Brad Schlossberger

Staff:
Lenze Kuiper, Chief Administrative Officer

Absent:
Ian Sundquist

Chairman Wolstenholme called the meeting to order, the time being 6:03 pm.

1. Approval of Agenda

Moved by: Don Anderberg

THAT the Executive Committee approves the July 14, 2022 Executive Committee Meeting Agenda, as presented.

CARRIED

2. Approval of Minutes

Moved by: Christopher Northcott

THAT the Executive Committee approve the May 12, 2022 Executive Committee Meeting Minutes, as presented.

CARRIED

3. Business Arising from the Minutes

There was no business arising from the minutes.

4. Official Business

a. Subdivision Activity

The subdivision activity, as of June 2022, was presented as information.

b. New Hire – Raeanne Keer (Executive Assistant)

The Committee was informed of the recent hiring of Executive Assistant Raeanne Keer, who will be starting with ORRSC later this month.

c. ORRSC Periodical – Cryptocurrency Mining

The Q2 2022 edition of the ORRSC periodical was presented as information.

d. Regional Assessment Review Board Appeals Update

An update on the status of the Regional Assessment Review Board appeals.

e. Alberta Professional Planners Institute (APPI) Award Submissions
   a. Municipality of Crowsnest Pass MDP
   b. Miistakis Municipal Land Use Suitability Tool Report for the Municipality of Crowsnest Pass and the Municipal District of Pincher Creek

The CAO started that applications have been submitted to the Alberta Professional Planners Institute (APPI) awards for the Municipality of Crowsnest Pass MDP and the Miistakis Municipal Land Use Suitability Tool Report for the Municipality of Crowsnest Pass and the Municipal District of Pincher Creek.

f. GIS Update
   a. Work Order Development – Town of Fort Macleod
   b. Park Concept Plan – Town of Milk River
   c. Drone – Town of Coaldale and Town of Magrath

Updates on the projects currently being worked on by the GIS Department for the Town of Fort Macleod, the Town of Milk River, the Town of Coaldale, and the Town of Magrath were provided to the Committee.

g. Staff Training
   a. Alberta Professional Planners Institute (APPI) October 23-25 Canmore
   b. Alberta Development Officers Association (ADOA) September 20-23 Camrose

The Committee was advised that staff would be attending the Alberta Professional Planners Institute (APPI) Conference on October 23-25, 2022 in Canmore, Alberta and the Alberta Development Officers Association (ADOA) Conference on September 20-23, 2022 in Camrose as a part of their ongoing professional development.

4. Official Business – CONT'D

h. Office Clean Up

The CAO provided an update on the Office Clean Up to the Committee.

5. Accounts

a. Office Accounts
   (i) Monthly Office Accounts
   (ii) Payments and Credits

Moved by: Christopher Northcott

THAT the Executive Committee accepts the documentation regarding the Monthly Office Accounts, May 2022, as information; and,

THAT the Executive Committee accepts the documentation regarding the Payments and Credits, May 2022, as information.

CARRIED

b. Financial Statements
   (i) Balance Sheet
      - As of May 31, 2022
   (ii) Comparative Income Statement
      - Actual to May 31, 2022
   (ii) Details of Account
      - May 31, 2022 Closing Balance

Moved by: Don Anderberg

THAT the Executive Committee accepts the documentation regarding the Balance Sheet, as of May 31, 2022, as information;

THAT the Executive Committee accepts the documentation regarding the Comparative Income Statement, actual to May 31, 2022, as information; and,

THAT the Executive Committee accepts the documentation regarding the Details of Account, May 31, 2022 Closing Balance, as information.

CARRIED

6. New Business

There was no new business for discussion.

7. CAO's Report

The CAO provided his CAO Report to the Committee.

8. Round Table Discussions

Committee members reported on various projects and activities in their respective municipalities.

9. Next Meeting – September 8, 2022

10. Adjournment

Following all discussions, Chair Gordon Wolstenholme adjourned the meeting, the time being 7:14 pm.

CHAIR

CHIEF ADMINISTRATIVE OFFICER

Jessica McClelland

From: Tony Bruder
Sent: October 31, 2022 4:21 PM
To: Jessica McClelland
Subject: FW: WBRA October Update

Not sure if you get this email as well? Can we ad it for info please.

Thank you

Tony

From: Waterton Biosphere Reserve Association <info+watertonbiosphere.com@ccsend.com>
Sent: October 31, 2022 3:18 PM
To: Tony Bruder <CouncilDiv1@mdpinchercreek.ab.ca>
Subject: WBRA October Update

Monday, October 31, 2022

WATERTON
BIOSPHERE RESERVE
ASSOCIATION

What's new with WBRA

Photo by Andrea Morehouse

Exploring Wetlands Near You

Invertebrate searching photo by WBRA

Wetland Field Day

Police Outpost Provincial Park provided a beautiful backdrop for a fun-filled day of outdoor learning during our recent Wetland Field Day!

In this curriculum linked field trip, grade 5 students from Cardston Elementary School explored the great outdoors where they learned various aspects of healthy land and water stewardship.

Thank you to our many supporters who help make this day possible including the Cardston Elementary School, Environment and Climate Change Canada , Alberta Conservation Association, Waterton Lakes National Park, Oldman Watershed Council , and of course to the teachers, parents, and community volunteers.

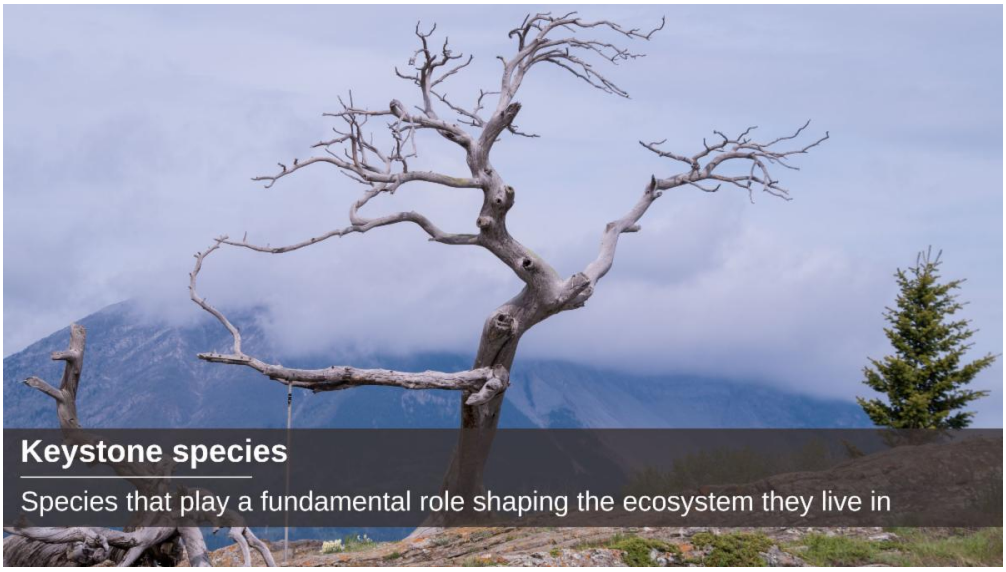
Getting Limber for Conservation

Recovering Vulnerable Limber Pine within WBR

Please join us in wishing 4600 limber pine seedlings good luck in their new home!

WBR partnered with the Whitebark Pine Ecosystem Foundation of Canada (WBPEF-C) and the Burton family of the Burke Creek Ranch to plant these limber pine seedlings on the landscape in late September.

This mass planting is one important step toward the long-term coordinated recovery efforts of this keystone species.



Why do limber pine need a helping hand?

Limber pine are a slow-growing, five-needle pine tree.

These hardy lifeforms can thrive in exposed, steep, rocky, and of course, windy areas. They are often shaped, bent, and twisted by our strong winds. You may recognize this gnarled figure thanks to the locally infamous Burmis Tree in Crowsnest Pass.

As one of two endangered tree species in Alberta, limber pine are seeing rapid declines throughout their once wide-ranging populations.

Limber pine photo by WBRA

Active blister rust photo by WBRA

Limber Pine Threats

One of the leading threats to limber pine is a human-introduced fungus called white pine blister rust. The fungus first infects the needles of the tree, eventually making its way down to the main stem. From here, the fungus blocks life-giving water and nutrient supplies, which often leads to the death of the tree.

Fire suppression, mountain pine beetles, and climate change are also among the threats facing limber pine.

Special Seedlings

The 4600 seedlings planted this September by WBPEF-C and WBR weren't just any limber pine seedlings...

To ensure seedlings have the best chance for survival, the WBPEF-C and their partners select cones from parent trees showing signs of blister rust resistance with the hope that these new trees will be more resilient towards their greatest threat.

Before these seedlings arrived for planting, they had been carefully nurtured by WBPEF-C for two years while they were monitored for blister rust resistance qualities!

The Birds and the Trees

The Clark's nutcracker, a jay-sized bird belonging to the crow family, has an insatiable appetite for five-needle pine cone seeds. In autumn, the Clark's nutcrackers are busy at work using their sharp beak to pry into whitebark and limber pine cones.

Five-needle pine seeds can't move like some other seeds spread by wind or water and rely on this hungry bird to help disperse their seeds to plant new trees.

Clark's nutcracker photo by JH Williams

Once they have picked through a cone, the Clark's nutcracker will hold the seeds under their tongue in a special pouch and will fly up to 10 kilometers to cache, or bury for later eating, their fat and protein-rich meal. The seeds that aren't later eaten by the Clark's nutcracker may get the chance to root and grow into a mature tree.

On average, how many limber pine seeds can the Clark's nutcracker cache in a year?

- 150
- 1,500
- 15,000
- 25,000
- 75,000

Please see end of eNewsletter for the answer.

A sincere thank you to the Whitebark Pine Ecosystem Foundation of Canada for their monumental planting effort and unwavering determination to restore five-needle pine species on our landscape, to the Crown Managers Partnership, and to the Burton family of the Burke Creek Ranch for making this project possible.

Bear Safety Training in WBR

Sharing the landscape safely

Thank you to those who attended the Bear Safety Workshops held in Kimball and Standoff this October!

Jeff Bectell, WBR's Carnivores and Communities Program (CACP) Coordinator and Mike Gibeau of the Southern Alberta Land Trust Society presented on topics including bear biology and behaviour, elements of the WBR's CACP, and the effective use of bear spray. WBR's bear safety workshops are targeted specifically at the safety concerns for southwestern Alberta rural residents as they go about their daily routines, living and working in close proximity with grizzly and black bears. Attendees learned how to minimize attractants around their residences and properties, how to avoid bear encounters, how to safely respond to a bear encounter, and how to correctly identify dangerous bear behaviour.

As all ages were welcomed at the workshop, there was a youth-specific portion that highlighted bear safe practices while walking to the bus stop, completing chores, and just being a kid out and about our shared landscape.

Finally, a four-legged member of the WBR, a plastic black bear on a track, took center stage to assist folks applying their bear spray knowledge and skill. Our black bear would say all participants had great aim, as his eyes are still watering!

Please visit Bear Conflict Solutions to learn more about bear spray, which is one of your best protection measure against bears.

A big thank you to our funders and supporters who made these workshops possible, including Blood Tribe Land Management, Southern Alberta Land Trust Society, Waterton Lakes National Park, Alberta Environment and Parks, Environment and Climate Change Canada, and of course Bear Conflict Solutions.

Adopt-A-Highway Annual Fall Cleanup

Caring for Alberta's Highways

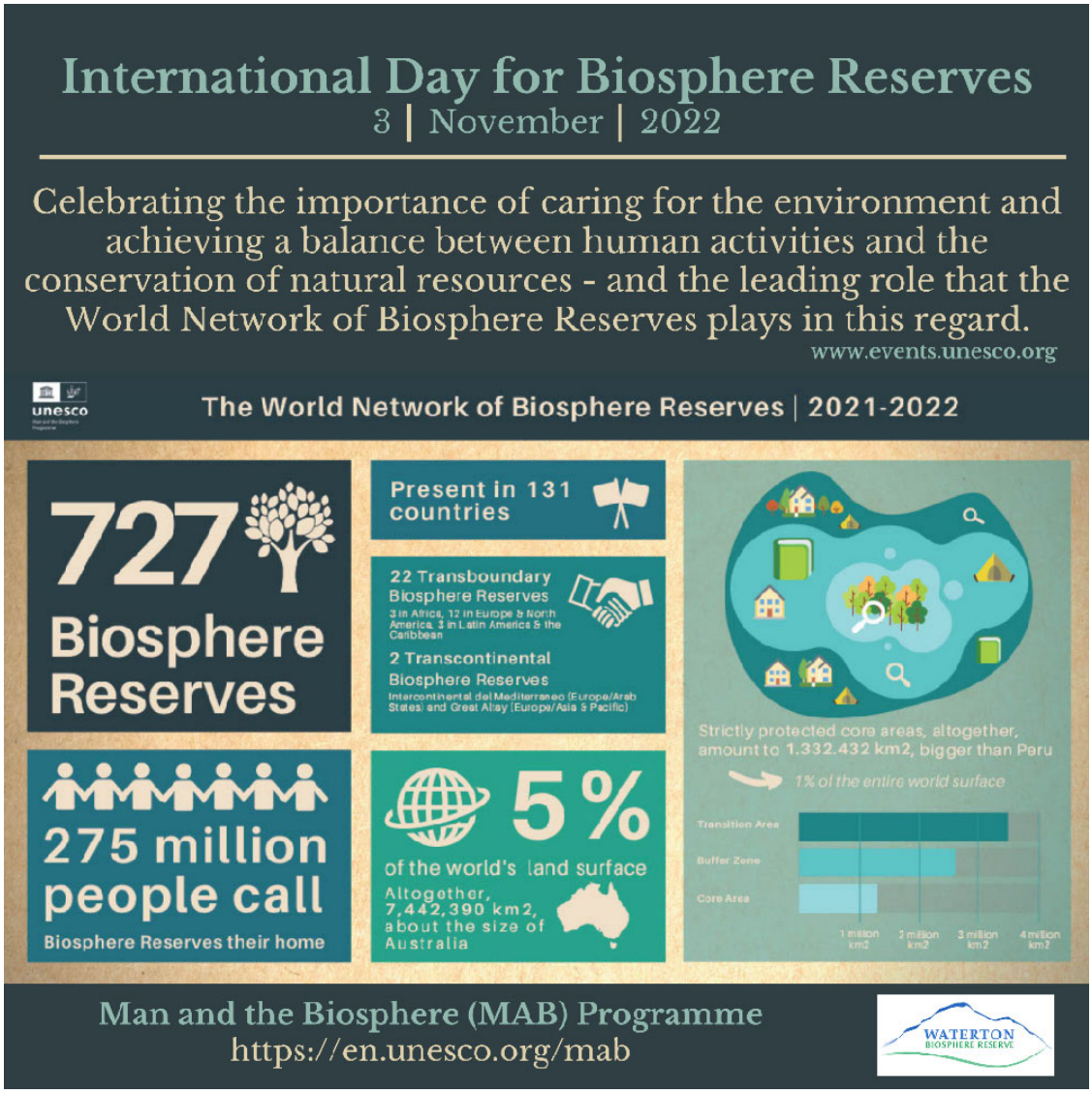
Members of the WBR slid on some gloves and hit their familiar 3-kilometer route along Highway-6 to support the Caring for Alberta's Highways Program.

It was a wonderful way to spend a warm and windless afternoon - a rare event for those in the WBR who have been cleaning this section since 2013!

We can all contribute in keeping our special corner of the world a *little less littered* for those who rely on it.

Garbage collected from Adopt-A-Highway Annual Fall Cleanup walk photo by WBRA

On the Horizon



Please "click" to view full infographic

Celebrate with us!

November 3rd, 2022 is the first International Day for Biosphere Reserves.

Designated as an official biosphere reserve in 1979, the WBR is just one of more than 700 UNESCO biosphere reserves around the world, 19 of which are here in Canada.

We want to acknowledge and celebrate the people and organizations who have contributed to the WBR over the years.

Be sure to follow our social media accounts on November 3rd to join the celebration.

Poll Answer

On average, the Clark's nutcracker can cache 25,000 five-needle pine seeds per year. What might be even more impressive? They can mentally map and remember up to 10,000 caching locations.

It is safe to say the Clark's nutcracker is one of the most dedicated limber pine conservation technicians out there! This close relationship is also one more reminder of why supporting efforts to recover these mighty pines will sustain many more species on the landscape.

Thank you for reading our eNewsletter. Please feel free to follow us on social media and visit our website to learn more about the Waterton Biosphere Reserve Association and our projects.

Visit our Website

Waterton Biosphere Reserve Association | BOX 7, PINCHER CREEK, T0K 1W0 Canada

THE CROWSNEST/PINCHER CREEK LANDFILL ASSOCIATION
MINUTES
September 14, 2022

The regular meeting of The Crowsnest/Pincher Creek Landfill Association was held at 9:30 am Wednesday September 14, 2022 at the Cowley Community Hall.

Present: John MacGarva, Municipal District of Pincher Creek #9
Dean Ward, Municipality of Crowsnest Pass
Dave Filipuzzi, Municipality of Crowsnest Pass
Doreen Glavin, Municipality of Crowsnest Pass
Mark Barber, Town of Pincher Creek
Dave Slingerland, Village of Cowley Absent
Dean Bennett, Landfill Manager
Jean Waldner, Landfill Office Supervisor

AGENDA

Doreen Glavin
Moved the agenda be adopted as presented. Carried. 09.14.22-2070

MINUTES

Mark Barber
Moved the minutes of August 17, 2022 be adopted as circulated. Carried. 09.14.22-2071

MANAGER'S REPORT

-MSW remains steady. We are in the development of building the new ramp to access higher levels of the cell, this takes a lot of planning and development to ensure it can be removed later but be able to stand up to the wear and tear for a couple years.
-Industrial cell slowed down as Teck has to stockpile more product before they can haul more material here.
-The new Eco center is up and running finally, we are seeing anywhere from 120 – 220 vehicles a day. There has been some complaints as always when we 1st opened, but they are subsiding now.
The general feeling now that it is running is very positive. People like that there is an attendant there to help them if needed and that it is a lot cleaner. The Recycling in the new eco center is going a lot better now that it is in the compound. Also the new Eco center employee is working out very well.
(Mark Barber from the Town of Pincher Creek added there has been some complaints about the hours of operation but overall it is working outstanding and says Thank you from the Town. John MacGarva from the MDPC says mostly positive comments.)
-Recycling is the CNP is steady as always. Still seeing some domestic waste in the bins.
-We are starting to gear up operations for winter, with the freezing ground it hampers how much dirt we can dig so we are trying to stockpile now.

-The new hide away truck is very close to delivery, they are just cleaning up a few things and hope to see it in the next 2 weeks.
-The new packer is still on schedule for November.
-Now that summer is over and I feel the heat won't get high enough to evaporate the leachate anymore I'm going to start draining the east pond so we can clean it out and gain more capacity.
Dave Filipuzzi
Moved the Manager's report be adopted as presented. Carried. 09.14.22-2072

FINANCIAL REPORT

Administration went over the Income Statement and Balance Sheet from September 8, 2022. And answered any questions from the statements. Administration asked if a donation to the Cowley Community Hall for $500.00 can be made again for letting us use the hall for meetings.
Mark Barber
Moved that $500.00 be donated to the Cowley Hall. Carried. 09.14.22-2073
Doreen Glavin
Moved the financial reports be accepted as information. Carried. 09.14.22-2074

CLOSED IN CAMERA SESSION

Time In 9:51 AM Moved by Dave Filipuzzi Carried. 09.14.22-2075
Time Out 10:36 AM Moved by Mark Barber Carried. 09.14.22-2076
Mark Barber
Moved to accept the information as presented. Carried. 09.14.22-2077

Correspondence: Thank you card and email from Pincher Creek LEGO League, and Livingstone Parents Association.

NEXT MEETING DATES

October 19, 2022
November 16, 2022
December 21, 2022

ADJOURNMENT

Dave Filipuzzi
Moved the meeting adjourn at 10:39 am Carried. 09.14.22-2078

Dean Ward
CHAIRMAN

Pam Waldner
ADMINISTRATION

M.D. OF PINCHER CREEK NO. 9

OPERATIONS REPORT

Current Public Works Activity

- Road Maintenance – Public Works has Nine (9) graders out on the roads doing road maintenance and snow removal.
- Snow removal and street maintenance in the Hamlets of Lundbreck, Beaver mine and Pincher station during snow events
- Bathrooms and Gardening clubs' water have been turned off in Lundbreck. Scenic Landscaping has completed the winterization of the sprinkler system at the end of October, 2022.
- Permanent snow fence repair and installation in progress.
- Temporary snow fence installation still in progress.
- Gravel crushing started October 3, 2022 at the summerview pit +- 15,000 CY has been crushed and crusher has been moved to the Livingstone colony pit. Crushing still ongoing at the Livingstone colony. Targeted 40k Cubic yard for this pit.
- Boat Club Road has been completed Monday September 19, 2022 and environmental assessment was also completed September 27, 2022. Preliminary design and Opinion of probable cost have been received November 10, 2022. Meeting to be arrange with Alberta Transportation in the near future.
- MD has retained the service of CPP to provide environmental and engineering services for the reclamation of Carbondale pit and Castle fall pit within the park boundaries. Pit assessment has been completed. Reclamation plan for Castle falls pit has been received October 4, 2022
- Reclamation of castle fall pit has started October 10, 2022 and has been completed October 21st 2022. (Seeding not completed) Final inspection was completed by CPP and report was received November 1st 2022.
- The MD has retained the professional service of DK blade services to provide technical training to our grader operators. Training has started October 17, 2022 and was completed for 2 operators on October 28, 2022.
- Traffic counters are out and collecting data on Maycroft and Christie Mine Road. Traffic counters to be remove October 6-7, 2022
- Garbage, Recycling, water to the airport… being done weekly by PW crew.
- Working on call log items daily.

Energy Projects Update

MD Estimated Annual Energy Savings: $12,536.66 ~~11,397~~

MD Funding Secured: $173,098

- **General Updates**
  - PW Office/Shop Thermostat upgrades complete July, 2022
  - Admin DHW removal complete September, 2022
  - Arena Furnace upgrades (75% grant funded) complete October 20, 2022. Awaiting funding closeout
  - Airport thermostat upgrade with occupancy sensors complete October 17, 2022
  - Admin Endotherm boiler additive (increased heat retention) planned Oct 26, 2022. Delayed due to failed gasket, awaiting machined replacement
  - Admin LED lighting swaps to begin mid-November
  - Weatherstripping upgrades at PW, Admin, and Airport scheduled for November 21, 2022
  - Industry outreach underway with Westlake, Enel. No response from Vestas, TransAlta, Siemens, Pieridae
  - Developing fuel usage tracking system within GIS dashboard
    - Received data from newer graders that have tracking within the CAT app
    - Conducting benchmarking to track the implementation of idling policy

- **EV Chargers**
  - Design complete for MD admin building, MD PW shop, and CMR Oct, 2022
  - Funding from Enel Green Power received in the amount of $20,000 USD
  - Grant application to Southgrow for remaining funds Oct 19, 2022
  - Castle Mountain Resort has agreed to supply $2,000 towards their installation
  - Targeted installation ~~November 8, 2022~~ December 7, 2022 due to delays with Town accepting funding

- **Eco-centre Solar Installation**
  - Awarded to Riteline for 2.4 kW array
  - Microgeneration application complete Sept 28, 2022, neighbouring properties notified as per regulations Sept 6, 2022. No comments received back
  - Tentative install date: ~~October 26, 2022~~ November 15, 2022 due to shipping, expected to be complete by Council

- **Climate Resiliency and Adaptation Plan**
  - $160,000 funding approved from MCCAC
    - $140,000 towards the contracted study
    - $20,000 towards staff wages, training, and community event
  - Kickoff Oct 3, 2022
    - Team: Tristan Walker, David Desabrais, Brett Wuth, and Andrea Hlady
  - Presentation of project plan to MD and Town council Oct 11, 2022
  - Data acquisition started Oct 13, 2022, community showcase complete Nov 8, 2022
  - Community survey planned for late November 2022.

- **Clean Energy Improvement Program**
  - Bylaw passed Oct 11, 2022
  - In discussion with FCM to determine funding
    - FCM has indicated substantial funding has been allocated to Alberta
  - Targeted program development start date Jan 15, 2023
  - Targeted program launch date Sept 15, 2023

Capital Projects Update - Bridges

- **Bridge File 75377 – Local Road over Screwdriver Creek, NW-08-06-02-W5M**
  - Construction awarded to 2nd lowest bidder
    - East Butte: **$306,011 (Eng. Est./Don Boyce $309,044)**
    - Option Excavating Inc. $287,675.00
    - Elite Site Services $320,605.00
    - DeGraaf Excavating Ltd.: $378,125
    - JA Building Services $407,046.89
    - Usurpassable Construction Ltd. $567,625.00
    - Low bidder did not have a history of completing culvert projects. Disqualified due to lack of relevant work.
  - Project has gone back to Council and is deferred until Aug. of 2022. MD has issued payment to Armtec for the culvert. The culvert will stay in the PW yard until installed in the Summer of '22.
  - Culvert was damaged in 2022, needs to be replaced
  - Replacement culvert ordered, in PW yard.
  - Don Boyce chose to retire prior to contract award. Project re-tendered, bids received Aug 9th
  - Kickoff complete October 18th, mobilization delayed to November 8th due to snowfall. ~~expected October 26th~~. Construction completion expected ~~mid to~~ late November, reseeding next year
  - Submittals received & approved

- **Bridge File 75265 – Local Road over Heath Creek, NE-11-10-01-W5M**
  - Tender awarded for engineering in 2021
    - Roseke Engineering at **$52,162.00 (Budget $53,000.00)**
  - Tender cancelled for construction in 2022
    - Low Bid at **$491,297 (Eng. Estimate $384,700)**
  - Construction set to commence in 2022
  - Roseke Engineering has been instructed to complete the bridge design detail as well as provide engineering and construction estimates for an adjacent stream bank protection work.
  - Survey has determined that the whole bridge and road is off the road right of way. Roseke Engineering will provide the MD with a survey plan to use for land negotiations.
  - The Historical Resources Application for this project has been approved.
  - Land is purchased and agreements are signed. Title registration may take a few months
  - Tender opening on the 26th/27th was significantly over budget & STIP funding has not been received. Tender cancelled, to be retendered this Winter for 2023 construction, apply for STIP
  - STIP Application drafted and ready to submit by November 30th

- **Bridge File 7743 – Local Road over Gladstone Creek, SW-23-05-02-W5M**
  - Tender awarded for engineering in 2021
    - Roseke Engineering at **$45,015.00 (Budget $46,000.00)**
  - Tender awarded for construction in 2022
    - Volker Stevin at **$267,700 (Budget $280,500)**
  - Coring has been scheduled following changes to Alberta Transportation changes to inspector ratings.
    - Coring has been completed with favourable results.
  - A tender package is to be completed by the end of November for Budgeting and allocation of Gas Tax Funds. AT has confirmed this bridge is not eligible for STIP-LRB funding given its current condition rating.
    - Preliminary report & design review received December 6.
    - Council approval of increased scope January 11, 2022.
    - All affected landowners/stakeholders contacted regarding anticipated 3 day closure.
    - Council approved $79,000 in additional 2022 funds for full strip-deck replacement on this bridge April 21, 2022.
  - Tender released April 29th, 2022. Tenders opened May 26th, 2022. Tender awarded to low bidder
  - Contractor planning staged construction approach, minimizing closure to less than an hour. Waiting for traffic accommodation plan. ECO Plan received. Lumber supply issues are delaying construction start, ~~awaiting revised mobilization date from Volker~~ lumber is in for treatment and mobilization is currently expected early December
  - Calls completed & letters sent to effected landowners & businesses Sep 1st indicating change in schedule and closure plan

- **Bridge File 2488 – Fisher Bridge, NW-26-07-02-W5M**
  - Engineering to be completed in 2021 due to change in rating since first inspected
  - Pending AT Grant and Council approval this bridge can be built outside of the Restricted Activity Period (RAP) as no contact with the water is needed
  - STIP funding has been approved (was submitted by ISL Engineering). Revised proposal, schedule, & estimate received from ISL. Within budget & STIP grant funding allotment
  - ISL awarded Supply-Build Engineering contract
  - Design, Supply, & Fabrication of Prefabricated Bridge awarded to Algonquin Bridge **(Cost: $458,040. Eng. Est: $638,000).**
  - RFPQ (Request for Contractor Pre-Qualification) for Installation has been sent out and closed July 26th. Installation RFQ bids received September 14th, 2022. Awarded to low bidder **(Cost: $330,954. Eng. Est: $349,000)**
  - Sure-Seal beginning document submission. Review of site conditions complete, TAS & Eco-plan drafts received ~~expected by council meeting. Anticipate~~ Pre-construction meeting ~~to occur early November~~ complete October 26th, 2022. Materials starting to be received on-site
  - Contractor plans to prepare bridge on private property NW of crossing over the Winter, bridge steel is expected to get unloaded by November 18th
  - Awaiting revised construction schedule, contractual completion is end of June, 2023

- **Bridge File 74260– Tributary to Foothills Creek, SW 13-05-029-W4M**
  - Budgeted for engineering completion in 2022 with construction in 2023
  - Proposal received from Roseke Engineering June 21st, 2022 to complete initial design services. Preliminary Engineering & Design Awarded to Roseke July 14, 2022.
  - Preliminary survey & drafting complete, Preliminary Engineering Report completed September 13th. Recommendation is replacement with an upsized 2m diameter x 25m L single culvert (existing structure is 1.9 m x 1.7m x 15.2m L). Total Anticipated Project Cost: **$330,000.**
  - Design to be complete by council meeting, construction expected for this bridge in 2024

- **Bridge File 76294– 2nd Tributary to Castle River, SW 32-006-01 W5M**
  - Approved for engineering completion in 2022 with expected construction in 2023 by council July 12th, 2022
  - Preliminary Engineering & Design awarded to Roseke July 14, 2022
  - Preliminary survey & drafting complete, Preliminary Engineering & Design complete as of Sep 28. QAES Complete, fish passage likely not a concern.
  - Recommendation is replacement with an upsized 1.6m diameter x 27m L single culvert (existing structure is 1.5m diameter x 18.3m L). Total Anticipated Cost: **$385,000**
  - Liner is not recommended as conservative flows result in unacceptable freeboard and cost would be similar or more than replacement as excavation requirements are minimal. Channel realignment downstream is also necessary
  - ~~Moving forward with design & land acquisition~~
  - Design for 76294 complete, rip-rap modified on downstream end to avoid need for land acquisition
  - STIP Application drafted and ready to submit by November 30th

- **Watercourse Crossing Inspection & Remediation Project – 100% Grant funded**
  - **$150,000** in grant funding awarded for Year 1 of this program
  - **Fintegrate** awarded initial contract to assess all MD crossings, prioritize for remediation, & perform detailed regulatory authorizations
  - Alignment with 10 year bridge study to be completed where feasible
  - Work has begun on prioritization & initial assessment, 175+ crossings reviewed
  - ~~4~~5 crossings have been identified to date that are in poor structural condition and have serious fish passage concerns
  - Contractor has completed initial assessments for priority areas. Awaiting Alberta Environment input prior to completing one or two detailed assessments to feed into additional funding asks
  - Application deadline for next AB fiscal year funding is extended to October 14th. Application submitted for additional $114,000, mostly to complete engineering & design for remediation of crossings
  - Interim report drafted for submittal by November 30th, 2022, met with AEP on Nov. 15th to discuss path forward for MD under program. Anticipate moving forward with design of 2 crossings, and construction of 1 within 2023-2024 AB fiscal year
  - Anticipating future regulatory Directives around making dealing with SAR crossings mandatory

Roads

- **Range Road 1-2 (Bitango Road) - *Engineering 2022 – Budget $40,000 - Const. 2023***

  Replace 64m of culvert 24" culverts with a 36"diameters culvert. Repair slides and sink holes on side slope.

  - Engineering Proposals have been submitted by 3 different firms and is under review by Public Work. Engineering contract will be awarded in 2022.
  - Service agreement for professional service has been signed with ISL Engineering and Land Services LTD on February 23rd 2022.
  - Geotechnical Boring scheduled for April 05, 2022.
  - Site Visit was held April 21st 2022.
  - Environmental Scientist was on site June 29, 2022 to begin the environmental review.
  - Design Brief meeting was held August 23, 2022
  - **Waiting on Council final approval of capital budget to move forward with next step**

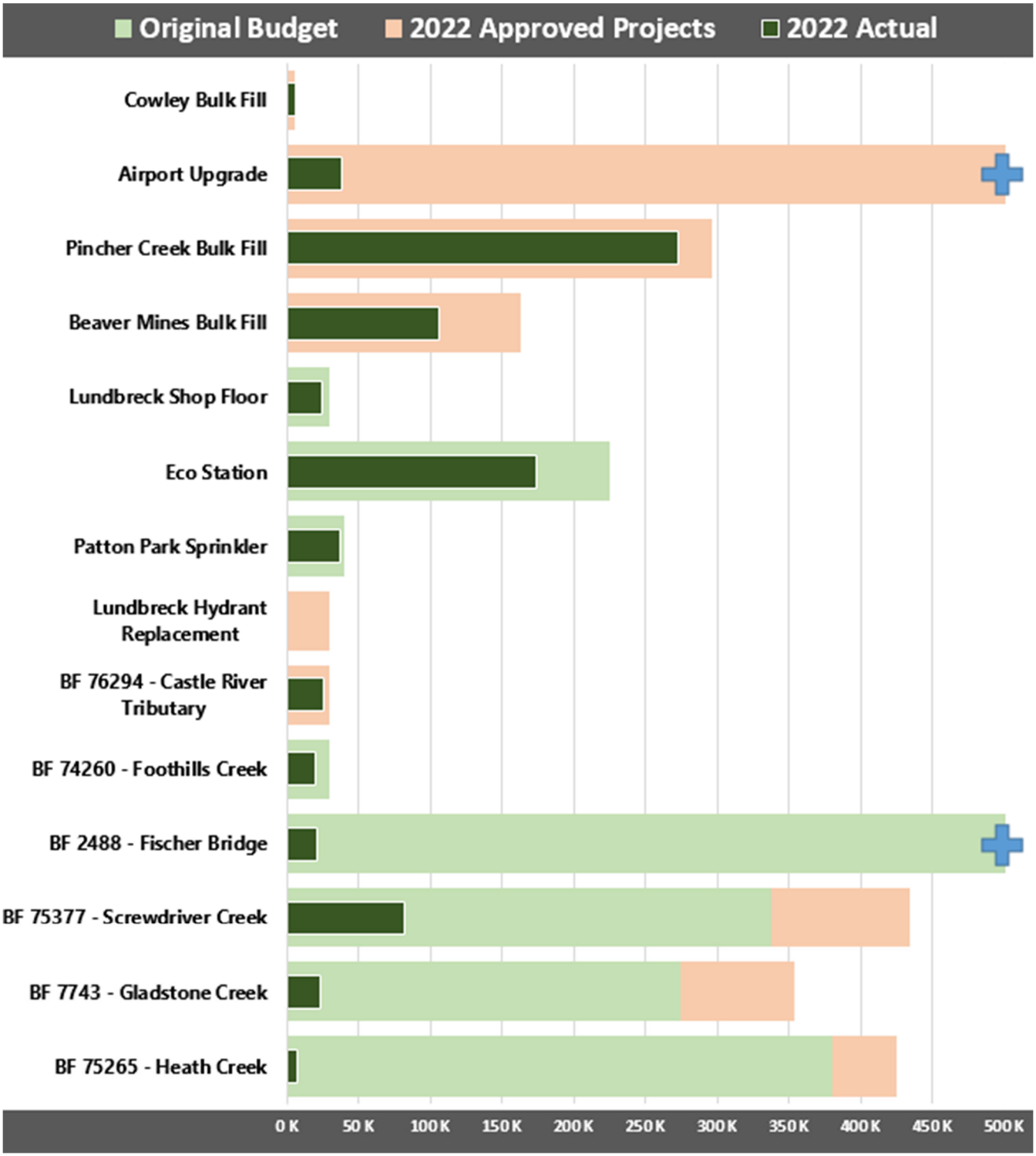
- **Station Street (Pincher Station) - *Engineering 2022 – Budget $40,000 - Const. 2023***

  Repair subgrade and install new asphalt on approximately 70m on intersection of 3rd avenue and Station Street and approximately 360m on Station Street going east to seed cleaning plant. Install culvert across 3rd avenue to drain water from North side of Station Street.

  - Engineering Proposals have been submitted by 3 different firms and is under review by Public Work. Engineering contract will be awarded in 2022.
  - Service agreement for professional service has been signed with ISL Engineering and Land Services LTD on February 23rd 2022.
  - Geotechnical Boring scheduled for April 05, 2022.
  - Site Visit was held April 21st 2022
  - Scope Change 1 (Utilities coordination, Hydrovac and Processing) has been approved July 18, 2022.
  - Utility Crossing agreements signed Aug 03, 2022.
  - Utility locating and surveying has been completed August 22, 2022
  - Preliminary and Construction estimates have been received September 16, 2022 for review.
  - **Waiting on Council final approval of capital budget to move forward with next step**

Large Capital and Other Projects

Total Approved Budget: $4,300,800. Spend as of Nov 15: $840,148
~~**Oct 19: $796,778**~~



Airport Lighting – *Construction 2022 - Budget $1,042,000*

Install Airport Airfield Lighting Replacement, with portion of funds from STIP

- Design-build contract awarded to Black & McDonald **(Cost: $979,600, Original Budget: $867,000)**
- Contractor (Leo Reedyk) engaged to manage tendering, project award, construction, commissioning, etc.
- Tendered, site visit complete with prospective bidders. Bids due back June 30th. Recommendation expected by July 8th
- Tenders received and qualification completed. Tender higher than original budget. Council approved $125,000 in additional funding during July 12th meeting

Tristar Electric Inc	Mississauga, ON	$1,577,136.00
Signal Electric Ltd.	Sidney, BC	$1,412,133.60
Western Pacific Enterprises Ltd.	Nisku, AB	$1,648,590.09
Black and McDonald Ltd.	Ottawa, ON	$979,600.00
SVEMY Construction Ltd.	Calgary, AB	$1,983,600.00

- Expect to be able to increase runway length by ~1000 ft (increasing landing weight by 15-20% in typical conditions). Finalized decision and proceeding with construction path forward
- It is expected that increasing the runway length will provide benefit in terms of classes of aircraft the airport can support. Design deliverables underway with revised thresholds 90% complete, awaiting path forward. Mobilization ~~expected~~ ~~in November~~ anticipated in 2023, 6-8 weeks construction required.

- **Lundbreck Shop Floor - *Construction 2022 – Budget $30,000***

Install concrete floor and sumps into the Lundbreck shop.

- Quotes and estimates from local contractor are being requested, and review for construction to begin Spring of 2022.
- Work has been completed August 14, 2022

- **Patton Park Sprinkler System - *Construction 2022 – Budget $40,000***

Connect the Patton Park Sprinkler and drip system to the Municipal Water distribution line.

- Construction awarded to Scenic Landscaping at **$37,105 (Budget $40,000)**
- Construction to begin Summer of 2022.
- Construction completed early September, 2022

- **Eco Centre**

  - IMDP Committee passed a resolution stating they have no concerns with this development.
  - Continued work with AEP for approval process and issuing of MD Development Permit
  - September 17, 2021, project information sent to Alberta Health Services for comment.
  - September 22, 2021, letters requesting consent to vary the *Subdivision and Development Regulation*'s 300m setback requirement from a Storage Site were sent via registered mail to all landowners within the 300m radius of the site. Many have been returned with positive endorsement of this project and agreement to the waiver.
  - AEP information circulation process completed.
  - Direction from MDPC to submit to AEP for variance on development permit on Dec 08. Submission currently being worked on by Director Milligan. Construction in Spring 2022
  - Concrete work delayed due to contamination found at site. Testing & excavation of contamination complete per direction by Environmental Consultant. Final clearance report received
  - Site has been operating since August 18th. Minor work remaining (solar, as-built engineering). Lighting complete, camera work complete, upgrading camera model complete. Solar install ~~planned week of Council meeting~~ complete by council meeting
  - Awaiting final as-built from MPE

- **Standpipes (Cowley, PC and new site in BM)**

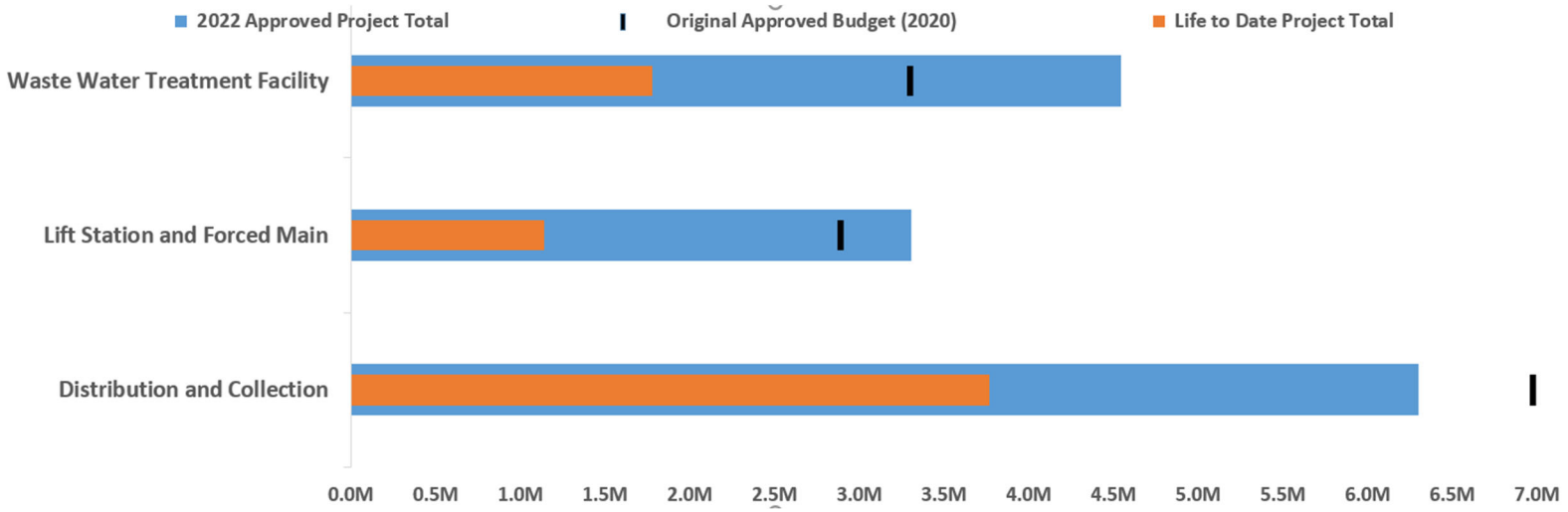
  - BM standpipe coin & credit is fully operational.
  - PC standpipe coin & credit is fully operational.
  - Cowley interface upgrade has been completed. Coin and credit/debit cards accepted.
  - Complaints have been received regarding inaccurate volumes at Pincher fill station. The site has been calibrated various times. Cost effective solution awarded to Flowpoint, awaiting material arrival for installation in PC and BM's
  - BM and Cowley sites had multiple operational issues in late July and early August
  - August credit/tap revenue exceeded July by ~25%
  - Bollards installed at BM, PC. Structural upgrade reviewed by MPE for Cowley, working towards implementation
  - Flowpoint completed install of pressure reducing kit upgrade Sep 27th at BM, PC
  - BM HRIA under review by Province, indicated to be at "top of pile" Sep 28th, follow up Nov 7th indicated HRIA is still in review stage

- **Lundbreck Hydrant Replacement Work**

  - Construction awarded to low bidder **(Rocky Mountain Bobcat: $25,266, Budget: $30,100)**
  - Construction ~~planned to start October 24~~ 70% complete. Additional unexpected hydrant extension required at 1 location, awaiting delivery. Expected to be received and installed week of Council meeting

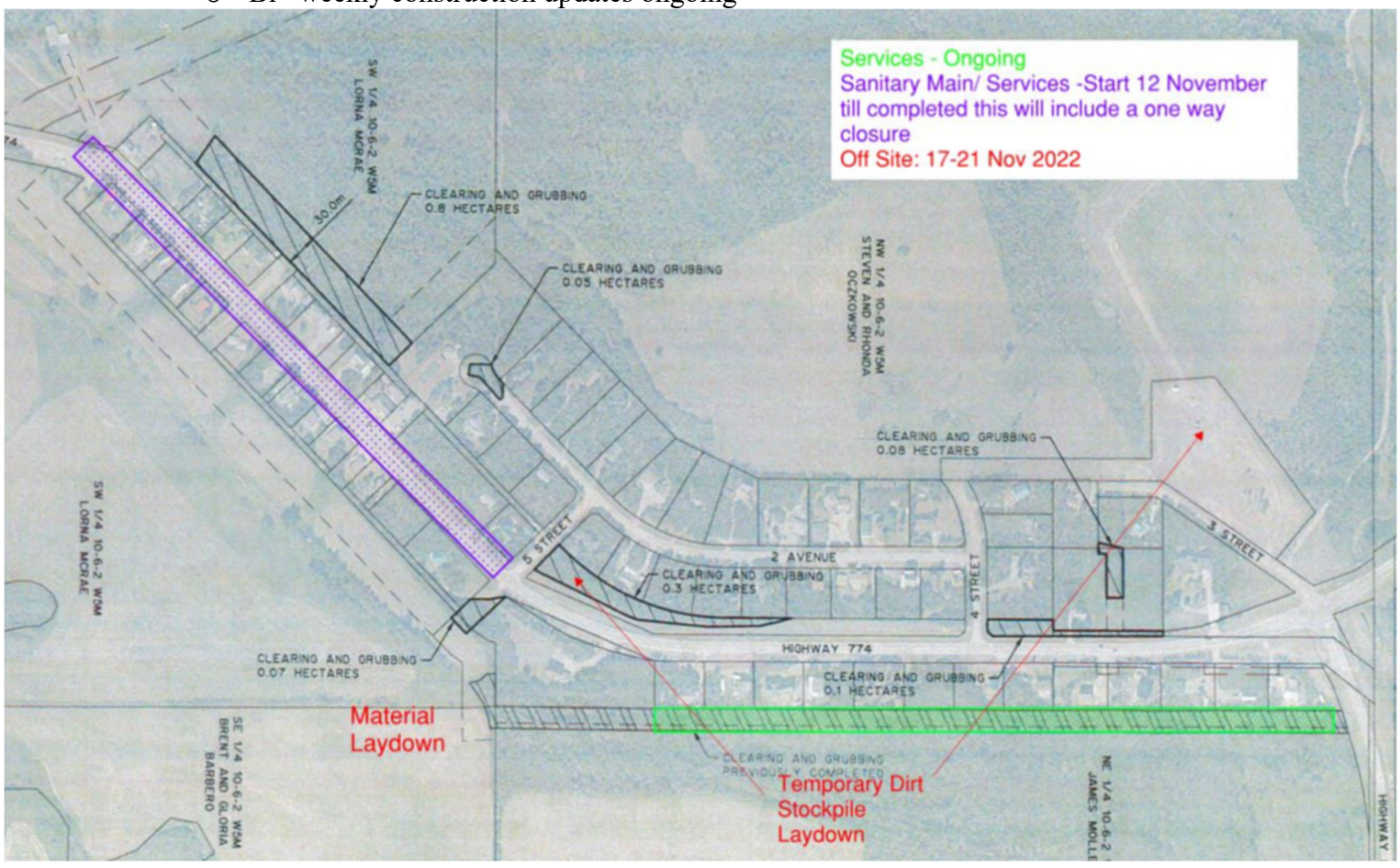
BEAVER MINES

Total Appr. Budget: $14,150,709. Spend as of Nov 15: $6,685,644
~~**Oct 19: $6,201,981**~~



Beaver Mines Water Distribution, Collection System.

- Tender was awarded to BYZ on July 21, 2021.
    1. BYZ Enterprises Inc. **$5,468,977.50 (Budget $6,251,600)**
- Virtual discussion meeting held with BMCA & Beaver Mines residences May 18th with good attendance and many takeaways
- Bi –weekly construction updates ongoing



- Servicing work along 2nd Avenue completed. BYZ working on highway services through October. Contractual date for underground completion was September 30th, 2022, extension granted to October 31st, 2022. An additional request for extension has been made to December 15th, 2022. This extension request was denied by Council. BYZ has responded to the denial indicating their disappointment. Remaining underground work continues through November
- BYZ has continued to indicate fuel prices over the construction season have been a major issue for them and sub-contractors. Informal requests have been made for additional compensation throughout the year and have not been entertained to date. Formal requests expected
- Meeting with PCES November 17th to work on plan for hydrant activation once construction allows

- **Beaver Mines Waste Facility/System**
  - Tender was awarded to BYZ on May 31, 2022
    BYZ Enterprises **$2,338,309.00 (Original Budget $2,076,999)**
  - Waste System will not be ready until 2023 at the earliest to allow for the AEP Approval Process to run its course
  - Tender opening and contract signing completed
  - Construction kickoff completed June 17th with Banner, BYZ, & Parcon (mechanical contractor). Mobilization delayed due to weather & material
  - Mobilization began week of Aug 29th for road and forcemain work. Forcemain installed, hydrotest complete. Road grade complete. Geotextile over road complete, gravelling underway. building foundation work underway, BYZ partially demobilized for Winter
  - Site expected to be serviced by Fortis ~~by end of October~~ by end of November, delayed due to snow

- **Beaver Mines Forcemain & Lift Station**
  - Tender was awarded to Parcon for Lift Station June 15th **$2,326,091 (Original Budget: $2,220,000)**
  - Construction awarded to low bidder for forcemain work:
    - TA Excavating: **$386,925 (Eng. Est. $600,000)**
  - Pre-construction kickoff completed June 23rd, 2022 for Lift Station
  - Site mobilization for lift station expected mid July. Long lead generator could be of concern, working with contractor on solution
  - Lift Station underground foundation work complete. Standing walls, masonry, and roofing underway, temporary power expected by Council meeting with interior work to follow
  - ~~o~~ Forcemain work survey beginning next week, mobilization now expected ~~early to mid November~~ in 2023 due to significant snowfalls and drifting

24 August, 2021 – Appellants withdraw their request for "a stay" in regards to our construction based upon the proposed build schedule. Where the Force Main and Waste Water Facility will be later in 2022 and 2023, it is felt that there is enough time for the Appeal to run its natural

course without impacting our proposed construction schedule. This approach by the Appellants was very much appreciated by the MD.
Our first pre-meeting with the Board was Dec 8th, 2021
Our first Mediated Meeting with the Board and the Appellants is Dec 15th, 2021. (Calgary)

First meeting was held and follow up meeting is slated for February 23, 2022. Meeting with the Board was on Feb 23rd

Second mediation took place August 10th, 2022. Legal/MD response complete, meeting with mediator on path forward to be held September 23rd, 2022. Additional response requested by Board by Oct 18th; complete, multiple responses between board, MD, and Appellants in last month, currently awaiting Appellants response by Nov 21, 2022. ~~, awaiting path forward from board.~~

This is a multi-month process, so it is hoped our Appeal process will conclude within this timeframe and any direction by the Appeal Board in the manner of additions to our project, can be treated as change orders.

Recommendation:

That the Operations report for the period October 20th – November 15th is received as information.

Prepared by: Roland/Eric/David Date: November 15th, 2022

Submitted to: Council Date: November 22nd, 2022

	DIVISION	CONCERN/REQUEST	ASSIGNED TO	ACTION TAKEN	REQUEST DATE	FOLLOW UPDATE	COMPLETION DATE
3138	Div 1	Re wanting to clean ditch for drainage to direct water from his property to drain into the culvert	Jonathan	Completed	August 30, 2021	Meeting schedule on site Tuesday October 11, 2022	October 28, 2022
2022-58	Div 1	Old Snow Fence falling/inquiring about rebuild	Don J	-	January 26, 2022	Old snow fence have been cleaned up. First call has been submitted for the rebuild.Will be looked after when gravel program is completed.	-
2022-231	Div 2	Snow Fence put up by MD is down, needs replacing or removal	Tony N	-	July 20, 2022	Post has been installed	-
2022-242	Div 1	Wind Fence Down at property and needs fixing. Few hundred feet on top of hill.	Tony N	-	July 29, 2022	Post has been installed	-
2022-280	Div 1	Sharp edge on side of bridge was hit by grader a couple of years ago. Requesting repair.	Bob M	-	September 7, 2022	Taper down section of Guard Rail to be replace	-
2022-308	Div 3	Zorratti property has a student on there and location is now a bus route. Owner requests a bus stop sign for safty due to low visibility.	Eric	-	October 14, 2022	-	-
2022-310	Div 3	Bales on west side of RR 1-4, concern over potential drifting	Josh/Tony	Completed	October 17, 2022	Called Robert Wolbert @ W/C Ranch - Now answer or place to leave message.	November 15, 2022
2022-312	Div 2	East 2 Miles rough - Trucks coming in on Monday. Perm snow fence damaged	Kent/Jon	Completed	October 19, 2022	-	October 20, 2022
2022-313	Div 4	Road Needs Grading, Cattle Guard Rough on Skyline, Perm Snow fence still needs attention	Shawn/Jon	-	October 24, 2022	Texas gate has been graded and smothed out. Post has been installed for permanent snow fence repair.	-
2022-314	Div 1	Road needs plowing, trucks getting stuck	Brian	Completed	October 24, 2022	Brian informed	October 24, 2022
2022-315	Div 3	Road to his place need plowing	Eric	Completed	October 23, 2022	Plow went the same day	October 23, 2022
2022-316	Div 3	Street in bad shape due to construction. Road desperately needs gravel for the winter	David	Completed	October 24, 2022	Pass along to David for Contractor to take action-David reached out by email	October 25, 2022
2022-317	Div 4	Road Needs Grading, Cattle Guard Rough on Skyline	Shawn/Jon	Completed	October 24, 2022	Road has been graded and has been shaped at the cattle guard	October 27, 2022
2022-318	Div 3	Road blocked in	Joey	Completed	October 24, 2022	Joey Informed	October 25, 2022
2022-319	Div 2	Complaint about operator	Eric	Completed	October 24, 2022	Discussion with Kent	November 4, 2022
2022-320	Div 3	Windrow	Joey	Completed	October 24, 2022	Joey Informed	October 25, 2022
2022-321	Div 1	Twp Rd 4-0 & RR 28-5A needs plowing	Brad	Completed	October 24, 2022	Brian informed	October 25, 2022
2022-322	Div 3	Sorge Road & RR 1-3A	Joey	Completed	October 24, 2022	Joey Informed	October 25, 2022
2022-323	Div 1	Road Impassible	Brad	Completed	October 24, 2022	Brian informed	October 25, 2022
2022-324	Div 1	Request Driveway Plowing	Brad	Completed	October 24, 2022	Brad Informed	October 27, 2022
2022-325	Div 1	Road needs to be cleared	Brian/Brad	Completed	October 24, 2022	Brad Informed	October 25, 2022
2022-326	Div 3	Driveway blocked in	Joey	Completed	October 24, 2022	Joey Informed	October 25, 2022
2022-327	Div 2	Road in poor driving condition	Joey	Completed	October 24, 2022	Joey Informed	October 25, 2022
2022-328	Div 3	Road impassible - drifting	Glen	Completed	October 25, 2022	Glen Informed	October 25, 2022
2022-329	Div 1	Road needs to be cleared east of Twin Butte	Brian	Completed	October 25, 2022	Brad informed	October 25, 2022
2022-330	Div 1	Road to be cleared for orphan well accociation	Brad	Completed	October 25, 2022	Brad Informed	October 25, 2022

	DIVISION	CONCERN/REQUEST	ASSIGNED TO	ACTION TAKEN	REQUEST DATE	FOLLOW UPDATE	COMPLETION DATE
2022-331	Div 1	Large Drift on Road	Brian	Completed	October 25, 2022	Brian informed	October 25, 2022
2022-332	Div 1	Bus couldn't make the house	Brad	Completed	October 25, 2022	Brad Informed	October 25, 2022
2022-333	Div 4	Road Needs Gravel	Tony N	Completed	October 25, 2022	Will be re-assess in the spring before the gravel program	November 15, 2022
2022-334	Div 2	Road needs attention	Joey	Completed	October 25, 2022	Joey Informed	October 25, 2022
2022-335	Div 2	Wondering why grader stopped at first house	Joey	Completed	October 25, 2022		October 26, 2022
2022-336	Div 3	Road Bad	Glen	Completed	October 25, 2022		October 25, 2022
2022-338	Div 2	Road needed plowing	Joey	Completed	October 25, 2022	Joey Informed	October 25, 2022
2022-339	Div 1	Perm Snow Fence Issues on road	Jon	-	October 31, 2022	Message Sent to Jon - Post have been put in	-
2022-340	Div 3	Concerns over roads not being graded	Eric	Completed	October 31, 2022	Eric sent an email requesting a call back to discussed the issue - No call back.	November 2, 2022
2022-341	Div 1	Snow Drifting, Conditions changed from removed snow fence	Eric/Jon	-	November 2, 2022	-	-
2022-342	Div 3	Issues with snowbank left by grader at approach	Joey	Completed	November 2, 2022	Eric called, Left message to call back	November 15, 2022
2022-343	Div 2	Driveway plowing requested	Joey	Completed	November 2, 2022	Completed by neighbour	November 3, 2022
2022-344	Div 4	Requested plowing of Stn Street	Tony N	Completed	November 2, 2022	-	November 2, 2022
2022-345	Div 4	Requesting Snow Fence be put pack in Sekella Field	Eric	Completed	November 2, 2022	Eric talk to her. First call submitted	November 2, 2022
2022-346	Div 2	Requesting Permanent snow fence be installed. Kent Z conversation	Jon	-	November 2, 2022	-	-
2022-347	Div 3	Requested plowing on street to his place	Eric	Completed	November 2, 2022	-	November 2, 2022
2022-348	Div 2	Requested Road being done	Kent	Completed	November 2, 2022	Kent Informed	November 3, 2022
2022-349	Div 3	Requested Road being done	Glen	Completed	November 3, 2022	Glen Informed	November 3, 2022
2022-350	Div 5	Requested Road being done	Tony T	Completed	November 3, 2022	-	November 3, 2022
2022-351	Div 3	Requested Road being done	Glen	Completed	November 3, 2022	-	November 3, 2022
2022-352	Div 3	Requested Road being done	Joey	Completed	November 3, 2022	-	November 4, 2022
2022-353	Div 1	Wondering why grader left at 4:00pm when roads weren't all done.	Brian	Completed	November 3, 2022	-	November 3, 2022
2022-354	Div 2	Complaint about operator	Jon/Eric	Completed	November 3, 2022	Discussion with the operator	November 4, 2022
2022-355	Div 2	Complaint about operator	Jon/Eric	Completed	November 3, 2022	Discussion with the operator	November 4, 2022
2022-356	Div 3	Request Road Being Done	Glen	Completed	November 3, 2022	-	November 3, 2022
2022-357	Div 3	Complaint about operator	Jon/Eric	Completed	November 3, 2022	Discussion with the operator	November 4, 2022
2022-358	Div 4	Request Driveway Snow Removal	Shawn/Topher	Completed	November 3, 2022	Rain Melted snow	November 4, 2022

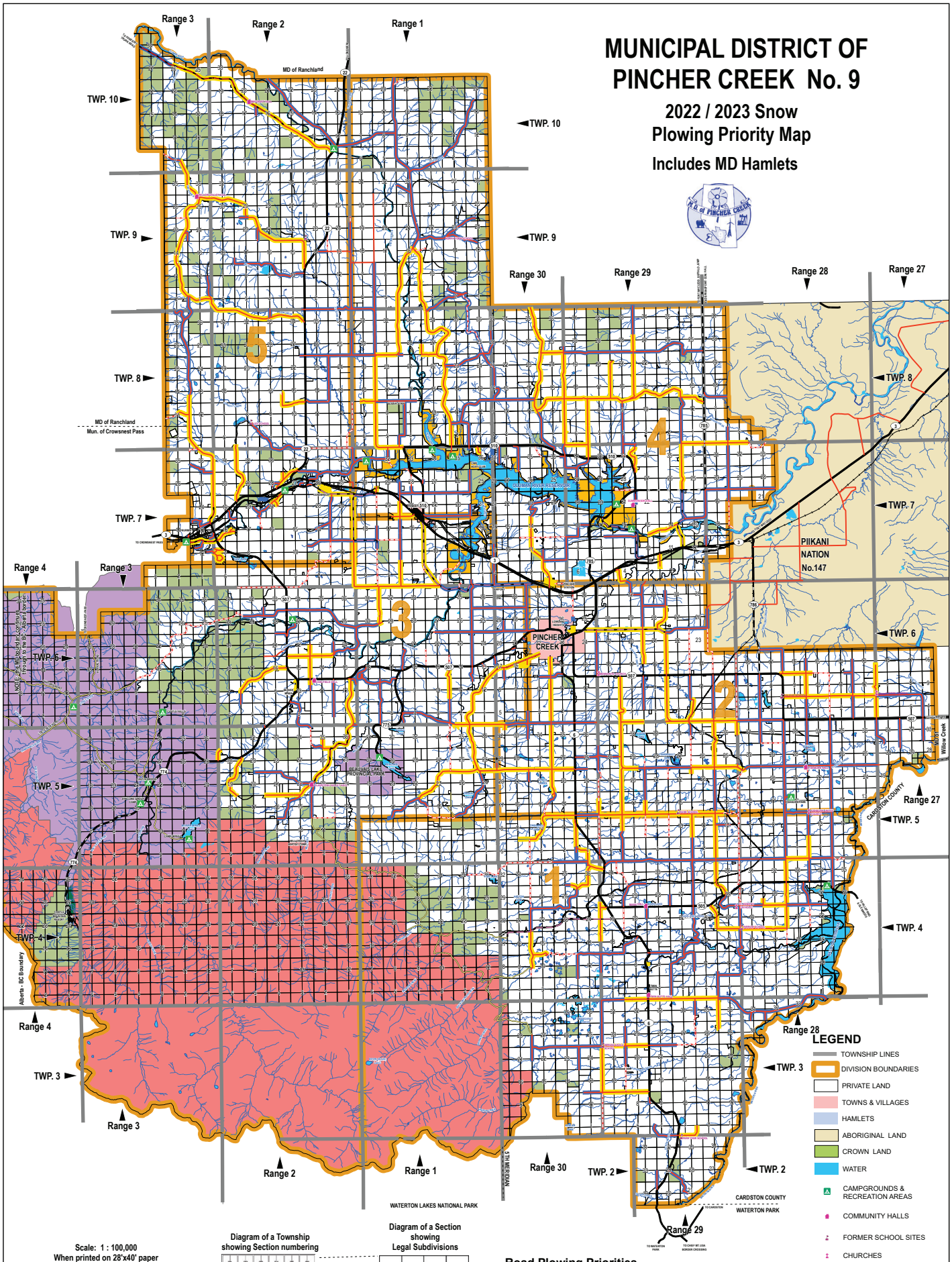
	DIVISION	CONCERN/REQUEST	ASSIGNED TO	ACTION TAKEN	REQUEST DATE	FOLLOW UPDATE	COMPLETION DATE
2022-359	Div 5	Request Driveway Snow Removal	Tony T		November 3, 2022	Form Received	
2022-360	Div 1	Requested Road being done	Brian	Completed	November 3, 2022	-	November 4, 2022
2022-361	Div 3	Wondering if there is a plan to fix the road where the chip seal was placed	Eric		November 3, 2022	-	
2022-362	Div 3	Request Driveway Snow Removal	Glen	Completed	November 4, 2022	Form Received	November 10, 2022
2022-363	Div 1	Concern over condition of road, grader left 2 inches of snow/slush on road.	Josh	Completed	November 4, 2022	-	November 4, 2022
2022-364	Div 2	Driveway plowing requested	Joey		November 4, 2022	Form Received	
2022-365	Div 1	Request Driveway Plowing	Brad	Completed	November 4, 2022	-	November 4, 2022
2022-366	Div 2	Switchback drifting bad	Kent	Completed	November 4, 2022	-	November 7, 2022
2022-367	Div 2	Requested Road being done	Kent	Completed	November 4, 2022	-	November 4, 2022
2022-368	Div 2	Requested Road being done	Kent	Completed	November 4, 2022	-	November 4, 2022
2022-369	Div 3	Requested Road being done	Glen/Joey	Completed	November 4, 2022	-	November 5, 2022
2022-370	Div 1	Driveway plowing requested	Brad	Completed	November 7, 2022	-	November 8, 2022
2022-371	Div 3	Radar Sign down	Jon	-	November 8, 2022	First call submitted	-
2022-372	Div 1	Requested Road being done	Brian	Completed	November 9, 2022	Brian informed	November 10, 2022
2022-373	Div 3	Requested Road being done	Glen	Completed	November 9, 2022	Glen Informed	November 9, 2022
2022-374	Div 3	Driveway plowing requested	Glen	Completed	November 9, 2022	Glen Informed	November 10, 2022
2022-375	Div 5	Road Icey	Tony T	Completed	November 9, 2022	Hill was completed when Tony T was out Nov 11	November 11, 2022
2022-376	Div 3	Driveway plowing requested	Joey	Completed	November 10, 2022	Joey Informed	November 10, 2022
2022-377	Div 3	Request Road Being Done	Joey	Completed	November 10, 2022	Joey Informed	November 10, 2022
2022-378	Div 3	Requested Runway Plowing	Bob M	Completed	November 14, 2022	Plow schedule to complete the work Nov 15, 2022	November 15, 2022
2022-379	Div 4	Concern about snowbank left by plow on driveway	Jon	Completed	November 14, 2022	Jon met with him, Operator will try to push snow away.	November 15, 2022
2022-380	Div 3	Icy hill need attention	Joey	Completed	November 5, 2022	Joey Completed the following Monday	November 7, 2022
2022-381	Div 4	Requested assisstance, Truck stuck on the side of the road	Topher	Completed	November 5, 2022	Topher went to assist on the following Monday	November 7, 2022
2022-382	Div 5	Road drifted in, Requested plowing	Tony T	Completed	November 11, 2022	Tony T called out	November 11, 2022
2022-347	Div 3	Requested plowing on street to his place	Tony T	Completed	November 11, 2022	Tony T called out	November 11, 2022
2022-348	Div 4	Manager Un-happy about snow removal/Plowing	Eric	Completed	November 9, 2022	Eric and Jon met with manager on November 10 and came up with a plan.	November 10, 2022

	DIVISION	CONCERN/REQUEST	ASSIGNED TO	ACTION TAKEN	REQUEST DATE	FOLLOW UPDATE	COMPLETION DATE

MUNICIPAL DISTRICT OF PINCHER CREEK No. 9

2022 / 2023 Snow Plowing Priority Map

Includes MD Hamlets



LEGEND

- TOWNSHIP LINES
- DIVISION BOUNDARIES
- PRIVATE LAND
- TOWNS & VILLAGES
- HAMLETS
- ABORIGINAL LAND
- CROWN LAND
- WATER
- CAMPGROUNDS & RECREATION AREAS
- COMMUNITY HALLS
- FORMER SCHOOL SITES
- CHURCHES

Scale: 1 : 100,000
When printed on 28"x40" paper

0 1.25 2.5 5 7.5 10 Kilometers

Information depicted is subject to change, therefore the MD Of Pincher Creek assumes no responsibility for descrepancies at time of use.

Produced by the MD Of Pincher Creek November 2022.

ProjectFile: C:\GIS\Work Space\MADM\SnowPlowingMap\ProjectFiles\SnowPlowing2022_XX.mxd

Diagram of a Township showing Section numbering

Diagram of a Section showing Legal Subdivisions

13	14	15	16
12	11	10	9
5	6	7	8
4	3	2	1

36

Road Plowing Priorities

- Priority 1
- Priority 2

Access

- PAVED - PRIMARY/SECONDARY
- UNPAVED - PRIMARY/SECONDARY
- LOCAL PAVED ROADS
- OILED / GRAVEL ROADS
- GRAVEL ROADS
- UNIMPROVED ROADS
- RAILROAD
- PRIVATELY MAINTAINED

Alberta Parks

- ECOLOGICAL RESERVE
- PROVINCIAL PARK
- PROVINCIAL REC AREA
- WILDLAND PARK

Recommendation to Council

TITLE: Dam Safety Review			
PREPARED BY: David Desabrais		**DATE: November 5th, 2022**	
DEPARTMENT: Utilities & Infrastructure			
David Desabrais		22/11/05	**ATTACHMENTS:** **1. 2021 Dam Safety Review**
Department Supervisor		**Date**	

APPROVALS:

	22/11/05		2022/11/05
Department Director	**Date**	**CAO**	**Date**

RECOMMENDATION :

That Council receive the 2021 Dam Safety Review for information.

BACKGROUND:

SNC Lavalin was contracted to carry out a Dam Safety Review (DSR) of the Cridland, Therriault, Sandy Lake, Fish Lake, and Foothill Lake Dams.

The objective of the study was to:

- Evaluate the safety of the dams and associated structures
- Confirm dam compliance with regulations and best practices
- Identify and prioritize deficiencies and make recommendations for mitigation
- Identify data gaps for safe operation
- Complete:
  - Site inspection
  - Hydrotechnical assessment (inclusive of consequence classification review)
  - Geotechnical assessment
  - Dam safety management review
  - Breach inundation study for consequence classification

Table 9.1 summarizes the recommendations related to the five (5) dams. 33 recommendations were provided in total, four (4) of which were high priority.

Recommendation to Council

Administration submitted a request per the DSR recommendations and the Alberta Dam and Canal Safety Directive to reclassify the Cridland Dam consequence rating to "low" from "significant". We are awaiting their final review.

The Alberta Dam and Canal Safety Directive (ADCSD) does not specifically prescribe when work needs to be done based on priority rating until it becomes "critical", at which point there are significant requirements around immediately dealing with the issue and notifying potential affected personnel. Avoiding escalation to "critical" is important.

ADCSD requirements regarding deficiencies are as follows:

(5) A dam/canal owner must:

(a) maintain a master deficiencies list at all times;

(b) undertake ongoing surveillance of each safety deficiency, in a form and frequency that is commensurate with the level of risk presented by each deficiency;

(c) develop and implement measures to mitigate and manage risks posed by safety deficiencies and critical safety deficiencies with regard to the master deficiencies list, so that the residual risks of all deficiencies are kept as low as reasonably practicable; and

(d) make funding and other resources available to effectively implement the measures referred to in clause (c).

Administration is proposing addressing the high priority items within the next 2 years by tackling the Therriault Dam recommendations first, then Cridland in 2024, followed by the lower priority deficiencies over the following 2-5 years, barring any significant findings from additional studies. Ongoing maintenance items will be addressed on a rolling basis where resources allow.

FINANCIAL IMPLICATIONS:

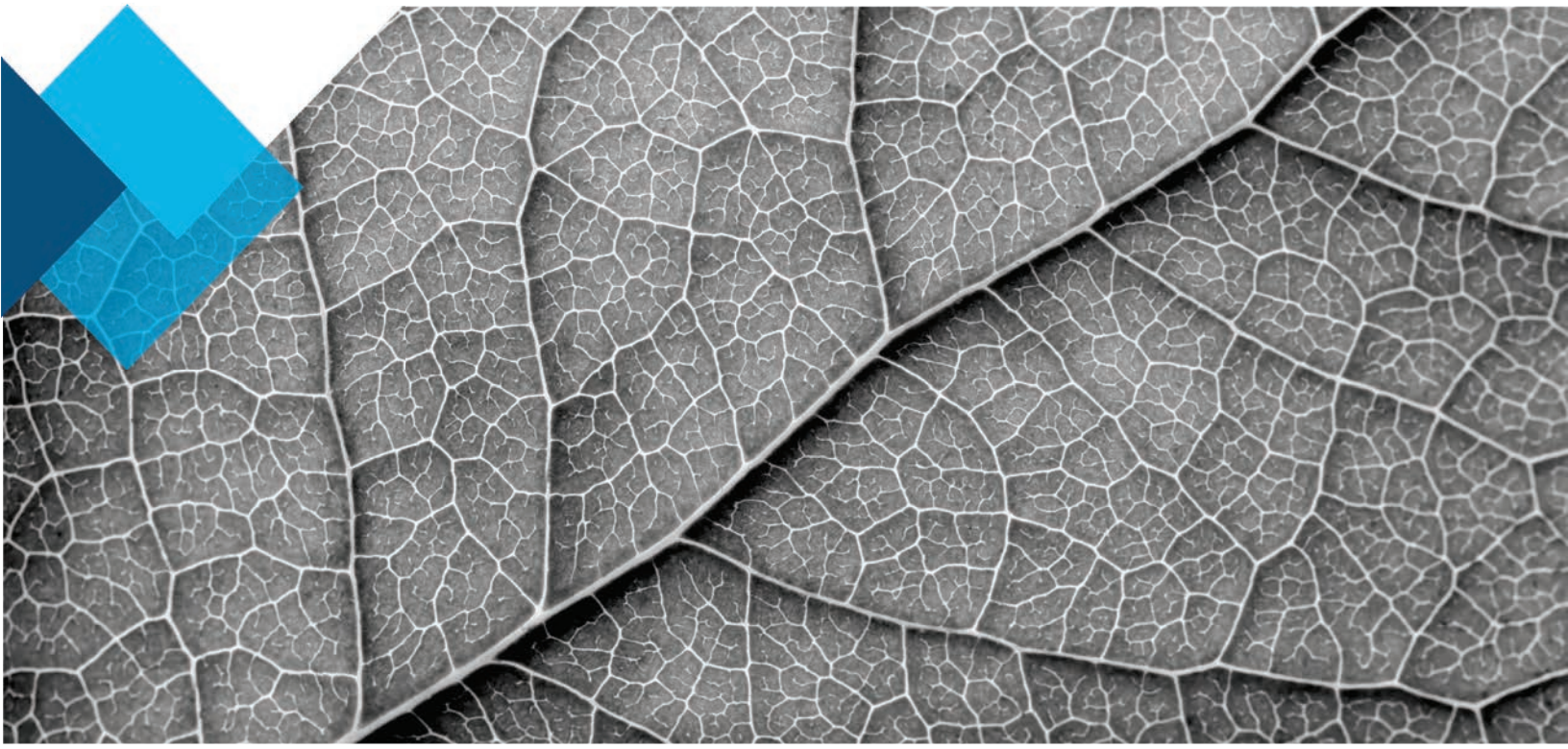
About $65,000 in 2022, $60,000 in 2023, $20,000 over next 2-5 years.

SNC·LAVALIN

2021 Dam Safety Review

Cridland Dam, Therriault Community Dam, Sandy Lake Project Dam, Fish Lake Project Dam, Foothill Lake Community Dam

Municipal District of Pincher Creek



Geoscience & Materials

March 14, 2022

Internal Ref: 683055

Notice to Reader

This report has been prepared and the work referred to in this report has been undertaken by SNC-Lavalin Inc. (SNC-Lavalin), for the exclusive use of the Municipal District of Pincher Creek (the MD), who has been party to the development of the scope of work and understands its limitations. The methodology, findings, conclusions, and recommendations in this report are based solely upon the scope of work and subject to the time and budgetary considerations described in the proposal and/or contract pursuant to which this report was issued. Any use, reliance on, or decision made by a third party based on this report is the sole responsibility of such third party. SNC-Lavalin accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report.

The findings, conclusions, and recommendations in this report (i) have been developed in a manner consistent with the level of skill normally exercised by professionals currently practicing under similar conditions in the area, and (ii) reflect SNC-Lavalin's best judgment based on information available at the time of preparation of this report. No other warranties, either expressed or implied, are made with respect to the professional services provided to the MD or the findings, conclusions, and recommendations contained in this report. The findings and conclusions contained in this report are valid only as of the date of this report and may be based, in part, upon information provided by others. If any of the information is inaccurate, new information is discovered, or project parameters change, modifications to this report may be necessary.

This report must be read as a whole, as sections taken out of context may be misleading. If discrepancies occur between the preliminary (draft) and final version of this report, it is the final version that takes precedence. Nothing in this report is intended to constitute or provide a legal opinion.

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Executive Summary

The Municipal District of Pincher Creek (the MD) retained SNC-Lavalin Inc. (SNC-Lavalin) to carry out an independent Dam Safety Review (DSR) of the Cridland Dam, Therriault Community Dam, Sandy Lake Project Dam, Fish Lake Project Dam, and the Foothill Lake Community Dam. All five dams are located within the MD and are operated and maintained by the MD.

The result of the DSR is presented in this report in accordance with the principles outlined in the Canadian Dam Association (CDA) 2007 Dam Safety Guidelines (DSG) (revised in 2013). The scope of this DSR included:

- Site inspection;
- Hydrotechnical assessment (inclusive of consequence classification review);
- Geotechnical assessment; and
- Dam safety management review.

A breach inundation study for consequence classification review was included in the scope. While such work is not typically part of a DSR, it was added to the scope of work by mutual agreement between the MD and SNC-Lavalin.

The above-mentioned tasks were completed based on available information supplied by the MD and reasonable assumptions made for the analyses. For geotechnical assessment, material properties based on literature review values were used as inputs.

No visible evidence of significant dam instability was discovered during the site inspection. The findings of this DSR are summarized in the paragraphs below.

For the Cridland Dam, as per the hydrotechnical review, the current consequence classification of the dam, which is “Significant” can be amended to “Low”. Overtopping of the Cridland Dam was observed in 2014 as per the MD in the answered questionnaire (Appendix II) for storm events less than the inflow design flood (IDF) event (1:100 to 1:1000-year return periods). The geotechnical assessment indicates that the factor of safety (FoS) of its downstream slope under steady state condition may be inadequate (slightly below FoS of 1.5), which may represent an immediate risk to the dams, particularly given seepage issues historically occurring and ongoing. Further assessment of the engineering properties and groundwater within the dams is strongly recommended to verify the dam is safe.

For the Therriault Community Dam, the hydrotechnical review found that flood inundation boundary could encroach upon multiple residences and the current consequence classification of “Significant” is appropriate for the Therriault Dam. The hydrotechnical review found that the available freeboard is likely inadequate for certain operating conditions. The geotechnical assessment indicates that FoS of its downstream slope under steady state condition may also be inadequate, given ongoing seepage issues. Further evaluation of the engineering properties and groundwater within the dams is strongly recommended to assess the potential risks.

For the Sandy Lake Project Dam, the hydrotechnical review found that the current classification of “Low” is appropriate. The hydrotechnical review found that the available freeboard is likely inadequate for certain operating conditions. A detailed freeboard analysis is recommended to confirm the required freeboard and

whether reducing the full supply level or raising the dam crest is appropriate to achieve the required freeboard. The geotechnical review found the stability conditions are adequate and exceed the CDA (2013) recommended criteria. For the Fish Lake Project Dam, the hydrotechnical review found that the current classification of “Low” is appropriate for the Fish Lake Project Dam. The geotechnical review found the stability conditions are adequate and exceed the CDA (2013) recommended criteria.

For the Foothill Lake Community Dam, the hydrotechnical review found there is a residence located approximately 4 km downstream of the dam that could be at risk to flooding in the event of a dam breach. A more detailed dam breach assessment is recommended before the current consequence classification could be considered for amendment from “Significant” to “Low”. The geotechnical review found the stability conditions are adequate and exceed the CDA (2013) recommended criteria.

As to the aspects of dam safety management, the 1999 Therriault, Fish Lake and Foothill Lake Dam Operation, Maintenance and Surveillance (OMS) Manuals were generally adequately prepared and contained most of the necessary elements for an OMS plan. However, information such as emergency contacts, public safety details, and operating procedures are likely out of date and the manuals should be updated. An emergency preparedness plan (EPP) and an emergency response plan (ERP) should be developed for the “Significant” consequence dams (Therriault and Foothill Lake Community Dam).

Several Medium, Low, and Maintenance related findings were identified. These findings should be addressed in a timely manner, relative to the priority assigned, to maintain and improve overall dam safety management for the dams. These deficiencies are listed in **Table 9.1** along with findings comments and recommendations. In some instances, it may be possible that additional information exists that was not available for the review, resulting in some findings or recommendations needing future review.

Based on the current regulatory requirements and the results of the DSR for the dams, the next DSR should be carried out in 2031.

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Tables

Drawings

Appendices

Abbreviations and Acronyms

ADCSD	Alberta Dam and Canal Safety Directive
AEP	Alberta Environment and Parks.
AES	Agricultural and Environmental Services
CDA	Canadian Dam Association
CDEM	Canadian Digital Terrain Model
CSP	Corrugated steel pipe
DSG	Dam Safety Guidelines
DSMS	Dam Safety Management System
DSR	Dam Safety Review
EDGM	Earthquake Design Ground Motion
EPP	Emergency Preparedness Plan
ERP	Emergency Response Plan
FSL	Full Supply Level
FoS	Factor of Safety
FWMIS	Fisheries and Wildlife Management Information System
GoA	Government of Alberta
HRV	Historical resource value
IDF	Inflow design flood
km	kilometre
LOL	Loss of Life
m	metre
m^3/s	cubic metres per second
the MD	Municipal District of Pincher Creek
OMS	Operations, Maintenance, and Surveillance Manual
PAR	Population at Risk
PFRA	Prairie Farm Rehabilitation Administration
PGA	peak ground acceleration
PMF	probable maximum flood
PW	Public Works
RDD	rapid drawdown
RFFA	Regional flood frequency analysis
RFP	Request for Proposal
SAR	Species at Risk
SD	Standard Deviation
SNC-Lavalin	SNC-Lavalin Inc.
UMA	UMA Engineering

1 Introduction

1.1 General

The Municipal District of Pincher Creek (the MD) retained SNC-Lavalin Inc. (SNC-Lavalin) to carry out an independent Dam Safety Review (DSR) of five dams located within the MD.

SNC-Lavalin submitted a proposal for this project dated April 20, 2021 in response to a Request for Proposal (RFP) Number 20210323 dated March 24, 2021.

1.2 Scope of Work

The objective of the project was to complete a DSR for five dams located within the MD at:

1. Cridland Dam;
2. Therriault Community Dam (Therriault Dam);
3. Sandy Lake Project Dam (Sandy Lake Dam);
4. Fish Lake Project Dam (Fish Lake Dam); and
5. Foothill Lake Community Dam (Foothill Lake Dam).

The DSR is a part of the dam safety management system with the overarching goal of protecting people, property, and the environment from harmful effects of failure of the dam, reservoir, or operations. The objective of the 2021 DSR is to:

- Evaluate the safety of the dams and associated structures;
- Confirm the dams are in compliance with regulatory requirements such as *Alberta Water Act,* Water (Ministerial) Regulation – Part 6, and best practices (Canadian Dam Association [CDA]. 2013. Dam Safety Guidelines, 2007. Revised 2013) and accompanying bulletins;
- Identify and prioritize known and any new deficiencies and make recommendations to mitigate identified deficiencies;
- Identify any data gaps to be addressed and/or study requirements for safe operations of the dams;
- Address the key issues identified by the MD in support of the undertaking of this DSR; and
- Carry out the Scope of Work as outlined in the RFP.

1.3 Project Team

The SNC-Lavalin DSR team that completed this project included:

- Alistair James, P.Eng., Principal Geotechnical Engineer, Geotechnical Lead;
- Aniruddha Saha, M.Eng., P.Eng., Geotechnical Engineer and Project Manager;
- Chris Duncan, P.Eng., Geotechnical Engineer;
- Keda Cao, EIT, Geotechnical Engineer-In-Training;
- Jeremy Zandbergen, P.Eng., Senior Geotechnical Engineer;
- Winston Wade, MEM, Senior Hydrotechnical Specialist;
- Andrew Clow, EIT, Hydrotechnical Engineer-In-Training;
- Haimanot Yadete, P.Eng., Senior Hydrotechnical Engineer;
- Beth Robertson, M.Eng., P.Eng., Hydrotechnical Engineer; and
- Christina Henze, EIT, Hydrotechnical Engineer-In-Training.

1.4 Previous Dam Safety Reviews (DSR)

Previous DSRs completed for the dams are listed below:

- 2010 Therriault DSR, completed by Genivar (Genivar, 2010a)
- 2010 (Cridland, Foothill, Fish Lake, and Sandy Lake) DSR, completed by Genivar (Genivar 2010b)
- Dam Safety Review for Cridland (Burmis) Dam, completed by UMA Engineering (UMA, 1999a)
- Dam Safety Review for Foothill Lake Dam, completed by UMA Engineering (UMA, 1999b); and
- Dam Safety Review of the Sandy (Marna) Lake Dam, completed by UMA Engineering (UMA, 1999c).

2 Project Description

2.1 Site Location and Layout

All five dams are located within, operated and maintained by the MD. A site location plan showing the five dams is presented on Drawing 1.

MD stated that ”MD obtained the dams from the Prairie Farm Rehabilitation Administration (PFRA) when they were devolving themselves of dam ownership and management. Along with the dams, there was a corresponding water licence and a purpose for the retention of water. The purpose of the water retention ranges from streamflow augmentation to community water supply. The stream flow augmentation was not well defined in the licence and west slope cutthroat trout may drive the requirement of water retention. However, the ownership transfer date was not confirmed.”

2.1.1 Cridland Dam

The Cridland Dam is an earthfill dam located in NW-10-5-30-W4. It was originally built in 1958. The length of the dam is approximately 70 m with a crest width of 8 m and a height of approximately 14 m. The reservoir can be drained through a 600 mm diameter corrugated steel pipe and has an emergency spillway outlet channel that is partially armoured with riprap. A site layout plan for Cridland is shown on Drawing 2.

2.1.2 Therriault Dam

The Therriault Community Dam is a zoned earthfill dam located in SW-27-5-29-W4. It was originally built in 1967, with construction completed to increase the storage capacity in 1989 (Genivar, 2010a). The length of the dam is approximately 106 m with a crest width of 7 m and a height of approximately 14.2 m. The reservoir can be drained through a 760 mm diameter corrugated steep pipe riparian conduit. There is a drop inlet spillway that connects to the riparian conduit outlet and an emergency spillway that is partially armoured with riprap. A site layout plan for Therriault is shown on Drawing 3.

2.1.3 Sandy Lake Dam

The Sandy Lake Project Dam is an earthfill dam located in NE-32-5-1-W5. It was originally built in 1962 to regulate storage capacity of a natural lake (Genivar, 2010b). The length of the dam is approximately 13 m with a height of approximately 2.8 m. The lake has a vegetated spillway outlet channel to allow excess inflows to be discharged. A site layout plan for Sandy Lake is shown on Drawing 4.

2.1.4 Fish Lake Dam

The Fish Lake Project Dam is an earthfill dam located in SE-32-4-30-W4. It was originally built in 1954 to combine and raise the water level of two natural interconnecting lake bodies (Genivar, 2010b). The length of the dam is approximately 91 m with a crest width of 3.8 m and a height of approximately 3.7 m. The lake has an outlet channel and a spillway to allow excess inflows to be discharged. A site layout plan for Fish Lake is shown on Drawing 5.

2.1.5 Foothill Lake Dam

The Foothill Lake Community Dam is an earthfill dam located in SE-28-4-30-W4. It was originally built in 1965 to raise the water level of a natural lake (Genivar, 2010b). The length of the dam is approximately 55 m with a crest width of 4.3 m and a height of approximately 3.7 m. The lake has a gated concrete low-level outlet to allow excess inflows to be discharged. A site layout plan for Foothill Lake is shown on Drawing 6.

2.2 Summary of Project Data

Key facility information for the dams is listed in **Table 2.1**.

Table 2.1 Summary of the Key Facility Information for the Dams

Parameter	Unit	Cridland	Therriault	Sandy Lake	Fish Lake	Foothill Lake
			Reservoir			
Full Supply Level (FSL)	m	1368	1220.11	Unknown	1508.55	30.3 (Local Datum)
Total Capacity at FSL	dam^3	230	712	836	673	310
Water Surface Area at FSL	ha	4.75	15.4	32.0	27.3 and 4.8	19.5
Drainage Area	km^2	7	53	1.8	2	1.5
			Dam			
Dam Crest Elevation	m	1369.82	1222.8	Unknown	1510.0	31.5 (Local Datum)
Embankment Height	m	9.8	14.2	2.4	3.8	3.4
Crest Length	m	70	106	13	91	55
Crest Width	m	8	7	3.7	3.7	4.3
Upstream Slope	H:V	4:1	3:1	3:1	3:1	3:1
Downstream Slope	H:V	3:1	2.25:1	2:1	2:1	2:1
Freeboard at FSL	m	1.1	2.7	0.9	1.45	1.2
Current Consequence Classification*		Significant	Significant	Low	Low	Significant

Where information was available in multiple sources, the values from the 2010 DRSs (Genivar 2010a, Genivar 2010b) were used.

*Current consequence classifications were retrieved from AEP (2021)

3 Status of Recommendations from 2010 DSR

Recommendations provided for the dams in the 2010 DSR (Genivar, 2010a; Genivar 2010b) and their status as of July 2021 are listed in **Table 3.1**.

Table 3.1 Summary of Recommendations in the 2010 DSR (Genivar, 2010a; Genivar, 2010b)

2010 DSR Recommendation	Status as of July 2021
Cridland Dam	
Deciduous brush, poplar, and aspen trees must be removed from the downstream face of the dam.	Completed in 2013, 2015, 2018, and 2021*
Reservoir bank stabilization must be extended along the right and left abutment shorelines at selected locations.	Outstanding
Selected flood eroded stretches along the spillway outlet channel should be repaired.	Partially Completed**
The low-level outlet gate control and gate well lid should be secured with a locking device.	Completed***
Therriault Community Dam	
The Full-Service Level of the reservoir should be reduced to reduce wave action impact and avoid issues with the buffering capacity of the reservoir in response to storm events.	Outstanding‡
The dam face will require placement of riprap along the western shore adjacent to the dam.	Outstanding
A perimeter barrier of grated covering over the drop spillway opening with an attached warning sign should be installed.	Outstanding
The existing emergency spillway is in need of a major repair resulting from the flood damage incurred during the June 17, 2010 flooding.	Completed in 2015
Sandy Lake Project Dam	
Repair and provide a locking device for the lid of the outlet gate well.	Outstanding
Fish Lake Project Dam	
Provide for and construct an all-weather accessible trail into the site.	Outstanding
Construct a new access structure to the outlet control gate.	Completed
Provide a locking device for the outlet gate control wheel.	Completed***
Clear the obstructions to the free flow of the culvert under the land bridge between the upper and lower reservoir.	To be redone†
Clear the vegetation overgrowth at the spillway.	Outstanding
Clear, reshape, and re-establish erosion control in the low-level outlet channel to eliminate water back-up and erosion within the outlet channel.	Outstanding

Table 3.1 (Cont'd) Summary of Recommendations in the 2010 DSR (Genivar, 2010a; Genivar, 2010b)

2010 DSR Recommendation	Status as of July 2021
Foothill Lake Community Dam	
Replace the 300 mm overflow pipe to original design or remove and re-contour the outlet spillway entrance to accommodate the design flow routed through the overflow pipe.	Outstanding
Reseed the bare ground along the top of the dam and protect the area from livestock traffic until vegetation is re-established and sustainable or cover the bare surface area with granular material to prevent erosion.	Outstanding††
Re-contour the spillway inlet and channel to eliminate the flood plain and debris catchment area at the inlet. Suggested minimum freeboard height is the greater of 1.0 m below the south-eastern shoreline or 0.75 m below the top of riprap along the north-western shoreline.	Outstanding
Remove the vegetation overgrowth at the low-level outlet portal area and re-establish rock erosion protection for the outlet channel.	Outstanding
Provide a locking device for the outlet gate control stem.	Outstanding

* As per MD's response, 'Agricultural and Environmental Services (AES) and Public Works (PW) have mulched the woody growth on the dam faces of Therriault Dam and Cridland Dam. In the last ten years, PW mulched significant growth (about 2013) and then AES followed up with spraying on the regrowth in 2013, 2015, 2018, and 2021 (dates approximate). Therriault Dam doesn't have poplars in the area so most control work is for Willows (Silver and regular) on and around the dam face, valve area and culvert area'.

** As per MD's response, 'Spillway (not used as an emergency spillway, it flows every year) has been redone at the road culvert a couple of times in the last ten years and once at the crossing in the field (minor overflow damage requiring a bit of gravel). Other work completed was the vegetation removal on the dam face (several times), repairs to the spillway protection grid (about twenty – twenty-five grader blades that keep logs and beavers from blocking the spillway), and beaver removals when they do manage to block it. Further work that has been recommended but not done has been some riprap added to the south end of the spillway to preserve the road crossing the dam.'

*** As per MD's response, 'PW installed locks on all operating gate wheels.'

‡ Not confirmed by MD.

† As per MD's response, 'The Fish Lake Culvert (between the lakes) had to be redone due to collapse of the crossing (dirt and culvert both) and needs to be constantly monitored for flow (floating debris, beavers and low water). Low water was mentioned to have happened because the culvert was installed too high. I'm not sure if that was ever solved. Flow between the lakes has looked good in the last year. Work removing beaver dams (and beavers) on the lower ponds was done in 2021.'

†† As per MD's response, 'It was discussed that it may need to be gravelled due to the nature of the soil (easily eroded when wet and with cattle in area using it as a crossing) but it has held up ok to this point. Fencing the entire lake was also discussed and dismissed as impractical.'

4 Site Inspection

4.1 General

SNC-Lavalin completed a detailed inspection of the dams on June 14, 2021. SNC-Lavalin's DSR inspection team was comprised of the following individuals:

- Alistair James, P.Eng., Principal Geotechnical Engineer; and
- Keda Cao, EIT, Geotechnical Engineer-In-Training.

Roland Milligan, Brian Millis, and Shane Poulsen of the MD escorted and provided responses to queries raised by the inspection team.

SNC-Lavalin personnel took notes of their visual observations for geotechnical and hydrotechnical safety management aspects of the dams, spillways, reservoirs, and shorelines. The DSR team documented their site inspection notes in a site inspection report which was submitted to the MD for review on June 25, 2021. The site inspection report is provided in Appendix I. A compilation of photographs taken during the site inspection by the SNC-Lavalin DSR team is also provided in Appendix I.

This section summarizes the outcome of the visual inspections, project-specific condition inspections, and interviews of the MD dam safety staff during the site inspection.

4.2 Visual Inspection

The visual inspection of the dams and abutments looked for evidence of possible concerns such as:

- depressions, sinkholes, or signs of settlement;
- desiccation or frost heave cracking;
- bulging in the slopes;
- evidence of seepage and internal erosion;
- indications of movement such as tension cracks, rotation, heave, or subsidence; and
- signs of surface erosion and/or degradation of slope protection on the dams and in the spillways.

In the following subsections, recommendations are included as part of descriptions of the observations. Recommendations are re-stated and summarized later in the Section 9 of this report.

4.2.1 Cridland Dam

The Cridland Dam is located on the northeast side of its reservoir and its crest is aligned in a northwest to southeast direction. The upstream slope of the dam is in fair condition, with some erosion noted at the north end of the slope where fences have fallen into the reservoir. The upstream slope is protected by riprap above and below the water surface, consisting of well-graded angular cobbles and boulders between

100 mm and 400 mm in diameter. The riprap is in fair condition, without signs of cracking and with minor vegetation growth. The riprap does not continue to the north abutment with sufficient extension to prevent erosion at the abutment. The eroded bank at the north abutment should be repaired and armoured to prevent further erosion.

Above the riprap, the dam crest is vegetated with native grasses. An access road crosses the dam crest. A small depression was observed on the access road at the south end of the crest. The depression should be filled, and the slope of the road regraded appropriately toward the reservoir to improve surficial drainage.

The downstream slope of the dam is vegetated with a mixture of native grasses, bushes, and shrubs. The vegetation is overgrown on the central part of the downstream slope and should be cleared to allow for inspection. A spring was observed along the boundary between the earth fill and native materials on the south side of the downstream slope. Seepage was also observed at the toe of the downstream slope.

A spillway outlet channel is located on the southeast side of the reservoir. The channel is partially armoured by riprap on the base, with the majority of the channel slopes vegetated with native grasses. The slopes of the spillway channel are generally in good condition, without major indications of instability. Minor sloughing was observed within the channel between the access road crossing and the Range Road 302A crossing. Downstream of the Range Road 302A culvert, the spillway channel appears to be blocked by wood debris and reeds. The blockage should be cleared from the channel.

Signage was not observed around the reservoir area. Appropriate signage should be installed along the spillway as well as the reservoir shoreline as per provincial regulatory requirements.

Overall, other than the seepage issues which should be addressed, the dam is generally in adequate condition with no readily visible signs of movement discovered.

4.2.2 Therriault Community Dam

The Therriault Community Dam is located on the north side of its reservoir and its dam crest is aligned in a northwest to southeast direction. The upstream slope of the dam is in adequate condition, with no major signs of instability observed, and only moderate erosion at the northwest end of the dam. The upstream slope is protected by riprap, which is partially hidden by overgrown vegetation. The vegetation should be cleared to allow for inspections.

The dam crest is in adequate condition, no readily visible signs of instability discovered. It is well vegetated with native grasses and includes an access road crossing the crest.

The downstream slope of the dam was in adequate condition, with no major signs of instability discovered. The slope is vegetated with a mixture of native grasses and shrubs. Minor erosion or a trail was observed along the north edge of the downstream slope at the abutment interface, possibly created by wildlife or livestock traffic. The trail should be re-vegetated or armoured to prevent further erosion. Seepage was observed on the south-eastern part of the downstream slope and toe. This seepage is a concern as it appeared to be mobilizing surface soils and may cause fines migration from within the dam. A French drain system or a drainage blanket should be installed on the downstream slope to help improve drainage, control slumps, and enhance slope stability.

The reservoir levels are regulated by a drop culvert outlet structure located at approximately the midpoint of the dam upstream slope. The inlet of the drop culvert is not adequately fenced, with gaps large enough to pass a person or boat into the inlet structure. The fencing should be improved to prevent accidental access to the inlet.

The drop culvert flows into an outlet channel. The outlet and subsequent channel are armoured by riprap near the discharge point, with the upper channel slopes vegetated with native grasses. The slopes of the spillway channel were generally in adequate condition, with no major indications of instability discovered, only with minor slumps and sloughing.

Signage was not observed around the reservoir area. Appropriate signage should be installed along the spillway as well as the reservoir shoreline as per provincial regulatory requirements.

Overall, other than the seepage issues which should be addressed, the dam is generally in adequate condition with no signs of movement identified.

4.2.3 Sandy Lake Project Dam

The Sandy Lake Project Dam is located on the northeast side of its impounded lake and its crest is aligned in an east-west direction. The crest, upstream, and downstream slopes of the dam were all assessed to be in adequate condition, with no major signs of instability or seepage identified. The slopes and crest are well vegetated with native grasses.

The lake levels are regulated by a drop culvert outlet structure located at approximately the midpoint of the dam's upstream slope. The inlet of the drop culvert was not visible during the inspection and the spillway did not appear to be used frequently for water release, being dry at the time of inspection. The spillway was in adequate condition and is well vegetated with native grasses. Visible signs of instability were not observed. The outlet point of the drop culvert was clogged by accumulated sand and silt and should be repaired. As the dam is approximately 2.8 m high, the dam height could potentially be reduced to less than 2.5 m by reprofiling the crest to a flattened and widened swale. This could allow for potential dam deregulation.

The slope of the spillway was estimated to be 1% on average. Drop structures suggested by the drawing No.0678-045-02-SW1471-003 (UMA 1999c) would be buried within the slope of the spillway channel and could not be confirmed.

Signage was not observed around the reservoir area. Appropriate signage should be installed along the spillway as well as the reservoir shoreline as per provincial regulatory requirements.

Overall, other than the clogged outlet which should be addressed, the dam is generally assessed to be in adequate condition based on the site inspection.

4.2.4 Fish Lake Project Dam

Fish Lake is formed by an upper and lower reservoir that are connected by a land bridge. The Fish Lake Project Dam is located on the northeast corner of the lower reservoir. The dam crest is aligned in a northwest to southeast direction. The crest, upstream, and downstream slopes of the dam were all judged to in adequate condition, with no major signs of instability or seepage identified. The slopes and crest are well vegetated with native grasses.

The lake levels are regulated by a gated low-level outlet within the reservoir, which is accessed by a steel bridge. The valve is used infrequently and may be inaccessible when the reservoir level is high. Downstream of the dam, the outlet channel is overgrown with vegetation, which should be cleared to allow for unimpeded flow.

The natural spillway in the southeast corner of the lower reservoir was partially blocked by a beaver dam which affects the capacity of spillway outflow. The beaver dam should be removed, and debris cleared from the spillway to restore the flow capacity.

Pipeline crossings were found adjacent to the land bridge between the upper and lower reservoirs. Signage at the pipeline crossings have faded, and the information on the signages may be outdated. It is recommended that the current owners of the pipelines be identified, and the current pipeline operational conditions be collected. Risks associated with pipeline operations should be considered as part of the regular dam operation and maintenance schedule. Extreme weather events or bank erosion may lead to pipeline exposure or even pipeline damage. The depths of the pipelines should be checked regularly as part of the reservoir operations.

As the dam is approximately 3.8 m high, the dam height could be reduced to less than 2.5 m by reprofiling the crest to a flattened and widened swale. This could allow for dam deregulation.

Signage was not observed around the reservoir area. Appropriate signage should be installed along the spillway as well as the reservoir shoreline as per provincial regulatory requirements.

Overall, other than the blocked natural spillway and pipeline risk which should both be addressed, the dam was generally assessed to be in adequate condition.

4.2.5 Foothill Lake Community Dam

The Foothill Lake Community Dam is located on the northeast corner of Foothill Lake. The dam crest is aligned in a northeast to southwest direction. The upstream slope of the dam was deemed to be in adequate condition and is protected by riprap above and below the water surface. The riprap consists of well-graded cobbles and boulders between 100 mm and 300 mm in diameter. The riprap is in fair condition, without signs of cracking and with minor vegetation growth.

The dam crest and downstream slope were assessed to be in adequate condition, with no major signs of instability discovered. Both are vegetated with native grasses, with some minor rutting on the crest.

The lake levels are regulated by an outlet control structure, which had a few defects at the time of the inspection. Defects included damage to the concrete inlet headwall, a bend in the inlet gate, exposed geotextile behind the concrete headwall, and the top of one of the outlet culverts being exposed and damaged. The functionality of the headwall and gate should be assessed and monitored. Should the functionality of the structure deteriorate, the structures should be repaired or replaced in a timely manner. The exposed geotextile should be covered by adequate earth fill to prevent damage. The damaged corrugated steel pipe (CSP) culvert should be repaired or replaced to ensure adequate flow capacity. The exposed portion of the pipe should be covered by adequate earth fill to prevent potential damage.

There is a spillway to the south of the low-level outlet. Erosion was observed at the junction of the dam and the spillway. The spillway is partially hidden by overgrown grasses at the junction of the spillway and the reservoir. The grasses might have trapped some silt from the reservoir, which slightly elevated the channel bed. Wood debris was observed at the junction. The current spillway elevation at the junction should be lowered and the channel armoured. Wood debris should also be removed from the spillway channel.

The southeast shoreline of the reservoir is experiencing erosion due to wave actions. Approximately 30 m of the shoreline currently does not have sufficient erosion protection to protect against wave runup. Erosion protection is recommended in this area.

Signage was not observed around the reservoir area. Appropriate signage should be installed along the spillway as well as the reservoir shoreline as per provincial regulatory requirements.

Overall, other than the issues with the outlet control structure which should be addressed, the dam was generally judged to be in adequate condition.

4.3 Staff Interview and Questionnaire

Prior to the dam safety inspection, SNC-Lavalin prepared a list of questions on dam safety management and other technical aspects of the dam and spillway and submitted it to the MD. The intent of the questionnaire was to gather relevant information to prepare for the site inspection and to engage MD dam safety staff in the process. MD staff added their responses for each of the 49 questions which were received and reviewed by SNC-Lavalin before the site inspection. The SNC-Lavalin DSR team interviewed MD staff during the site inspection to collect additional information. The completed questionnaire with the MD's answers is provided in Appendix II.

The questionnaire was broken down into topical sections with questions for each section, as follows:

- Dam Safety Management – 13 questions;
- Operations, Maintenance, and Surveillance – 11 questions;
- Emergency Preparedness – 4 questions;
- Geotechnical – 6 questions; and
- Hydrotechnical – 15 questions.

5 Hydrotechnical Review

The hydrotechnical review methodology and select details are provided in Appendix I. The following report subsection summarize the review.

5.1 Cridland Dam

5.1.1 Inflow Design Flood

The inflow design flood (IDF) for the Cridland Dam was estimated from a regional flood frequency analysis (RFFA) based on surrounding stream gauge stations. The methodology of the statistical analysis is described in Appendix III-1.

The catchment contributing to the inflow to Cridland Dam was delineated based on topographic data of the freely available Canadian Digital Terrain Model (CDEM[1]). The resolution of the CDEM data is approximately 25 m. The IDF for the Cridland dam is based on the 1:100 year return period storm after having amended the dam consequence classification to “Low”. Based on the regression equations in Table A-2 and the catchment area of 7 km^2, the IDF is estimated at approximately 4 m^3/s.

5.1.2 Spillway Capacity Review

The hydraulic capacity of the excavated earthen emergency spillway at Cridland Dam was estimated by developing a one-dimensional hydraulic model to simulate the flow and develop a rating curve. The methodology for the hydraulic modelling analysis is described in Appendix III-3.

Based on available information, the estimated maximum capacity of the emergency earthen spillway is approximately 30 m^3/s. Using the rating curve, the reservoir elevation for a discharge of 4 m^3/s (IDF) was estimated to be approximately 1,368.6 m, or about 1.2 m of freeboard.

5.1.3 Review of Consequence Classification

A dam breach analysis was completed to evaluate the flood inundation boundary downstream of the Cridland Dam and to evaluate whether amending the dam consequence classification from “Significant” to “Low” is reasonable. The methodology for the dam breach analysis is described in Appendix III-4.

The resulting flood from a dam breach is expected to overtop and likely wash out the culvert crossing along Range Road 302A. The flood inundation boundary encroaches upon an uninhabited shed that is on the left bank of the water course approximately 200 m downstream of the dam. A residence on the east side of Range Road 302A is not within the flood inundation boundary. Based on these results, the potential loss of life and property damage is considered reasonable to amend to “Low” consequence.

5.1.4 Freeboard Review

A review of the available freeboard information provided in the 1999 DSR (UMA 1999a) which indicated that the total wind set-up and wave runup freeboard requirements are 0.7 m. Based on the spillway capacity review, there is about 1.2 m of required freeboard modelled for a 1:100-year return period IDF which is

[1] https://open.canada.ca/data/en/dataset/7f245e4d-76c2-4caa-951a-45d1d2051333

adequate for the required freeboard. However, according to answers provided by the MD in the questionnaire (Appendix II), in 2014, the Cridland dam was overtopped. It is recommended that a more detailed freeboard and spillway capacity analysis based on survey data be completed so the model may be calibrated and updated.

5.2 Therriault Community Dam

5.2.1 Inflow Design Flood

The IDF for the Therriault Dam was estimated from a RFFA based on surrounding stream gauge stations. The methodology of the statistical analysis is described in Appendix III-2.

Based on the current consequence classification of the dam, the IDF for the Therriault Dam is derived using flows between the 1:100 and 1:1,000-year return period. Based on Table A-4, the IDF is between approximately 74 and 223 m^3/s. A 1:1000-year return period IDF was adopted for the hydrotechnical analyses.

5.2.2 Spillway Capacity Review

The hydraulic capacity of the excavated earthen emergency spillway at Therriault Dam was estimated by developing a one-dimensional hydraulic model to simulate the flow and develop a rating curve. The methodology for the hydraulic modelling analysis is described in Appendix III-3.

Based on available information, the estimated maximum capacity of the earthen spillway was approximately 27 m^3/s. This includes the assumption that the earthen spillway is 10 m wide (observed at site inspection and on satellite imagery) and not 38.5 m wide (as suggested in the as-built drawings). The Therriault Dam spillway system also includes a drop outlet structure with a square inlet at the FSL dropping into a round CSP. The hydraulic capacity was estimated to be approximately 15 m^3/s using weir flow calculations, as outlined in Appendix III-3.

The combined earthen spillway and drop outlet estimated maximum capacity is approximately 42 m^3/s, which is insufficient to pass the estimated IDF using a 1,000-year return period. Given the sensitivity of the hydraulic capacity to the width of the earthen spillway, a more accurate estimate should be evaluated with up-to-date survey data.

5.2.3 Review of Consequence Classification

A dam breach analysis was completed as additional scope to the DSR to evaluate the current consequence classification of the Therriault Dam and to assess the potential of amending the classification from “Significant” to “Low”. The methodology for the dam breach and inundation analysis is described in Appendix III-4.

The flood inundation boundary encroaches upon a residence situated immediately south of Township Road 60 and likely would encroach upon three (3) residences that are located 800 m further downstream. The resulting flood from a dam breach is expected to overtop and likely wash out the bridge crossing along Township Road 60. Regional Road 292 and the railroad to the east near Township Road 60 are likely not to be impacted. Based on these results, the potential loss of life and property damage would maintain the consequence classification as “Significant”.

5.2.4 Freeboard Review

A freeboard review was completed while conducting the dam breach and spillway assessments. There is not sufficient capacity in the spillway to convey the 1:1000-year return period IDF and the dam was found to likely overtop if the spillway width is 10 m as was observed in the field. Additionally, according to answers provided by the MD in the questionnaire (Appendix II), in 2014, the Therriault Dam was overtopped. It is recommended that a more detailed freeboard and spillway capacity analysis based on survey data be completed.

5.3 Sandy Lake Project Dam

5.3.1 Inflow Design Flood

The IDF for the Sandy Lake was estimated from an RFFA based on surrounding stream gauge stations. The methodology of the statistical analysis is described in Appendix III-1.

The catchment contributing to the inflow to Sandy Lake was delineated based on topographic data of the freely available CDEM data and estimated to be about 1.8 km^2.

Based on the current consequence classification of the Sandy Lake Dam, the IDF computation for the Sandy Lake is based on the 1:100-year return period. Following the regression equations in Table A-2 and the catchment area of 1.8 km^2, the IDF is estimated at approximately 0.7 m^3/s.

5.3.2 Freeboard Review

A desktop review of the required freeboard was conducted using available information including the lake size, lake orientation, and local wind speed. The lake is shaped with the longest fetch orientated from west and southwest which correspond to the highest wind speeds. The desktop review revealed that the currently available freeboard (0.9 m) may not be adequate for normal conditions. An additional analysis is recommended to review the required freeboard and to reassess the FSL.

5.4 Fish Lake Project Dam

5.4.1 Inflow Design Flood

The IDF for the Fish Lake was estimated from an RFFA based on surrounding stream gauge stations. The methodology of the statistical analysis is described in Appendix III-1.

The catchment contributing to the inflow to Fish Lake was delineated based on topographic data of the freely available CDEM data and estimated to be about 2 km^2.

The IDF for the Fish Lake is computed based on the 1:100-year return period. Following the regression equations in Table A-2 and the catchment area of approximately 2 km^2, the IDF is estimated at approximately 0.8 m^3/s.

5.5 Foothill Lake Community Dam

5.5.1 Inflow Design Flood

The IDF for the Foothill Lake was estimated from an RFFA based on surrounding stream gauge stations. The methodology of the statistical analysis is described in Appendix III-1.

The catchment contributing to the inflow to Foothill Lake was delineated based on topographic data of the freely available CDEM data and estimated to be about 1.5 km^2.

The IDF for the Foothills Lake is computed based on the 1:100-year return period. Following the regression equations in Table A-2 and the catchment area of approximately 1.5 km^2, the IDF is estimated at approximately 0.6 m^3/s.

5.5.2 Spillway Capacity Review

The hydraulic capacity of the excavated earthen emergency spillway at Foothills Lake was estimated by developing a one-dimensional hydraulic model to simulate the flow and develop a rating curve. The methodology for the hydraulic modelling analysis is described in Appendix III-3.

Based on available information, the estimated maximum capacity of the emergency spillway is approximately 17 m^3/s. Using the rating curve, the reservoir elevation for a discharge of 0.6 m^3/s (IDF) was estimated to be approximately 1 m of freeboard.

6 Consequence Classification Review

6.1 Introduction

According to the CDA 2007 DSG and the 2013 Revision (CDA 2013), the consequence classification of a dam is used primarily to identify:

- an appropriate IDF and Earthquake Design Ground Motion (EDGM);
- the frequency of future DSRs;
- the level of detail required in the Operations, Maintenance, and Surveillance (OMS) Manual, Emergency Preparedness Plan (EPP), and Emergency Response Plan (ERP) for the dam; and
- the level of effort required for overall dam safety management oversight. The CDA (2013) DSG provides a classification system that can be used to guide the standard of care expected from dam owners and designers for safe operation of dams. The system is based on the potential incremental consequences of a dam failure.

In 2018, the Government of Alberta published the Alberta Dam and Canal Safety Directive (ADCSD; GoA 2018) that provides the criteria to determine the incremental consequences of a dam failure. The criteria, along with IDF specifications from CDA (2013) Dam Safety Guidelines (following the traditional standards-based approach), are reproduced in . The criteria in the ADCSD (GoA 2018) are very similar to those in the CDA (2013) DSG. Key additions, changes, or differences in the 2018 ADCSD criteria compared to the CDA (2013) guidelines criteria are shown as *italics* in **Table 6.1** below.

Table 6.1 Classification of Dams According to the 2018 Alberta Dam and Canal Safety Directive, and IDF Selection According to the CDA 2007 Dam Safety Guidelines

Consequence Classification	Population at Risk (PAR)	Incremental Consequences of Failure			Annual Exceedance Probability Traditional Standards-Based Criteria	
		Loss of Life (LOL)	Infrastructure and Economic, and other property Losses	Environmental and Cultural Losses	IDF	EDGM
Low	Nonidentifiable	*No possibility of loss of life other than through unforeseeable circumstances*	Minimal economic losses *mostly limited to the dam owner's property, and no potential for development within the dam inundation zone*	Minimal short-term loss or damage and no long-term loss or damage to: *Fisheries* *Wildlife habitats* *Rare or endangered species* *Unique landscapes, or* *Sites of cultural significance*	1:100	1:100
Significant	Temporary only	*Low potential for loss of life*	Low economic losses affecting limited infrastructure and residential buildings, public transportation or services or commercial facilities, or some destruction or damages to locations used occasionally and irregularly for temporary purposes	No significant loss or damage to: Important fisheries Important wildlife habitat *Rare or endangered species* *Unique landscapes, or* *Sites of cultural significance* Restoration or compensation in kind highly possible	Between 1:100 and 1:1,000	Between 1:100 and 1:1,000
High	Permanent	10 or fewer	High economic losses affecting infrastructure, public transportation *or services or* commercial facilities, *or some destruction or severe damage to scattered residential buildings*	Significant loss or damage to: Important fisheries Important wildlife habitat *Rare or endangered species* *Unique landscapes, or* *Sites of cultural significance* Restoration or compensation in kind for losses and damages highly possible	1/3 between 1:1,000 and PMF	1:2,475
Very High	Permanent	100 or fewer	Very high economic losses affecting important infrastructure, public transportation or services *or* commercial facilities, *or some destruction or severe damage to residential areas*	Significant loss or damage to: critical fisheries critical wildlife habitat *rare or endangered species* *Unique landscapes, or* *Sites of cultural significance* Restoration or compensation in kind for losses and damages possible but impractical	2/3 between 1:1,000 and PMF	1/2 between 1:2,475 and 1/10,000 or MCE
Extreme	Permanent	More than 100	Extremely high economic losses affecting critical infrastructure, public transportation or services *or* commercial facilities, *or some destruction or severe damage to residential areas*	Major loss or damage to: critical fisheries critical wildlife habitat *rare or endangered species* *Unique landscapes, or* *Sites of cultural significance* Restoration or compensation in kind for losses and damages is impossible	PMF	1/10,000 or MCE

Note (1) Definitions for population at risk:

None: there is no identifiable population at risk, so there is no possibility of LOL other than through unforeseeable misadventure.

Temporary: people are only temporarily in the dam-breach inundation zone (e.g., seasonal cottage use, passing through on transportation routes, participating in recreational activities).

Permanent: the population at risk is ordinarily located in the dam-breach inundation zone (e.g., as permanent residents); three consequence classes (high, very high, extreme) are proposed to allow for more detailed estimates of potential LOL (to assist in decision-making if the appropriate analysis is carried out).

Note (2) Implications for LOL:

Unspecified: The appropriate level of safety required at a dam where people are temporarily at risk depends on the number of people, the exposure time, the nature of their activity, and other conditions. A higher class could be appropriate, depending on the requirements. However, the design flood requirement, for example, might not be higher if the temporary population is not likely to be present during the flood season.

6.2 Current Consequence Classification of the Dams

The 2010 DSR recommended a consequence classification of “Low” for all five dams (Genivar 2010a; Genivar 2010b). However, the Alberta Environment and Parks (AEP) dam database (AEP 2021) lists three (3) of the dams as being “Significant” consequence classification. It is assumed that the MD currently operates and maintains the dams as per the AEP consequence classifications in **Table 6.2**.

Table 6.2 Summary of Current Consequence Classifications

Dam	Current Consequence Classification
Cridland Dam	Significant
Therriault Dam	Significant
Sandy Lake Dam	Low
Fish Lake Dam	Low
Foothill Lake Dam	Significant

6.3 Proposed Consequence Classifications

Inundation studies and detailed consequence assessments were not available to review for any of the current dam classifications. SNC-Lavalin carried out a desktop review of the losses listed in to comment on the current classification. An additional dam breach analysis was completed for the Cridland and Therriault dams to assess whether the current consequence could be lowered.

6.3.1 Cridland Dam

A potential breach of the Cridland Dam would result in water flow from the reservoir toward the northeast, crossing Range Road 302A into low-lying areas and depressions in the surrounding area.

Population at Risk and Loss of Life: There is a building approximately 300 m downstream of the Cridland Dam along the northwest bank of the outlet channel. The MD confirmed that the building is a shed with only seasonal use.

To evaluate the Lose of Life (LOL) potential, SNC-Lavalin carried out a dam breach analysis on the Cridland Dam (see Appendix III-4). The results of the analysis indicate that the uninhabited shed is likely to be inundated in the event of a dam breach, but a residence to the north is not. Based on this assessment, no loss of human life is expected other than through unforeseen circumstances.

Infrastructure and Economic Losses: Damage to infrastructure would include Range Road 302A both downstream of the dam and downstream of the outlet spillway channel. Modelling indicates that the downstream shed is within the flood inundation boundary of a dam breach and could be impacted. Other damage is expected to be limited to minor erosion and sediment deposition downstream of the dam. Infrastructure and economic losses are considered to be “Low” consequence.

Environmental and Cultural Losses: Water from the reservoir is considered to have limited impact on any aquatic life and the environment in general. No fish were detected following a desktop screening of the area within 1 km of the dam. The nearest waterbody downstream of the dam is Indianfarm Creek, which is approximately 3.2 km downstream from the dam. The effects of the dam breach are not expected to cause any deterioration of fish habitat this far from the dam. Irrespective of the level of impact, it is reasonable to assume that the MD can restore and/or compensate the incremental damage in a timely manner.

Based on a review of the Alberta Listing of Historical Resources, the area downstream of the Cridland Dam does not have any areas of cultural significance or heritage resources.

Classification: Based on the above assessment, the current consequence classification of "Significant" could be amended to "Low" for the Cridland Dam.

6.3.2 Therriault Community Dam

A potential breach of the Therriault Community Dam would result in water flow from the reservoir toward the north via the existing outlet known as Indianfarm Creek.

Population at Risk and Loss of Life: There are several residences between 4 km and 6 km downstream of the Therriault Community Dam along the banks of Indianfarm Creek. To evaluate the LOL potential, SNC-Lavalin carried out a dam breach analysis on the Therriault Dam (see Appendix III-4). At least one of these residences is expected to be inundated during a dam breach event. The assessment is therefore, that this would generate risk amenable to a classification of "Significant".

Infrastructure and Economic Losses: The IDF event would flow into the existing Indianfarm Creek outlet north of the dam before eventually crossing Township Road 60 and continuing in Indianfarm Creek. In the event of a dam breach, the flood could inundate multiple residences and overtop Township Road 60. If overtopped, Township Road 60 could be washed out at the Indianfarm Creek crossing and require repairs. Economic losses are anticipated to affect limited infrastructure and a few residential buildings. The economic losses are considered to be "Significant" consequence.

Environmental and Cultural Losses: The Therriault Community Dam separates the reservoir from the Indianfarm Creek, which flows north in a meandering path and drains into the Oldman River, approximately 15 km north of the dam. The creek is located in a floodplain valley, and the slopes range from 1-5% on the floodplain and up to 15% on the side of the slopes. Environmental impacts as a result of flooding are expected to be "Low", especially immediately downstream with gradual attenuation of the effects as the flood moves downstream.

A query of the Fisheries and Wildlife Management Information System (FWMIS) identified only one wildlife species in the expected impact area caused by dam failure: (Government of Alberta [GOA] 2021a): fathead minnow (*Pimephales promelas*). Fathead minnow are not considered a Species at Risk (SAR).

In the event of dam failure causing water to flow north from the reservoir to Indianfarm Creek, the impact zone is estimated to extend to Township Road 60 (approximately 2.5 km north of the dam) due to the topography of the area. The valley that transects Indianfarm Creek downstream has the capacity to contain the flow and the sediment preventing it from reaching the Oldman River. Because water would be retained within the valley there is an increased potential to impact ground or low nesting birds, depending on the time of year that the failure occurs. Such damage is deemed short-term and non-permanent. However, damage or destruction of migratory birds or nests is regulated by Federal *Migratory Bird Convention Act*.

A search of Alberta Listing of Historic Resources found no records of historical resources within the proposed work area (GOA 2021b).

Classification: Based on the above assessment, the current consequence classification of "Significant" is assessed to be appropriate for the Therriault Dam.

6.3.3 Sandy Lake Project Dam

A potential breach of the Sandy Lake Dam would result in water flow from the reservoir toward the north along Range Road 14 into an existing channel that crosses Highway 775 and Township Road 60A.

Population at Risk and Loss of Life: There are no residences along the downstream flood path and, therefore, no permanent population at risk. A house on the north side of Sandy Lake is outside the potential flood path caused by a dam breach. There is no permanent population at risk. The temporary population at risk would be limited to members of the public who may be present on the dam or within the downstream flood path during a breach. No loss of human life is expected other than through unforeseen circumstances.

Infrastructure and Economic Losses: The flood due to failure of the Sandy Lake Dam would flow into agricultural land northeast of the dam, along the west side of the service road between the dam and Highway 775. Water flow would eventually reach and cross Highway 775 and continue into low-lying areas to the north and northwest. Without dam breach modelling and information on the culvert crossing, the impacts to Highway 775 are uncertain, though any damage is expected to be repairable.

Environmental and Cultural Losses: An inundation from a dam breach is considered to have limited impact on any aquatic life and the environment in general. Irrespective of the level of impact, it is reasonable to assume that losses would be relatively low and restoration and/or compensation for the incremental damage is feasible.

Based on a review of the Alberta Listing of Historical Resources, the area downstream of the Sandy Lake Dam does not have any areas of cultural significance or heritage resources.

Classification: Based on the above assessment, the current consequence classification of “Low” is assessed to be appropriate for the Sandy Lake Project Dam.

6.3.4 Fish Lake Project Dam

A potential breach of the Fish Lake Dam would result in water flow from the reservoir toward the east and northeast into low-lying areas and depressions in the surrounding area.

Population at Risk and Loss of Life: There are no residences along the downstream flood path and, therefore, no permanent population at risk. The temporary population at risk would be limited to members of the public who would be present on the dam or within the downstream flood path during a breach. No loss of human life is expected other than through unforeseen circumstances.

Infrastructure and Economic Losses: Aside from the dam itself, damage in the event of a dam breach is expected to be limited to minor erosion and sediment deposition downstream of the dam. The flood may impact Range Road 303. However, without dam breach modelling the impact is uncertain. There are no buildings in the downstream area. Incremental infrastructure and economic losses are considered to be Low consequence.

Environmental and Cultural Losses: An inundation from breach of the dam and draining of its lake is considered to have limited impact on any aquatic life and the environment in general. Irrespective of the level of impact, it is reasonable to assume that the losses could be restored and/or compensated .

Based on a review of the Alberta Listing of Historical Resources, the area downstream of the Fish Lake Project Dam does not have any areas of cultural significance or heritage resources. However, the south and west sides of Fish Lake are bounded by areas having a historical resource value (HRV) of five (5), which designates a high potential to contain a historic resource. In these areas, the primary historic resource categories are archaeological (GoA, 2021).

Classification: Based on the above assessment, the current consequence classification of "Low" is judged to be appropriate for the Fish Lake Dam.

6.3.5 Foothill Lake Community Dam

A potential breach of the Foothill Lake Community Dam would result in water flow from the reservoir toward the east into an existing gully, crossing Range Road 303, and into the surrounding area.

Population at Risk and Loss of Life: There is a residence approximately 4 km downstream of the Foothill Lake Community Dam along the west bank of the creek. Available terrain data is limited to a coarse resolution of approximately 30 m which is insufficient to evaluate the floodplain near the residence. Further modelling with higher resolution terrain data or local survey data of the outlet channel would be beneficial to assess the impact of an IDF and/or potential dam breach event.

Infrastructure and Economic Losses: Aside from the dam itself, damage to Range Road 303 is expected in the case of a dam breach. Insufficient data is available to confirm whether the residence approximately 4 km downstream will be inundated and be at risk to property damage. As damage to the residence is uncertain, the incremental infrastructure and economic losses are considered to be "Significant" consequence.

Environmental and Cultural Losses: Environmental and cultural losses should be reviewed before amending the consequence of the dam to "Low".

Classification: Based on the above assessment, the current consequence classification of "Significant" is judged to be appropriate for the Foothill Lake Community Dam. However, a desktop review and detailed inundation modelling could justify amending the consequence of the Foothill Lake Community Dam to "Low".

6.4 Summary of Consequence Classifications

The recommended dam classification and the applicable IDF and EDGM for the five (5) dams based on recommended classification, as per the CDA (2013) DSG, are provided in **Table 6.3**.

Table 6.3 Recommended Consequence Classifications, IDF, and EDGM

Dam	Recommended Consequence Classification	Inflow Design Flood (IDF)	Earthquake Design Ground Motion (EDGM)
Cridland Dam	Low	1/100 year	1/100 year
Therriault Dam	Significant	Between 1/100 and 1/1,000 year	1/1,000 year
Sandy Lake Dam	Low	1/100 year	1/100 year
Fish Lake Dam	Low	1/100 year	1/100 year
Foothill Lake Dam	Significant	Between 1/100 and 1/1,000 year	1/1,000 year

6.5 DSR Frequency

The frequency of conducting DSRs of dams in the Significant consequence class is every ten years according to the CDA (2013) DSG. The next DSR for the Therriault and Foothill Lake dams should be scheduled for 2031, ten (10) years following the 2021 DSR.

A DSR for submission to AEP is not required for Low consequence class dams according to the CDA (2013) DSG. However, according to ADCSD (GoA 2018) DSRs are required to be conducted every ten (10) years for “Low” consequence dams. Based on the stricter guideline, a DSR for the Cridland, Sandy Lake, and Fish Lake dams should also be scheduled for 2031, ten (10) years following the 2021 DSR.

7 Geotechnical Analysis

7.1 General

The geotechnical review for a DSR generally includes a comprehensive review of the dam slope stability, instrumentation and monitoring system, liquefaction potential, etc. in compliance with the CDA DSG and other applicable best practices. This section describes geotechnical analyses completed for the dams based on the available information.

7.2 Instrumentation Review

There is currently no instrumentation installed in any of the dams.

7.3 Geotechnical Setting

7.3.1 Geology

There is limited historical information on the design, foundation materials, and construction materials used for these dams. Based on available Alberta Geological Survey (AGS) surficial geology maps, the dams are located on the following surficial deposit types:

- Cridland – Stagnant Ice Moraine;
- Therriault - Stagnant Ice Moraine;
- Sandy Lake – Moraine;
- Fish Lake – Moraine; and
- Foothill Lake Community Dam – Stagnant Ice Moraine.

It is assumed that the dams were founded on glacial tills material containing a mixture of clay, silt, sand, and gravel. It is also assumed that the dams were constructed using the same locally available tills.

7.4 Slope Stability Analysis

7.4.1 Methodology

The Slope/W package Geostudio 2021 (version 11.0.1.21429) by Geoslope International was used to conduct the slope stability and seepage analyses and to estimate factors of safety. The method of analysis used for this study was the Morgenstern-Price method for a 2D limit equilibrium model.

The 2018 Dam Safety Directive indicates in section 5.6 that:

“(1) A dam/canal owner must demonstrate that the target stability criteria and selected factors of safety used in the design of structures for a dam or canal:

(a) are consistent with local industry and best practices;
(b) are supported by a comprehensive risk management system;
(c) have been selected with oversight by independent qualified professionals; and

(d) are justifiable having regard to, at a minimum, all of the following:

(i) potential variability in material properties;
(ii) site and subsurface conditions;
(iii) modes of failure;
(iv) accumulated experience with a particular soil or rock mass;
(v) variable construction and operating conditions;
(vi) soil response and its variation with confining stress and stress level;
(vii) time-dependent, deformation-dependent, and stress-path-dependent processes that may affect the critical material properties such as the operational pore pressures and shear strengths;
(viii) strain-incompatibility of different materials and its foundation; and
(ix) the ability and practicality of implementing an effective risk management system to reduce or mitigate the residual risks associated with the uncertainties of the selected factors over the lifecycle of the structures."

For this report, the guidance of the CDA (2013) is considered appropriate when determining suitable factors of safety. Slope stability analysis was carried out for a selected section of each of the dams to calculate FoS and to check the conformance with the CDA (2013). The FoS criteria for dams according to the CDA (2013) for static and seismic loading conditions are shown in **Table 7.1** and **Table 7.2**.

Table 7.1 Factors of Safety Criteria for Slope Stability – Static Assessment (construction, operation, and transition phase)

Loading Condition	Minimum Factor of Safety (1)	Slope
End of construction before reservoir filling	1.3	Upstream and downstream
Long-term (steady state seepage, normal reservoir level)	1.5	Downstream
Full or partial rapid drawdown	1.2-1.3(2)	Upstream

Note (1) Factor of Safety is the factor required to reduce operational shear strength parameters to bring a potential sliding mass into a state of limiting equilibrium, using generally accepted methods of analysis.

Note (2) Higher factors of safety may be required if drawdown occurs relatively frequently during normal operation.

Table 7.2 Factors of Safety Criteria for Slope Stability – Seismic Assessment (construction, operation, and transition phase)

Loading Condition	Minimum Factor of Safety (1)	Slope
Pseudo-static	1.0	Upstream and downstream
Post-earthquake(2)	1.2-1.3	Upstream and downstream

Note (1) Factor of Safety is the factor required to reduce operational shear strength parameters to bring a potential sliding mass into a state of limiting equilibrium, using generally accepted methods of analysis.

Note (2) Post-earthquake stability indicates that movements from an earthquake have moved and "remolded" the dike material, which would change its strength properties. This is only checked if the dam has a FOS <1 in a Pseudo-static analysis.

The following loading cases were analyzed and the factor of safety for each calculated:

- static stability of the downstream slope at Full Supply Level (FSL);
- rapid drawdown of the upstream slope; and
- pseudo-static seismic stability of the downstream slope at FSL.

7.4.2 Surface and Subsurface Geometry

The surface and subsurface geometry of the models was based on select cross sections of the dams provided in the 1999 DSR reports by UMA Engineering (UMA, 1999a; UMA, 1999b; UMA, 1999c) and 1999 OMS Manuals by UMA Engineering (UMA, 1999d; UMA, 1999e).

7.4.3 Material Parameters

There was no borehole information, laboratory testing results, or previous slope stability modelling for the dams available for review at the time of this report. The material properties used our analysis are based on typical literature values attributed to the fill materials and foundation soils. The material properties selected in our analysis are presented in **Table 7.3**.

Table 7.3 Material Properties Used for Slope Stability Analysis

Material	Wet Density, γ (kN/m^3)	Effective Friction Angle, φ, (°)	Effective Cohesion, c', (kPa)	Undrained Shear Strength, S_u, (kPa)
Embankment Fill	19.0	28	5	60
Foundation Till	20.0	30	10	100
Pervious Filter	18.0	35	0	N/A

Generally, the fill material has no cohesion in the design while the source material, the in-situ till, would have an effective cohesion (c'). This is reasonable, as the in-situ material has experienced millennia of pressure from hundreds of metres of ice surcharge and is heavily over-consolidated. Once excavated and replaced as fill material, the original strength is not regained, no matter how well compacted by mechanized equipment. However, the exclusion of a cohesion parameter from the embankment fill in the initial modelling resulted in factors of safety between 0.9 and 1.1 for some dams, which would indicate the dams are inherently unstable with respect to their slope faces. This is not the case, as evidenced by years of successful operation. Therefore, an effective cohesion of 5 kPa was selected for the embankment fill, which approximately models the performance of the dams.

7.4.4 Phreatic Surface

There are no piezometers or other instrumentation installed in the dams that can directly measure the phreatic surfaces. For each dam analyzed, the phreatic surfaces drawn were based on engineering judgment used to assume groundwater profiles based on available data, case histories, and experience. The phreatic surfaces are modelled as long-term steady state conditions for FSL although the levels are changing seasonally due to reservoir level variation and environmental factors such as groundwater conditions and precipitation. This is considered conservative in the analysis of slope stability.

7.4.5 Seismic Condition

In accordance with the classification system recommended in the CDA (2013) Dam Safety Guidelines, the dams are either Low or Significant consequence structures. The appropriate design criteria for evaluating the safety of the dams should be the EDGM for an Annual Exceedance Probability of a 1-in-100-year return period for Low consequence structures, and a 1-in-1,000-year return period for Significant consequence structures.

According to 2015 National Building Code Seismic Hazard Calculation, the peak ground acceleration (PGA) in the Pincher Creek area for a 1-in-100-year return period is 0.019 g, and the PGA for a 1-in-1,000-year return period is 0.084 g.

A horizontal force (seismic coefficient) was applied to the failure mass which is proportional to the design horizontal acceleration for the analysis of seismic condition. One-half of the PGA (0.5*PGA) (Hynes-Griffin and Franklin 1984) was used for the non-rigid response of the dam embankments and foundations. As recommended by CDA (2013) Guideline Bulletins, the vertical component of the earthquake was not employed in the stability analyses.

7.4.6 Slope Stability Analysis Results

A summary of the calculated FoS for the dams are provided in **Table 7.4** and figures of the slope stability models are included in Appendix IV.

The FoS for the dams were analyzed for the FSL and rapid drawdown (RDD) cases for the static loading condition; only the Cridland and Therriault dams do not meet the minimum recommended FoS for downstream steady state slope stability, although the computed FoS were relatively close to the minimum target of 1.5. The calculated FoS under seismic loading based on the pseudo-static analyses also meets the minimum requirements as per CDA (2013). Slip surfaces that are less than 1 m depth below the surface are not considered significant and are not reported.

For analyses conducted of the Cridland and Therriault dams, the FoS for the dams may not be adequate, based on the limited geotechnical information and the engineering judgment used in assigning parameters. Further assessment is strongly recommended to verify the slopes are safe. The assessment within this DSR, based on an absence of site-specific soil characterization, may be different from that concluded after undertaking subsurface investigations with laboratory testing and instrumentation data.

Based on the analysis conducted of the Sandy Lake, Fish Lake, and Foothill Lake dams, the FoS for the dams are adequate and exceed the CDA (2013) recommended criteria.

Table 7.4 Modelling Results Summary

Dam	Loading Conditions	Reservoir Elevation (m)	Factor of Safety[1]			Appendix Figure No.
			Upstream[3]	Downstream	Seismic event at FSL (with 1/2 PGA)	
Cridland	FSL	1,370.11	-	**1.3**	1.3	V-01 / V-02
	RDD	1,360.00	2.9	-	-	V-03
Therriault	FSL	1,220.10	-	**1.4**	1.3	V-04 / V-05
	RDD	1,209.00	3.2	-	-	V-06
Sandy Lake	FSL	29.44[2]	-	2.3	2.2	V-07 / V-08
	RDD	27.92[2]	11.9	-	-	V-09
Fish Lake	FSL	1,508.55	-	1.9	1.9	V-10 / V-11
	RDD	1,506.20	8.0	-	-	V-12
Foothill Lake	FSL	30.27[2]	-	1.9	1.7	V-13 / V-14
	RDD	27.83[2]	8.2	-	-	V-15

[1] FoS that are less than minimum CDA (2013) recommended criteria are shown in **bold** face and underlined.

[2] Reference datum as actual elevations are unknown.

[3] Undrained analyses.

7.5 Liquefaction Assessment

A dam foundation may liquefy under specific static loading changes (such as a dam raise), or dynamic (cyclic loading) loading (such as experienced during an earthquake). Generally, two key characteristics of the fine-grained soil that could lead to liquefaction are the material's void ratio (which is associated with its compaction) and degree of saturation and plasticity. Loose and saturated deposits with non-plastic to very low plasticity are more prone to liquefaction than dense and plastic deposits.

The review of the likely materials forming the five dams, and the materials on which the dams are founded, has not revealed materials with the potential for liquefaction such as loose sands or silts.

7.6 Geotechnical Conclusions

SNC-Lavalin's analysis for the DSR indicates that the Cridland and Therriault dams' slopes do not meet the required FoS stipulated in the CDA guidelines 2013 for the downstream static steady state seepage full-service level, based on the available information, absence of past geotechnical studies, selected material parameters and other assumptions modelled.

Because of the uncertainty and absence of site-specific geotechnical information, it is recommended to conduct further investigation of the dams to collect information on the embankment and foundation soils as well as the piezometric pressures. We note that there is an observed seepage at the right abutment of Therriault Dam (which forms a part of the impoundment) and there are noted seepage areas on the face of the Cridland Dam. We recommend that both dams should be further assessed with a particular focus on the material properties and phreatic surface and seepage. While the overall slope does not show readily visible evidence of movement, it should be recognized that the seepage could lead to undetected internal erosion and potential sudden failure of the dam.

Based on the analysis conducted of the Sandy Lake, Fish Lake, and Foothill Lake dams, the FoS for the dams are adequate and exceed the CDA (2013) recommended criteria. The dam slopes exhibited no readily visible evidence of instability.

8 Dam Safety Management

A review of the Dam Safety Management System (DSMS) was conducted as part of the DSR through review of documents, staff interviews, and information provided by the MD. The document reviews were planned so as to form an assessment of the planning, OMS including inspections, emergency preparedness, and the systems used for monitoring and evaluation.

The stages and elements of an effective DSMS are described within DSG (CDA, 2013), starting with the Dam Safety Policy, engaged by the highest level of an organization. The DSMS essentially follows the Plan-Do-Check-Act philosophy. The components of the DSMS may each be broken down into stages and elements as follows:

- **Planning:** Work program component, Execution Responsibilities, Standards and Procedures, Resources, Schedules;
- **Implementation:** Operation, Maintenance, Surveillance, Emergency Preparedness;
- **Checking and Reviewing:** Dam surveillance and Dam Safety Reviews, Program peer reviews or review boards, Program audits, Incident investigations, Testing of emergency preparedness, equipment tests;
- **Corrective Actions – to follow up from:** Peer reviews and audits, Incident investigations, Deficiencies and non-conformances during Dam Safety Reviews, inspection, monitoring, equipment testing, or emergency preparedness tests;
- **Reporting:** Periodic reporting to management; and
- **Supporting Processes:** Staff training and qualification, program communication, record keeping and management.

The DSMS documents available for review consisted of the 1999 OMS Manuals for Therriault Dam (UMA, 1999d), Fish Lake Dam (UMA, 1999e), and Foothill Lake Dam (UMA, 1999f).

8.1 OMS

The 1999 Therriault, Fish Lake, and Foothill Lake OMS Manuals were generally well prepared and contained most of the necessary elements. However, information such as emergency contacts, public safety details, and operating procedures are likely out of date and the manuals should be updated.

General information that should be contained within in the OMS Manuals include, but are not limited to:

- Regulatory and licensing information;
- Facility location, access, description, history, and details;
- Organizational structure including key personnel, roles, responsibilities, and contact information;

- Operations and reservoir management details;
- Dam inspection and maintenance requirements and frequency;
- Equipment operations and testing details; and
- Record keeping procedures.

It should be noted that an OMS Manual is not required in regulation for “Low” consequence dams but does represent best industry practice.

8.2 Emergency Management

Emergency management is another essential element of the DSMS, consisting generally of the Emergency Preparedness Plan and Emergency Response Plan. An EPP and ERP should be developed for the “Significant” consequence dams. The emergency management documents should meet the requirements in Part 7 of the ADCSD (GoA, 2018).

General components of an EPP include, but are not limited to:

- Facility location, access, description, and details;
- Emergency response structure and communications directory (owner, technical experts, first responders, local emergency authorities);
- Emergency contacts (police, fire, ambulance, hospitals and health centers, emergency management agencies);
- Inundation effects and mapping of a potential dam breach;
- Inundation effects and mapping of a potential dam breach;
- Response procedures based on emergency level (unusual event, potential flood, imminent flood);
- Operations employee training and plan testing requirements; and
- Impact mitigation resources (equipment, supplies, etc.).

General components of an ERP include, but are not limited to:

- Facility location and access instructions/maps;
- Warning systems and plan activation conditions;
- Emergency response procedures and communications directory (owner, technical experts, first responders, local emergency authorities);
- Emergency contacts (police, fire, ambulance, hospitals and health centers, emergency management agencies);

- Operations employee training and plan testing requirements; and
- Impact mitigation procedures and resources (actions, equipment, supplies, etc.).

It should be noted that as with the OMS Manual, an EPP and ERP are not required for “Low” consequence dams, but it does represent best industry practice.

9 Recommendations

SNC-Lavalin completed a review of the available information for the dams and associated structures and conducted a visual inspection of the facilities. During the review and inspections, SNC-Lavalin did not identify any high priority concerns. Several concerns of low to medium priority, as well as areas of improvement that should be addressed through ongoing maintenance, management, and monitoring, are presented in **Table 9.1**.

- For Cridland Dam, four (4) medium to high priority concerns were identified, as well as five (5) areas for improvement and one (1) recommendation without a priority rating.
- For Therriault Dam, three (3) medium to high and one (1) low priority concern were identified, as well as four (4) areas for improvement.
- For Sandy Lake Dam, one (1) medium and one (1) area for improvement was identified, and one (1) recommendation without a priority rating were provided.
- For Fish Lake Dam, two (2) low priority concerns were identified, as well as three (3) areas for improvement, and one (1) recommendation without a priority rating were provided.
- For Foothill Lake Dam, two (2) low priority concerns were identified, as well as three (3) areas for improvement.

Table 9.1 Finding Summary from the 2021 DSR

Item Number	Facility	Finding	Priority Rating[1]	Report Section	Recommendations
CL21-01	Cridland	Vegetation overgrowth was observed on the upper portion of the downstream slope. It is understood that a slump failure occurred within the overgrowth area historically, and the slope had been repaired.	Maintenance	4.2.1	The vegetation should be cleared for inspection. Inspection should be carried out by a suitable qualified professional as soon as the vegetation is removed, since the re-establishment of vegetations could be much faster than anticipated.
CL21-02	Cridland	A spring was observed along the boundary between the earth fill and natural materials on the south side of the downstream slope. It is suspected that the water flow is primarily from the reservoir rather than nearby natural slopes.	Medium	4.2.1	This may require addressing through engineering mitigations or pond level. We examined this in our analysis and we did not identify a need for immediate action but rather for monitoring.
CL21-03	Cridland	Seepage was observed on the downstream slope toe across an area near the toe and from a previous mitigation. This may cause piping failure at the toe due to a loss of fine grains, leading to dam instability.	Medium	4.2.1	This may require addressing through engineering mitigations or pond level. We examined this in our analysis and we did not identify a need for immediate action but rather for monitoring.
CL21-04	Cridland	A small depression was observed on the access road at the south end of the crest.	Maintenance	4.2.1	Recommended to fill the depression, and the slope of road be regraded appropriately towards the reservoir to improve the surficial drainage, and to encourage standing water to flow into the reservoir.
CL21-05	Cridland	Bank erosion was observed at the north end of the upstream slope, where fences have fallen into the reservoir. Riprap on the upstream slope does not continue to the north abutment with sufficient extension to prevent erosion at the abutment.	Maintenance	4.2.1	Recommend repairing fences and placing riprap at the eroded locations. The eroded bank, from the north end of upstream slope to the abutment should be adequately riprapped to prevent further erosion.
CL21-06	Cridland	The spillway channel, downstream of the Range Rd 302A culvert, appears to be partially blocked by wood debris and reeds.	Maintenance	4.2.1	Wood debris and reeds should be cleared from the channel because the debris may significantly reduce spillway flow capacities.
CL21-07	Cridland	Signage was not observed around the reservoir area.	Maintenance	4.2.1	It is recommended that appropriate signage be installed along the spillway as well as the reservoir shoreline, as per the provincial regulatory requirements.
CL21-08	Cridland	The minimum FoS at the downstream face of the dam may not be adequate.	High	7.4.6	It is recommended to conduct site-specific geotechnical investigation of the dam to collect information on the embankment and foundation soils as well as the pore water pressures.
CL21-09	Cridland	The impacts on downstream safety, environment, and properties appear to be limited, based on SNC-Lavalin's site observations and inundation review. The classification of the dam may potentially be amended to 'Low'.	-	6.3.1	The Cridland dam could be reclassified as a "Low" consequence facility.
CL21-10	Cridland	Overtopping of the dam was observed in 2014 as per the MD in the answered questionnaire (Appendix II).	High	5.1.4	It is recommended that a more detailed freeboard and spillway capacity analysis based on survey data be completed.
TR21-01	Therriault	A minor erosion or trail, possibly created by animal traffic, was observed along the north edge of the downstream slope at the abutment interface.	Maintenance	4.2.2	It is recommended that the trail be re-vegetated or riprapped to prevent further erosion. Fencing the area may also be considered to stop the animal traffic while vegetation is re-established.
TR21-02	Therriault	Bank erosion was observed at the north end of the upstream slope at or near the abutment.	Maintenance	4.2.2	The eroded bank and the upstream dam slope should be adequately riprapped to prevent further erosion.
TR21-03	Therriault	Seepage and standing water were observed on the eastern part of the downstream slope. This part of the downstream structure seems to primarily consist of natural slopes, forming an abutment which has been raised at the reservoir with a small dike during previous improvement work integrating the dike as a freeboard and a natural promontory as a part of the dam. The seepage may cause concern for fines migration but also appears to be mobilizing the surficial soils which are saturated. Particularly in winter, when the standing water is frozen forming an ice cover over the slope surface, the seepage may cause a build-up of porewater pressure within the slope, which may result in internal erosion and/or slope instability.	Medium	4.2.2	We recommended that: I. If construction-issued drawings are not available, site-specific geotechnical investigation may be required to confirm the extent of natural and fill materials. II. For example, a French drain system or a drainage blanket may be necessary on the downstream slope to help improve drainage, control slumps, and enhance slope stability.
TR21-04	Therriault	The spillway drop inlet may require some upgrade. There is a gap below a barrier chain that is large enough to pass a person or a boat into the inlet structure. These spaces may allow people paddling or boating in the reservoir to fall into the drop inlet by accident.	Low	4.2.2	Even though paddling and boating were not historically observed within the reservoir, it is still recommended that the spaces be reduced by adding additional poles to the fence. This may require regular maintenance to remove large driftwood trapped by the poles.
TR21-05	Therriault	Riprap on upstream slope was partially covered by overgrown vegetation. The riprap appeared to be adequate.	Maintenance	4.2.2	Vegetation should be cleared for regular inspections. The presence of the vegetation limits inspection and may obscure defects.
TR21-06	Therriault	Signage was not observed around the reservoir area.	Maintenance	4.2.2	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements. In particular, warnings of the potential risks of failing into the drop inlet should be installed in place to notify the public.
TR21-07	Therriault	The estimated capacity of the emergency spillway structures (earthen channel and drop spillway) are insufficient to pass the estimated IDF and overtopping of the dam was observed in 2014 as per the MD in the answered questionnaire (Appendix II).	High	5.2.2	It is recommended to complete a survey of the earthen channel to confirm the width and update the hydraulic capacity as necessary. A freeboard assessment is recommended as part of the spillway capacity review to confirm sufficient freeboard is maintained while passing the IDF.

Table 9.1 (Cont'd) Finding Summary from the 2021 DSR

Item Number	Facility	Finding	Priority Rating[1]	Report Section	Recommendations
TR21-08	Therriault	The FoS at the downstream of the dam is not adequate.	High	7.4.6	It is recommended to conduct further investigation of the dam to collect information on the embankment and foundation soils as well as the phreatic surface.
SL21-01	Sandy Lake	The spillway outlet appears to be collecting sand and silt; this may be encouraged by the beached driftwood which should be removed. The spillway does not appear to be used frequently for water release.	Maintenance	4.2.3	The clogging and debris should be removed and repaired. Drop culvert infrastructure should be regularly inspected, checked for operability, and maintained.
SL21-02	Sandy Lake	As per drawing No.0678-045-02-SW1471-003 issued for DSR, the dam height is approximately 9 feet (2.74 m), which is consistent with our visual estimation during the site inspection.	-	4.2.3	The dam height could be reduced to less than 2.5 m, by reprofiling the dam crest to a flattened and widened swale, which may allow for removal of some regulatory requirements.
SL21-03	Sandy Lake	The freeboard review indicated that the current configuration of the dam is likely not sufficiently high to avoid overtopping during normal and minimum freeboard conditions.	Medium	5.3.2	A detailed freeboard analysis for water elevations in the pond during an IDF should be conducted to identify the required dam height or reduced FSL elevation.
FL21-01	Fish Lake	The natural spillway, on the southeast corner of the lower reservoir, is currently partially (perhaps substantially) blocked by a beaver dam, which significantly affects the capacity of spillway outflow. Nearby woodland is providing a ready supply for beaver dam construction and habitat, although we understand that the location is rarely one that beavers inhabit Wood debris was also observed within the spillway channel.	Maintenance	4.2.4	The beaver dam should be removed and repeated if it is rebuilt, and the wood debris in the spillway channel should be cleared to restore the flow capacity.
FL21-02	Fish Lake	Vegetation overgrowth was observed within the outlet channel downstream of the dam.	Maintenance	4.2.4	Overgrown vegetation should be cleared within the outlet channel.
FL21-03	Fish Lake	Pipeline crossings were found adjacent to the land bridge between the upper and lower reservoirs. Signage regarding the pipeline crossings has faded, and the information on the signs may be outdated.	Low	4.2.4	It is recommended that the current owners of the pipelines be identified, and the current pipeline operational conditions be collected. Risks associated with pipeline operations should be considered as part of the regular dam operation and maintenance schedule. Extreme weather events or bank erosion may lead to pipeline exposure or even pipeline damage. The depths of the pipelines should be checked regularly as part of the reservoir operations. Signs should be updated with new information and be made legible.
FL21-04	Fish Lake	The use of outlet valve appears to be infrequent, as per MD's representatives. The steel bridge, constructed for the access to the valve, may be partially submerged when the reservoir level is high, which imposes risks to valve operations.	Low	4.2.4	Valve infrastructure should be regularly inspected, checked for operability, and maintained. Access to the infrastructure during high water levels should be made readily available to the MD's operators.
FL21-05	Fish Lake	Signage with regard to the dam site were not observed around the reservoir area.	Maintenance	4.2.4	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements.
FL21-06	Fish Lake	As the dam is approximately 3.8 m high, the dam height could be reduced to less than 2.5 m by reprofiling the crest to a flattened and widened swale.			Delicensing of the dam might be considered by reducing the dam height to less than 2.5 m.
FH21-02	Foothill Lake	The southeast shoreline of the reservoir is experiencing erosion due to wave action. Approximately 30 m of the shoreline currently does not have adequate erosion protection.	Low	4.2.5	It is recommended the shoreline segments not having adequate freeboard be protected against further wave erosion.
FH21-03	Foothill Lake	Erosion was observed at the junction of the dam and the spillway.	Maintenance	4.2.5	Riprap should be placed at the eroded junction to prevent further erosion.
FH21-04	Foothill Lake	The spillway is partially hidden by overgrown grasses at the junction of spillway and the reservoir. The grasses might have trapped some silt from the reservoir, which slightly elevated the channel bed. Wood debris was observed at the junction.	Maintenance	4.2.5	The current spillway elevation at the junction should be lowered and the channel be lined with erosion protection. Wood debris should also be removed from the spillway channel.

Table 9.1 (Cont'd) Finding Summary from the 2021 DSR

Item Number	Facility	Finding	Priority Rating[1]	Report Section	Recommendations
FH21-05	Foothill Lake	A few defects were found within the outlet control structures: 1. The concrete inlet headwall appears to be partially damaged. 2. The inlet gate shaft is bent, but still functional as per MD's representative. 3. Geotextiles behind the concrete headwall was exposed. 4. One of the outlet CSP culverts is exposed and damaged.	Low	4.2.5	The functionality of the headwall and gate should be assessed and monitored. Should the functionality of the structure deteriorate, the structures should be repaired or replaced in a timely manner. The exposed geotextile should be covered by a layer of earth fill to prevent damage. The damaged CSP culvert should be repaired or replaced to ensure adequate flow capacity. The exposed portion of the pipe should be covered by a layer of earth fill to reduce potential damage.
FH21-06	Foothill Lake	Signage with regard to the dam site was not observed around the reservoir area.	Maintenance	4.2.5	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements.

[1]Priority Rating

High:	A high probability or actual dam safety issue considered immediately dangerous to life, health, or the environment, or a significant risk of regulatory enforcement.
High:	If not corrected, could likely result in dam safety issues leading to injury, environmental impact, or significant regulatory enforcement.
Medium:	If not corrected, could likely result in dam safety issues leading to injury, environmental impact, or significant regulatory enforcement; or a repetitive deficiency that demonstrates a systematic breakdown of procedures.
Low:	Single occurrences of deficiencies or non-conformances that alone would not be expected to result in dam safety issues.
Maintenance/Monitoring:	Further improvements are necessary to meet industry best practice or reduce potential risks.

10 Closure

The sections of this report were prepared by the signatories listed below. Haimanot Yadete is signing as the hydrotechnical reviewer. Jeremy Zandbergen is signing as the geotechnical reviewer, project reviewer and responsible member. We trust that this report meets your requirements. Should you have any questions or comments, please contact the undersigned.

Prepared by:

Keda Cao EIT
Junior Geotechnical Engineer
Geoscience & Materials
Engineering Services, Canada

Prepared by:

Andrew Clow, EIT
Hydrotechnical Engineer-in-Training
Geoscience & Materials
Engineering Services, Canada

Reviewed by:

PROFESSIONAL ENGINEER ALBERTA
HAIMANOT A. YADETE

March 14, 2022

Haimanot Yadete, P.Eng.
Senior Hydrotechnical Engineer
Geoscience & Materials
Engineering Services, Canada

PROFESSIONAL ENGINEER ALBERTA
JEREMY W. ZANDBERGEN

2022-03-14
ID# 208650

PERMIT TO PRACTICE
SNC-LAVALIN INC.
ENGINEERING SERVICES
RM SIGNATURE:
RM APEGA ID #: 208650
DATE: 2022-03-14
PERMIT NUMBER: P009643
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Jeremy Zandbergen, P.Eng.
Senior Geotechnical Engineer
Geoscience & Materials
Engineering Services, Canada

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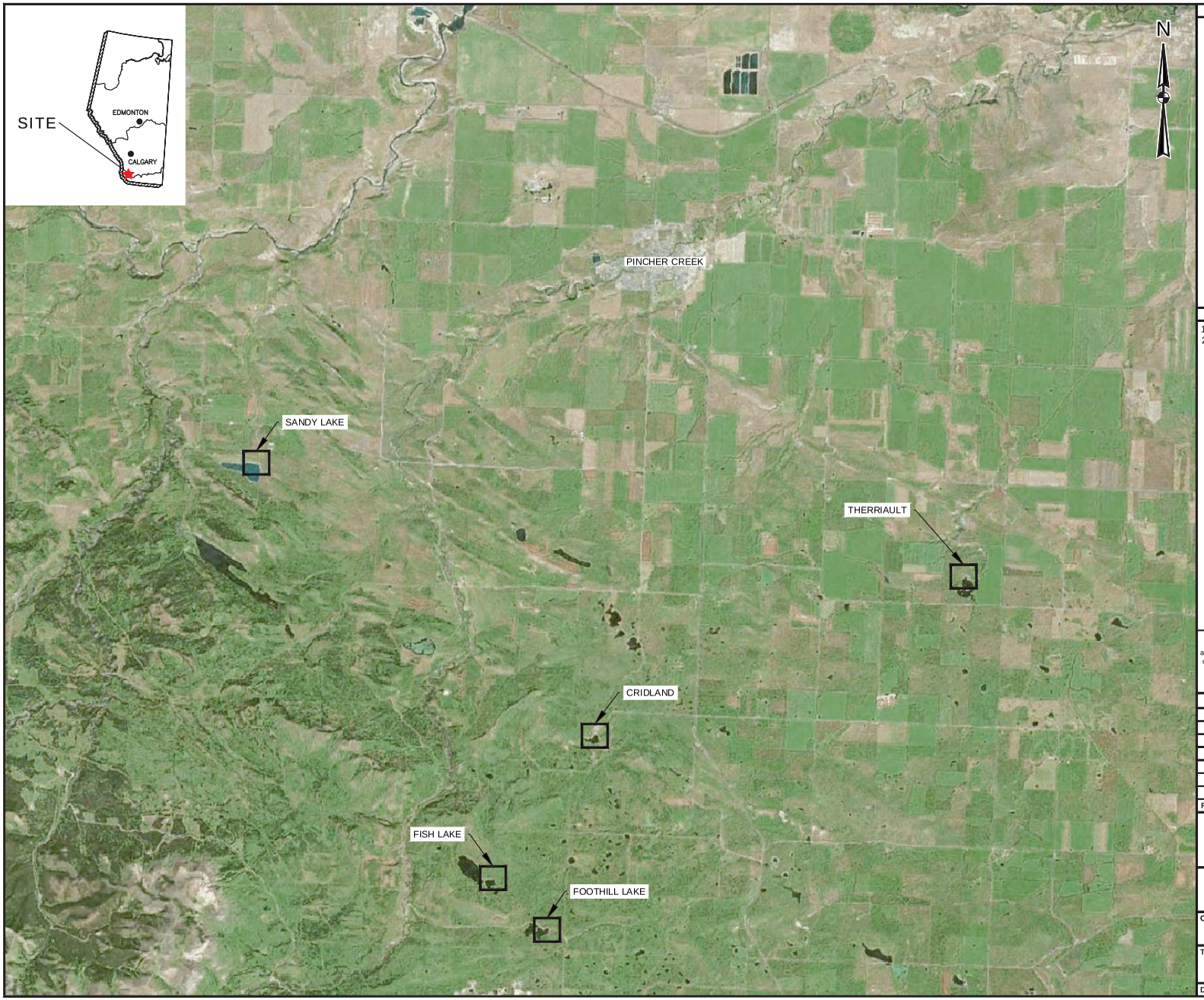
Drawings



LEGEND

NOTES

1. Imagery Provided by Autodesk Live Maps, (year unknown).
2. Drawing is located in UTM, NAD83 Zone 12 coordinate system.

DRAFT

NOT FOR CONSTRUCTION

DISCLAIMER

REFERENCE DRAWINGS

DWG No	DESCRIPTION

REVISIONS

REV	DATE	DESCRIPTION	DES	DRN	CHK	APP
PA	2021 07 14	ISSUED FOR REVIEW	KC	AC	-	-

1:100,000

0 1 2 3 4 5 km

SNC·LAVALIN

CLIENT	PROJECT LOCATION
MD PINCHER CREEK	PINCHER CREEK, AB

TITLE: SITE LOCATION PLAN

DATE	DWG No	FIG	REV
2021 07 14	683055-0000-4GDD-1000	-	PA

11X17

Date Plotted: July 14, 2021

\\sir1653\Projects QMS\MD Pincher Creek\683055_Dam Safety\40_Execution\45_GIS_Dwgs\4.5.2 CAD\683055-0000-4GDD-0000_PA-Pincher Creek.dwg

LEGEND

PHOTO LOCATION

NOTES

1. Imagery Provided by Autodesk Live Maps, (year unknown).
2. Drawing is located in UTM, NAD83 Zone 12 coordinate system.

DRAFT

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS

DWG No	DESCRIPTION

REVISIONS

REV	DATE	DESCRIPTION	DES	DRN	CHK	APP
PA	2021 07 14	ISSUED FOR REVIEW	KC	AC	-	-

1:2,500 0 25 50 75 100 m

SNC·LAVALIN

CLIENT	PROJECT LOCATION
MD PINCHER CREEK	PINCHER CREEK, AB

TITLE

SITE PLAN
CRIDLAND DAM

DATE	DWG No	FIG	REV
2021 07 14	683055-0000-4GDD-1001	-	PA

11X17

Date Plotted: July 15, 2021

\\sl1653\Projects QMS\MD Pincher Creek\683055_Dam Safety\40_Execution\45_GIS_Dwgs\4.5.2 CAD\683055-0000-4GDD-0000_PA-Pincher Creek.dwg

LEGEND

PHOTO LOCATION

NOTES

1. Imagery Provided by Autodesk Live Maps, (year unknown).
2. Drawing is located in UTM, NAD83 Zone 12 coordinate system.

DRAFT

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS

DWG No	DESCRIPTION

REVISIONS

REV	DATE	DESCRIPTION	DES	DRN	CHK	APP
PA	2021 07 14	ISSUED FOR REVIEW	KC	AC	-	-

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0 10 30 50 m

SNC·LAVALIN

CLIENT	PROJECT LOCATION
MD PINCHER CREEK	PINCHER CREEK, AB

TITLE

SITE PLAN
THERRIAULT DAM

DATE	DWG No	FIG	REV
2021 07 14	683055-0000-4GDD-1002	-	PA

11X17

Date Plotted: July 15, 2021

\\sir1653\Projects QMS\MD Pincher Creek\683055_Dam Safety\40_Execution\45_GIS_Dwgs\4.5.2 CAD\683055-0000-4GDD-0000_PA-Pincher Creek.dwg

LEGEND

PHOTO LOCATION

NOTES

1. Imagery Provided by Autodesk Live Maps, (year unknown).
2. Drawing is located in UTM, NAD83 Zone 12 coordinate system.

DRAFT

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS

DWG No	DESCRIPTION

REVISIONS

REV	DATE	DESCRIPTION	DES	DRN	CHK	APP
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0 5 10 15 20 m

SNC·LAVALIN

CLIENT	PROJECT LOCATION
MD PINCHER CREEK	PINCHER CREEK, AB

TITLE

SITE PLAN
SANDY LAKE DAM

DATE	DWG No	FIG	REV
2021 07 14	683055-0000-4GDD-1003	-	PA

11X17

Date Plotted: July 15, 2021

\\sir1653\Projects QMS\MD Pincher Creek\683055_Dam Safety\40_Execution\45_GIS_Dwgs\4.5.2 CAD\683055-0000-4GDD-0000_PA-Pincher Creek.dwg

LEGEND

PHOTO LOCATION

NOTES

1. Imagery Provided by Autodesk Live Maps, (year unknown).
2. Drawing is located in UTM, NAD83 Zone 12 coordinate system.

DRAFT

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS

DWG No	DESCRIPTION

REVISIONS

REV	DATE	DESCRIPTION	DES	DRN	CHK	APP
PA	2021 07 14	ISSUED FOR REVIEW	KC	AC	-	-

1:500 0 5 10 15 20 m

SNC·LAVALIN

CLIENT	PROJECT LOCATION
MD PINCHER CREEK	PINCHER CREEK, AB

TITLE

SITE PLAN
FISH LAKE DAM

DATE	DWG No	FIG	REV
2021 07 14	683055-0000-4GDD-1004	-	PA

11X17

Date Plotted: July 15, 2021

\\sir1653\Projects QMS\MD Pincher Creek\683055_Dam Safety\40_Execution\45_GIS_Dwgs\4.5.2 CAD\683055-0000-4GDD-0000_PA-Pincher Creek.dwg

LEGEND

PHOTO LOCATION

NOTES

1. Imagery Provided by Autodesk Live Maps, (year unknown).
2. Drawing is located in UTM, NAD83 Zone 12 coordinate system.

DRAFT

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS

DWG No	DESCRIPTION

REVISIONS

REV	DATE	DESCRIPTION	DES	DRN	CHK	APP
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SNC·LAVALIN

CLIENT	PROJECT LOCATION
MD PINCHER CREEK	PINCHER CREEK, AB

TITLE

SITE PLAN
FOOTHILL LAKE DAM

DATE	DWG No	FIG	REV
2021 07 14	683055-0000-4GDD-1005	-	PA

11X17

Date Plotted: July 15, 2021

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Appendix I

Site Inspection Report

SNC·LAVALIN

File No.: 683055

DAM SAFETY INSPECTION FORM

Facility Name: Pincher Creek DSR
Location: MD Pincher Creek
Description: Dam Safety Review (DSR)
Purpose: Site Inspection for Dam Safety Review

Date of Inspection: June 14, 2021
Weather: Sunny, 12 to 32 °C

Persons Present During Inspection:

NO.	NAME	ORGANIZATION
1	Alistair James	SNC-Lavalin
2	Keda Cao	SNC-Lavalin
3	Roland Miligan	MD of Pincher Creek
4	Brian Millis	MD of Pincher Creek
5	Shane Poulsen	MD of Pincher Creek
6	Ken Nowosiad	Alberta Environment and Parks
7		
8		
9		
10		

List of Areas for Inspection:

1. **Cridland Dam**
2. **Therriault Community Dam**
3. **Sandy Lake Project Dam**
4. **Fish Lake Project Dam**
5. **Foothill Lake Community Dam**

DAM SAFETY INSPECTION FORM

1. Cridland Dam

Summary of Inspection Observations and Identified Deficiencies:

- Seepage was observed at the downstream toe and along the southern edge of the downstream slope. These seepage issues will need to be addressed.
- Other than seepage issues, the other aspects of the dam are generally in Good condition. No signs of movement were observed on the dam.
- A summary of inspection observations and recommended actions is provided in the following tables.

Recommended Actions:

Item	Summary of Inspection Observations	Recommended Actions
CL 21-01	Vegetation overgrowth was observed on the upper portion of the downstream slope. It is understood that a slump failure occurred within the overgrowth area historically, and the slope had been repaired.	The vegetation should be cleared for inspection. Inspection should be carried out by a suitable qualified professional as soon as the vegetation is removed, since the re-establishment of vegetations could be much faster than anticipated.
CL21-02	A spring was observed along the boundary between the earth fill and natural materials on the south side of the downstream slope. It is suspected that the water flow is primarily from the reservoir rather than nearby natural slopes.	This may require addressing through engineering mitigations or pond level management. We examined this in our analysis and will make recommendations in due course; we did not identify a need for immediate action but rather for monitoring.
CL21-03	Seepage was observed on the downstream slope toe across an area near the toe and from a previous mitigation. This may cause piping failure at the toe due to a loss of fine grained soil, leading to dam instability.	
CL 21-04	A small depression was observed on the access road at the south end of the crest.	Recommended to fill the depression, and the slope of road be regraded appropriately towards the reservoir to improve the surficial drainage, and to encourage standing water to flow into the reservoir.
CL 21-5	Bank erosion was observed at the north end of the upstream slope, where fences have fallen into the reservoir. Riprap on the upstream slope does not continue to the north abutment with sufficient extension to prevent erosion at the abutment.	Recommend to repair fences and place riprap at the eroded locations. The eroded bank, from the north end of upstream slope to the abutment, should be properly riprapped to prevent further erosion.
CL 21-06	The spillway channel, downstream of the Range Rd 302A culvert, appears to be partially blocked by wood debris and reeds.	Wood debris and reeds should be cleared from the channel because the debris may significantly reduce spillway flow capacities.
CL 21-07	Signage was not observed around the reservoir area.	It is recommended that appropriate signage be installed along the spillway as well as the reservoir shoreline, as per the provincial regulatory requirements.

Main Dam

Crest

Condition	Remarks/Description
Surface Cracking/Scarps	None observed.
Horizontal Alignment	No observed movement (**Photograph 1-2**).
Settlement	None observed.
Depression/Sinkhole	A small depression was observed on the access road at the south end of the crest.
Surface Protection	Partially vegetated with native grasses.
Vegetation	Partially vegetated with grasses. Shrubs were also observed at the south end of the crest (**Photograph 1-1**).
Animal Burrows	None observed.
Other	None.

Upstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 1-2**).
Slope Protection	Riprap extending up the slope, with vegetation within the upper riprap and on the upper slopes (**Photograph 1-3**).
Upstream Riprap	The upstream riprap consists of well graded angular cobbles and boulders, approximately 100 mm to 400 mm in size (**Photographs 1-3, 1-5, 1-6**). The riprap is in fair condition without signs of cracking.
Erosion	Erosion was observed at the north end of the upstream slope near the abutment, where fences fell into the reservoir due to erosion (**Photograph 1-4**).
Depression/Sinkhole	None observed
Vegetation	Areas not armoured with riprap are well vegetated with native grasses (**Photograph 1-2**).
Animal Burrows	None observed.
Other	n/a

DAM SAFETY INSPECTION FORM

Downstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photographs 1-7, 1-8, 1-9, and 1-10**)
Slope Protection	Well vegetated with native grasses, bushes, and shrubs.
Erosion	Riprap was placed on the north side of the slope, down to the toe (**Photographs 1-10 and 1-11**).
Depression/Sinkhole	None observed.
Vegetation	Vegetation overgrowth was observed on the central part of the downstream slope (**Photograph 1-1**). It is understood that historically a slumping failure happened at the overgrown area, and slump had been repaired. The other part of the slope was vegetated with native grasses. A clear boundary between the fill and natural materials can be distinguished based on the vegetation growth conditions. Grasses on fill materials appeared to be less lush than that on natural materials (**Photograph 1-14**).
Animal Burrows	Animal establishments were observed during the inspection (**Photograph 1-13**).
Other	A spring was observed along the boundary between the earth fill and natural materials on the south side of the downstream slope. It is suspected that the water flow is primarily from the reservoir rather than nearby natural slopes (**Photograph 1-18**). Within the area of seepage flow, vegetation overgrowth was observed.

Instrumentation

Condition	Remarks/Description
Observation Well	n/a
Piezometer	n/a
Slope Indicator	n/a
Weir	n/a
Deformation Monitoring	n/a
Others	n/a

Downstream Toe Area

Condition	Remarks/Description
Surface Condition	Indications of instability were not observed during the inspection. However, soft and wet ground conditions were observed around the toe area (**Photograph 1-16**).
Movement	None observed.

Condition	Remarks/Description
Depression/Sinkhole	Shallow depressions with standing water were observed around the toe area. Petroleum sheen (or possibly chelate crystals) was visible on the standing water (**Photograph 1-17**).
Drainage System / Seepage	There is a concrete outlet head wall located at the centre of the toe. Within the area above the headwall and around the headwall, water seepage and standing water were observed (**Photographs 1-15, 1-16, and 1-17**).
Vegetation	Grasses within the seepage and wet area appear to be lusher than the dry areas.
Animal Burrows	None observed.
Other	n/a

Reservoir Shorelines and Downstream Channels

Upstream Reservoir

Condition	Remarks/Description
Slope Condition	Eroded banks were observed around the reservoir (**Photographs 1-21, 1-22 and 1-23**).
Surface Protection	The banks were generally covered by native grasses.
Erosion	Bank erosion was observed around the reservoir. (**Photographs 1-21, 1-22 and 1-23**)
Movement	None observed.
Vegetation	Bank crests were well vegetated with native grasses.
Others	Animal burrows were observed on reservoir bank (**Photographs 1-24**).

Downstream Channel - Spillway

Condition	Remarks/Description
Sidewall/Slope Condition	The slopes of the spillway channel are generally in good condition, without major indications of instability. Minor surficial slumps were observed at multiple locations along the channel (**Photographs 1-26, 1-27, and 1-29**).
Surface Protection	The channel was partially armoured by riprap, and mostly vegetated with native grasses (**Photographs 1-26, 1-27, 1-28, and 1-29**). The inlet and outlet of the access road crossing were well armoured with riprap (**Photographs 1-29, 1-30, 1-31, 1-32**). Riprap armouring consists of well graded 100 mm to 400 mm diameter rounded cobbles and boulders. The inlet and outlet of the Range Rd 302A culvert may not be adequately armoured (**Photographs 1-35 and 1-36**).
Erosion	

DAM SAFETY INSPECTION FORM

Condition	Remarks/Description
	Minor sloughing was observed within the channel between the access road crossing and the Range Rd 302A crossing (**Photograph 1-34**).
Movement	None observed.
Vegetation	Well vegetated with native grasses.
Others	Wood debris was observed downstream of the Range Rd 302A culvert (**Photograph 1-36**).

Other Aspects

Condition	Remarks/Description
Access Road	The access road is in good condition.
Signs and Public Safety	Signage was not observed around the reservoir area.
Fence	A barbed wire fence without a lock was present at the entrance of access road. Barbed wire fences were also in place around the reservoir.
Others	n/a

2. Therriault Community Dam

Summary of Inspection Observations and Identified Deficiencies:

- Seepage was observed along the eastern part of the downstream slope. These seepage issues will need to be addressed.
- Other than seepage issues, the other aspects of the dam are generally in Good condition. No signs of movement were observed on the dam.
- A summary of inspection observations and recommended actions is provided in the following tables.

Recommended Actions:

Item	Summary of Inspection Observations	Recommended Actions
TR21-01	A minor erosion or trail, possibly created by animal traffic, was observed along the north edge of the downstream slope at the abutment interface.	It is recommended that the trail be re-vegetated or riprapped to prevent further erosion. Fencing the area may also be considered to reduce the animal traffic while vegetation is re-established.
TR 21-02	Bank erosion was observed at the north end of the upstream slope at or near the abutment.	The eroded bank and the upstream dam slope should be properly riprapped to prevent further erosion.
TR 21-03	Seepage and standing water were observed on the eastern part of the downstream slope. This part of the downstream structure seems to primarily consist of natural slopes, forming an abutment which has been raised at the reservoir with a small dike during previous improvement work integrating the dike as a freeboard and the natural promontory as a part of the dam. The seepage may cause concern for fines migration but also appears to be mobilizing the surficial soils which are saturated. Particularly in winter, when the standing water is frozen, forming an ice cover over the slope surface, the seepage may cause a build-up of porewater pressure within the slope, which may result in slope instability.	We recommended that: i. If construction-issue drawings are not available, geotechnical investigation may be required to confirm the extent of natural and fill materials. ii. A French drain system or a drainage blanket may be necessary on the downstream slope to help improve drainage, control slumps, and enhance slope stability. We will provide options for mitigation once we have conducted further analysis.
TR 21-04	The spillway drop inlet may require some upgrade. There is a gap below a barrier chain that is large enough to pass a person or a boat into the inlet structure. These spaces may allow people paddling or boating in the reservoir to fall into the drop inlet by accident.	Even though paddling and boating were not historically observed within the reservoir, it is still recommended that the spaces be reduced by adding additional poles to the fence. This may require regular maintenance to remove large driftwood trapped by the poles.
TR 21-05	Riprap on the upstream slope was partially covered by overgrown vegetations. The riprap appeared to be adequate.	Vegetation should be cleared for regular inspections. The presence of the vegetation limits inspection and may obscure defects.

Item	Summary of Inspection Observations	Recommended Actions
TR 21-06	Signage was not observed around the reservoir area.	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements. In particular, warnings of the potential risks of failing into the drop inlet should be installed in place to notify the public.

Main Dam

Crest

Condition	Remarks/Description
Surface Cracking/Scarps	None observed.
Horizontal Alignment	No observed movement (**Photograph 2-1)**
Settlement	None observed.
Depression/Sinkhole	None observed.
Surface Protection	Well vegetated with native grasses.
Vegetation	Well vegetated with native grasses.
Animal Burrows	None observed.
Other	n/a

Upstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 2-2**)
Slope Protection	Well vegetated with native grasses. Riprap was placed on the lower part of the slope
Upstream Riprap	Riprap was partially hidden by overgrown vegetation.

Condition	Remarks/Description
Erosion	Erosion was observed at the north end of the upstream slope (**Photograph 2-4**).
Depression/Sinkhole	None observed
Vegetation	Well vegetated with native grasses
Animal Burrows	None observed
Other	n/a

Downstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 2-5**)
Slope Protection	Well vegetated with native grasses and bushes.
Erosion	A minor erosion or a trail, possibly created by animal traffic, was observed along the north edge of the downstream slope at the abutment interface (**Photograph 2-1**).
Depression/Sinkhole	None observed
Vegetation	Well vegetated with native grasses and bushes.
Animal Burrows	None observed
Other	n/a

Instrumentation

Condition	Remarks/Description
Observation Well	n/a
Piezometer	n/a

Condition	Remarks/Description
Slope Indicator	n/a
Weir	n/a
Deformation Monitoring	n/a
Others	n/a

Downstream Toe Area

Condition	Remarks/Description
Surface Condition	Indications of instability were not observed during the inspection. However, soft and wet ground conditions were observed around the toe area within the eastern part of the slope. This soft and wet area was well vegetated with bushes and shrubs. (**Photograph 2-6**).
Movement	None observed
Depression/Sinkhole	None observed
Drainage System / Seepage	Seepage and standing water were observed on the natural part of the downstream slope. **(Photographs 2-9 and 2-16)**
Vegetation	Well vegetated with grasses, bushes, and shrubs.
Animal Burrows	None observed
Other	n/a

Reservoir Shorelines and Downstream Channels

Upstream Reservoir

Condition	Remarks/Description
Slope Condition	Good, indications of instability were not observed during the inspection (**Photographs 2-14 and 2-15**)
Surface Protection	The reservoir shorelines are vegetated with native grasses and bushes.

DAM SAFETY INSPECTION FORM

Condition	Remarks/Description
Erosion	No significant erosion observed.
Movement	None observed
Vegetation	Well vegetated with a mixture of trees, native grasses, bushes, and shrubs.
Others	n/a

Downstream Channel - Spillway

Condition	Remarks/Description
Sidewall/Slope Condition	The slopes of the spillway channel are generally in good condition, with no major indications of instability. Only minor slumps were observed in the channel (**Photographs 2-10, 2-11, 2-12, 2-13**).
Surface Protection	The spillway is partially armoured with riprap, and mostly vegetated with native grasses. (**Photographs 2-10, 2-11, 2-12, 2-13**).
Erosion	Minor sloughing observed at multiple locations (**Photographs 2-10, 2-11, 2-12, and 2-13**).
Movement	None observed.
Vegetation	Well vegetated with native grasses
Others	The low-level outlet channel is armoured with riprap (**Photographs 2-7 and 2-8**). A section of eroded vertical bank was observed at the first turn of the outlet channel (**Photograph 2-13**). This bank may be unstable in the long term.

Other Aspects

Condition	Remarks/Description
Access Road	The road is in good condition.
Signs and Public Safety	Signage was not observed around the reservoir area.
Fence	

DAM SAFETY INSPECTION FORM

Condition	Remarks/Description
	A barbed wire fence without a lock was present at the entrance of access road. Barbed wire fences were also in place around the reservoir.
Others	The drop inlet of the spillway was not adequately fenced, which may allow paddlers / boats to enter the drop inlet accidentally.

3. Sandy Lake Project Dam

Summary of Inspection Observations and Identified Deficiencies:

- The outlet culvert appears to be collecting sand and silt, possibly already clogged.
- Other than the clogged outlet, the other aspects of the dam are generally in good condition. No signs of movement were observed on the dam.
- A summary of inspection observations and recommended actions is provided in the following tables.

Recommended Actions:

Item	Summary of Inspection Observations	Recommended Actions
SL21-01	The spillway outlet appears to be collecting sand and silt; this may be facilitated by the beached driftwood which should be removed. The spillway does not appear to be used frequently for water release.	The dam height could potentially be reduced to less than 2.5 m, by reprofiling the dam crest to a flattened and widened swale. Further discussion and commentary will be provided in the DSR for consideration.
SL21-02	As per drawing No.0678-045-02-SW1471-003 issued for dam safety review, the dam height is approximately 9 feet (2.7 m), which is consistent with our visual estimation during the site inspection.	
SL21-03	The slope of the spillway was estimated to be 1% on average. Drop structures presence, suggested by the drawing No.0678-045-02-SW1471-003, were not observed along the spillway channel.	
SL21-04	Signage was not observed around the reservoir area.	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements.

Main Dam

Crest

Condition	Remarks/Description
Surface Cracking/Scarps	None observed.
Horizontal Alignment	No observed movement (**Photograph 3-1**)
Settlement	None observed.
Depression/Sinkhole	None observed.
Surface Protection	

Condition	Remarks/Description
	Well vegetated with native grasses.
Vegetation	Well vegetated with native grasses.
Animal Burrows	None observed.
Other	The overall height of the dam was estimated to be 2.4 m to 2.7 m (**Photograph 3-4**).

Upstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 3-2**)
Slope Protection	Well vegetated with native grasses.
Upstream Riprap	No riprap observed on site.
Erosion	None observed.
Depression/Sinkhole	None observed.
Vegetation	Well vegetated with native grasses.
Animal Burrows	None observed.
Other	n/a

Downstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photographs 3-3 and 3-4**)
Slope Protection	Well vegetated with native grasses.

DAM SAFETY INSPECTION FORM

Condition	Remarks/Description
Erosion	None observed.
Depression/Sinkhole	None observed.
Vegetation	Well vegetated with native grasses.
Animal Burrows	None observed.
Other	The downstream outlet is collecting sand and silt and appears to be clogged (**Photograph 3-5**).

Instrumentation

Condition	Remarks/Description
Observation Well	n/a
Piezometer	n/a
Slope Indicator	n/a
Weir	n/a
Deformation Monitoring	n/a
Others	n/a

Downstream Toe Area

Condition	Remarks/Description
Surface Condition	Good, indications of instability were not observed during the inspection (**Photographs 3-3 and 3-4**)
Movement	None observed.
Depression/Sinkhole	None observed.
Drainage System / Seepage	None observed.
Vegetation	Well vegetated with native grasses. Possible overgrowth.
Animal Burrows	None observed.
Other	n/a

Reservoir Shorelines and Downstream Channels

Upstream Reservoir

Condition	Remarks/Description
Slope Condition	Good, indications of instability were not observed during the inspection (**Photographs 3-8 and 3-9**)
Surface Protection	Shorelines are vegetated.
Erosion	No significant erosion observed
Movement	None observed.
Vegetation	Well vegetated with a mixture of trees, grasses, bushes, and shrubs.
Others	n/a

Downstream Channel - Service Spillway

Condition	Remarks/Description
Sidewall/Slope Condition	The slopes of the channel are generally in good conditions, without major indications of instability (**Photographs 3-6, 3-7 and 3-8**).
Surface Protection	Well vegetated with native grasses. Possible overgrowth.
Erosion	None observed.
Movement	None observed.
Vegetation	Well vegetated with native grasses. Possible overgrowth.
Others	The slope of the spillway channel was estimated to be 1% on average.

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Other Aspects

Condition	Remarks/Description
Access Road	The road is in good condition.
Signs and Public Safety	Signage was not observed around the reservoir area.
Fence	A barbed wire fence without lock was present at the entrance of access road. Barbed wire fences were also in place around the reservoir.
Others	n/a

4. Fish Lake Project Dam

Summary of Inspection Observations and Identified Deficiencies:

- The natural spillway is currently partially (perhaps substantially) blocked by a beaver dam, which should be cleared to restore the spillway flow capacity.
- A pipeline crossing was found near the land bridge between the reservoirs, for which a pipeline risk assessment should be considered as part of dam operation.
- Other than the above-mentioned issues, the other aspects of the dam are generally in good condition. No signs of movement were observed on the dam.
- A summary of inspection observations and recommended actions is provided in the following tables.

Recommended Actions:

Item	Summary of Inspection Observations	Recommended Actions
FL21-01	The natural spillway, on the southeast corner of the lower reservoir, is currently partially (perhaps substantially) blocked by a beaver dam, which significantly affects the capacity of spillway outflow. A nearby woodland is providing a ready supply for beaver dam construction and habitat, although we understand that the location is rarely one that beavers inhabit Wood debris was also observed within the spillway channel.	Beaver dam be removed, and the wood debris in the spillway channel be cleared to restore the flow capacity.
FL21-02	Vegetation overgrowth was observed within the outlet channel downstream of the dam.	Overgrown vegetation be cleared within the outlet channel.
FL21-03	Pipeline crossings were found adjacent to the land bridge between the upper and lower reservoirs. Signs/markers of pipeline crossings have faded, and the information on the signage may be outdated.	It is recommended that the current owners of the pipelines be identified, and the current pipeline operational conditions be collected. Risks associated with pipeline operations should be considered as part of the regular dam operation and maintenance schedule. Extreme weather events or bank erosion may lead to pipeline exposure or even pipeline damage. The depths of the pipelines should be checked regularly as part of the reservoir operations.
FL21-04	The use of the outlet valve appears to be infrequent, as per MD's representatives. The steel bridge, constructed for the access to the valve, may be partially submerged when the reservoir level is high, which imposes risks to valve operations.	Delicensing of the dam might be considered by reducing the dam height to less than 2.5 m. Further discussion and commentary will be provided in the DSR for consideration.

Item	Summary of Inspection Observations	Recommended Actions
FL21-5	Signage with regard to the dam site was not observed around the reservoir area.	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements.

Main Dam

Crest

Condition	Remarks/Description
Surface Cracking/Scarps	None observed.
Horizontal Alignment	No observed movement.
Settlement	None observed.
Depression/Sinkhole	None observed.
Surface Protection	Well vegetated with native grasses.
Vegetation	Well vegetated with native grasses.
Animal Burrows	None observed.
Other	n/a

Upstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 4-2**).
Slope Protection	Well vegetated with native grasses.
Upstream Riprap	No riprap was observed on slope.
Erosion	

Condition	Remarks/Description
	Minor erosion along the toe.
Depression/Sinkhole	None observed.
Vegetation	Well vegetated with native grasses.
Animal Burrows	None observed.
Other	A steel bridge, constructed for the access to the outlet valve, is partially submerged (**Photograph 4-3**).

Downstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 4-4**).
Slope Protection	Well vegetated with native grasses.
Erosion	None observed.
Depression/Sinkhole	None observed.
Vegetation	Well vegetated with native grasses (**Photograph 4-4**).
Animal Burrows	None observed.
Other	n/a

Instrumentation

Condition	Remarks/Description
Observation Well	n/a
Piezometer	n/a
Slope Indicator	n/a
Weir	n/a
Deformation Monitoring	n/a
Others	n/a

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Downstream Toe Area

Condition	Remarks/Description
Surface Condition	Well vegetated with native grasses (**Photograph 4-4**).
Movement	None observed.
Depression/Sinkhole	None observed.
Drainage System / Seepage	None observed.
Vegetation	Well vegetated with native grasses (**Photograph 4-4**).
Animal Burrows	None observed.
Other	n/a

Reservoir Shorelines and Downstream Channels

Upstream Reservoir

Condition	Remarks/Description
Slope Condition	Reservoir slopes are generally in good conditions. Minor erosion was observed along shoreline.
Surface Protection	Well vegetated with native grasses.
Erosion	Minor erosion was observed along shoreline.
Movement	None observed.
Vegetation	Well vegetated with native grasses.
Animal Burrows	Animal burrows were found on reservoir banks (**Photographs 4-9 and 4-10**).

Condition	Remarks/Description
Others	There are pipeline crossings at the land bridge between the upper and lower reservoirs. Signage of pipeline crossings has faded, and the information on the signage may be outdated (**Photographs 4-7 and 4-8**).

Downstream Channel - Spillway

Condition	Remarks/Description
Sidewall/Slope Condition	The slopes of both the downstream outlet channel and the spillway channel appear to be stable, with no major indications of instability (**Photographs 4-5 and 4-6**).
Surface Protection	Both the outlet channel and the spillway channel are well vegetated with native grasses, trees, bushes, and shrubs (**Photographs 4-5 and 4-6**).
Erosion	Minor erosion on spillway banks (**Photograph 4-6**). No erosion was observed on outlet channel.
Movement	None observed.
Vegetation	Vegetation overgrowth was observed within the outlet channel (**Photograph 4-5**).
Others	A beaver dam was observed at the entrance of spillway channel. Wood debris was also observed along the spillway channel. (**Photograph 4-6**).

Other Aspects

Condition	Remarks/Description
Access Road	No all-weather assessable trail was observed on site.
Signs and Public Safety	Signage was not observed around the reservoir area, aside from pipeline crossings. Signage marking pipelines crossings has faded.
Fence	A chain link fence without a lock was present at the entrance of access road. Fences were also in place around the reservoir.
Others	n/a

5. Foothill Lake Dam

Summary of Inspection Observations and Identified Deficiencies:

- The southeastern shoreline of the reservoir needs to be armoured to prevent further erosion.
- The ground elevation at the junction of the spillway and the reservoir should be lowered to maintain the functionality of the spillway.
- A few defects were found in the outlet control structures, which should be addressed.
- Other than the above-mentioned issues, the other aspects of the dam are generally in good condition. No signs of movement were observed on the dam.
- A summary of inspection observations and recommended actions is provided in the following tables.

Recommended Actions:

Item	Summary of Inspection Observations	Recommended Actions
FH21-01	The impacts on downstream environment and properties appear to be very limited, based on SNC-Lavalin's site observations. The classification of the dam may potentially be changed to 'low', subject to further study.	We will conduct a review to check the classification of the dam, as we will for each dam.
FH21-02	The southeast shoreline of the reservoir is experiencing erosion due to wave action. Approximately 30 m of the shoreline currently does not have adequate freeboard to allow for wave runup.	It is recommended the shoreline segment not having adequate freeboard be protected against further erosion, using riprap or erosion mats or other options.
FH21-03	Erosion was observed at the junction of the dam and the spillway.	Riprap should be placed at the eroded junction to prevent further erosion.
FH21-04	The spillway is partially hidden by overgrown grasses at the junction of spillway and the reservoir. The grasses might have trapped some silt from the reservoir, which slightly elevated the channel bed. Wood debris was observed at the junction.	The current spillway elevation at the junction should be lowered and the channel be riprapped. Wood debris should also be removed from the spillway channel.
FH21-5	A few defects were found within the outlet control structures: 1. The concrete inlet headwall appears to be partially damaged. 2. The inlet gate shaft is bent, but still functional as per MD's representative. 3. Geotextiles behind the concrete headwall was exposed. 4. One of the outlet CSP culverts is exposed and damaged.	The functionality of the headwall and gate should be assessed and monitored. Should the functionality of the structure deteriorate, the structures should be repaired or replaced in a timely manner. The exposed geotextile should be covered by adequate layer of earth fill to prevent damage. The damaged CSP culvert should be repaired or replaced to ensure adequate flow capacity.

Item	Summary of Inspection Observations	Recommended Actions
		The exposed portion of the pipe should be covered by adequate layer of earth fill to reduce potential damage.
FH21-06	Signage with regard to the dam site was not observed around the reservoir area.	It is recommended that appropriate signage be installed on the dam as well as around the reservoir area, as per the provincial regulatory requirements.

Main Dam

Crest

Condition	Remarks/Description
Surface Cracking/Scarps	None observed (**Photograph 5-1**).
Horizontal Alignment	No observed movement (**Photograph 5-1**).
Settlement	None observed.
Depression/Sinkhole	None observed.
Surface Protection	Most part of the crest was vegetated with native grasses. Minor rutting was observed on site (**Photographs 5-1 and 5-2**).
Vegetation	Partially vegetated with native grasses.
Animal Burrows	None observed.
Other	n/a

Upstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the site inspection (**Photograph 5-1**)
Slope Protection	Riprap extending up the slope. Wood debris was observed on some part of the slope (**Photograph 5-1**).

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Condition	Remarks/Description
Upstream Riprap	The upstream riprap consists of well graded cobbles and boulders, approximately 100 mm to 300 mm in diameter. The riprap is in fair condition without signs of cracking.
Erosion	Erosion was observed at the junction of the spillway channel and the dam (**Photograph 5-4**).
Depression/Sinkhole	None observed.
Vegetation	The upper slope was vegetated with native grasses.
Animal Burrows	None observed.
Other	The concrete inlet headwall appears to be partially damaged (**Photograph 5-13**). The inlet gate shaft is bent, but still functional as per MD's representative (**Photograph 5-14**). Geotextiles behind the concrete headwall were exposed (**Photograph 5-15**)

Downstream Slope

Condition	Remarks/Description
Slope Stability	Indications of instability were not observed during the inspection (**Photograph 5-2**)
Slope Protection	Partially vegetated with native grasses.
Erosion	Surficial erosion, possibly due to rainwater run-off and cattle traffic, was observed at the lower slope (**Photograph 5-10**).
Depression/Sinkhole	None observed.
Vegetation	Partially vegetated with native grasses.
Animal Burrows	None observed.
Other	n/a

Instrumentation

Condition	Remarks/Description
Observation Well	n/a
Piezometer	n/a
Slope Indicator	n/a
Weir	n/a
Deformation Monitoring	n/a
Others	n/a

Downstream Toe Area

Condition	Remarks/Description
Surface Condition	Partially vegetated with native grasses. Riprap was also observed at the outlet (**Photograph 5-12**).
Movement	None observed.
Depression/Sinkhole	None observed.
Drainage System / Seepage	No seepage observed at the toe area. One of the outlet CSP culverts is exposed and damaged (**Photographs 5-10, 5-11, and 5-12**).
Vegetation	Partially vegetated with native grasses.
Animal Burrows	None observed.
Other	n/a

Reservoir Shorelines and Downstream Channels

Upstream Reservoir

Condition	Remarks/Description
Slope Condition	Eroded vertical banks were observed along the southeastern shoreline (**Photographs 5-7, 5-8, and 5-9**). Driftwood was also observed at various locations. The northern shoreline is riprapped and does not show visible signs of instability (**Photograph 5-3**).
Surface Protection	The northern shoreline is riprapped. Other part of the reservoir was vegetated with native grasses, trees, shrubs, and bushes.

DAM SAFETY INSPECTION FORM

Condition	Remarks/Description
Erosion	Erosion was primarily observed along the southeastern shoreline.
Movement	No indications of significant movement were observed.
Vegetation	The reservoir shoreline was vegetated with native grasses, trees, shrubs, and bushes.
Others	Approximately 30 m of the southeastern shoreline currently does not have adequate freeboard to allow for wave runup (**Photographs 5-7 and 5-8**).

Downstream Channel - Spillway

Condition	Remarks/Description
Sidewall/Slope Condition	The slopes of the spillway channel are generally in good condition, without signs of instability (**Photograph 5-6**).
Surface Protection	The channel is covered with overgrown native grasses (**Photograph 5-6**). At the junction of dam and the spillway, the overgrown grasses might have trapped some silt from the reservoir, which slightly elevated the channel bed. Wood debris was observed at the junction (**Photograph 5-5**).
Erosion	No significant signs of erosion were observed within the spillway channel.
Movement	None observed.
Vegetation	The channel is generally covered with overgrown native grasses.
Others	Wood debris was observed within the spillway channel (**Photograph 5-5**).

Other Aspects

Condition	Remarks/Description
Access Road	The access road is in good condition.
Signs and Public Safety	Signage with regard to the dam site was not observed around the reservoir area.
Fence	A lockable gate was present at the entrance of access road towards the reservoir

Attachment I

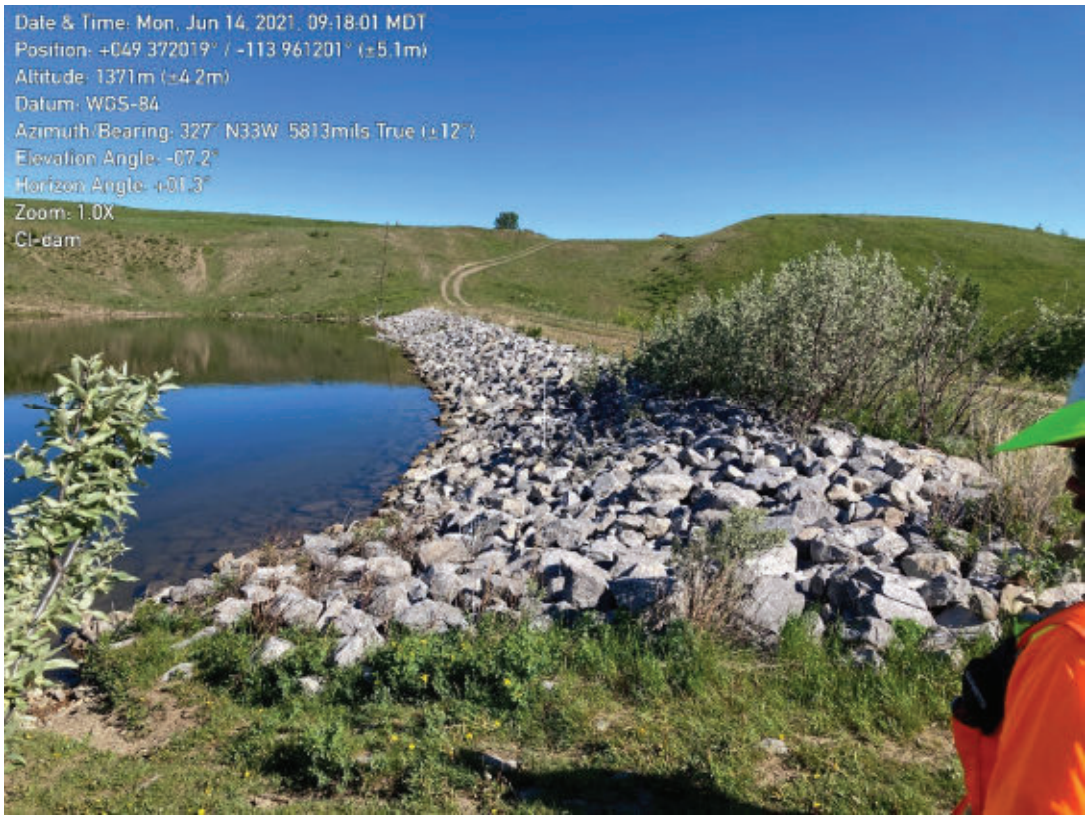
Site Inspection Photos

1-Cridland Dam

Photograph 1-1 Dam full view, facing south


Photograph 1-2 Dam upstream slope, facing southeast

1-Cridland Dam



Photograph 1-3 Dam upstream slope, facing northwest

Photograph 1-4 Eroded bank and fallen fences, at the north end of the dam's upstream slope, adjacent to the abutment

1-Cridland Dam

Photograph 1-5 Riprap and inlet control valve on upstream slope

Photograph 1-6 Riprap sizes compared to 9.5-size boot

1-Cridland Dam

Photograph 1-7 Dam downstream slope, facing northwest

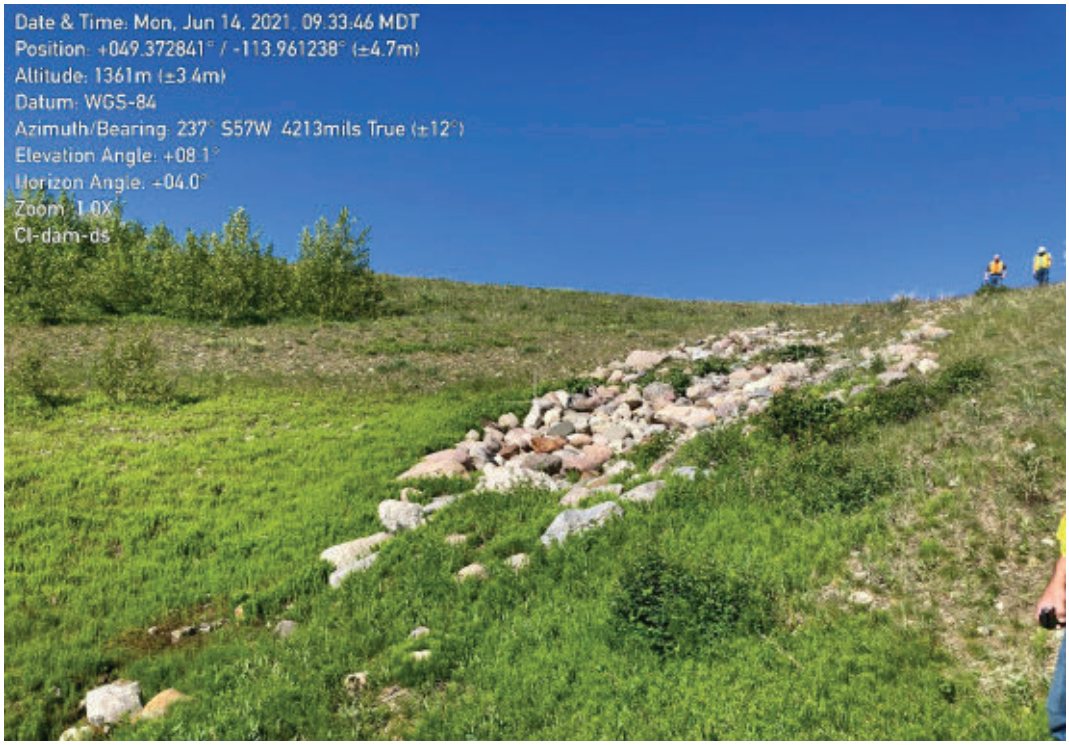
Photograph 1-8 Dam downstream slope, facing southeast

1-Cridland Dam

Photograph 1-9 Dam downstream slope, looking at the toe from the north side of the crest

Photograph 1-10 Riprap on dam downstream slope – facing down

1-Cridland Dam

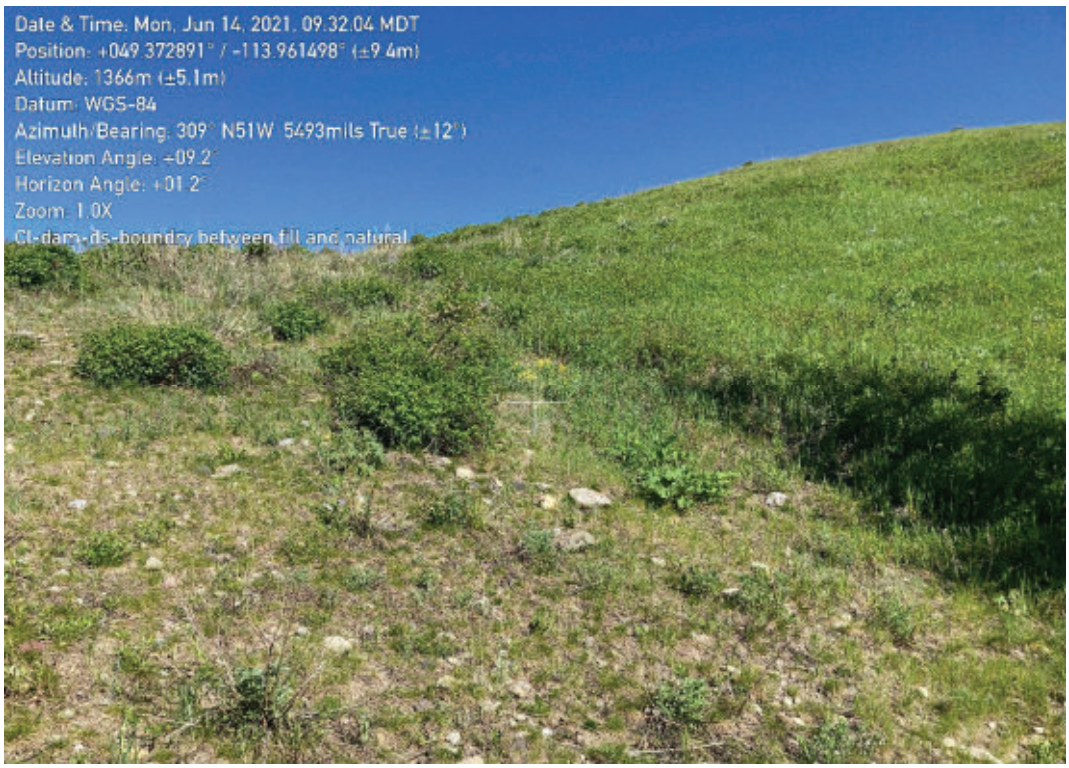


Photograph 1-11 Riprap on dam downstream slope, looking up

Photograph 1-12 Dam downstream slope, looking at the toe from the south side of the crest

1-Cridland Dam

Photograph 1-13 Animal establishment observed on downstream slope



Photograph 1-14 Possible boundary between fill and natural materials, where different vegetation growth can be observed along the north edge of the downstream slope

1-Cridland Dam

Photograph 1-15 Downstream outlet headwall at toe

Photograph 1-16 soft and wet ground at the downstream slope toe

1-Cridland Dam

Photograph 1-17 Standing water at the downstream slope toe with petroleum sheen or chelate crystals

Photograph 1-18 Vegetation overgrowth along the south edge of the downstream slope, where a spring was observed on site

1-Cridland Dam

Photograph 1-19 Access road north of the dam

Photograph 1-20 Looking downstream of outlet channel

1-Cridland Dam

Photograph 1-21 Reservoir shoreline, facing north

Photograph 1-22 Reservoir shoreline, facing south

1-Cridland Dam

Photograph 1-23 Reservoir shoreline, facing southwest

Photograph 1-24 Animal burrow on reservoir bank

1-Cridland Dam

Photograph 1-25 Spillway channel, facing upstream

Photograph 1-26 Spillway channel, facing upstream

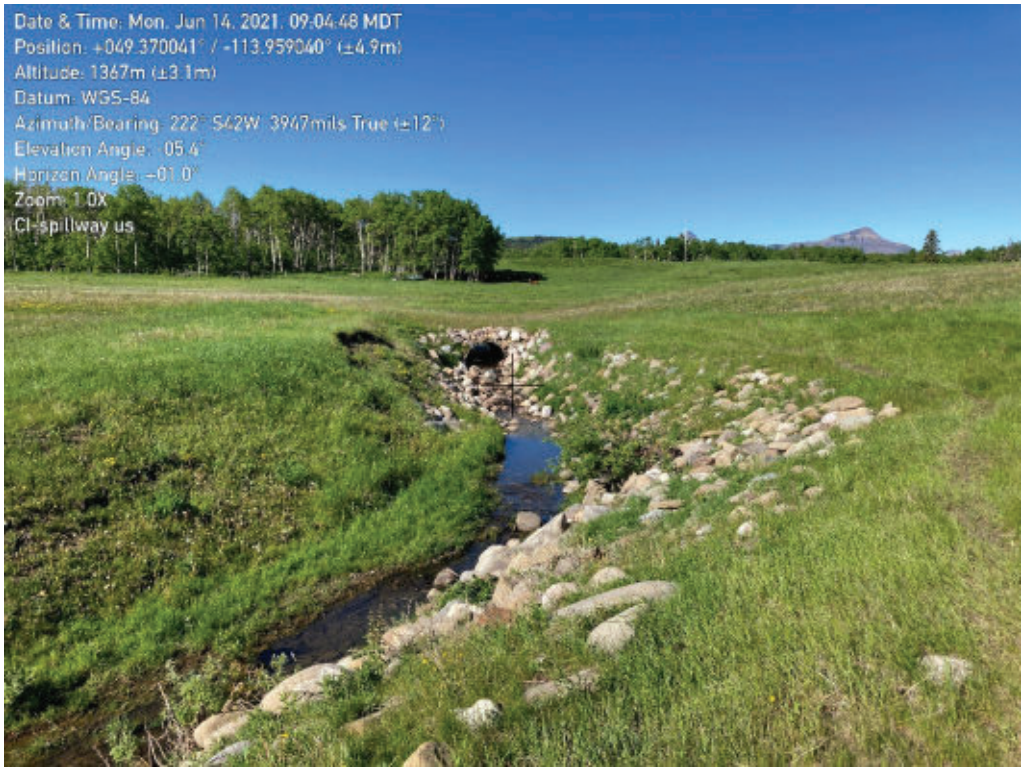
1-Cridland Dam

Photograph 1-27 Spillway channel, facing downstream

Photograph 1-28 Spillway channel, facing downstream

1-Cridland Dam

Photograph 1-29 Access roading crossing over spillway, facing downstream



Photograph 1-30 Access roading crossing over spillway, facing upstream

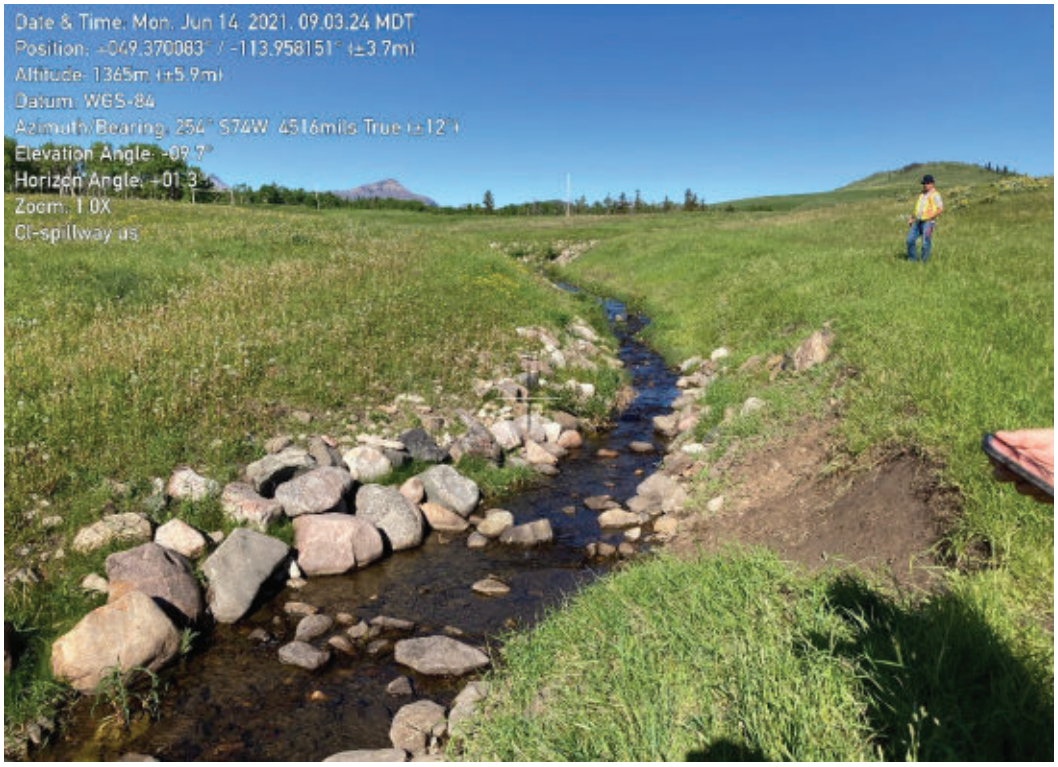
1-Cridland Dam

Photograph 1-31 Access roading crossing over spillway, facing upstream

Photograph 1-32 Access roading crossing over spillway, looking southeast

1-Cridland Dam

Photograph 1-33 Spillway channel between access road crossing and Range Rd302A crossing, facing upstream



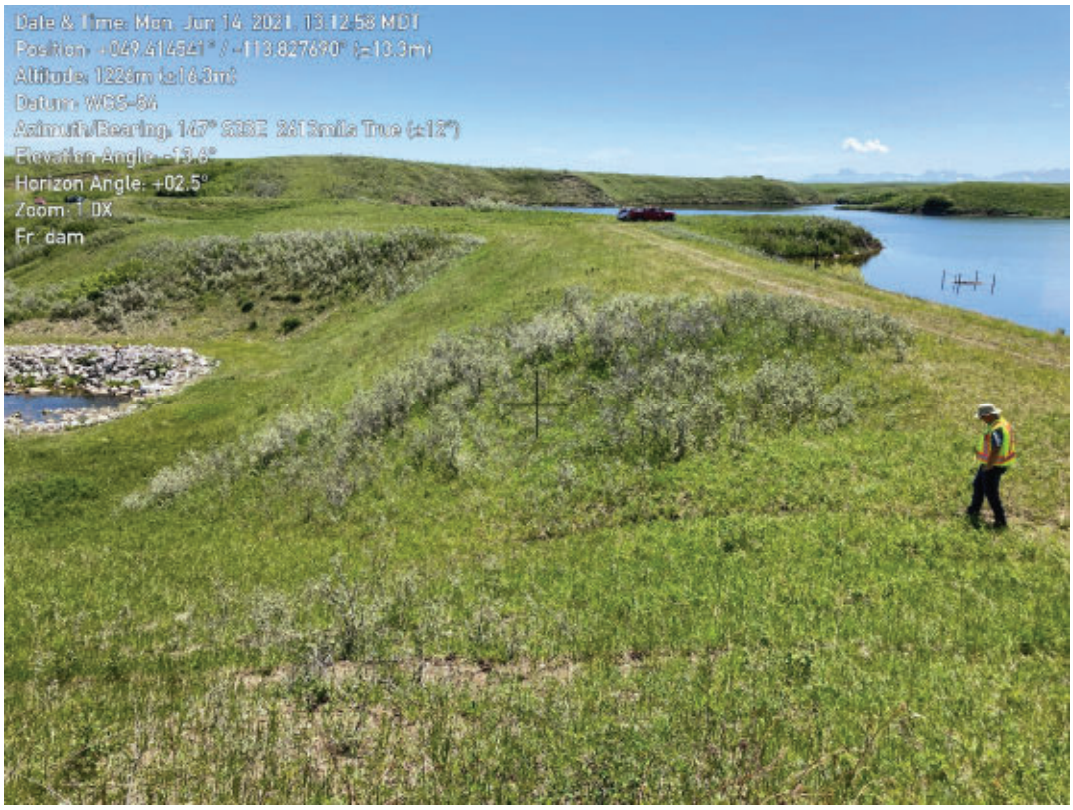
Photograph 1-34 Spillway channel between access road crossing and Range Rd302A crossing, facing upstream

1-Cridland Dam

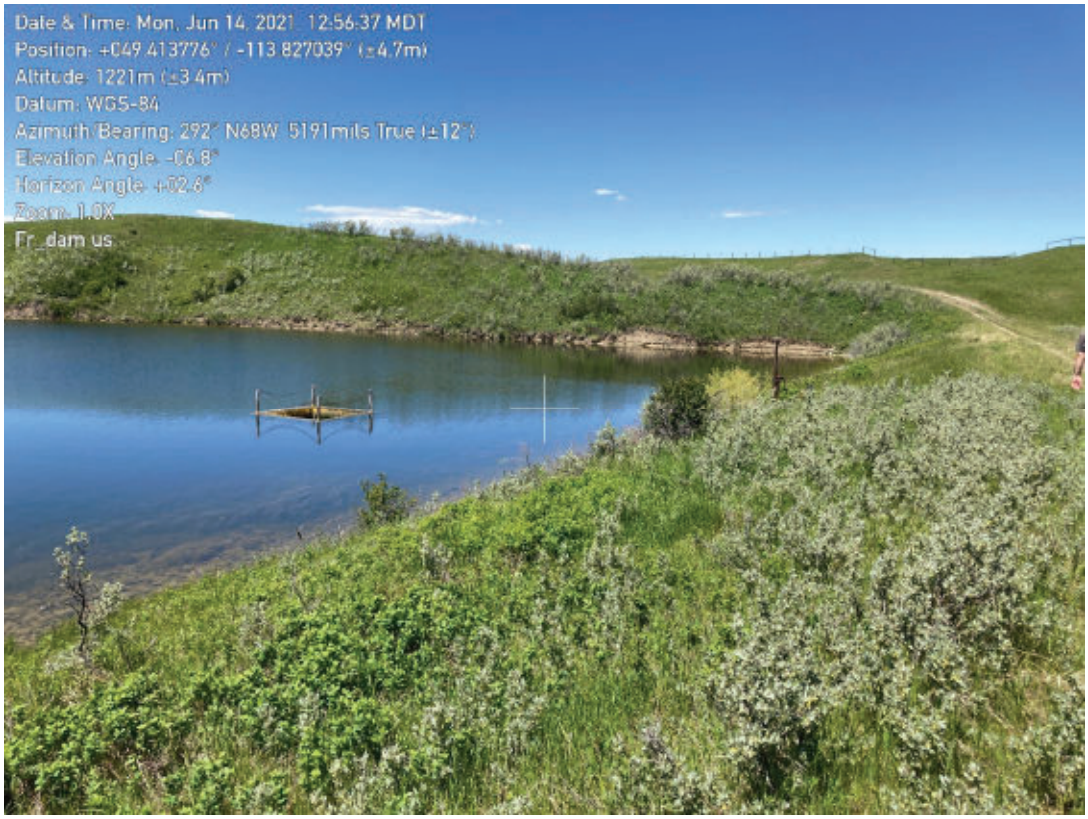
Photograph 1-35 Culvert inlet under Range Rd302A

Photograph 1-36 Culvert outlet under Range Rd302A

2-Therriault Dam



Photograph 2-1 Dam full view, facing southeast



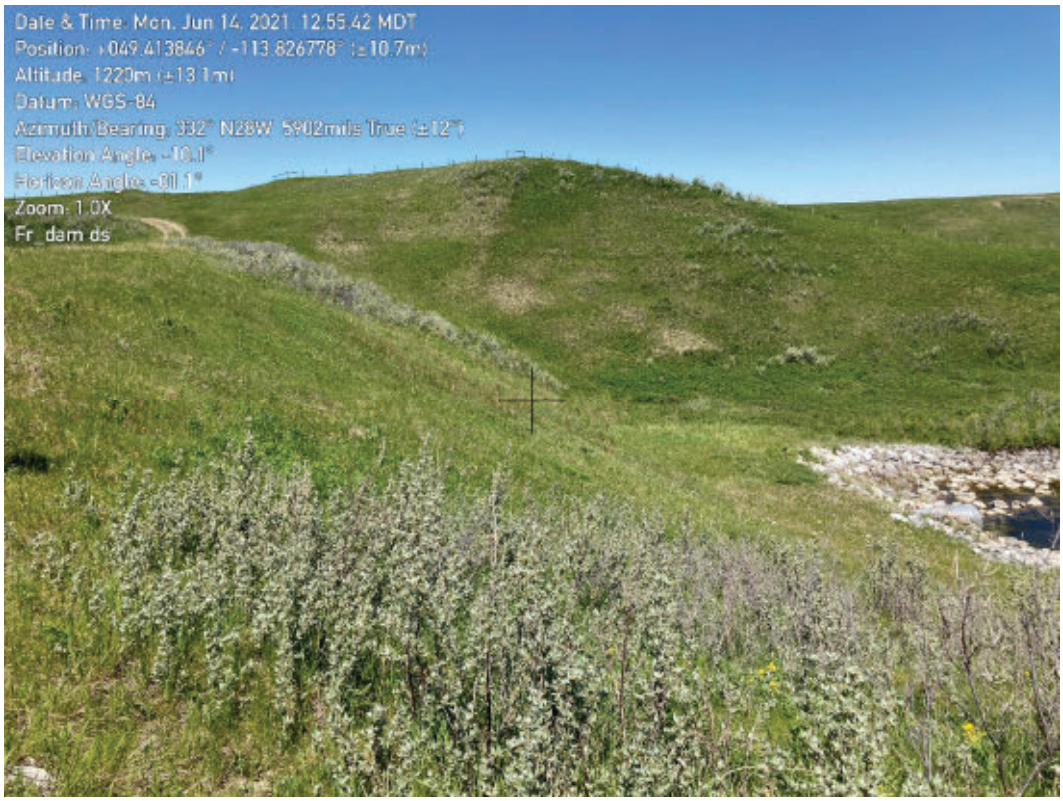
Photograph 2-2 Dam upstream slope, facing northwest

2-Therriault Dam

Photograph 2-3 Spillway drop inlet (Drain inlet) and control valve

Photograph 2-4 Eroded bank at the north end of the dam upstream slope

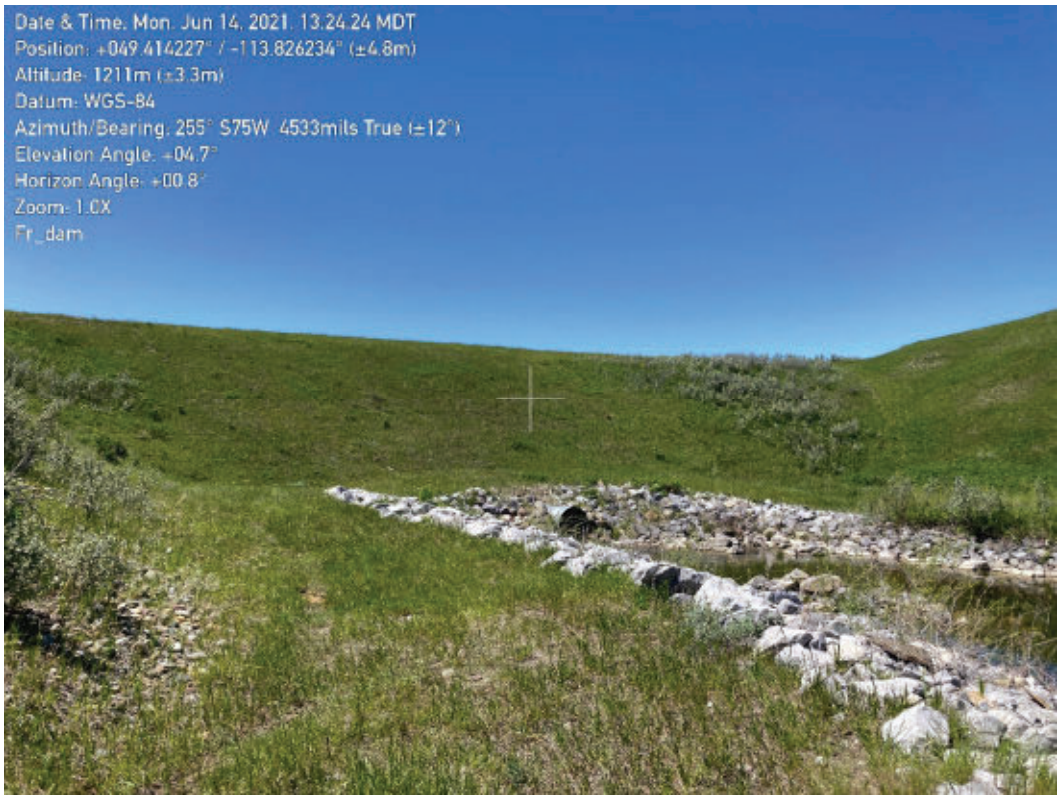
2-Therriault Dam



Photograph 2-5 Dam downstream slope (engineered section), facing northwest

Photograph 2-6 Dam downstream slope (engineered section and natural section), facing southeast

2-Therriault Dam

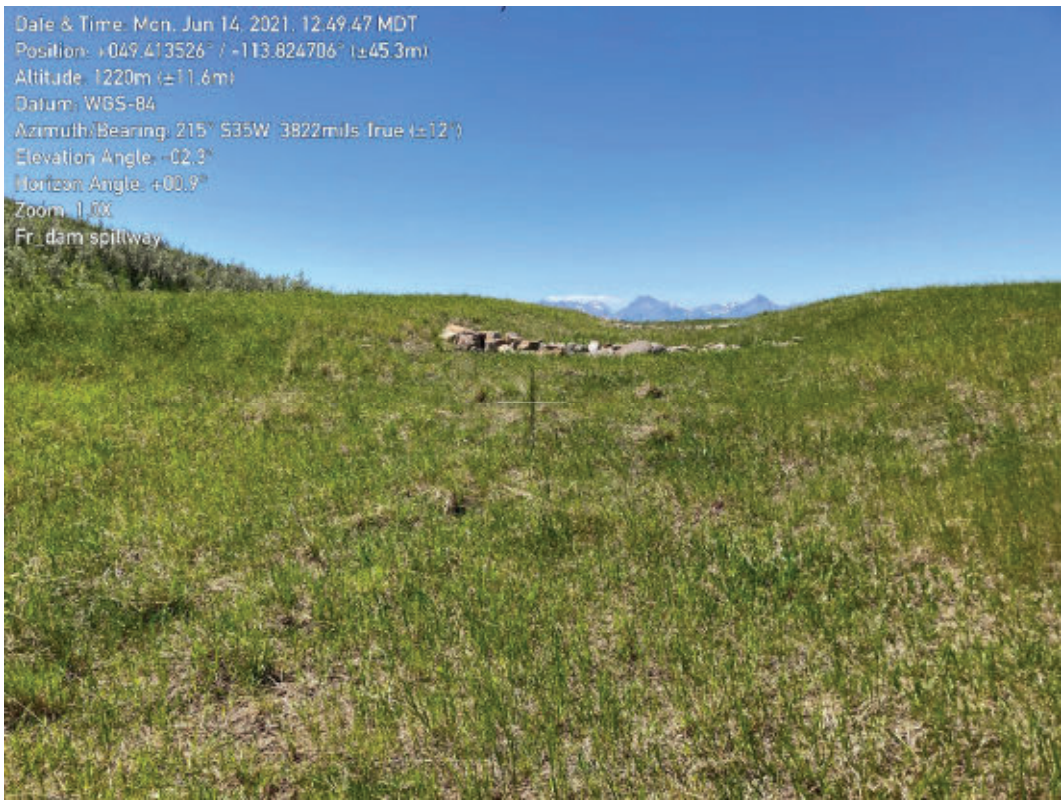


Photograph 2-7 Dam downstream slope (engineered section), looking up, including low level outlet

Photograph 2-8 Low Level Outlet CSP pipe and riprap at downstream toe, looking down from the crest

2-Therriault Dam

Photograph 2-9 Dam downstream slope (natural section), where soft and wet ground condition as well as standing water were observed, looking down



Photograph 2-10 Spillway channel, facing upstream

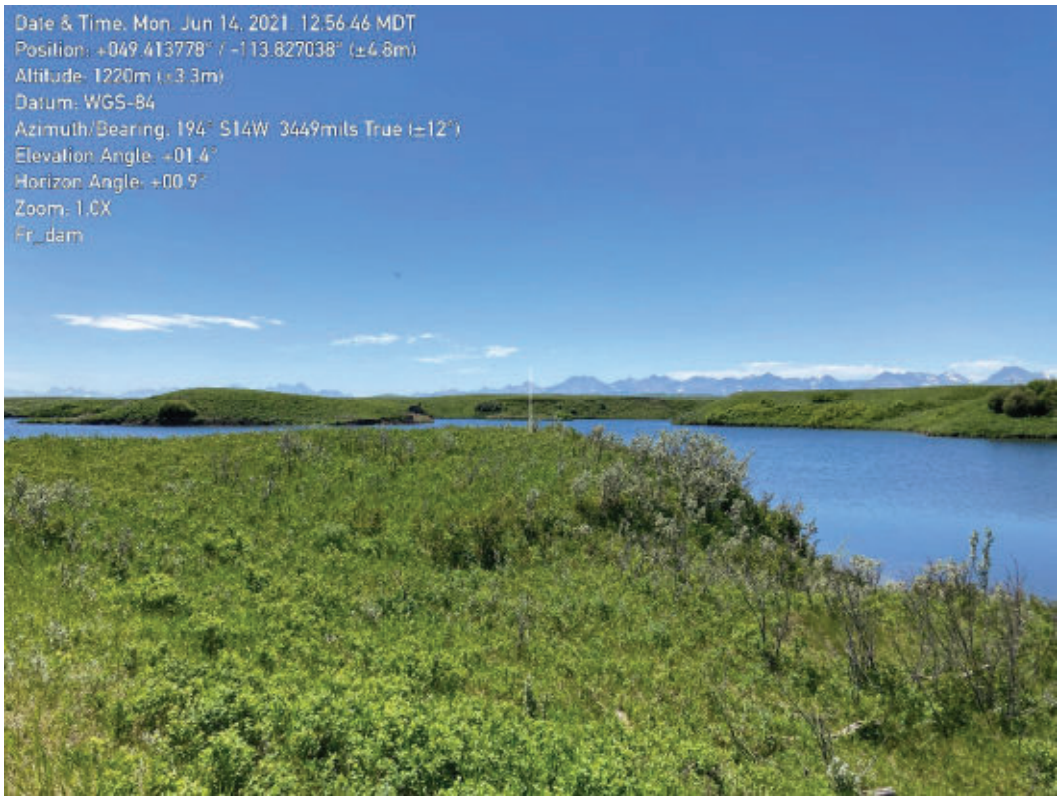
2-Therriault Dam

Photograph 2-11 Spillway channel, facing downstream

Photograph 2-12 Spillway channel, facing downstream

2-Therriault Dam

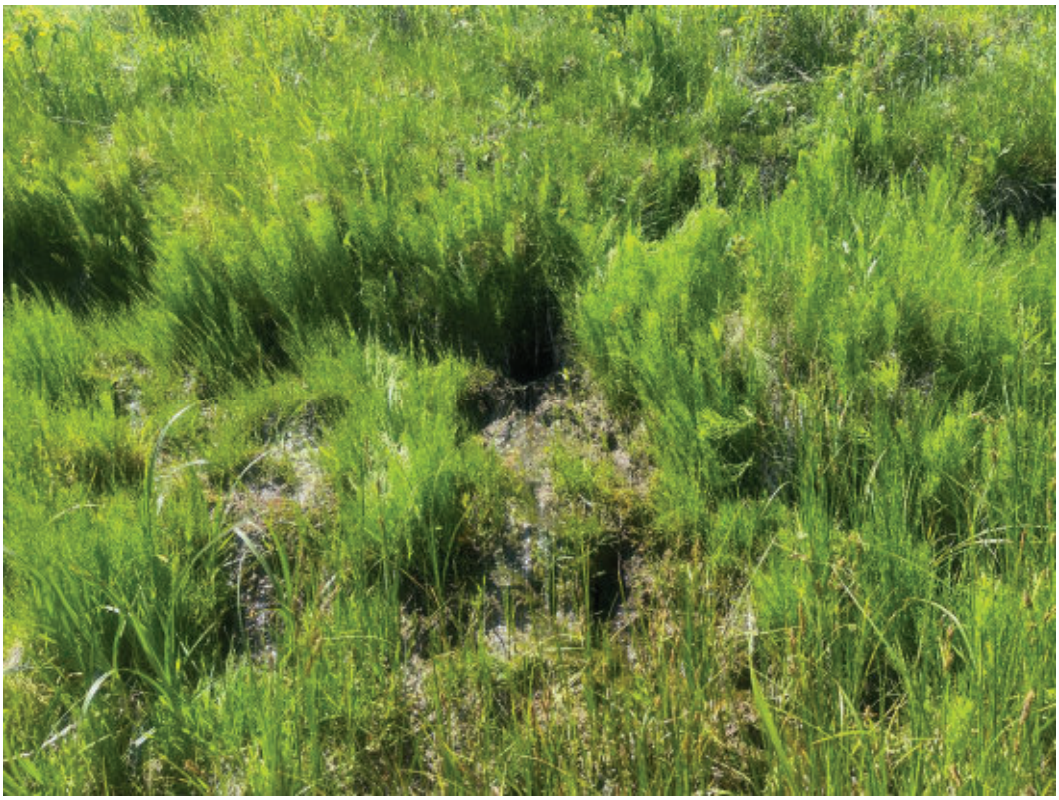
Photograph 2-13 Spillway channel, looking from dam crest



Photograph 2-14 reservoir shoreline, facing south

2-Therriault Dam

Photograph 2-15 Reservoir shoreline, facing southwest


Photograph 2-16 Seepage and Standing water observed on downstream slope (natural section)

2-Therriault Dam

Photograph 2-17 A minor erosion or trail was observed along the north edge of the downstream slope at the abutment interface, looking down from the crest

3-Sandy Lake Dam

Photograph 3-1 Dam full view, facing south

Photograph 3-2 Dam upstream slope, facing west

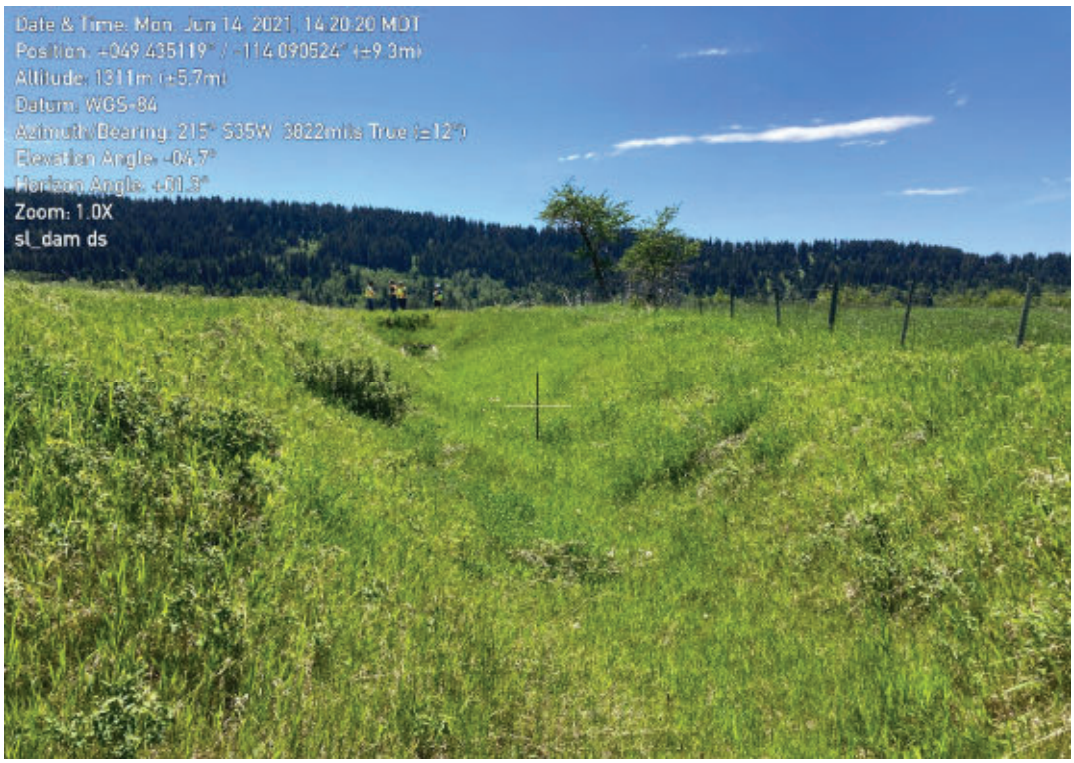
3-Sandy Lake Dam

Photograph 3-3 Dam downstream slope and outlet headwall

Photograph 3-4 Dam downstream slope, facing south

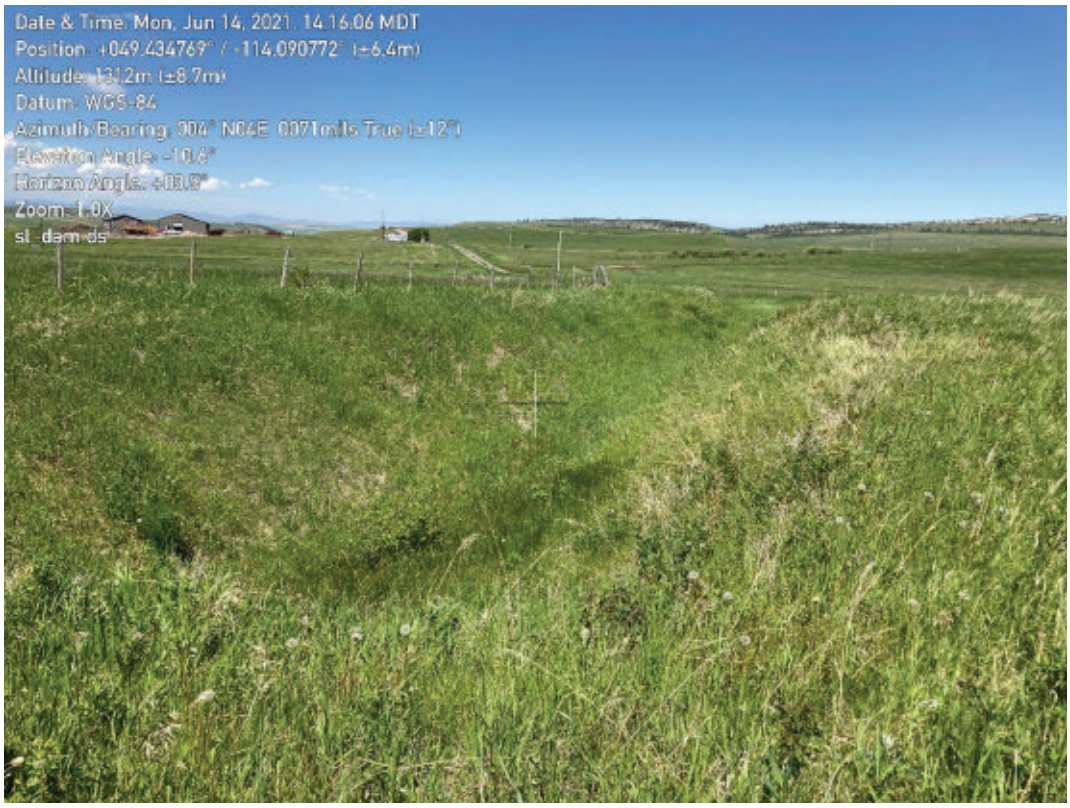
3-Sandy Lake Dam

Photograph 3-5 Clogged outlet

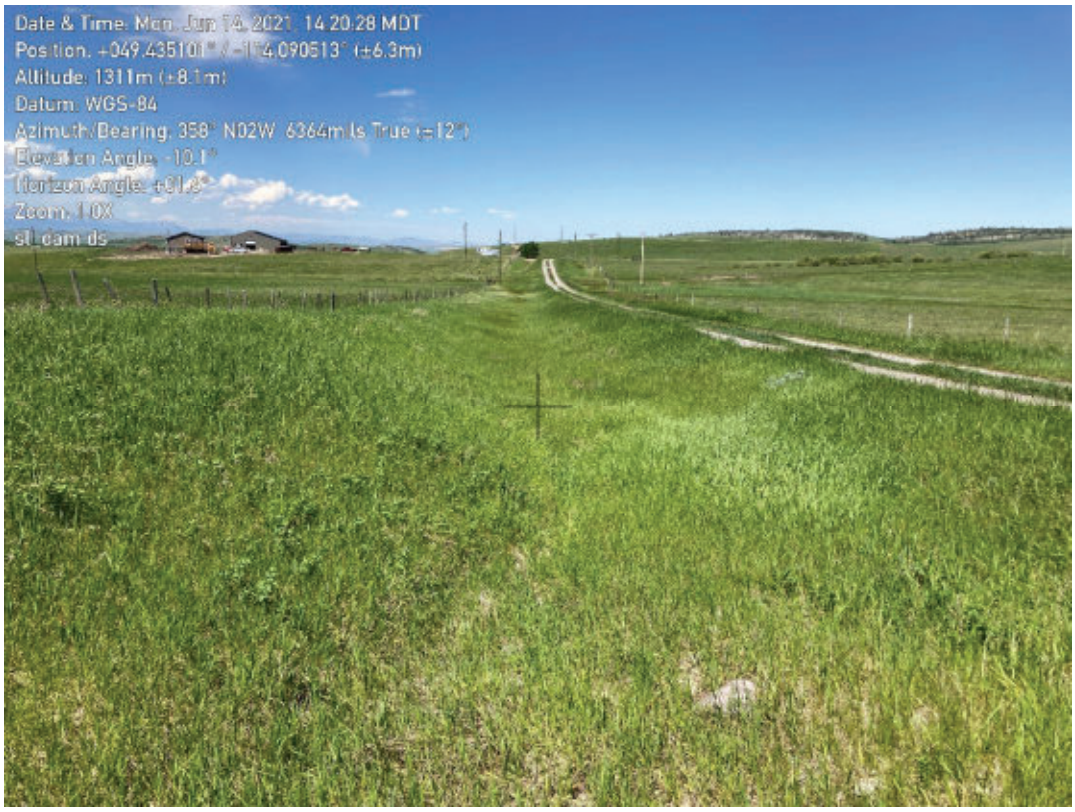


Photograph 3-6 Spillway channel, facing south

3-Sandy Lake Dam



Photograph 3-7 Spillway channel, facing north



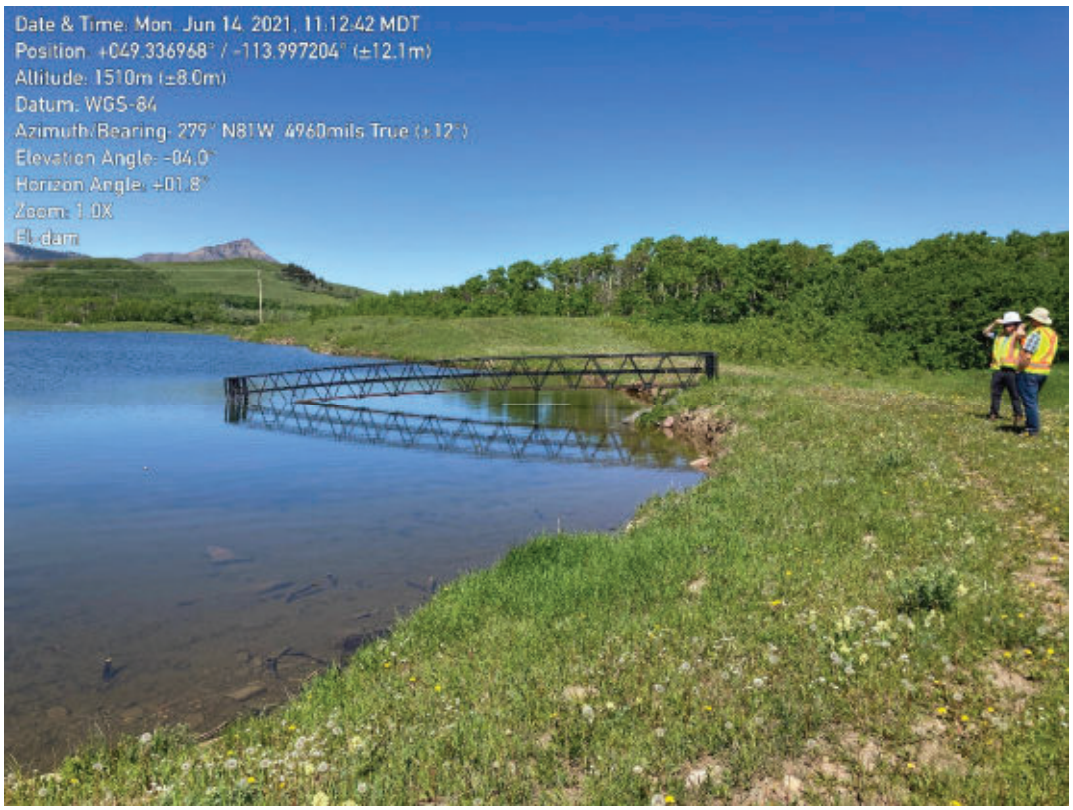
Photograph 3-8 Spillway channel, facing west

3-Sandy Lake Dam

Photograph 3-9 Reservoir shoreline, facing southeast

4-Fish Lake Dam

Photograph 4-1 Dam full view,



Photograph 4-2 Dam upstream slope, facing west

4-Fish Lake Dam

Photograph 4-3 Steel bridge connecting to the inlet control valve

Photograph 4-4 Dam downstream slope

4-Fish Lake Dam

Photograph 4-5 Outlet channel with vegetation overgrowth, facing west

Photograph 4-6 Spillway channel blocked by beaver dam, facing south

4-Fish Lake Dam

Photograph 4-7 Land bridge between upper reservoir and lower reservoir, facing southeast

Photograph 4-8 Pipeline crossings near land bridge, facing west

4-Fish Lake Dam

Photograph 4-9 Animal burrows on reservoir bank

Photograph 4-10 Animal burrows on the reservoir bank

5-Fishhill Dam

Photograph 5-1 Dam upstream slope, facing south

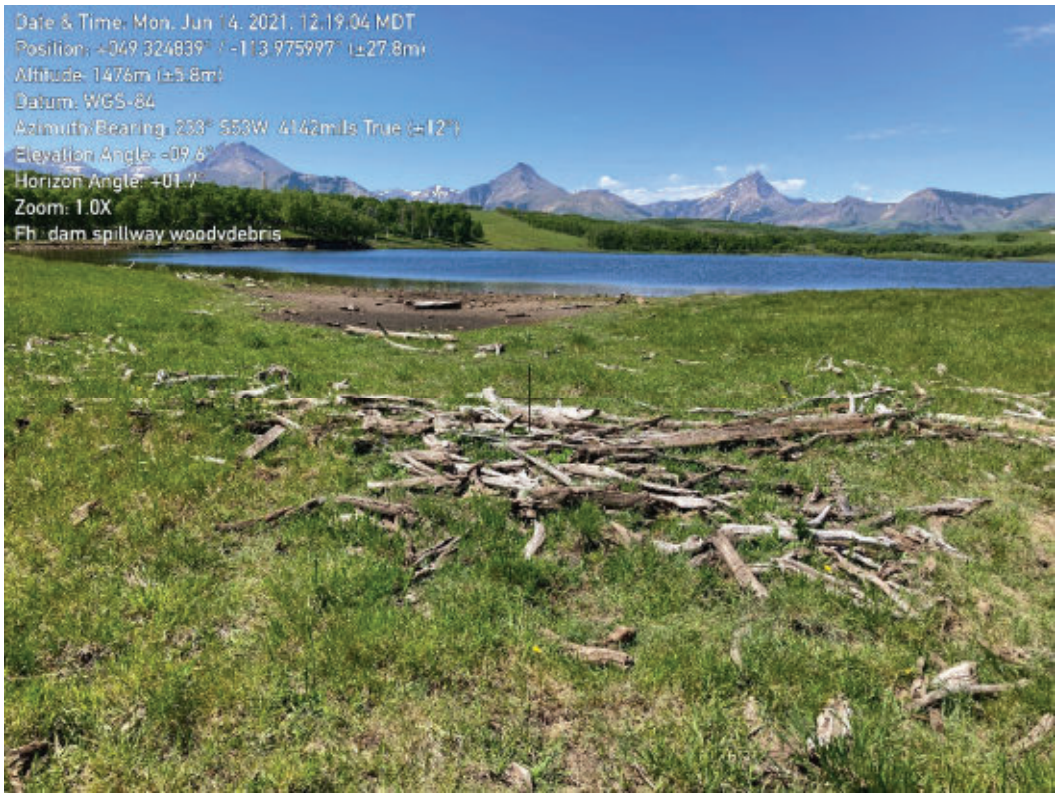
Photograph 5-2 Dam downstream slope, facing northwest

5-Fishhill Dam

Photograph 5-3 Riprap on the northern shoreline, facing west

Photograph 5-4 Bank erosion at the junction of the dam and the spillway, facing northwest

5-Fishhill Dam



Photograph 5-5 Spillway channel facing west (U/S)with vegetation overgrowth and wood debris

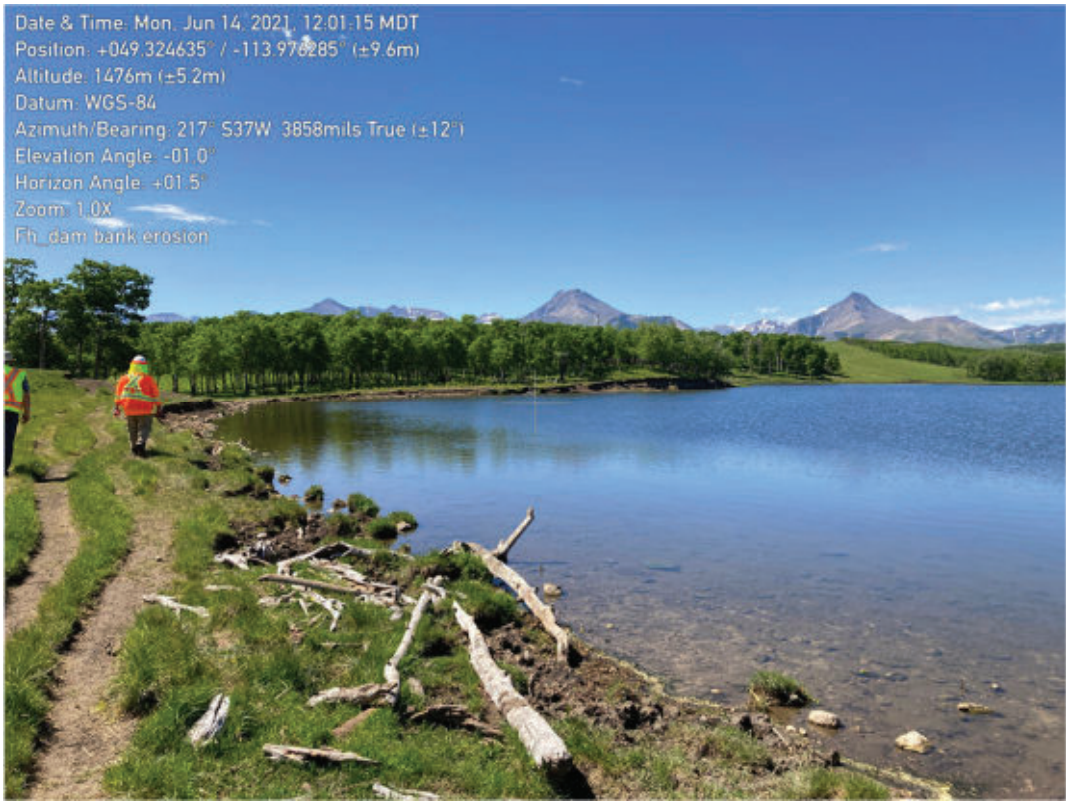
Photograph 5-6 Spillway channel, facing east

5-Fishhill Dam

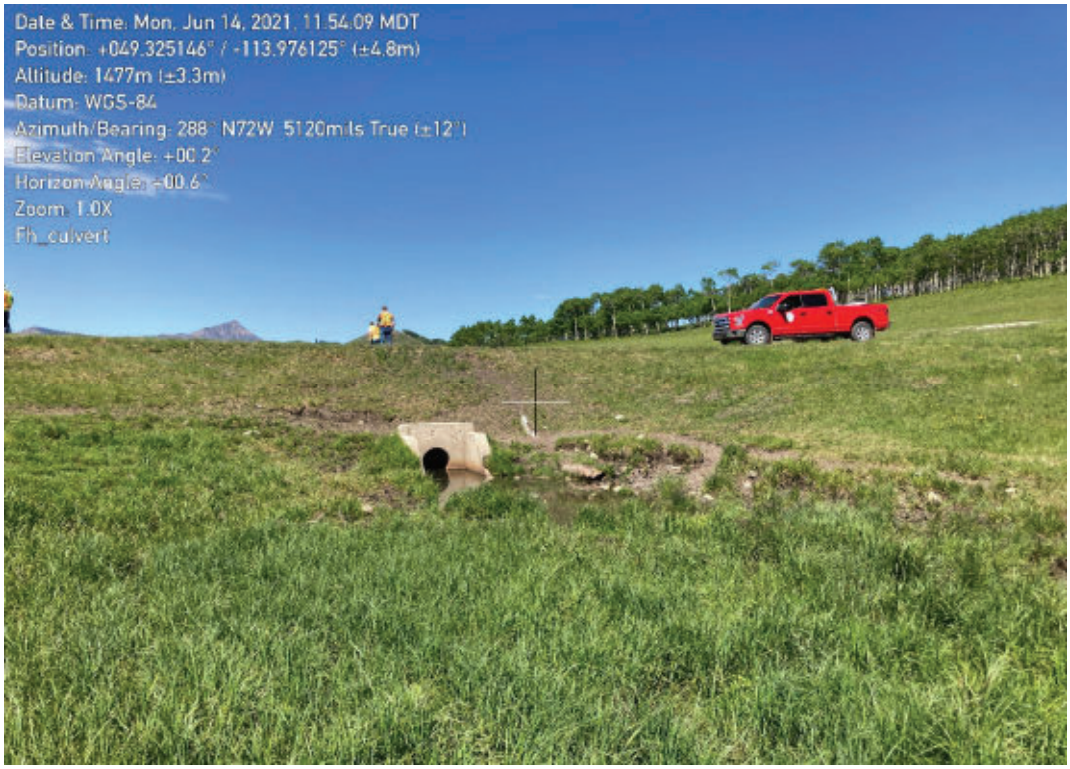
Photograph 5-7 Bank erosion along the southeastern shoreline

Photograph 5-8 Section along southeastern shoreline with inadequate wave runup freeboard

5-Fishhill Dam



Photograph 5-9 Wood debris along the southeastern shoreline



Photograph 5-10 Low level outlet headwall and outlet CSP culvert

5-Fishhill Dam

Photograph 5-11 Exposed CSP outlet culvert

Photograph 5-12 Damaged CSP outlet culvert pipe head and headworks of low level outlet

5-Fishhill Dam

Photograph 5-13 Damaged concrete inlet headwall

Photograph 5-14 Bent valve operation shaft

5-Fishhill Dam

Photograph 5-15 Exposed geotextile behind inlet concrete headwall

Appendix II

Staff Questionnaire

SNC-Lavalin Inc.
Environment & Geoscience
201, 8915 – 51 Avenue
Edmonton, Alberta, Canada T6E 5J3
780.436.9400

Memorandum

To:	MD of Pincher Creek	**Date:**	June 03, 2021
Attention:	Roland Milligan, Director of Development, MD of Pincher Creek		
cc:	N/A		
From:	Aniruddha Saha, SNC-Lavalin Inc. Alistair James, SNC-Lavalin Inc. Christina Henze, SNC-Lavalin Inc.	**Project:**	683055
Subject:	Dam Safety Review for 5 dams in Pincher Creek – Staff Questionnaire (Version 1)		

The MD of Pincher Creek (the MD) commissioned SNC-Lavalin Inc. (SNC-Lavalin) to conduct an independent Dam Safety Review (DSR) for Therriault Dam, Cridland Dam, Foothill Lake Dam, Fish Lake, Sandy Lak in Pincher Creek, Alberta.

As a part of the DSR process, SNC-Lavalin proposed to prepare a questionnaire and submit it to the MD prior to the site inspection. SNC-Lavalin prepared this questionnaire primarily for the appropriate MD dam safety staff with the intent to collect important information on MD dam safety management practices in place. The questionnaire should be reviewed and answered by all relevant levels of personnel involved in dam safety (Dam Safety Engineer, EOR, Field Operations Staff / Technologists, Senior Manager, etc.) as required.

SNC-Lavalin would appreciate receiving the MD's response prior to the site visit and staff interviews, so that any additional relevant information and response to any of our potential follow-up questions can be posed or collected during the site inspection.

These questions are prepared considering the CDA's 2007 Dam Safety Guidelines (2013 revision) and 2016 Dam Safety Review Bulletin and SNC-Lavalin's experience on dam safety and our general understanding of the dam and its appurtenant structures.

Questions are generally organized under different aspects of those dams and appurtenant structures to meet the intent of the DSR and may have some overlaps. Where response to a question is either partly or completely covered by a previous question, reference can be made to the appropriate question numbers.

The MD's responses are to be supplied in an email or letter or memorandum format, presenting our questions with corresponding answers in the same order and numbering. In the pages below, MD's responses to SNC-Lavalin are presented in blue italicized text.

Dam Safety Management

1. Who is the 'Engineer of Record' for all 5 dams and related structures? Who has the ultimate responsibility for the safety of those dams and related structures?
   We do not have an Engineer of Record.
2. Who is responsible for the day-to-day oversight (monitoring, surveillance, maintenance) of dam safety management at the MD for the facilities within the scope of this DSR?
   Our Agriculture Fieldman, Shane Poulsen.

3. Who (name of person and title) is ultimately accountable to ensure that imminent or potential dam safety issues are addressed in a timely manner?
   Roland Milligan, Director of Development and Community Services
4. How are senior management and/or the key person with ultimate accountability for dam safety kept informed of the status of all dam safety issues?
   Current process is limited. Verbal communication.
5. What are the criteria for prioritizing which dam safety issues at which dams are addressed? Does the MD produce an annual report for senior management or council on those dam safety issues and their status?
   We have nothing in place and this needs to be addressed. We collect photographic data at the moment. Water collection and release dates.
6. Is the decision-making process vetted by different levels of authority within the MD? Please describe the process.
   No, it is not.
7. Who is responsible for the Dam Safety Management System at the MD? Is there an organization chart outlining lines of authority as well as roles and responsibilities and accountability (organization charts and RACI charts)? RACI is an abbreviation for Responsible, Accountable, Consulted, Informed.
   Roland Milligan, Director of Development and Community Services.
   We do have and Org Chart that shows the Ag Fieldman answering to the Director of Development and Community Services.
8. Are there performance metrics for dam safety management at the MD? How often are the results reviewed or the metrics updated?
   No there is not.
9. Does the MD utilize the findings and recommendations of a DSR to improve dam safety at its dams?
   The recommendations are presented to Senior Administration Council for consideration.
10. What are the public safety concerns for those dams? What specific actions have been undertaken at the dam to address public safety?
    Flooding of downstream residents. We have not addressed access issues.
    We have a list of downstream contacts.
11. Is there a staff training program for key individuals responsible for dam safety? How are the technical competencies evaluated? How are staff assessed? Are records of training available? Is there an audit of how training complies with the training policy/plan?
    No formal staff training program. Ag Fieldman currently trains seasonal staff for water level inspection and how to operate the gates.
12. Is there any ongoing or planned dam safety work for dams that the DSR team should be aware off?
    Not currently.
13. What is the main concern of MD staff?
    Water levels are our main concern.
    The MD needs to develop a dam safety program.

Operations, Maintenance and Surveillance (OMS)

14. Do you have defined operating procedures for normal, unusual, flood and/or emergency conditions at the dam? Who is responsible for reservoir operations at the site (name of person and title)?
    Not at the current time.

Therriault Dam

15. The DSR conducted by Genivar in 2010 suggested to update the OMS manual annually. Is the MD updating the manual annually?
    Sorry but no.
16. Did the MD complete the construction of the boat safety and debris barrier around or over the mouth of the drop spillway intake?
    No.
17. Did the MD reinforce the emergency spillway channel with riprap in the downstream section?
    Yes. 2015.

Cridland Dam

18. Did the MD extend the reservoir bank stabilization along the right and left abutment shorelines at selected locations?
    No.
19. Did the MD update the operation and emergency procedures manuals?
    No.
20. Please provide us the date of overtopping for the Cridland dam.
    2015

Foothill Lake Dam

21. Did the MD replace the 300 mm overflow pipe to original design or remove and re-contour the outlet spillway entrance to accommodate the design flow routed through the overflow pipe?
    No.

Fish Lake Dam

22. Did the MD construct an all-weather assessable trail into the site?
    No.
23. Did the MD construct a new access structure to the outlet control gate?
    Yes.

Sandy Lake Dam

24. Did the MD repair and provide a locking device for the lid of the outlet gate well?
    No.

Emergency Preparedness (EP)

25. What communications systems are available if there is an emergency? Are there any warning systems in an emergency situation? How are downstream residents, recreationists, local governments and area visitors warned?
    We would directly phone the downstream residents. Can use Alberta Emergency Alert.
26. Is there a list of all persons and agencies to be notified when a potential or imminent flood emergency is declared?
    In our Regional Emergency Management Plan.

27. Is any training provided on the emergency response procedures? How many people are trained? Is someone trained on the emergency response procedures available at all times?
    Needs to be done.
28. Is information about accessing the site readily available? Does information about accessing the site deal with power outages and extreme weather conditions?
    No and no.

Geotechnical and Instrumentation

29. SNC-Lavalin understands that the dams do not contain any monitoring instrumentation. Does the MD have any plans to install instrumentation?
    No current plans but we can definitely consider it.
30. Who undertakes visual inspections of the dykes/dams and adjacent slopes, in addition to or as part of the OMS surveillance activities? How often are visual inspections conducted?
    Ag Fieldman.
31. What training has been provided to those conducting the geotechnical inspections?
    None.
32. How are the inspections recorded and are they reviewed by an EOR regularly?
    No.
33. What management of vegetation occurs on the slopes of dyke and dam/reservoir slopes?
    Brush trees and herbicide application to control also.
34. Have there been slumps or erosion on the slopes of the reservoir or the dam since the last DSR? Have there been any significant repairs or maintenance activities on the slopes since the last DSR?
    There was some on the Cridland Dam in 2015. As far as we can find, no slumps or significant repairs on any other.

Hydrotechnical / Hydrological

35. What have been the most extreme conditions of reservoir level and discharges observed?

    Overtopping of the Cridland Dam and the Therriault Dam in 2014.

36. What is the maximum operating level for the reservoirs?

    Level of the horn on the Therriault, spillway on others.
37. Do you have in place a program to inspect the spillway after high floods?
    We do it but we do not have a documented program.
38. Have you found or detect any erosion at the spillway after the passage of a high flood? If the answer is yes, please describe.
    Spillways at both Cridland and Therriault had repairs after the 2014 flood. Repairs done in the following years.
39. Has debris blockage ever occurred at the discharge facilities? If yes, what when did the blockage occur? And what was the extent of the blockage?
    Beaver dam at entrance to Cridland spillway. 2019. Blocked to the extend that release valve was under water.
40. Is there a potential for debris from upstream to interfere operations at the site?
    Cridland dam has possibility of trees. Also the Foothills dam has possibility of trees and also weed. The wind sends everything to the operation end of the dam.
41. Is there a debris management program at the site?
    Yes. Staff in doing inspections regularly and debris is addressed when noticed.

42. Do ice jams block any flow control equipment or discharge facilities? Is their potential for ice jams having adverse effects on flow control and discharge?
    Yes.
43. What are the constraints in the operation of the spillway?
    Debris, beaver dams, access (due to seasonal conditions, ice and snow), age of operating structures.
44. Were there inundations in the downstream reach caused by the operation of the spillway? At what conditions, period of the year and discharge?
    Nothing on record.
45. Is there any critical infrastructure downstream of the dams (ex. Hwy, hospital, etc.)?
    Cridland: Hwy. No. 6 and intervening MD roads.
    Therriault: CPR pectin line to gas plant, possibly Hwy. 507.
46. Were there issues with the riprap stability and if affirmative, under what conditions they have occurred?
    Lack of riprap on Cridland needs to be addressed as it is affecting the dam face riprap.
47. Were there observations of critical conditions with respect to the available freeboard at the dams and when were they experienced (period of the year)?
    Yes, at the Foothills dam. To much water and constricted flow through culvert due to weeds. March/April.
48. Are there anecdotal records of experienced critical water management conditions that require mentioning?
    Every spring there are some issues.
49. Is there a specific requirement for minimum environmental flow release related to the period of the year?
    Not that we are aware of.

Closure

We sincerely appreciate all of your time, effort and information that you will provide regarding management and operations of the facility addressed in this DSR.

Appendix III

Hydrotechnical Review

Appendix III – Hydrotechnical Review

The appendix for the hydrotechnical review summarizes the methodologies used for the Inflow-Design-Flood estimation, Spillway Capacity Review, Review of Consequence Classification, and Review of Historic Flood Events during the 2021 DSR of Cridland Dam, Therriault Dam, Sandy Lake Project Dam, Fish Lake Project Dam, and Foothill Lake Community Dam.

1 Regional Flood Frequency Analysis for Small Catchments (< 10 km^2)

The regional flood frequency analysis for the small catchments was developed for catchments < 10 km^2 in the South of Pincher Creek.

The catchment of the Cridland Dam was chosen (Figure A-1) as a reference catchment to represent the small catchments. The regional flood frequency analysis (RFFA) curve resulting from the Cridland Dam was applied to the four (4) small catchments.

Figure A-1 Spatial extent of Cridland Dam catchment (reference catchment, 7 km2) shown with white perimeter line.

SNC-Lavalin performed a regional flood frequency analysis based on the historical peak discharge of selected nearby hydrometric stations (Table A-1). A Generalized Extreme Value distribution was chosen to fit the past hydrologic events and to estimate the future probabilities of occurrence.

Table A-1 Hydrometric Stations used for the Regional Flood Frequency Analysis

Station Name	Gauge ID	Area [km^2]	Records [years]
Hosmer Creek above Diversions	08NK026	6.4	28
Galwey Brook Near Waterton Park	05AD904	20.5	5
Drywood Creek Near Twin Butte	05AD016	29.3	44
Yarrow Creek at Spread Eagle Road	05AD042	47.9	7

The four hydrometric stations were selected based on their similarity in elevation distribution and their proximity to the study sites.

A regression relationship based on catchment area to discharge was developed from all the frequency analysis of each station (Figure A-2 and Table A-2).

Figure A-2 Regression Relationship for Catchment Area vs. Discharge

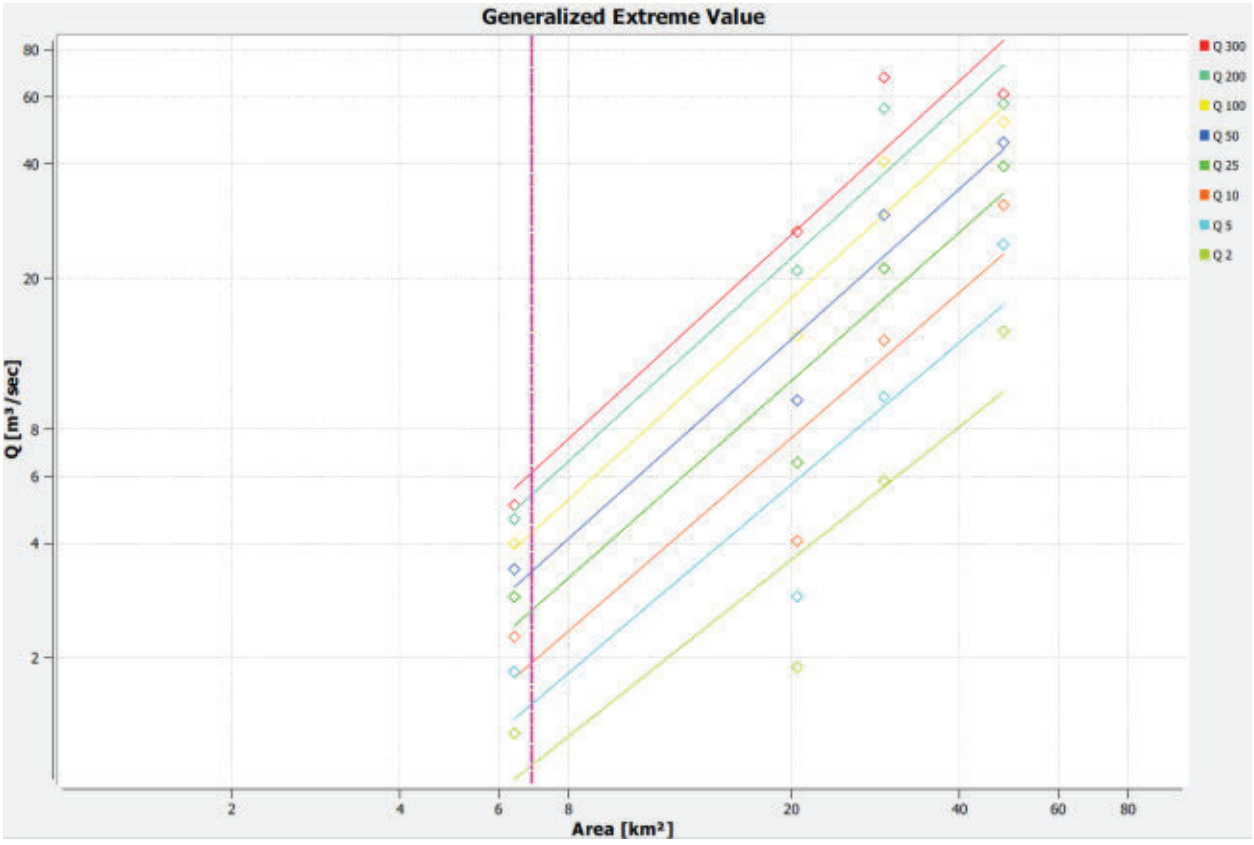


Table A-2 Peak Flood Discharges (m3/s) for Different Return Years (2 to 1000 years) depending on catchment area

Return Year	Regression equation for Peak Discharge Q based on catchment area A
1000	$Q = 0.66A^{1.37}$
300	$Q = 0.45A^{1.35}$
200	$Q = 0.40A^{1.34}$
100	$Q = 0.33A^{1.33}$
50	$Q = 0.26A^{1.32}$
25	$Q = 0.22A^{1.30}$
10	$Q = 0.16A^{1.28}$
5	$Q = 0.14A^{1.25}$
2	$Q = 0.11A^{1.17}$

2 Regional Flood Frequency Analysis for Therriault catchment

A regional flood frequency analysis for the Therriault Dam was developed based on the Therriault catchment of 54 km^2 (reference catchment, see Figure A-3). The catchment was delineated using topographic data of the freely available Canadian Digital Terrain Model (CDEM[1]). The resolution of the CDEM data is approximately 25 m.

Figure A-3 Spatial extent of Therriault Dam catchment (reference catchment, 54 km2), shown in white outline

SNC-Lavalin assessed a regional flood frequency analysis based on the historical peak discharge of selected nearby hydrometric stations (Table A-3). A Generalized Extreme Value distribution was chosen to fit the past hydrologic events and to estimate the future probabilities of occurrence.

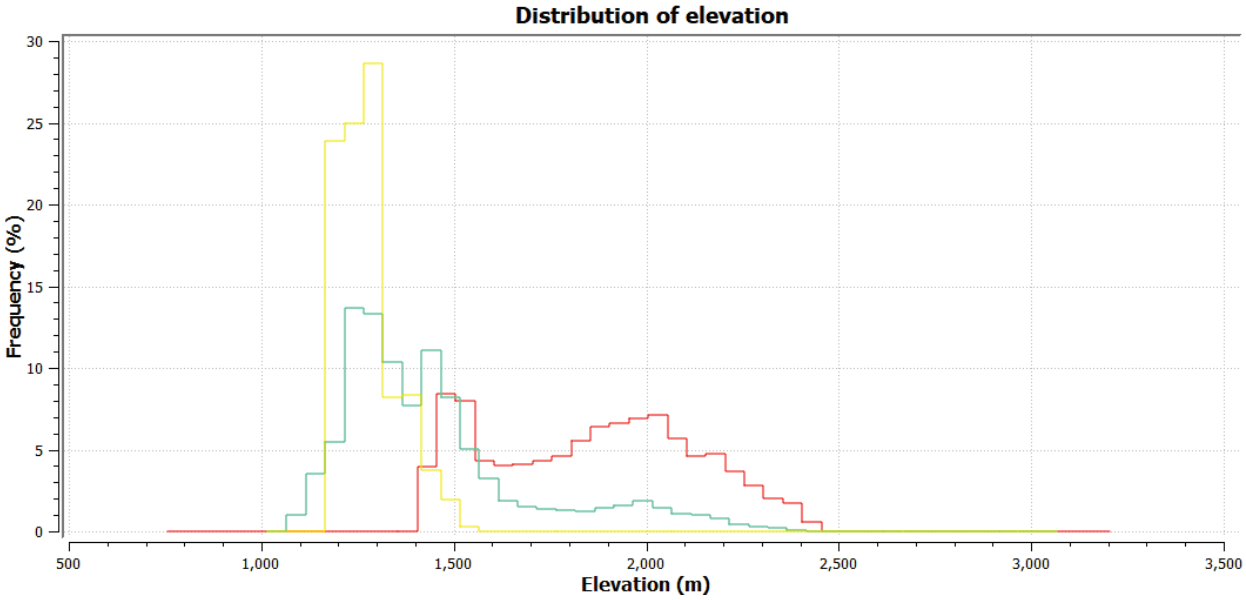
Table A-3 Hydrometric Stations used for the Regional Flood Frequency Analysis

Station Name	Gauge ID	Area [km^2]	Records [years]
Drywood Creek Near Twin Butte	05AD016	29.3	44
Pincher Creek at Pincher Creek	05AA004	157.5	55

The two hydrometric stations were selected based on their similarity in elevation distribution (hypsometric curves, see Figure A-4), their available years of record, and their proximity to the study sites.

[1] https://open.canada.ca/data/en/dataset/7f245e4d-76c2-4caa-951a-45d1d2051333

Figure A-4 Hypsometric Curves of Reference Catchment in comparison with selected stream gauge catchments



> Red – Drywood Creek near Twin Butte;

> Green – Pincher Creek at Pincher Creek; and

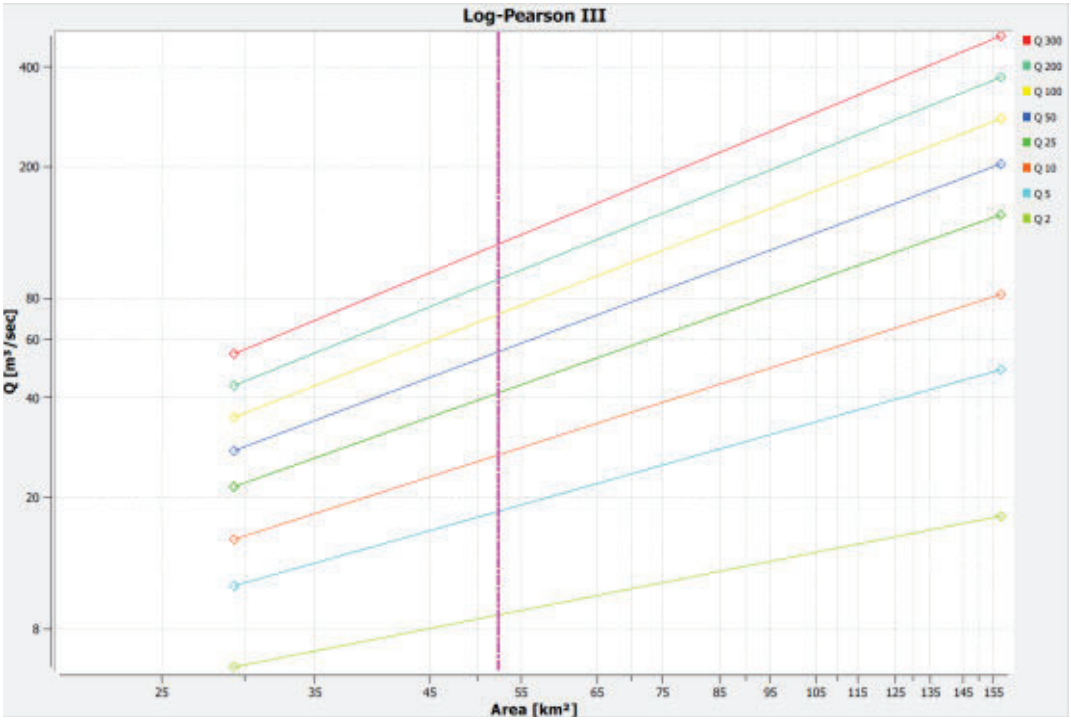
> Yellow - Reference Catchment (Therriault Dam).

A regression relationship based on catchment area to discharge was developed from all the frequency analysis of each station (Figure A-5). The resulting regression relationship was then applied to the Therriault Dam catchment to estimate the peak flood discharge from 2-year flood events up to 1,000-year flood events (Table A-4).

Table A-4 Peak Flood Discharges (m3/s) for Different Return Periods (2 to 1000 years) for the reference catchment

Return Period (years)	Therriault Dam Catchment (54 km^2)
1000	223
300	121
200	95
100	74
50	27
25	43
10	28
5	19
2	9

Figure A-5 Regression Relationship for Catchment Area vs. Discharge

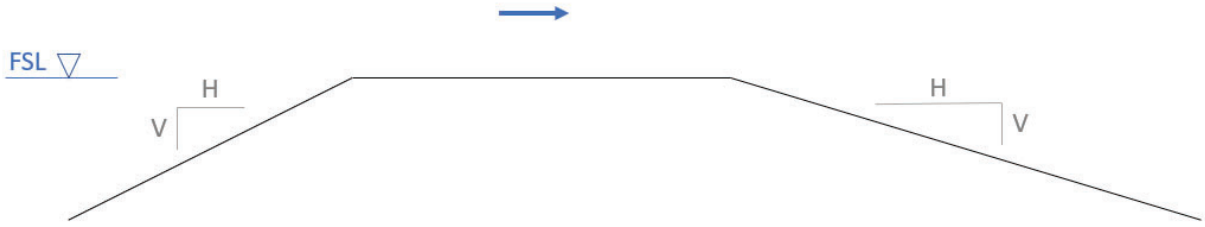


3 Spillway Capacity Review

The hydraulic capacity of the emergency spillways at Cridland Dam, Therriault Dam, and Foothills Dam were estimated. These were the dams classified as “Significant” consequence at DSR commencement.

The emergency spillways consist of an excavated earthen channel with the bed elevation set at the Full Supply Level (FSL). The controlling portion of the spillways are trapezoidal consisting of an upstream slope section, horizontal section, and downstream slope section, as seen in Figure A-6.

Figure A-6 Typical earthen emergency spillway profile



The geometry of each earthen spillway was estimated from drawings, site observations, and satellite imagery. A one-dimensional (1D) hydraulic model was developed to simulate flow in the emergency spillways using the latest Hydraulic Engineering Center River Analysis System (HEC-RAS version 5.0.7), as outlined in the following sections. HEC-RAS is developed by the U.S. Army Corps of Engineers and is widely used in the industry to model hydraulics of water flow through natural rivers and other channels.

The maximum hydraulic capacity estimates assumed that flow passed through the emergency spillway structures up to the assumed top of dam. The reservoir elevations when passing the IDF were also estimated. No analysis of low points on the dam was completed and no analysis on the integrity of the spillway (e.g., erosion) during flooding was completed.

3.1 Cridland Dam

The geometry for Cridland Dam’s emergency spillway was estimated from the drawings included in Appendix I of the Dam Safety Review by UMA Engineering (1999a). A typical section and profile of the emergency spillway were provided in Drawing 004. The spillway parameters were further refined using the 2010 Dam Safety Reviews report by Genivar (2010b). A site survey in 2010 determined the FSL and dam freeboard height were lower than original design drawings (Genivar 2010b). As well, Genivar (2010b) stated that the spillway section was widened from 5 m to 10 m in 2003. The spillway parameters used in the hydraulic modelling are summarized in Table A-5.

Table A-5 Cridland Dam emergency spillway parameters

Parameter	Value	Source
Upstream Slope	4(H):1(V)	Profile DWG 004 (UMA 1999a)
Downstream Slope	70(H):1(V)	Profile DWG 004 (UMA 1999a)
Trapezoidal Side Slopes	1.5(H):1(V)	Section DWG 004 (UMA 1999a)
FSL (spillway bed elevation)	1368 m	2010 DSR (Genivar 2010b)
Top of Dam	1369.8 m	2010 DSR (Genivar 2010b)
Bottom Width	10 m*	2010 DSR (Genivar 2010b)
Height	1.8 m	2010 DSR (Genivar 2010b)
Length	82.8 m**	Profile DWG 004 (UMA 1999a)

*Corresponds well with 2021 site observations
**Corresponds well with satellite imagery

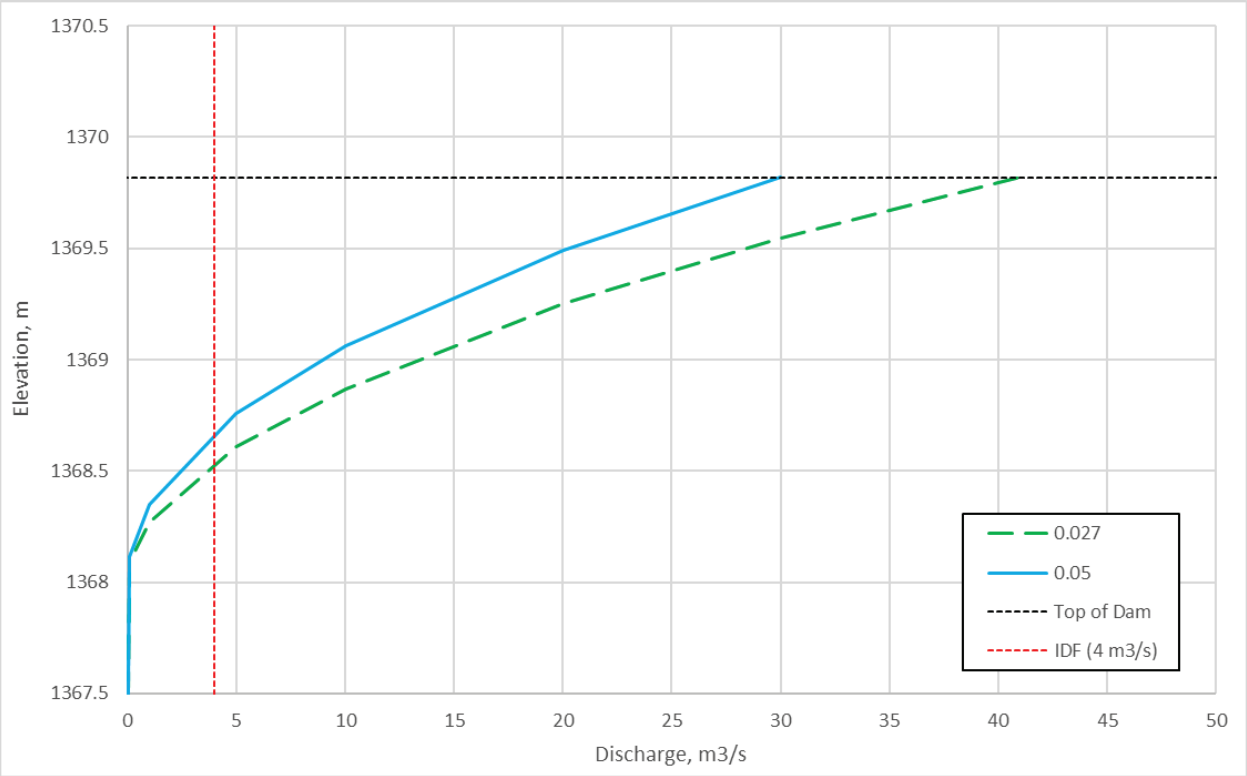
The 1D hydraulic model geometry was set up with the parameters in Table A-5. The upstream boundary condition was set as a very low slope to simulate the flat reservoir water surface. The downstream boundary condition was set as the downstream slope of emergency spillway.

A range of roughness coefficients (Manning's n) was chosen based on recommended values listed in Chow (1959) and photographs taken during the site inspection. As seen in Photo A-1, the emergency spillway has long grasses in the bottom of the spillway, with shorter grass and shrubs along the side slopes. From Chow (1959), straight, excavated, earth channels range from n = 0.027 (short grass, few weeds) to 0.05 (brush on sides).

Photo A-1 Cridland Dam emergency spillway looking upstream (14 June 2021)

The model was run using both roughness coefficients to obtain a range of hydraulic capacities. A rating curve was generated at the most upstream section and the capacity was estimated as the discharge at the top of dam elevation, as shown in Figure A-7. The emergency spillway was estimated to have a maximum capacity of 30 m^3/s to 41 m^3/s.

Figure A-7 Cridland Dam emergency spillway rating curves



The IDF was calculated to be approximately 4 m^3/s for the 100-year storm. Using the rating curve in Figure A-7, the reservoir elevation for a discharge of 4 m^3/s is estimated to be 1,368.6 m. This allows for approximately 1.2 m of freeboard.

3.2 Therriault Dam

The geometry for Therriault Dam's emergency spillway was estimated from the as-built drawings included in Appendix I of the Operation, Maintenance, and Surveillance Manual prepared by UMA Engineering (1999d). A typical section and profile of the emergency spillway, referred to as 'modified earth spillway', were provided in Drawing 005. The spillway parameters were further refined using the Therriault Dam 2010 Safety Review report by Genivar (2010a). The FSL was confirmed to be 1,220.11 m and a survey found that the bed of the spillway channel and top of dam elevations were 0.46 m and 0.6 m, respectively, above the design drawings (Genivar 2010a). No information was given on a surveyed spillway width in the Therriault Dam 2010 Safety Review report (Genivar 2010a). The as-built drawings (UMA 1999d) show a section 38.5 m wide. However, photos from the site investigation do not match this dimension, as shown in Photo A-2. The width of the spillway channel was therefore estimated from photos, field observations, and satellite imagery to be approximately 10 m.

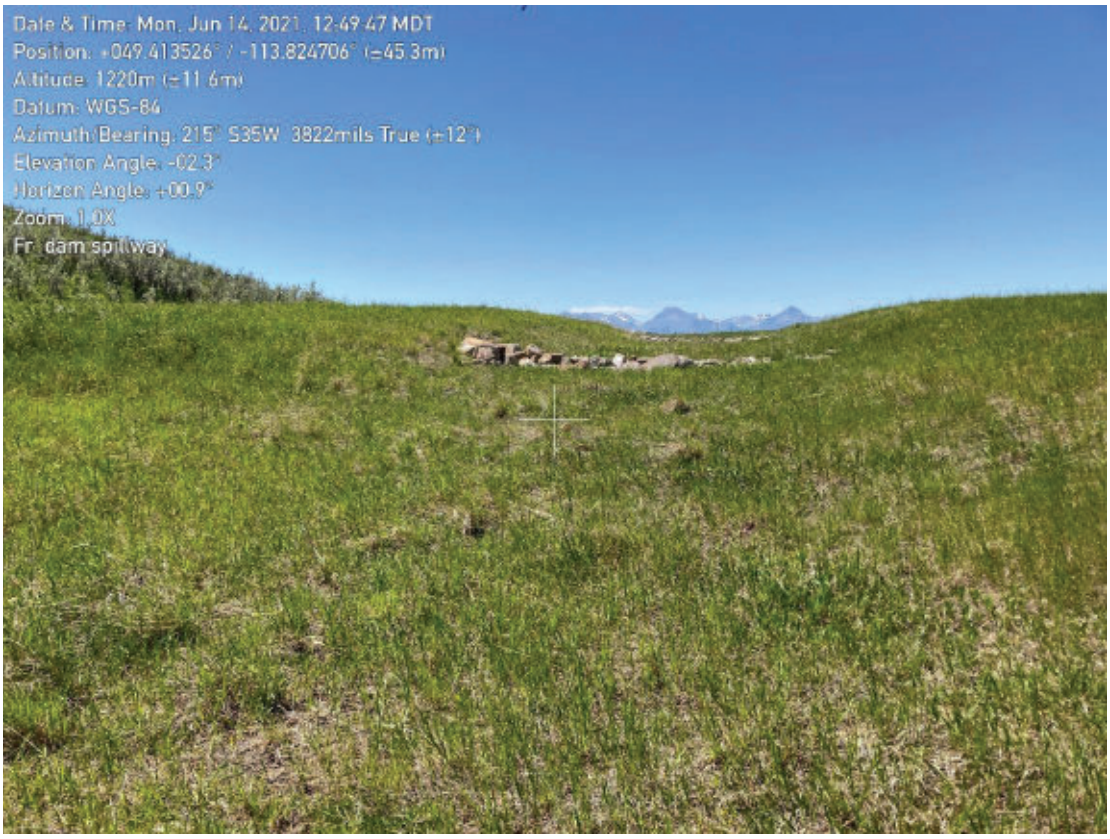


Photo A-2 Therriault Dam emergency spillway looking upstream (14 June 2021)

The spillway parameters used in the hydraulic modelling are summarized in Table A-6.

Table A-6 Therriault Dam emergency spillway parameters

Parameter	Value	Source
Upstream Slope	4(H):1(V)	Profile DWG 005 (UMA 1999d)
Downstream Slope	10(H):1(V)	Profile DWG 005 (UMA 1999d)
Trapezoidal Side Slopes	3(H):1(V)	Section DWG 005 (UMA 1999d)
FSL (spillway bed elevation)	1220.82 m	2010 DSR (Genivar 2010a)
Top of Dam	1222.8 m	2010 DSR (Genivar 2010a)
Bottom Width	10 m	Site observations, satellite imagery
Height	1.52 m	2010 DSR (Genivar 2010a)
Length	50 m*	Profile DWG 005 (UMA 1999d)

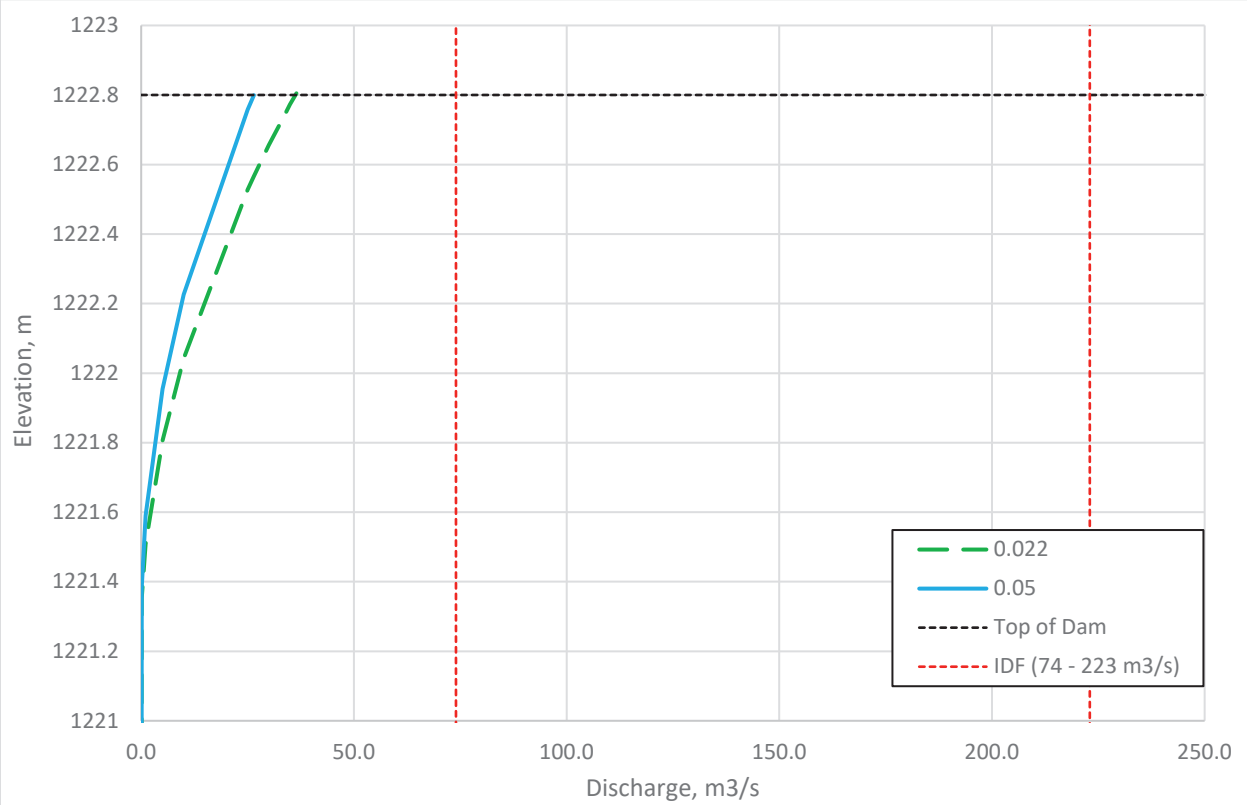
*Corresponds well with satellite imagery

The 1D hydraulic model geometry was set up with the parameters in Table A-6. The upstream boundary condition was set as a very low slope, to simulate the flat reservoir water surface. The downstream boundary condition was set as the downstream slope of emergency spillway.

A range of roughness coefficients (Manning's n) was chosen based on recommended values listed in Chow (1959) and photographs taken during the site inspection. As seen in Photo A-2, the emergency spillway has short grasses in the bottom and along the side slopes of the spillway with some riprap. From Chow (1959), straight, excavated, earth channels range from n = 0.022 (short grass, few weeds) to 0.05 (cobble bottom).

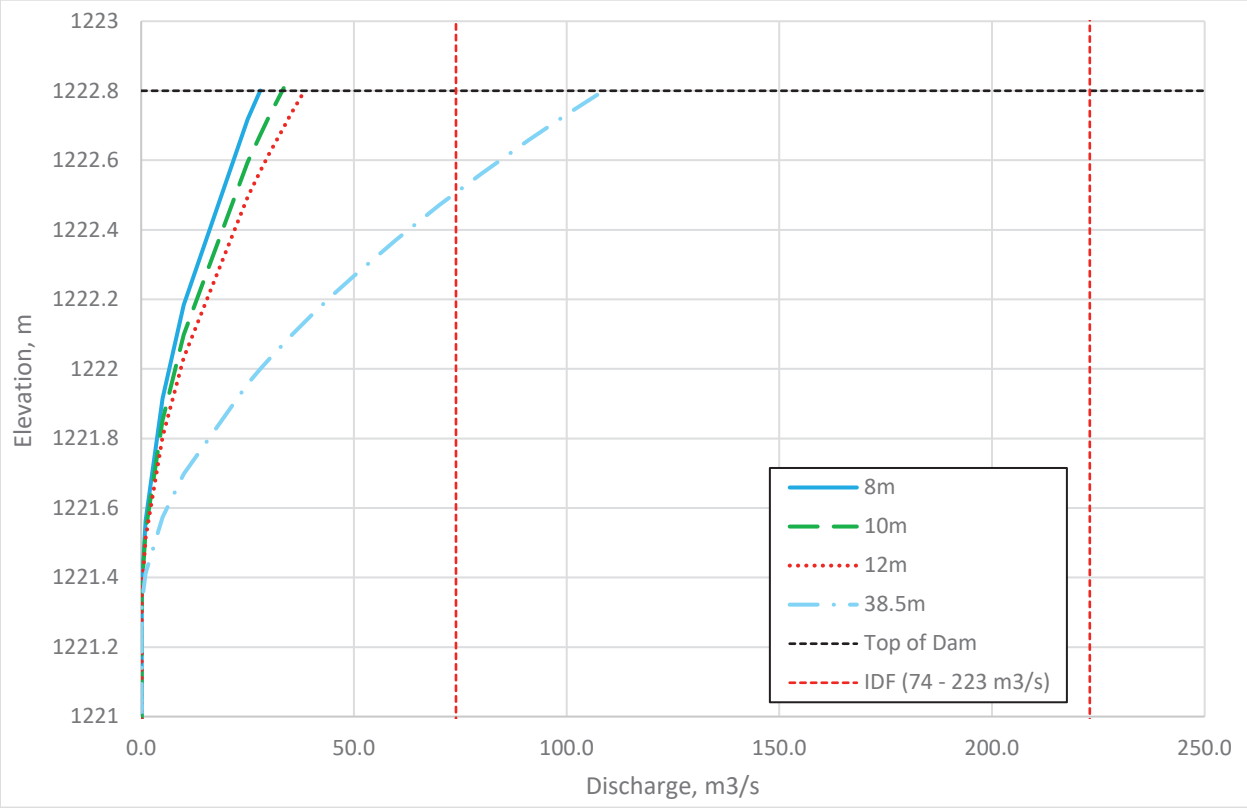
The model was run using both roughness coefficients to get a range of hydraulic capacities. A rating curve was generated at the most upstream section and the capacity was estimated as the discharge at the top of dam elevation, as shown in Figure A-8. The emergency spillway was estimated to have a maximum capacity of approximately 27 m^3/s to 37 m^3/s.

Figure A-8 Therriault Dam emergency spillway rating curves (width = 10m).



A sensitivity analysis evaluated the width to understand how it affected the estimated capacity. Values of 8 m, 12 m, and 38.5 m were used for the emergency spillway width while keeping the roughness coefficient consistent (n = 0.03). The resulting rating curves are shown in Figure A-9. The capacity of the spillway channel is quite sensitive to assumed section width. Changing the bottom width by +/- 2 m changed the capacity by about +/-16%. Increasing the bottom width to 38.5 m increased the capacity by over three times (108 m^3/s).

Figure A-9 Therriault Dam emergency spillway rating curves for various widths (Manning's n = 0.03)



3.2.1 Drop Spillway

The Therriault Dam spillway system includes a drop spillway. The inlet structure to the drop spillway is a square concrete inlet with approximately 2,031 mm sides and an elevation of 1,220.11 m corresponding to the FSL, and a 760 mm diameter corrugated steel pipe (CSP) riparian conduit (UMA Engineering 1999d). Photo A-3 shows the drop spillway inlet, and Figure A-10 shows a plan schematic of the drop spillway and riparian conduit. The drop spillway inlet connects to a 1,524 mm diameter CSP with an inlet invert elevation of 1,209.1 m via a vertical square concrete shaft. The 1,524 mm conduit was originally ~57.15 m in length and was extended to a total length of 66.4 m in 2002 (Genivar 2011b). The inlet to the riparian conduit is at the bottom of the reservoir and a gate is used to control the flow through the riparian conduit to lower water levels during normal operations. The riparian conduit does not increase the maximum capacity of the drop spillway and is assumed to be closed for the calculation of the drop spillway rating curve.

The capacity of the drop spillway is limited by the weir flow at the entrance up to a discharge of approximately 15 m^3/s (see Figure A-11). The weir flow capacity was calculated assuming the perimeter of the square inlet (~8.124 m) acted as a horizontal weir with a discharge coefficient of 1.84 $m^{0.5}/s$. For flows more than 15 m^3/s, the conduit becomes fully pressurized and is limited by the size of the pipe and friction losses.

Figure A-10 Therriault Dam drop spillway schematic (from UMA Engineering 1999d)

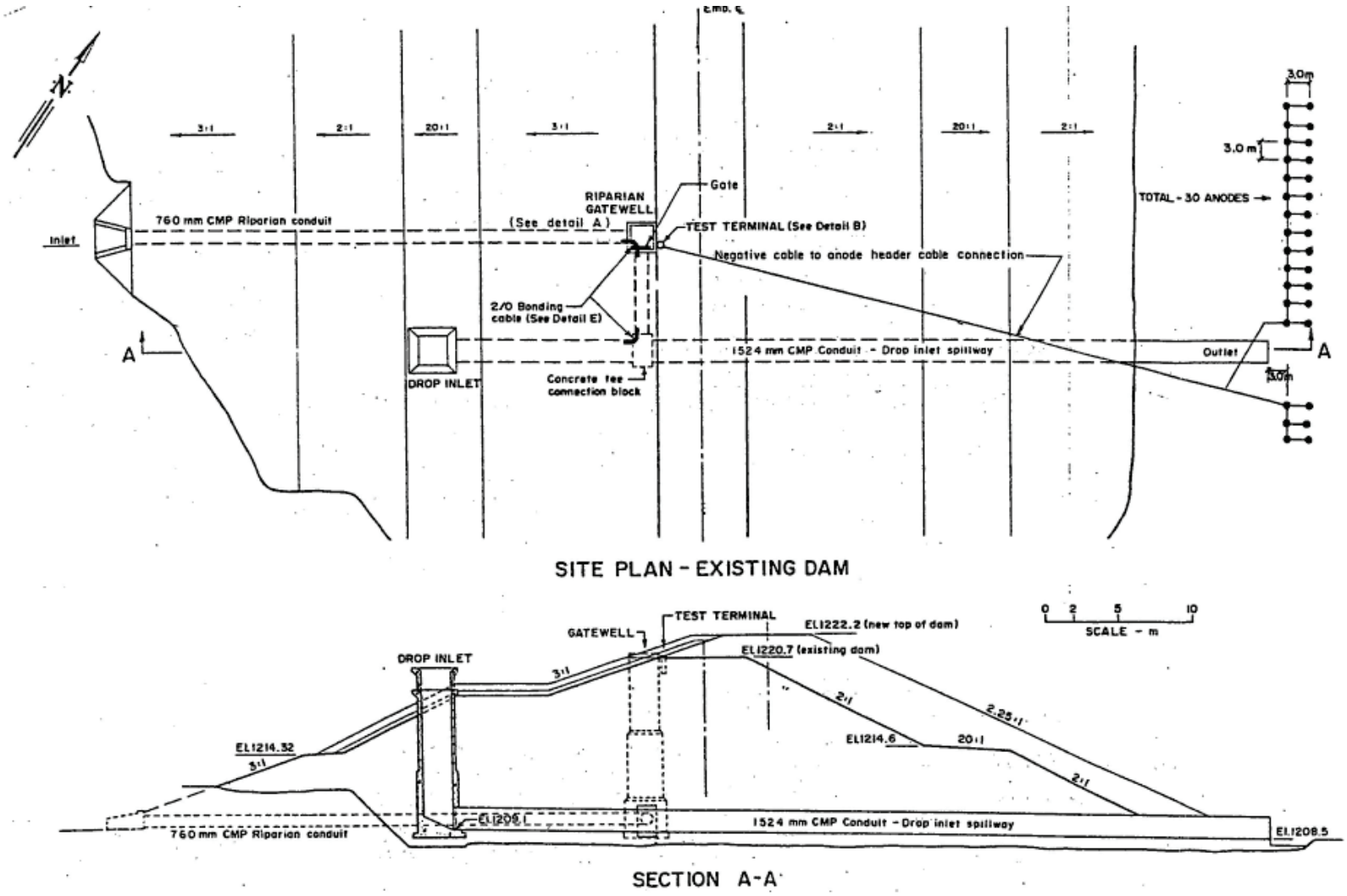
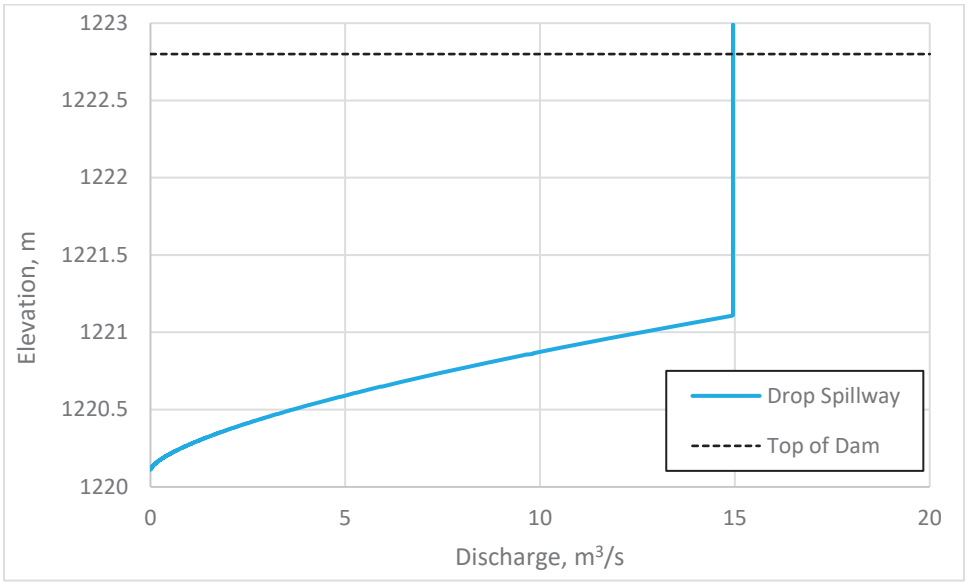


Figure A-11 Therriault Dam drop spillway rating curve



3.3 Foothills Dam

The geometry for the Foothills Dam emergency spillway was estimated from the drawings included in Appendix I of the Dam Safety Review by UMA Engineering (1999b). A typical section and profile of the emergency spillway were provided in Drawing 003. The FSL and top of dam local elevations were also provided (UMA 1999b). The spillway parameters used in the hydraulic modelling are summarized in Table A-7.

Table A-7 Foothills Dam emergency spillway parameters

Parameter	Value	Source
Upstream Slope	25(H):1(V)	Profile DWG 003 (UMA 1999b)
Downstream Slope	30(H):1(V)	Profile DWG 003 (UMA 1999b)
Trapezoidal Side Slopes	3.5(H):1(V)	Section DWG 003 (UMA 1999b)
FSL (spillway bed local elevation)	30.3 m	1999 DSR (UMA 1999b)
Top of Dam	31.5 m	1999 DSR (UMA 1999b)
Bottom Width	5.75 m*	Section DWG 003 (UMA 1999b)
Dam Height (approx.)	1.2 m	1999 DSR (UMA 1999b)
Dam Length	23.6 m**	Profile DWG 003 (UMA 1999b)

*Corresponds well with 2021 site observations
**Corresponds well with satellite imagery

The 1D hydraulic model geometry was set up with the parameters in Table A-7. The upstream boundary condition was set as a very low slope, to simulate the flat reservoir water surface. The downstream boundary condition was set equal to the downstream slope of emergency spillway.

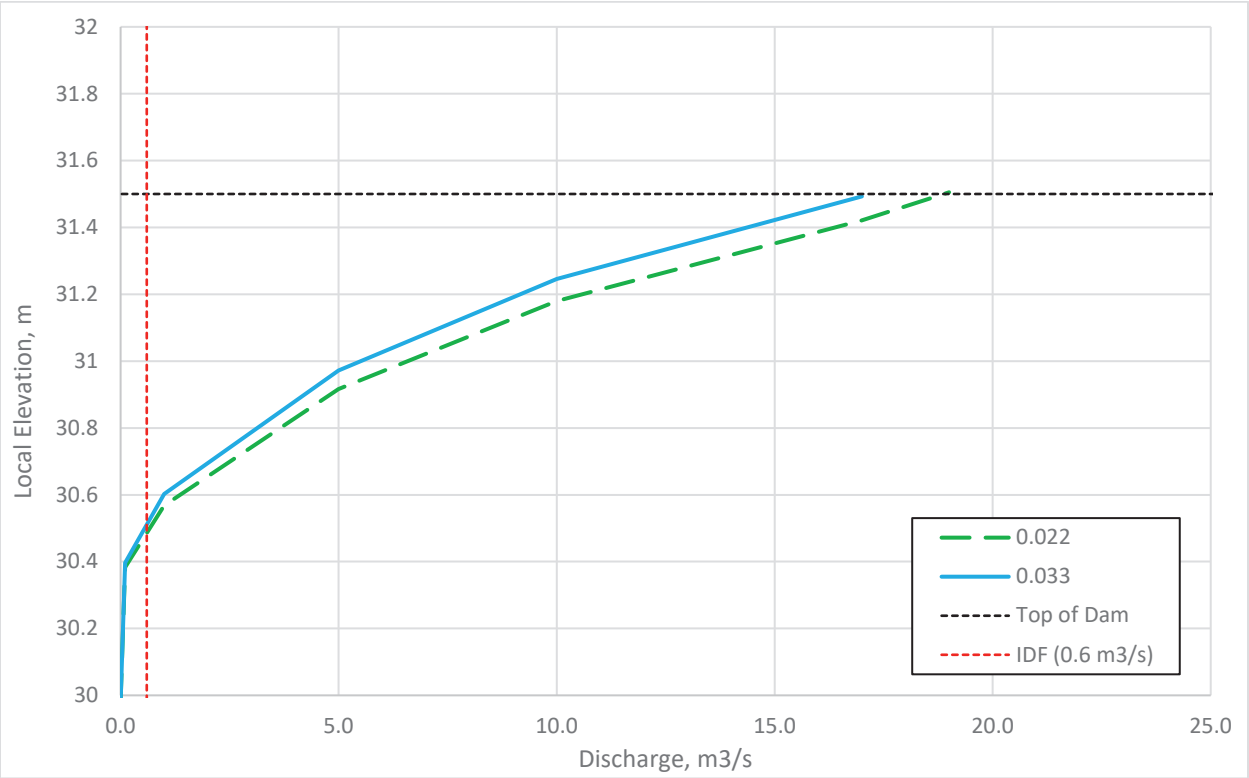
A range of roughness coefficients (Manning's n) was chosen based on recommended values listed in Chow (1959) and photographs taken during the site inspection. As seen in Photo A-4, the emergency spillway has longer grasses in the bottom of the spillway, with shorter grass along the side slopes. From Chow (1959), straight, excavated, earth channels range from n = 0.022 to 0.033 (short grass, few weeds).

The model was run using both roughness coefficients to quantify the sensitivity of the channel capacity to roughness. A rating curve was generated at the most upstream section and the capacity was estimated as the discharge at the top of dam elevation, as shown in Figure A-12. The emergency spillway was estimated to have a capacity of approximately 17 m^3/s to 19 m^3/s.

The IDF was calculated to be approximately 0.6 m^3/s. Using the rating curve in Figure A-12, the reservoir elevation for a discharge of 0.6 m^3/s is estimated to be approximately 30.5 m. This allows for approximately 1 m of freeboard.

Photo A-4 Foothills Dam emergency spillway looking downstream (14 June 2021)

Figure A-12 Foothills Dam emergency spillway rating curves



4 Review of Consequence Classification

A dam breach assessment was completed for the Cridland and Therriault Dams to estimate the flood inundation boundary in the event of a dam breach. Mapping of the inundation area is used to confirm or reassess the classification of the Cridland and Therriault Dams.

4.1 Cridland Dam

Multiple buildings are presently located on the left bank of the floodplain within 300 m of the Cridland Dam. The existing building nearest to the floodplain at this time was confirmed by the MD to be a shed with only seasonal use, but never any occupation for the purpose of sleeping / living. In addition to the buildings, Range Road 302A crosses the flood plain approximately 400 m downstream from the dam.

A 1D hydraulic model of floodplain downstream of the Cridland Dam was developed using a HEC-RAS model. The model included the reservoir, the dam with an active culvert, a spillway, a 750 m long reach downstream of the dam, and Range Road 302A with a culvert.

4.1.1 Bathymetry

The floodplain downstream of the dam is typically dry and can be measured with LiDAR which was retrieved from Valtus coving a 1 km^2 area with a 2 m horizontal resolution. This region was used to model a 750 m long reach downstream of Cridland Dam. Cross sections were extracted from the LiDAR at a spacing of 50 m to 100 m and interpolated where necessary to improve model stability. The bathymetry along the upstream face of the dam was assumed to match the geometry shown in Drawing 004 from the 1999 DSR (UMA 1999a).

4.1.2 Hydrological Conditions

Three (3) hydrological conditions were considered for the dam breach analysis:

- 1. Sunny day scenario: The water level in the reservoir was assumed to be equal to the FSL (1368 m) and there was a base flow of 1.6 m^3/s (5-year return period) to simulate an equilibrium discharge through the culvert through the dam.

- 2. and 3.: Two (2) rainy day scenarios: A constant base flow equal to the 100 and 1000-year return period design storms was set as the inflows to the reservoir. The resulting water elevation in the reservoir was approximately 1386.3 m and 1368.6 m, respectively, at the time of the breach to coincide with an equilibrium flow in the spillway.

4.1.3 Dam Geometry

The geometry for Cridland Dam was estimated from the drawings included in Appendix I of the Dam Safety Review by UMA Engineering (1999a). The capacity curve for the reservoir was provided in Drawing 003 and a section along the dam outlet and profile of the dam were provided in Drawing 004. The dam geometry was further refined using the 2010 Dam Safety Reviews report by Genivar (2010b). A site survey in 2010 determined the FSL and dam freeboard height were lower than original design drawings (Genivar 2010b). The geometry used to represent the dam and culvert is shown in Table A-11.

The breach parameters were calculated using the equations presented by Froehlich (1995) based on guidance from U.S. Army Corps of Engineers (2014) and is shown in Table A-12.

Table A-8 Cridland Dam and Culvert parameters

Parameter	Value	Source
Upstream slope	4(H):1(V)	Profile DWG 004 (UMA 1999a)
Downstream slope	2.5(H):1(V)	Profile DWG 004 (UMA 1999a)
FSL (spillway bed elevation)	1368 m	2010 DSR (Genivar 2010b)
Top of dam	1369.8 m	2010 DSR (Genivar 2010b)
Culvert length	75.9 m	Profile DWG 004 (UMA 1999a)
Culvert diameter	600 mm	Profile DWG 004 (UMA 1999a)
Culvert slope	4%	Profile DWG 004 (UMA 1999a)

Table A-9 Breach parameters

Parameter	Value
Final bottom width	10 m
Final bottom elevation	1361 m \1\
Side slopes	0.1(H):1(V)
Breach weir coefficient	1.44
Breach formation time	0.5 hours
Breach failure mode	Piping
Piping coefficient	0.5
Initial piping elevation	1366 m

Note (1) Final bottom breach elevation was set equal to 1 m above the base of upstream face of the dam.:

4.1.4 Flood Inundation

The resulting flood inundation model extents were very similar for the sunny day and the two (2) rainy day conditions and all three (3) scenarios were considered for the classification of the dam. Figure A-13 shows the flood inundation extents for the sunny day condition. Range Road 302A is expected to overtop and likely fail at the culvert crossing. The property on the north bank of the floodplain is within the flood inundation extents and the building identified as a shed is likely to be inundated.

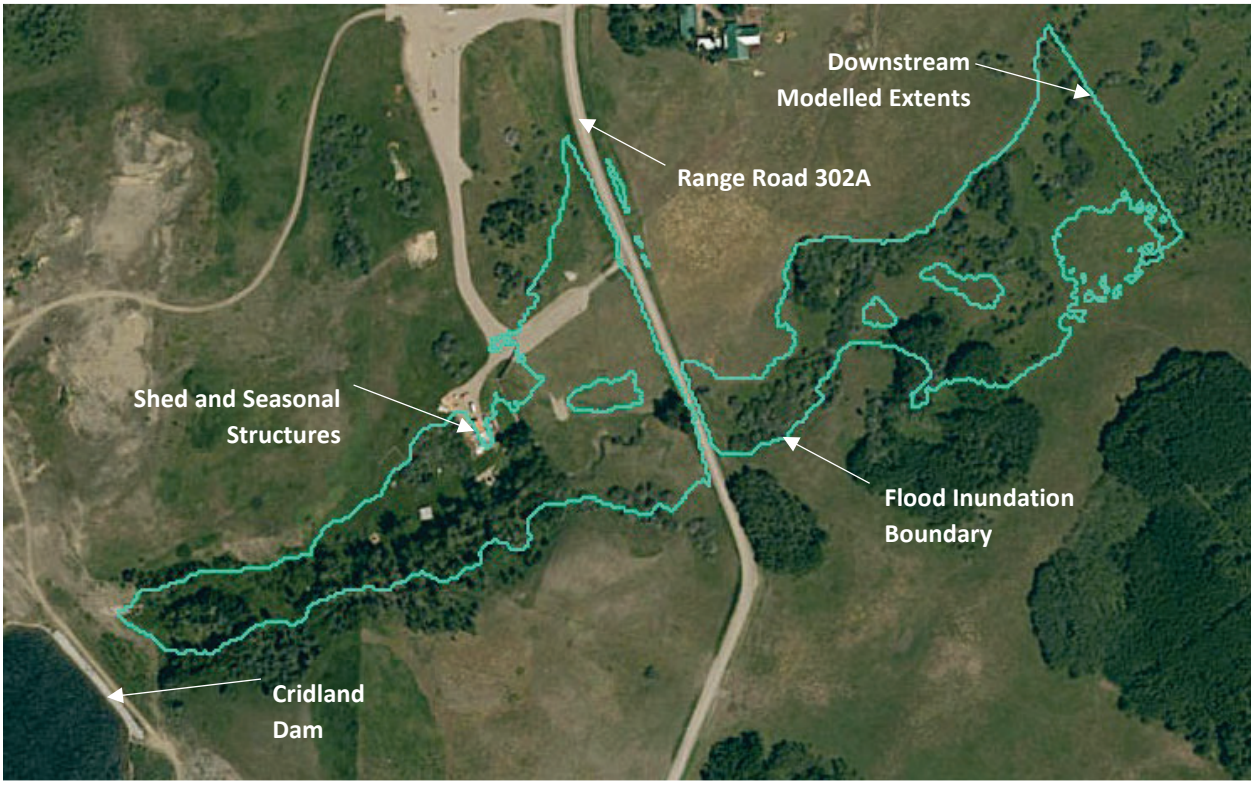
The velocity near the shed is estimated to be approximately 1.5 m/s and flow depths range from approximately 0.1 m to 0.5 m. To assess the sensitivity of the velocity and depth at the dwelling to the dam breach formation time and channel roughness downstream of the dam, multiple scenarios were evaluated. Table A-13 shows the predicted flow depth and velocity at the shed for the various scenarios.

Conclusion: Based on these results and the existing structures and land use, the population at risk and loss of life and infrastructure and economic losses would be considered low and the classification could be reduced from significant to low.

Table A-10 Breach formation time sensitivity analysis

Scenario	Breach Time (minutes)	Manning's n in Channel	Velocity (m/s)	Flow Depth (m/s)
Base case	30	0.05	1.5	0.1 to 0.5
Increased roughness	30	0.06	1.4	0.2 to 0.6
Extended breach time	60	0.05	1.2	0.1 to 0.3

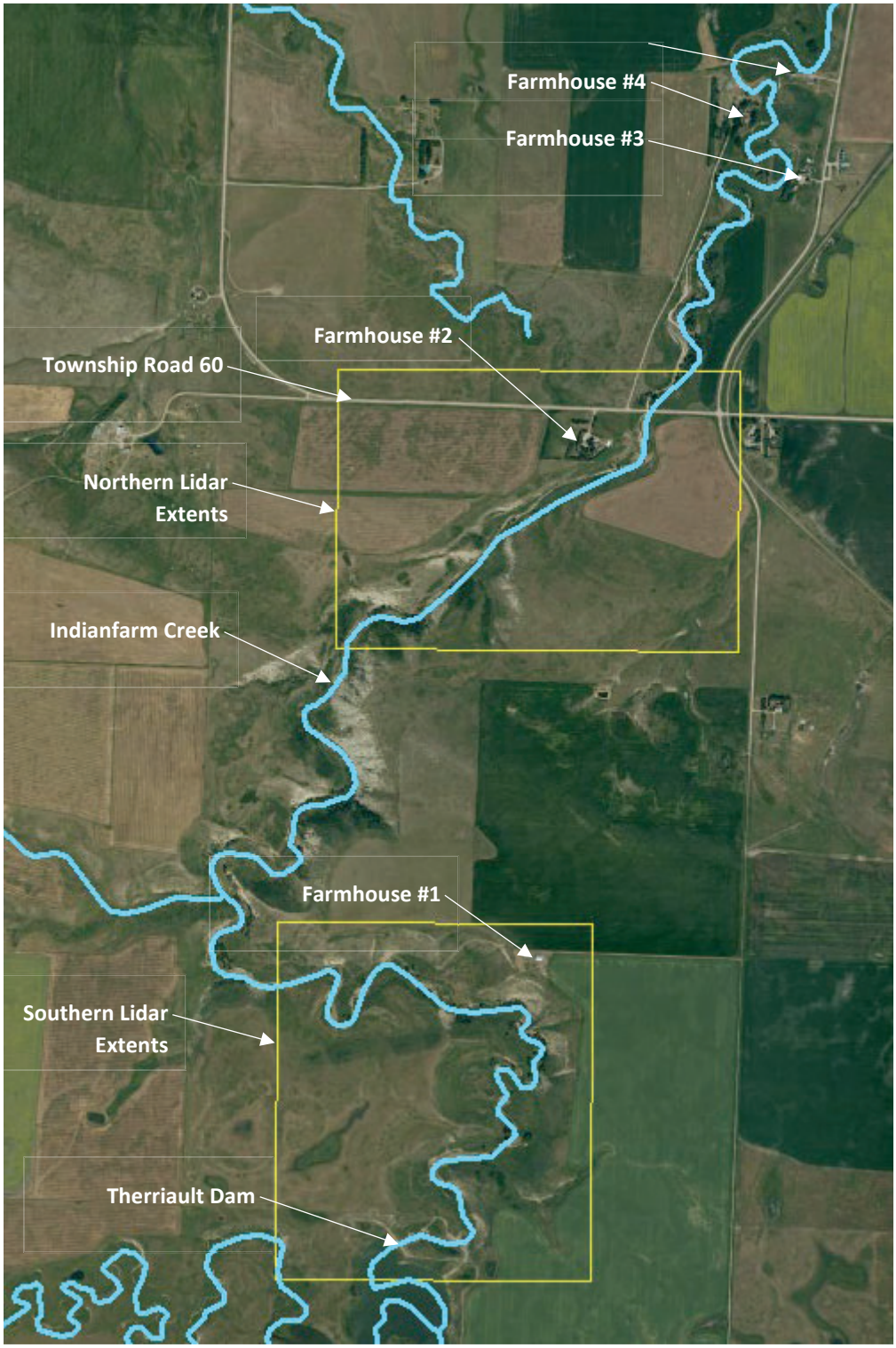
Figure A-13 Flood inundation extents downstream of Cridland Dam (perimeter in cyan outline).



4.2 Therriault Dam

There are multiple properties and residences close to the floodplain downstream of the Therriault Dam. Figure A-14 shows the locations of the buildings that could potentially be inundated in the event of a dam breach. The nearest existing building (Farmhouse #1) is constructed on the top of the right bank, is elevated 40 m above the floodplain, and is not at risk of being inundated. Farmhouse #2 is the next closest building presently in existence and is on the left bank of the floodplain approximately 4 km downstream of the Therriault dam. Farmhouses #3, #4, and #5 are located close to the banks of Indianfarm Creek approximately 5 km downstream from the Therriault dam (750 m north of Township Road 60). A bridge crossing is located at Township Road 60.

Figure A-14 Therriault Floodplain Aerial



4.2.1 Bathymetry

The floodplain downstream of the dam is typically dry and can be measured with LiDAR which was retrieved from Valtus covering two 1 km^2 areas with a 2 m horizontal resolution. The extents of the LiDAR are shown in Figure A-14. These regions were used to model the floodplain immediately downstream of the Therriault Dam as well as the area approaching Township Road 60 and Farmhouse #2. Data from CDEM was used to approximate the river cross section between the two areas with LiDAR information.

Cross sections were extracted from the LiDAR at a spacing of 50 m to 200 m and interpolated where necessary to improve model stability. The bathymetry along the upstream face of the dam was assumed to match the geometry shown in Drawing 4 from the 1999 DSR (UMA 1999d). The bridge crossing at Township Road 60 was assumed to be 10 m.

4.2.2 Hydrological Conditions

A rainy day event with a 1000-year design storm over 24 hours was considered while modelling the potential dam breach scenario. Because the spillways were found to not have sufficient capacity to pass the entire IDF, the reservoir could reach the dam crest invert elevation before breaching. The time of the breach was set to coincide with the timing of the peak inflow.

4.2.3 Dam Geometry

The geometry for Therriault Dam was estimated from the drawings included in Appendix I of the Dam Safety Review by UMA Engineering (1999d). The capacity curve for the reservoir was assumed to match the curve provided in Drawing 1, a section along the dam outlet and profile of the dam was provided in Drawing 4, and details about the drop spillway were provided in Drawing 7. The dam geometry was further refined using information from the 2010 Dam Safety Reviews report by Genivar (2010b) to include a 0.6 m increase of the dam crest elevation. The geometry used to represent the dam and culvert is shown in Table A-14.

The breach parameters were calculated using the equations presented by Froehlich (1995) based on guidance from U.S. Army Corps of Engineers (2014) and is shown in Table A-15.

Table A-11 Therriault Dam and Culvert parameters

Parameter	Value	Source
Upstream slope	3(H):1(V)	Profile DWG 004 (UMA 1999b)
Downstream slope	2.25(H):1(V)	Profile DWG 004 (UMA 1999b)
FSL	1220.11 m	2010 DSR (Genivar 2010a)
Top of dam	1222.8 m	2010 DSR (Genivar 2010a)
Culvert length	75.9 m	Profile DWG 004 (UMA 1999a)
Culvert diameter	600 mm	Profile DWG 004 (UMA 1999a)
Culvert slope	4%	Profile DWG 004 (UMA 1999a)

Table A-12 Breach parameters

Parameter	Value
Final bottom width	10 m
Final bottom elevation	1211 m \1\
Side slopes	0.1(H):1(V)
Breach weir coefficient	1.44
Breach formation time	0.5 hours
Breach failure mode	Piping
Piping coefficient	0.5
Initial piping elevation	1218 m

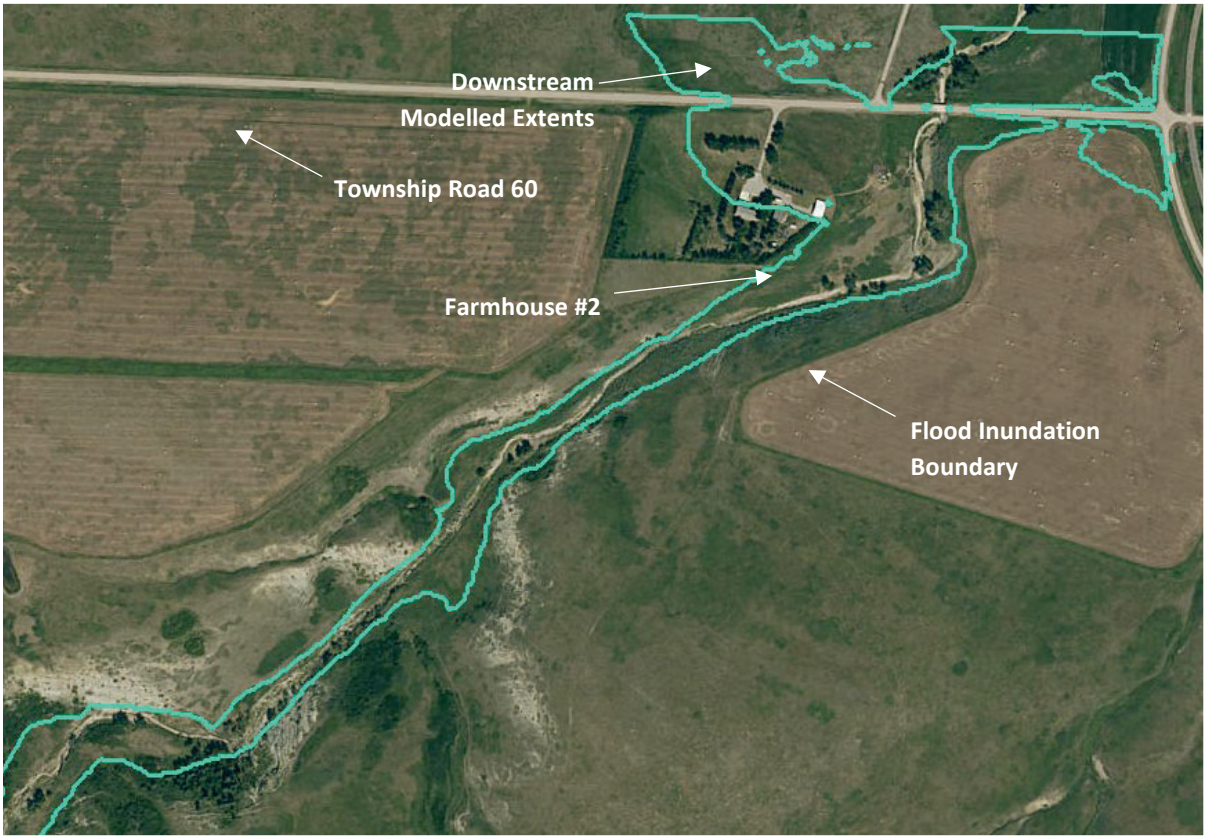
Note (1) Final bottom breach elevation was set equal to 1 m above the base of upstream face of the dam.:

4.2.4 Flood Inundation

Figure A-15 shows the flood inundation extents for the rainy day dam breach condition. Township Road 60 is expected to overtop and likely fail at the Indianfarm Creek crossing. Farmhouse #2 is on the border of the flood inundation boundary and is likely to sustain some flooding or damage. The water depth in the creek north of Township Road 60 is expected to exceed 2.5 m and Farmhouses #3, #4, and #5 are all at risk of being inundated.

Conclusion: Based on these results and the existing structures and land use, the population at risk, loss of life, infrastructure, and economic losses would be considered “Significant” and the overall dam consequence classification would remain “Significant”.

Figure A-15 Flood inundation extents near Township Road 60 downstream of Therriault Dam



5 Review of Historic Flood Events

The MD informed SNC-Lavalin of a previous overtopping of the Cridland Dam and the Therriault Dam in 2014. Older DSR reports from 1999 and 2010 also commented on historical overtopping events (e.g., 1975, 1995, 2008, 2009, or 2010). The June 2014 flood event caused slumping and erosion on the Cridland Dam and the Therriault Dam and Spillway. The damage has since been repaired.

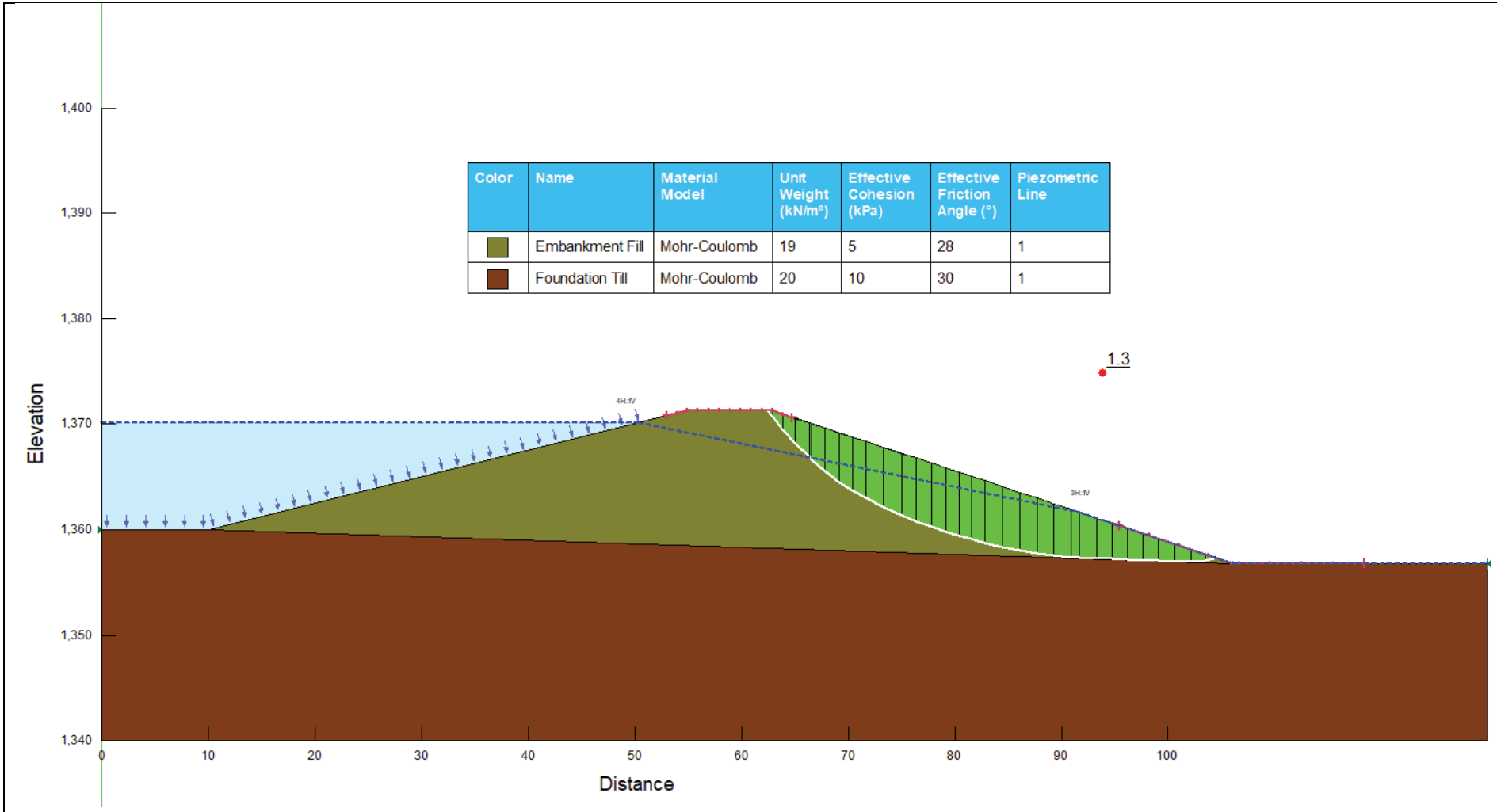
The 2014 flood event is expected to have occurred due to the heavy rainfall event on June 17, 2014. The event was recorded by several weather stations. The Beaver Mines climate station recorded 95 mm of rain and the Pincher Creek climate station recorded 57 mm of rain on June 17, 2014. Based on regional Intensity-Duration-Frequency curves, these events had a return period of approximately 50 years (Beaver Mines) and about two to five years (Pincher Creek). Several stream gauges also recorded peak flow events on regional watercourses. Drywood Creek near the Mouth (05AD010) recorded a flow of 166 m^3/s which is estimated as a 1 in 30-year return period event for this station. Smaller stations like Pincher Creek at Front Range Road recorded a flow of 16.3 m^3/s (approximately 1 in 10-year return period event).

This review indicates that the 2014 event had a return period of only five (5) to 50 years' rainfall intensity depending on regional variations. Thus, stronger rain intensities and peak flows should be expected for the dams in the future. Overtopping of the Cridland Dam and Therriault Dam would be expected to occur more frequently than the design return period (1:100-year and 1:1000-year).

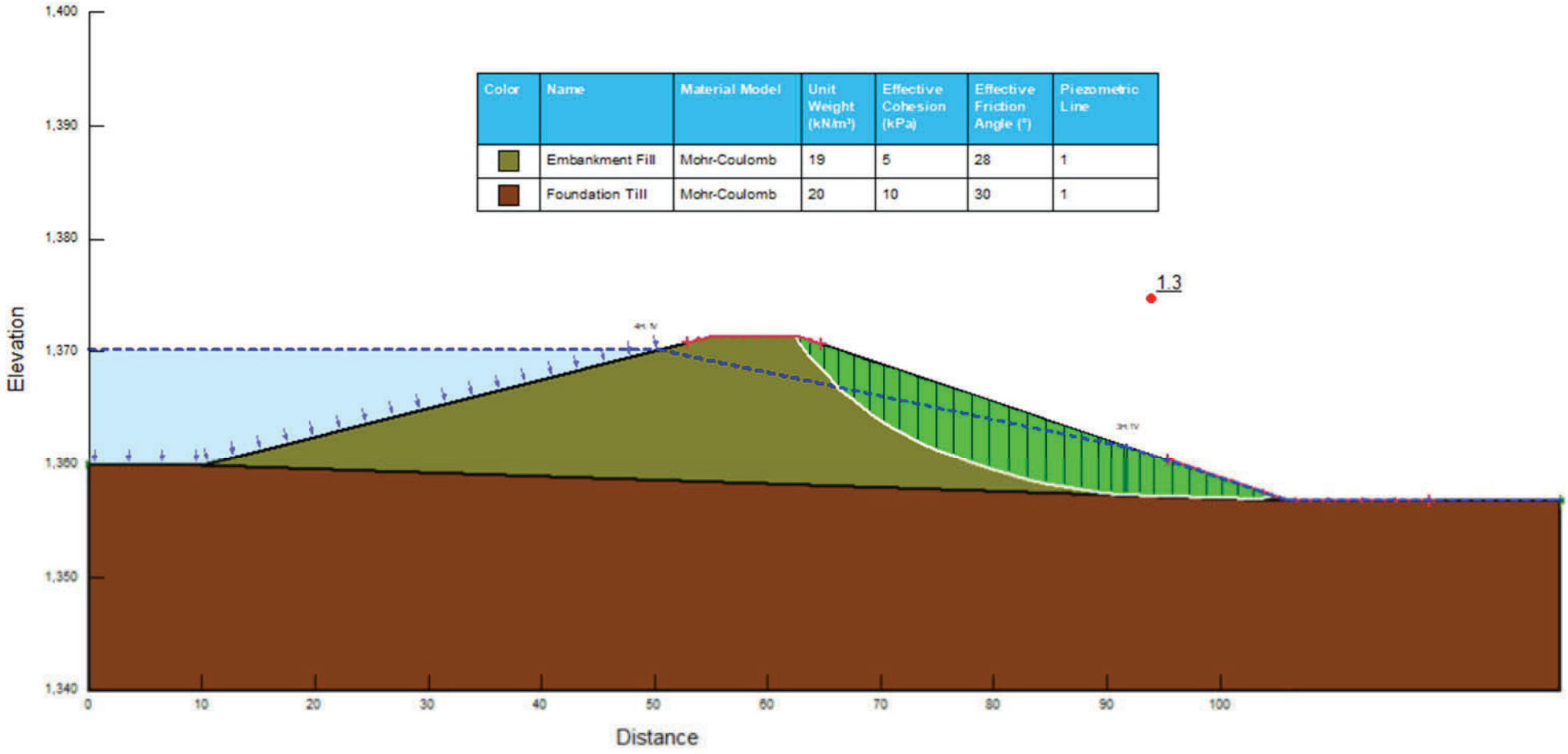
Appendix IV

Slope Stability Analyses Results

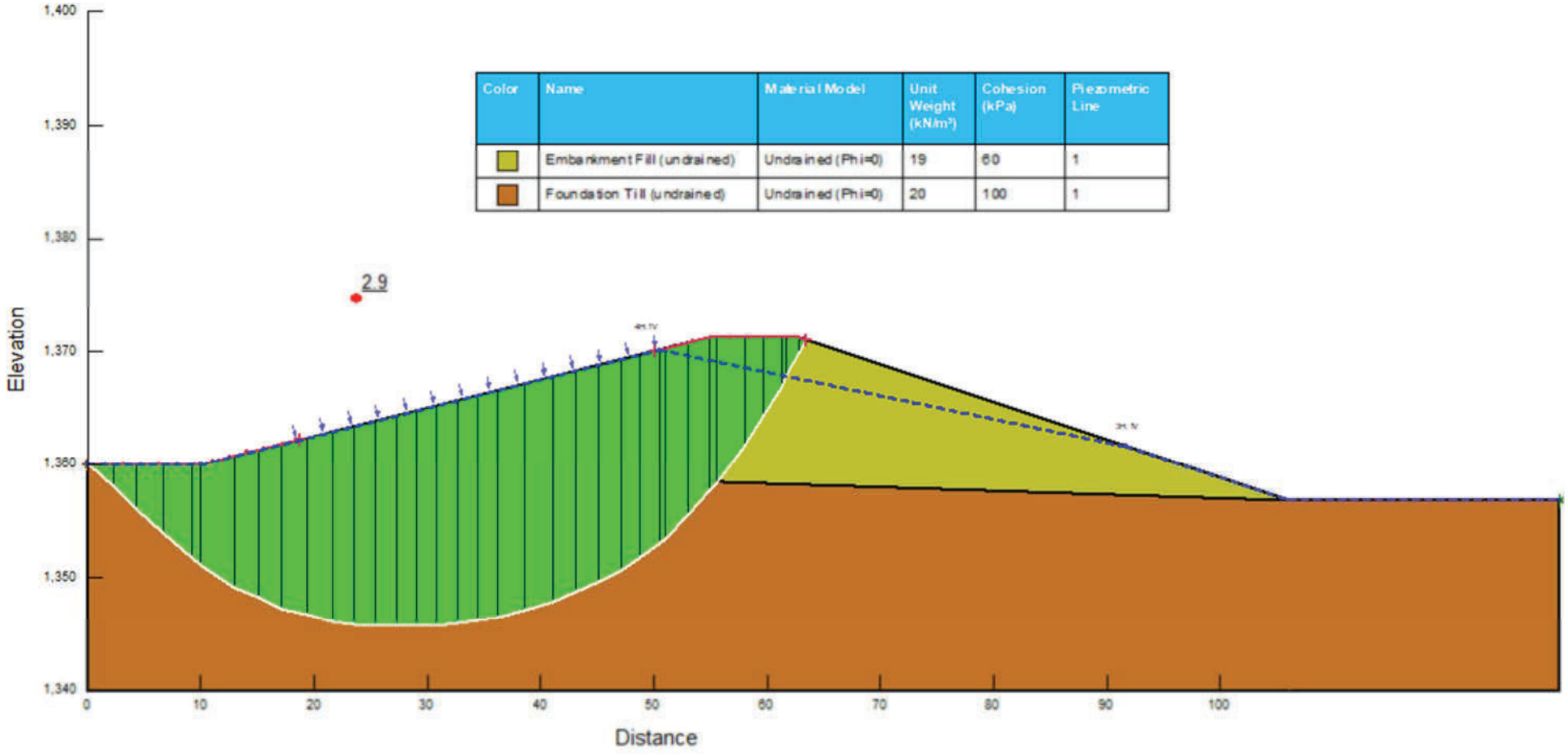
Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-01
	Analysis: Cridland Dam (Downstream)	**Condition:** Full Supply Level, Static Load
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.3

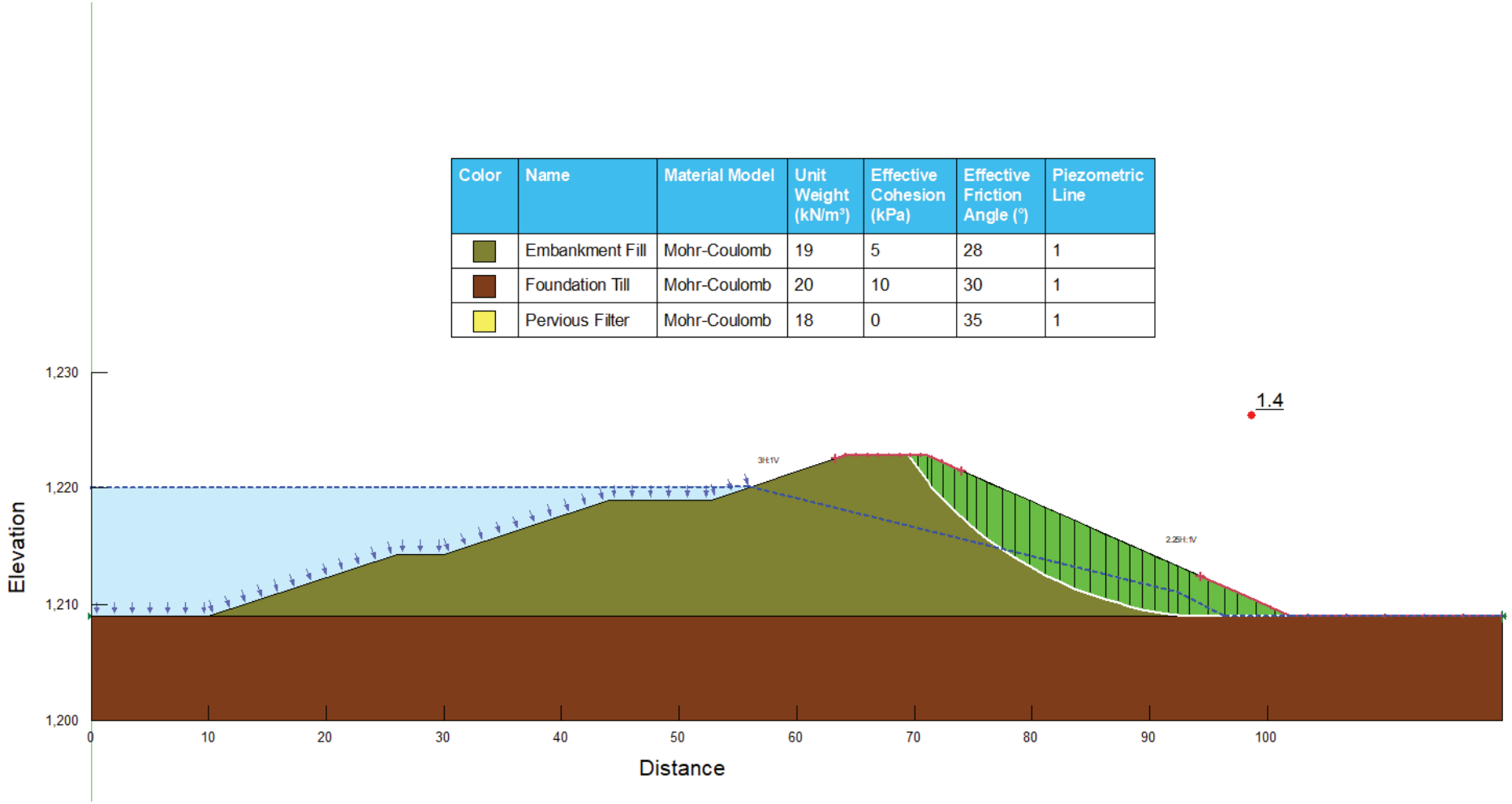


SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-02
	Analysis: Cridland Dam (Downstream)	**Condition:** Full Supply Level, Pseudo-Static
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.3



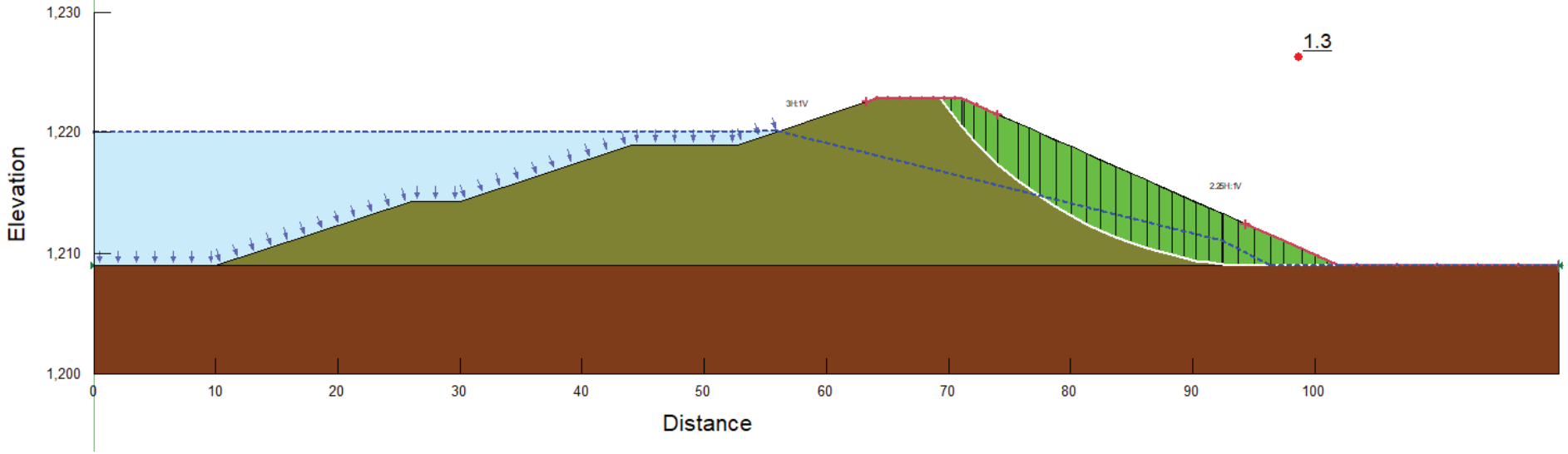
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-03
	Analysis: Cridland Dam (Upstream)	**Condition:** Rapid Drawdown, Static
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 2.9

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1
	Pervious Filter	Mohr-Coulomb	18	0	35	1



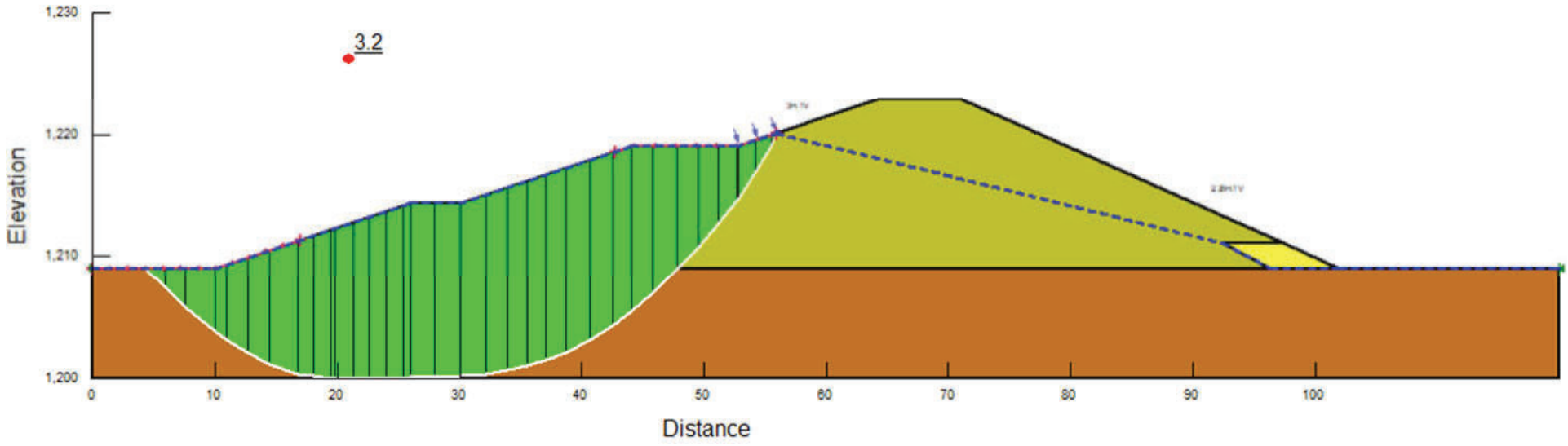
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-04
	Analysis: Therriault Community Dam (Downstream)	**Condition:** Full Supply Level, Static
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.4

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1
	Pervious Filter	Mohr-Coulomb	18	0	35	1



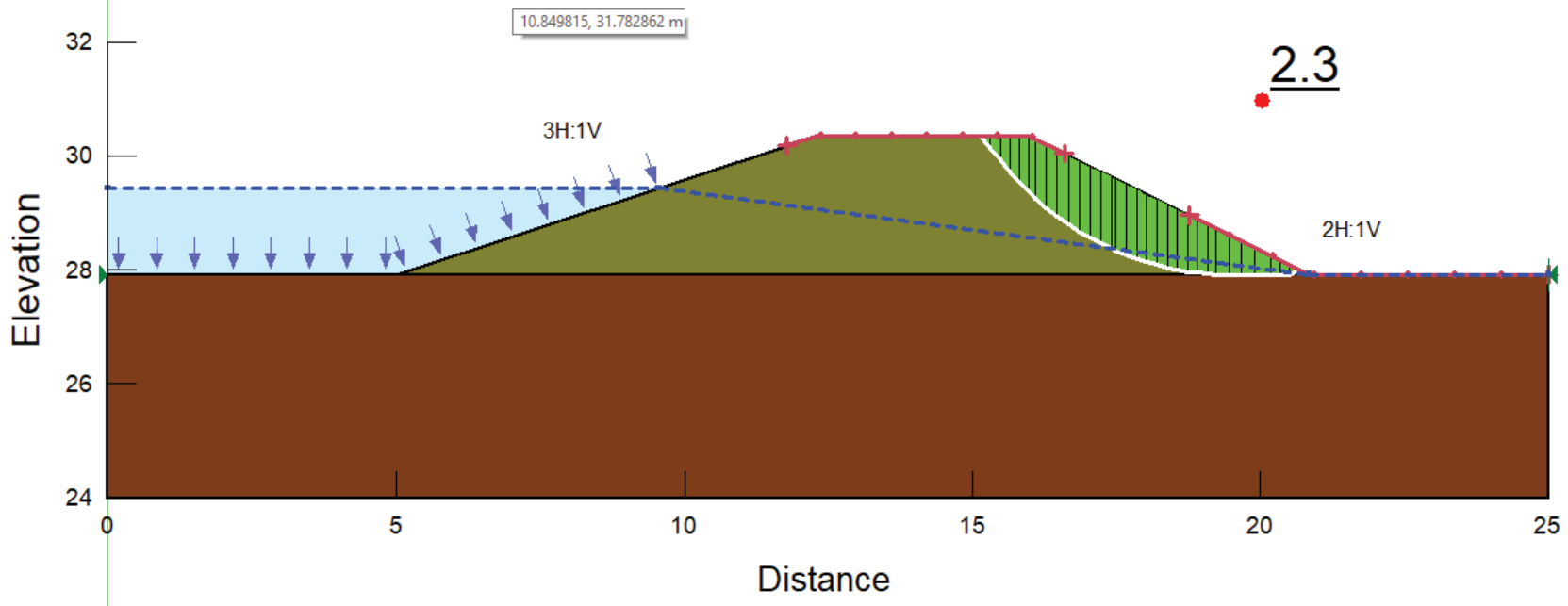
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-05
	Analysis: Therriault Community Dam (Downstream)	**Condition:** Full Supply Level, Pseudo-static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.3

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Cohesion (kPa)	Piezometric Line
	Embankment Fill (undrained)	Undrained (Phi=0)	19			60	1
	Foundation Till (undrained)	Undrained (Phi=0)	20			100	1
	Pervious Filter	Mohr-Coulomb	18	0	35		1



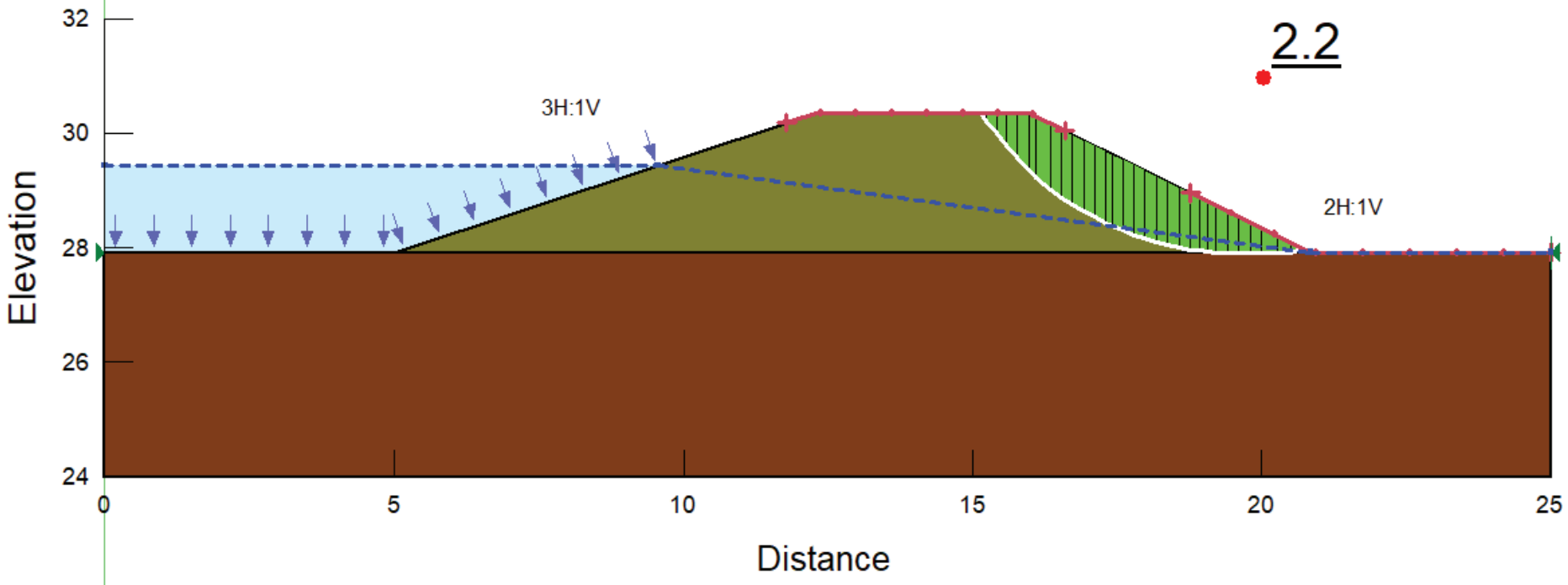
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-06
	Analysis: Therriault Community Dam (Upstream)	**Condition:** Rapid Drawdown, Static
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 3.2

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-07
	Analysis: Sandy Lake Project Dam (Downstream)	**Condition:** Full Supply Level, Static
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 2.3

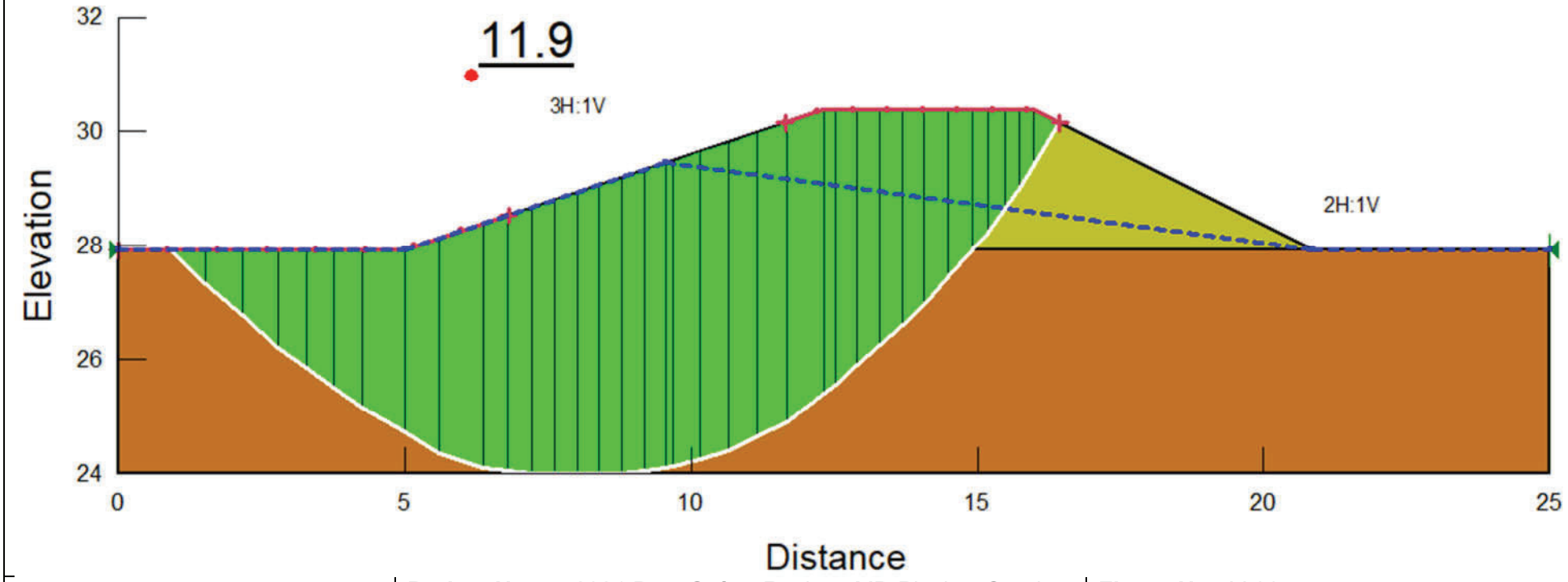
Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



SNC·LAVALIN

Project Name: 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-08
Analysis: Sandy Lake Project Dam (Downstream)	**Condition:** Full Supply Level, Pseudo-static.
Project No.: 683055	
Date: August 26, 2021	**Factor of Safety:** 2.2

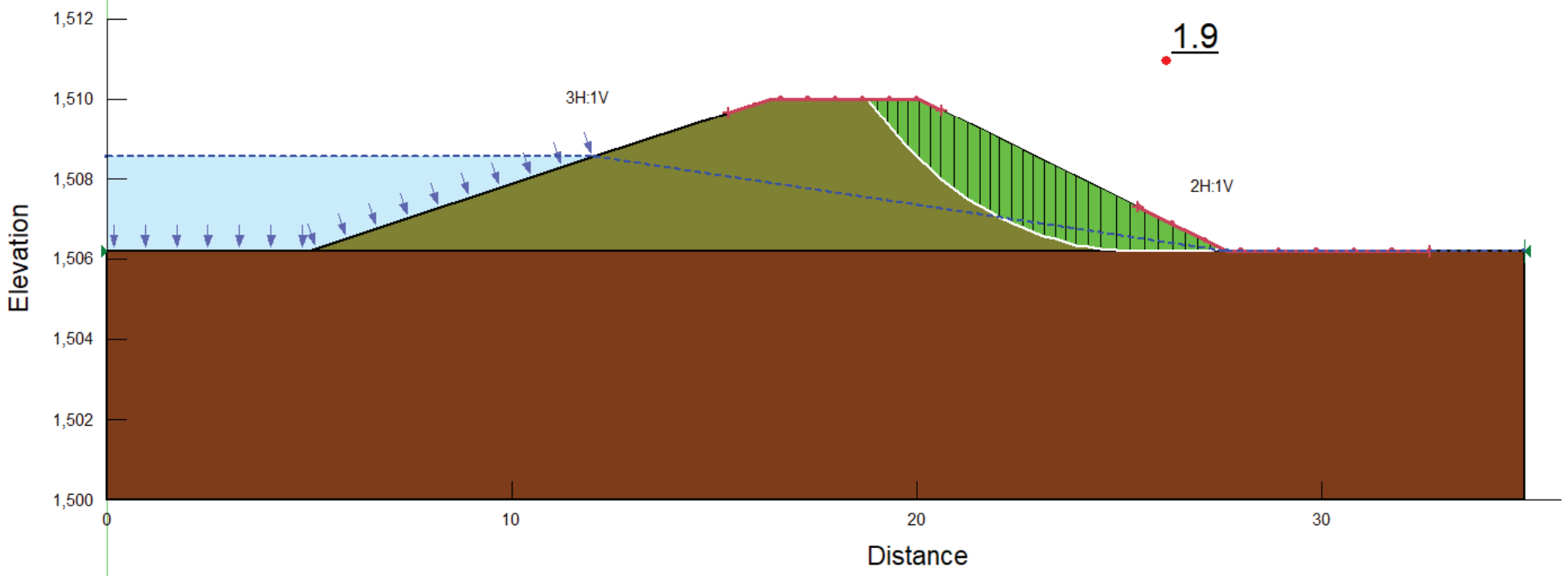
Color	Name	Material Model	Unit Weight (kN/m³)	Cohesion (kPa)	Piezometric Line
	Embankment Fill (undrained)	Undrained (Phi=0)	19	60	1
	Foundation Till (undrained)	Undrained (Phi=0)	20	100	1



SNC·LAVALIN

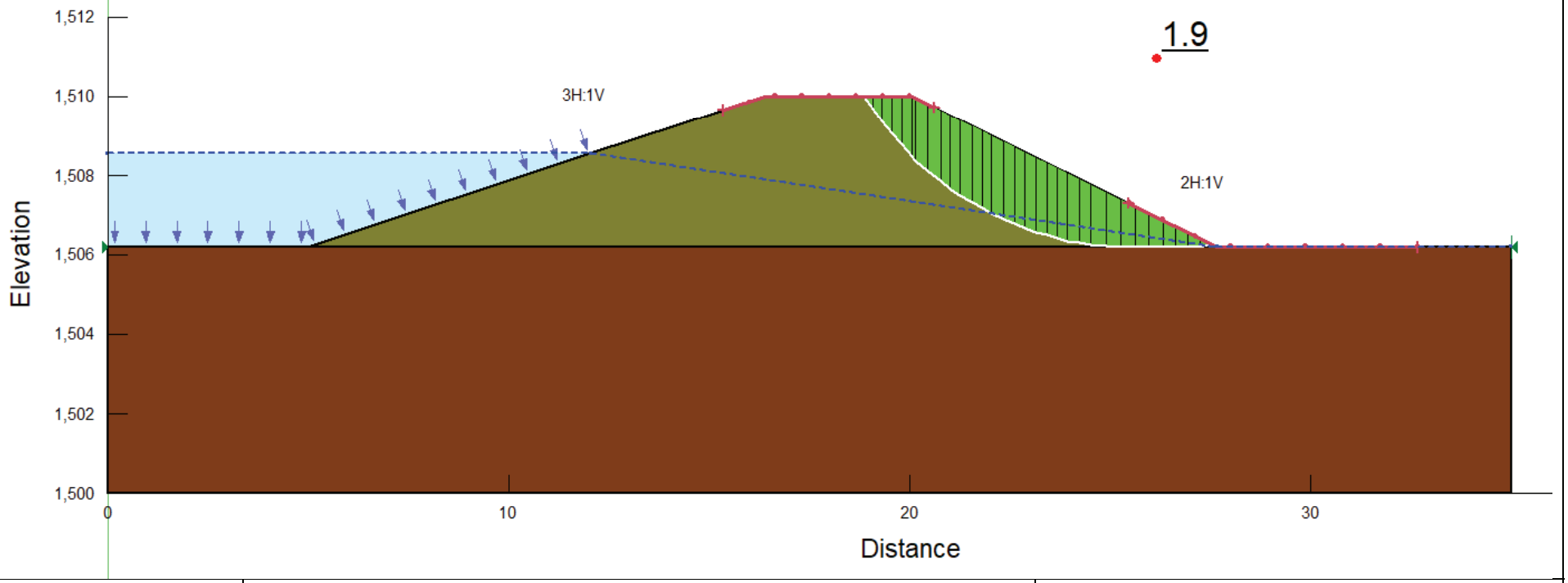
Project Name: 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-09
Analysis: Sandy Lake Project Dam (Upstream)	**Condition:** Rapid Drawdown, Static.
Project No.: 683055	
Date: August 26, 2021	**Factor of Safety:** 11.9

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



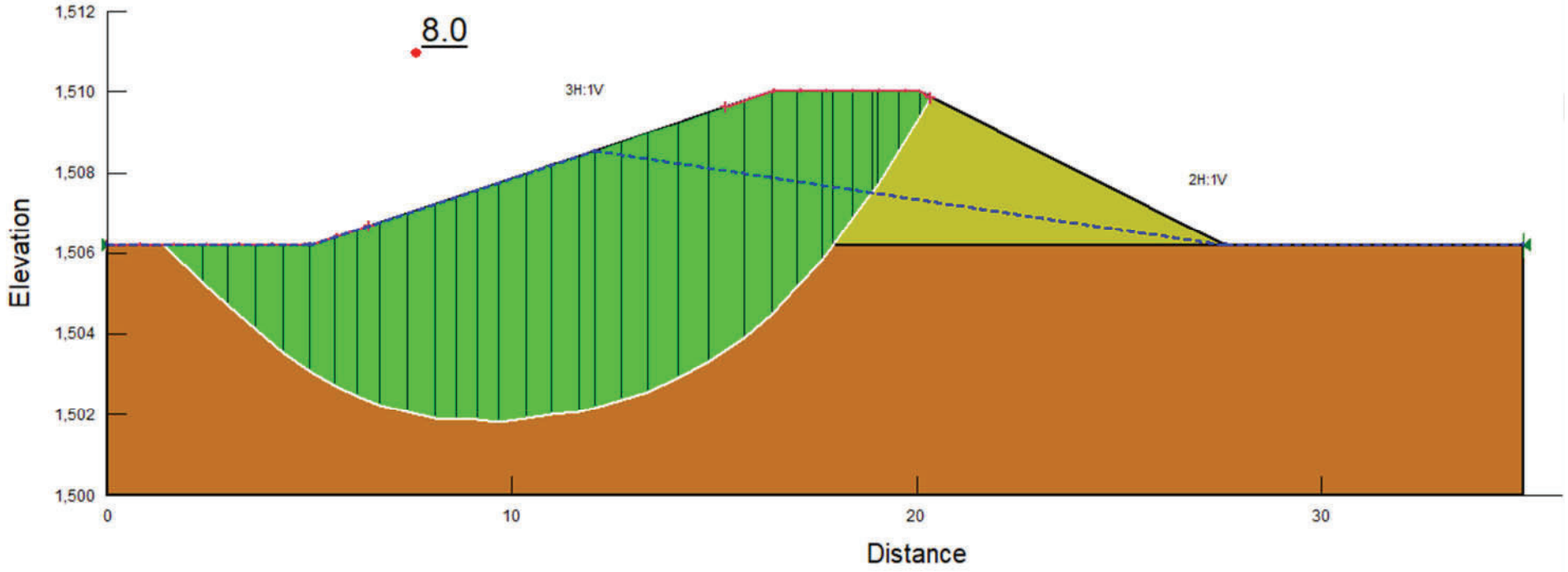
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-10
	Analysis: Fish Lake Project Dam (Downstream)	**Condition:** Full Supply Level, Static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.9

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



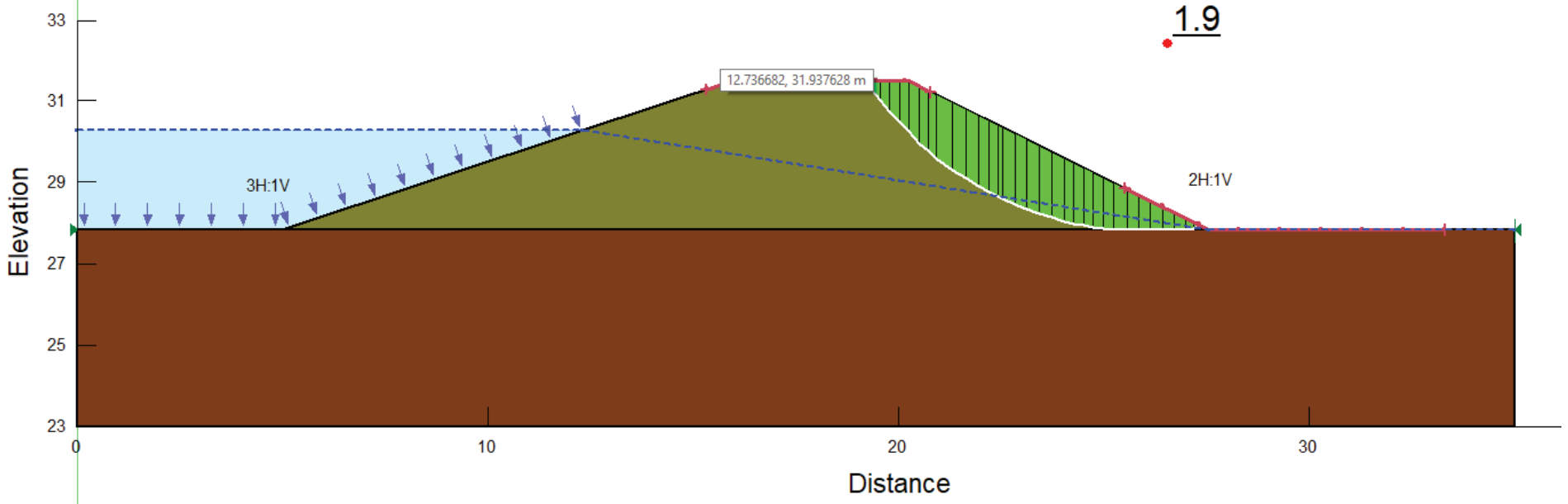
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-11
	Analysis: Fish Lake Project Dam (Downstream)	**Condition:** Full Supply Level, Pseudo-static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.9

Color	Name	Material Model	Unit Weight (kN/m³)	Cohesion (kPa)	Piezometric Line
	Embankment Fill (undrained)	Undrained (Phi=0)	19	60	1
	Foundation Till (undrained)	Undrained (Phi=0)	20	100	1



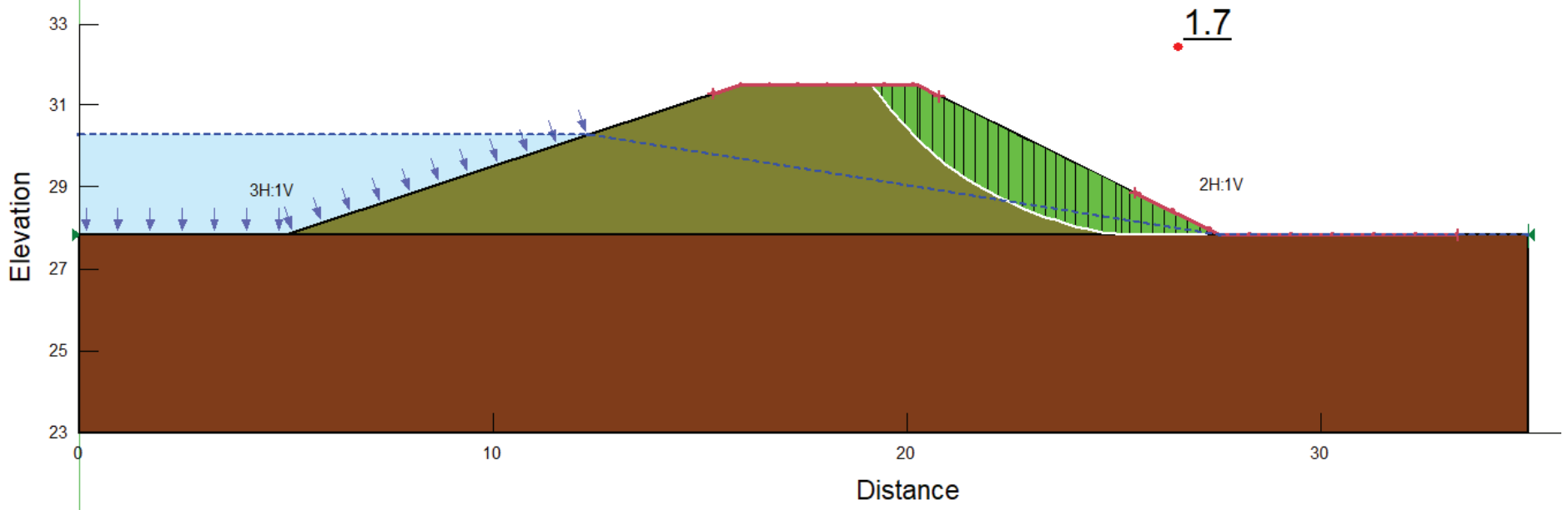
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-12
	Analysis: Fish Lake Project Dam (Upstream)	**Condition:** Rapid Drawdown, Static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 8.0

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



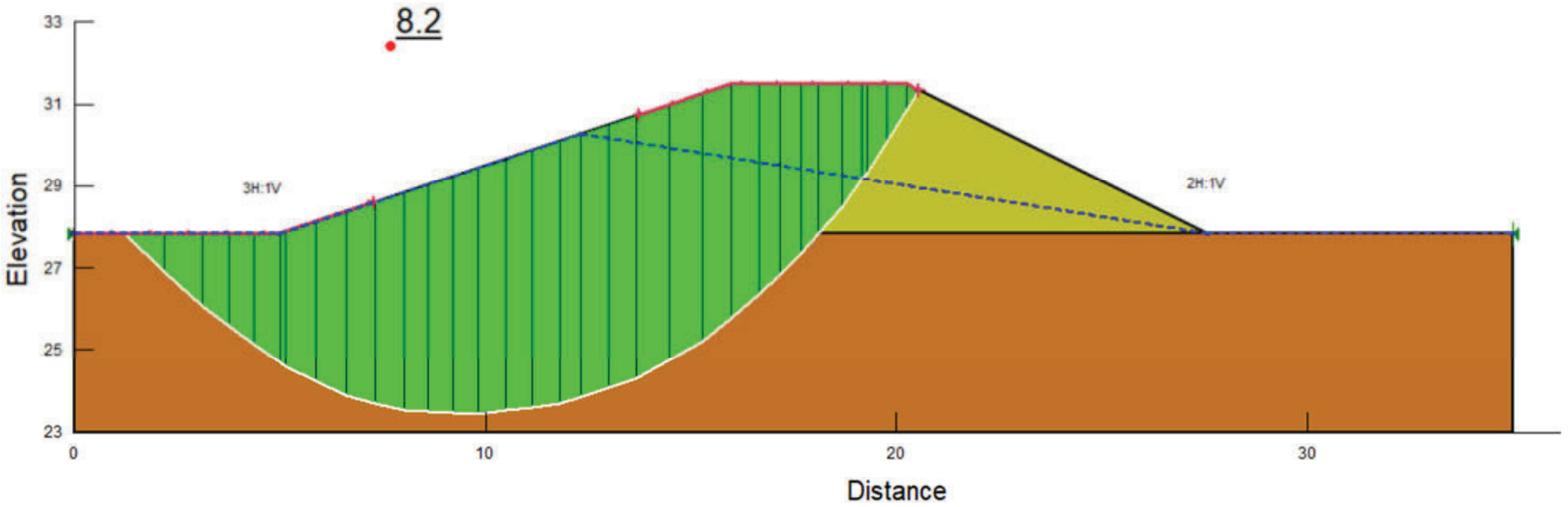
SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-13
	Analysis: Foothill Lake Community Dam (Downstream)	**Condition:** Full Supply Level, Static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.9

Color	Name	Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Piezometric Line
	Embankment Fill	Mohr-Coulomb	19	5	28	1
	Foundation Till	Mohr-Coulomb	20	10	30	1



SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-14
	Analysis: Foothill Lake Community Dam (Downstream)	**Condition:** Full Supply Level, Pseudo-static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 1.7

Color	Name	Material Model	Unit Weight (kN/m³)	Cohesion (kPa)	Piezometric Line
	Embankment Fill (undrained)	Undrained (Phi=0)	19	60	1
	Foundation Till (2)	Undrained (Phi=0)	20	100	1



SNC·LAVALIN	**Project Name:** 2021 Dam Safety Review, MD Pincher Creek	**Figure No.:** V-15
	Analysis: Foothill Lake Community Dam (Upstream)	**Condition:** Rapid Drawdown, Static.
	Project No.: 683055	
	Date: August 26, 2021	**Factor of Safety:** 8.2

SNC·LAVALIN

400, 640 - 5th Avenue SW
Calgary, Alberta, Canada T2P 3G4
403.253.4333
www.snclavalin.com

SNC·LAVALIN

400, 640 - 5th Avenue SW
Calgary, Alberta, Canada T2P 3G4
403.253.4333
www.snclavalin.com

MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9
IN THE PROVINCE OF ALBERTA
BYLAW No. 1344-22

BEING a Bylaw of the Municipal District of Pincher Creek No. 9 in the Province of Alberta, for the purpose of regulating and providing for the terms, conditions, rates and charges for the supply and use of water services, wastewater services and solid waste services provided by the Municipal District of Pincher Creek No. 9.

WHEREAS, pursuant to Section 3 of the *Municipal Government Act* the purposes of a municipality include providing services, facilities or other things that, in the opinion of council, are necessary or desirable for all or a part of the municipality;

AND WHEREAS, pursuant to Section 7 of the *Municipal Government Act* a council of a municipality may pass bylaws for municipal purposes respecting public utilities and the enforcement of bylaws;

NOW **THEREFORE** the Council of the Municipal District of Pincher Creek No. 9, in the Province of Alberta, duly assembled, enacts as follows:

PART I - TITLE AND DEFINITIONS

1. Bylaw Title

This Bylaw shall be known as "The Utilities Bylaw".

2. Definitions and Interpretation

(1) In this Bylaw, unless the context otherwise requires:

(a) "Account" means an agreement between a Customer and the MD for the supply of Utility Services of which the terms of this Bylaw shall form a part and includes the amounts payable from time to time by the Customer to the MD, as the context requires;

(b) “Additional Overstrength Surcharge” means a rate, fee or charge imposed upon a Person who releases Wastewater to the Wastewater System that exceeds one or more constituent concentrations set out in Schedule “G”;

(c) "Bulk Waste" includes furniture, appliances, mattresses, bicycles, or other oversize items not capable of being placed in a Waste Receptacle or a Garbage bag for collection;

(d) "Chief Administrative Officer" or "CAO" means the Chief Administrative Officer of the MD or the Chief Administrative Officer's delegate;

(e) “Cistern” means a waterproof holding tank or receptacle for holding potable water to meet on Property water demand;

(f) "Collection Area" means, in respect to Solid Waste Services, the hamlets of Lundbreck and Beaver Mines;

(g) "Collection Schedule" means the set schedule regarding the provision of Solid Waste Services approved by the Chief Administrative Officer for the collection of Household Waste within the Collection Area and from Properties authorized by the Chief Administrative Officer to receive Solid Waste Services;

(h) "Commercial Waste" means any Waste, other than Household Waste, generated by commercial, industrial, institutional, community, governmental, religious or charitable organizations;

(i) "Construction Waste" means any Waste generated by constructing, altering, repairing or demolishing any structure;

(j) "Council" means the council of the Municipal District of Pincher Creek No. 9;

(k) "Cross Connection" means any temporary, permanent, or potential connection of any piping, fixture, fitting, container or appliance to the Water System that may allow backflow to occur, including but not limited to: swivel or changeover devices, removable sections, jumper connections, and bypass arrangements;

(l) "Cross Connection Control Device" means a testable CSA certified device that prevents the backflow of water;

(m) "Curb Stop" means a valve connected to a Service Connection enabling the turning-on and turning-off of the water supply to a Customer's Property;

(n) "Customer" means any Person receiving Utility Services and, where the context or circumstances so require, includes any Person who is named on an Account, or who makes or has made an application for Utility Services or otherwise seeks to receive Utility Services, and also includes any Person acting as an agent or representative of a Customer;

(o) “Distribution System” means the portion of a water supply system whose primary purpose is to convey potable water from the Transmission System under controlled flow and pressure conditions to Customer Property. Small diameter Water Main’s with many Service Connections;

(p) "Dwelling" means a private residence with sleeping and cooking facilities used or intended to be use as a residence;

(q) “Engineering Design Standards" means the MD's Minimum Engineering Design Standards, or in the absence of such standards, generally accepted municipal engineering standards;

(r) "Emergency" means a condition that creates an imminent danger or a real possibility of Property damage, or personal injury, or when a condition or situation is declared to be an emergency by Council, or the Federal or Provincial Crown, or other civil authority having jurisdiction;

(s) "Facilities" means any infrastructure forming part of:

(i) the Water System, including without limitation: water treatment plants, reservoirs, pumping stations, Water Mains, Water Service Lines, bulk water stations, Curb Stops, valves, fittings, fire hydrants, chambers, Meters, Cross Connection Control Devices and all other equipment and machinery of whatever kind owned by the MD that is used to produce and supply potable water to Customers; or

(ii) the Wastewater System, including without limitation: Wastewater treatment plants, Wastewater lagoons, pumping stations, Wastewater Mains, Wastewater Service Lines, valves, fittings, chambers, Meters, and all other equipment and machinery of whatever kind owned by the MD that is used for the collection, transmission, treatment and disposal of Wastewater; as the context requires.

(t) "Garbage Bag" means a non-returnable plastic bag meeting the following specifications:

(i) made from sturdy material which is strong enough to withstand normal handling and lifting;

(ii) can be securely tied at the top;

(iii) is in good condition, free from rips and tears; and

(iv) not exceeding 20 kilograms including its contents.

(u) "Hazardous Waste" has the same meaning as in the *Environmental Protection and Enhancement Act* and associated regulations;

(v) "Household Waste" means unwanted refuse or materials intended for disposal generated by normal human living processes and domestic activities;

(w) “Ion Exchange Water Softener” means any water treatment device that exchanges the naturally-occurring minerals in water with salt or any other chemical in the process called ion exchange;

(x) "Liquid Waste" means any Waste, other than Hazardous Waste, having a moisture-content in excess of 30%;

(y) "MD" means the municipal corporation of the Municipal District of Pincher Creek No. 9 and its duly authorized employees, agents, contractors and other representatives or the geographic area contained within the boundaries thereof, as the context requires;

(z) "Meter" means the individual or compound water meter, of a make and model approved by the MD, and all other equipment and instruments, including but not limited to, radio frequency units and remote meter reading devices supplied and used by the MD to calculate and register the amount of water consumed relative to the land and buildings that the Meter is designed to monitor;

(aa)"Multiple Dwelling" means a wholly or partially residential development containing more than one Dwelling, whether or not the development is within a single building;

(bb) "Non-Residential Premises" means any building that is used for commercial, industrial or institutional purposes and does not include Residential Premises;

(cc) "Occupant" means a Person occupying a Property, including a lessee or licensee, who has actual use, possession or control of the Property;

(dd) “Overstrength” means Wastewater released to the Wastewater System that is higher in concentration for one or more constituent concentrations set out in Schedule “G” of this Bylaw;

(ee) “Overstrength Surcharge” means a rate, fee or charge imposed upon a Person who releases Wastewater to the Wastewater System that exceeds one or more constituent concentrations set out in Schedule “G”;

(ff) "Owner" means:

(i) in the case of land, the Person who is registered under the *Land Titles Act* as the owner of the fee simple estate in the parcel of land; or

(ii) in the case of any property other than land, the Person in lawful possession of it;

(gg) "Peace Officer" includes a Bylaw Enforcement Officer appointed by the MD, a Community Peace Officer whose appointment includes enforcement of the MD's Bylaws and a member of the Royal Canadian Mounted Police;

(hh) "Person" means any individual, firm, partnership, association, corporation, trustee, executor, administrator or other legal representative to whom the context applies according to law;

(ii) "Private Drainage Line" means that portion of a Service Connection that extends from the property line to an improvement or location on a Customer's Property that receives, or is to receive Wastewater Services, comprised of the Customer-owned assembly of pipes, fittings, fixtures, traps and appurtenances for the collection and transmission of Wastewater into the Wastewater System;

(jj) "Private Wastewater Disposal System" means an on-site Wastewater treatment system for the treatment and disposal of Wastewater that is not connected to the Wastewater System, as defined in the *Alberta Private Sewage Systems Standard of Practice 2015* adopted by the *Private Sewage Disposal Systems Regulation;*

(kk) "Private Water Line" means that portion of a Service Connection that extends from the property line to an improvement or location on a Customer's Property that receives, or is to receive, Water Services, comprised of the Customer-owned assembly of pipes, fittings, fixtures, traps and appurtenances for providing water to a Customer's Property, excluding the Meter owned by the MD;

(ll) "Property" means:

(i) in the case of land, a parcel of land including any buildings; or

(ii) in other cases, personal property;

(mm) "Recreational Vehicle" means a vehicular or trailer type unit designed to provide temporary living quarters for recreational, camping, travel or seasonal use;

(nn) "Residential Premises" means any building that is used as a Dwelling and includes a Multiple Dwelling;

(oo) “Redevelopment” means construction of new residence or dwelling within a lot or parcel, typically after demolishing the existing buildings; or addition to existing dwelling resulting in intensification beyond original intended use.

(pp) “Rural” means locations outside of Hamlet boundaries within the MD;

(qq) "Service Connection" means all of the Facilities required to achieve a physical connection between:

(i) the MD's Water Main and the structure, improvement or location that receives Water Services, to allow a Customer to receive potable water, which includes a Water Service Line and a Private Water Line; or

(ii) the MD's Wastewater Main and the structure, improvement or location that receives Wastewater Services, to allow a Customer to discharge Wastewater, which includes a Wastewater Service Line and a Private Wastewater Line; as the context requires;

(rr) "Solid Waste Services" means the collection of Household Waste from Properties within the Collection Area or other Properties authorized by the Chief Administrative Officer;

(ss) "Subsidiary Meter" means a privately owned Meter installed on Property at the Customer's expense and utilized strictly for the Customer's purposes;

(tt) "Terms and Conditions" means the terms and conditions in respect of Water Services, Wastewater Services and Solid Waste Services described in Schedules "A", "B", "C", "D", "E", “F”, and “G”;

(uu) “Transmission System” means any piping whose primary purpose is to convey treated water from the water treatment equipment or pumping stations to the Distribution System, reservoirs, tanks, and bulk fill stations serving an area. Large diameter pipe with minimal connections;

(vv) "Utility Services" means Water Services, Wastewater Services or Solid Waste Services or any combination of them;

(ww) "Utility Services Guidelines" means those guidelines, procedures, protocols, requirements, specifications or standards adopted by the Chief Administrative Officer from time to time pursuant to section 6 of this Bylaw;

(xx) "Violation Ticket" has the same meaning as in the *Provincial Offences Procedure Act;*

(yy) "Waste" means any discarded material intended for disposal and includes but is not limited to Bulk Waste, Commercial Waste, Construction Waste, Hazardous Waste, Household Waste and Liquid Waste;

(zz) "Waste Collection Fee" means the fixed monthly service fee charged to the Owner of a Property that is provided Solid Waste Services;

(aaa) "Waste Collector" means any authorized employee or agent of the MD performing Waste collection activities;

(bbb) "Waste Receptacle" means a sturdy reusable container of rust resistant material, of a tapered cylindrical design, having a smooth rim, two rigid fixed handles and a removable watertight lid, and meeting the following requirements:

(i) not exceeding 20 kilograms including its contents;

(ii) no smaller than 60 liters and no larger than 100 litres; and

(iii) in a safe, serviceable condition.

(ccc) "Wastewater" means the composite of water and water-carried wastes associated with the use of water for drinking, food preparation, washing, hygiene, sanitation or other domestic purposes, but does not include wastewater from industrial processes;

(ddd) "Wastewater Main" means those pipes installed for the collection and transmission of Wastewater within the MD to which a Service Connection may be connected;

(eee) "Wastewater Service Line" means that portion of a Service Connection owned by the MD that extends from the Wastewater Main to the property line of a Property that receives, or is to receive, Wastewater Services;

(fff) "Wastewater Services" includes the collection, transmission, treatment and disposal of Wastewater, as applicable, and associated services offered to the Customer under this Bylaw;

(ggg) "Wastewater System" means the Facilities used by the MD for the collection, transmission, treatment and disposal of Wastewater, which is deemed to be a municipal public utility within the meaning of the *Municipal Government Act;*

(hhh) "Water Conservation and Demand Management Measures" means restrictions upon the use of water for non-essential purposes, including but not limited to: irrigation, watering livestock, washing of vehicles, driveways or sidewalks, and any other purpose where water is utilized externally to a building and on any certain day or for a certain time period;

(iii) "Water Main" means those pipes installed for the conveyance of potable water within the MD to which Service Connections may be connected;

(jjj) "Water Service Line" means that portion of a Service Connection owned by the MD that extends from the Water Main to the property line of a Property that receives, or is to receive, Water Service;

(kkk) "Water Services" means the provision of potable water by the MD to a Customer's Property and associated services offered to the Customer under this Bylaw;

(lll) "Water System" means the Facilities used by the MD to supply potable water to Customers, which is deemed to be a municipal public utility within the meaning of the *Municipal Government Act.*

(2) In this Bylaw, a citation of or reference to any act or regulation of the Province of Alberta or of Canada, or of any other bylaw of the MD, is a citation of or reference to that act, regulation, or bylaw as amended or replaced.

PART II - PROVISION OF UTILITY SERVICES

3. Other Public Utilities Prohibited

The MD or its authorized representatives shall be the exclusive provider of Utility Services, where available, to eligible Customers within the boundaries of the MD.

4. Terms and Conditions

All Utility Services shall be provided in accordance with Schedules "A", "B", "C", "D", "E", “F”, and “G” as applicable.

5. Fees and Charges

(1) The MD will provide Utility Services to Customers within the MD at the rates, fees or other charges specified in Schedule "E", as may be amended by Council from time to time.

(2) Subject to subsection (3), additional services provided by the MD to a Customer will be billed to the Customer in accordance with an agreement between the Customer and the MD.

(3) Additional costs arising from:

(a) requirements or requests for specific non-routine services not more particularly described in this section or the acts or omissions of any particular Customer or defined group of Customers, or

(b) repairs or remedies of any loss or damage to Facilities or other property that is caused by a Customer or any other party for whom a Customer is responsible in law, including, without limitation, any costs or damages described in any judgment of a court in the MD's favour, may, at the Chief Administrative Officer's sole option, and in addition to any other legally available remedies, be added to a Customer's Account as an additional amount due and payable by the Customer to the MD.

(4) If a Property is required to connect to the Water System, pursuant to section 2(1) of Schedule “B” of this Bylaw, and the Wastewater System, pursuant to section 2(1) of Schedule “C” of this Bylaw, and the Owner of that Property connects to both of those systems within 90 days of the Chief Administrative Officer providing notice of a date to connect to those systems, the MD will waive the fee for the initial Supply of the Meter as set out in Schedule “E” of the Bylaw.

6. Utility Services Guidelines

(1) Subject to subsection (2), the Chief Administrative Officer may adopt, amend, repeal and replace Utility Services Guidelines from time to time as the Chief Administrative Officer deems advisable.

(2) Utility Services Guidelines must not be inconsistent with this Bylaw and, in the event of an inconsistency, this Bylaw shall prevail.

(3) Without limiting the generality of subsection (1), Utility Services Guidelines may deal with any or all of the following subject matters:

(a) procedures or requirements that a Customer must comply with before a Service Connection is installed or activated, or before Utility Services are provided, or as a condition of ongoing provision of Utility Services;

(b) Customer Accounts, including, without limitation, provisions or requirements concerning: opening an Account, making payments on an Account, consequences for failure to pay Accounts in full, lost bills, dishonoured cheques, collection of delinquent Accounts, adjusting improperly billed Accounts, Utility Services application fees, handling of confidential Customer Account information, closing an Account, and any other matter relating to Customer Accounts;

(c) measurement of water consumption, including without limitation provision or requirements concerning: meter inspection and testing, meter settings, chambers and installations, meter reading, disputes concerning meter data, estimates of consumption or Subsidiary Meters, remote meter reading devices, relocation of meters, access for meter readers, and adjustments to bills when

meters have malfunctioned;

(d) procedures or requirements concerning investigating Customer complaints and concerns;

(e) procedures or requirements for provision of temporary Water Services, including without limitation Water Services provided during the construction phase of a development;

(f) procedures or requirements that a Customer must comply with in order to access a MD bulk water station;

(g) procedures or requirements for upgrading, re-sizing, relocating or otherwise changing a Service Connection, whether at the instigation of the MD or at the request of a Customer;

(h) the turn-on and turn-off of Water Services, whether at the instigation of the MD or at the request of a Customer; and

(i) supply of water for firefighting purposes, including without limitation procedures or requirements concerning the maintenance of public and private fire hydrants and permissible use of water from fire hydrants.

7. Notices

In any case in which written notice is required to be provided to a Customer pursuant to this Bylaw, the Chief Administrative Officer may serve notice:

(1) personally;

(2) by e-mail if the Customer has consented to receive documents from the MD by e-mail and has provided an e-mail address to the MD for that purpose;

(3) by mailing or delivering a copy of the notice to the last known address of the Customer as disclosed in the MD's assessment roll for the Property; or

(4) if the Customer does not answer the door, by placing the written notice on the door of the Property.

8. Authority of the Chief Administrative Officer

Without restricting any other power, duty or function granted by this Bylaw, the Chief Administrative Officer is authorized to, in accordance with this Bylaw and all other applicable laws:

(1) take any steps and carry out any actions required to give effect to, and enforce, the provisions of this Bylaw;

(2) establish forms for the purpose of this Bylaw; and

(3) delegate any powers, duties or functions under this Bylaw to an employee of the Municipality.

PART III – ENFORCEMENT

9. Offence

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

10. Continuing Offence

In the case of an offence that is of a continuing nature, a contravention constitutes a separate offence in respect of each day, or part of a day, on which it continues and 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 day.

11. Vicarious Liability

For the purposes of this Bylaw, an or omission by an employee or agent of a Person is deemed also to be an act or omission of the Person if the act or omission occurred in the course of the employee's employment with the Person, or in the course of the agent's exercising the powers or performing the duties on behalf of the Person under their agency relationship.

12. Corporations and Partnerships

(1) When a corporation commits an offence under this Bylaw, every principal, director, manager, employee or agent of the corporation who authorized the act or omission that constitutes the offence or assented to or acquiesced or participated in the act or omission that constitutes the offence is guilty of the offence whether or not the corporation has been prosecuted for the offence.

(2) If a partner in a partnership is guilty of an offence under this Bylaw, each partner in that partnership who authorized the act or omission that constitutes the offence or assented to or acquiesced or participated in the act or omission that constitutes the offence is guilty of the offence.

13. Fines and Penalties

(1) A Person who is guilty of an offence is liable to a fine in an amount not less than $100.00 and not exceeding $10,000.00.

(2) Without restricting the generality of subsection (1) the fine amounts established for use on Violation Tickets, if a voluntary payment option is offered, are as set out in Schedule "F".

14. Violation Ticket

(1) A Peace Officer is hereby authorized and empowered to issue a Violation Ticket pursuant to the *Provincial Offences Procedure Act* to any Person who the Peace Officer has reasonable and probable grounds to believe has contravened any provision of this Bylaw.

(2) Subject to the *Provincial Offences Procedure Act* and the regulations thereunder, if a Violation Ticket is issued in respect of an offence, the Violation Ticket may;

(a) specify the fine amount established by this Bylaw for the offence; or

(b) require a Person to appear in court without the alternative of making a voluntary payment.

15. Voluntary Payment

A Person who commits an offence may:

(1) if a Violation Ticket is issued in respect of the offence; and

(2) if the Violation Ticket specifies the fine amount established by this Bylaw for the offence; make a voluntary payment by submitting to a Clerk of the Provincial Court, on or before the initial appearance date indicated on the Violation Ticket, the specified penalty set out on the Violation Ticket.

16. Obstruction

No Person shall obstruct, hinder or impede any authorized representative of the MD in the exercise of any of their powers or duties pursuant to this Bylaw.

PART IV - GENERAL

17. Schedules

The following schedules are included in, and form part of, this Bylaw:

(a) Schedule "A" - General Terms and Conditions of Utility Services;

(b) Schedule "B" - Terms and Conditions of Water Services;

(c) Schedule "C" - Terms and Conditions of Wastewater Services;

(d) Schedule "D" - Terms and Conditions of Solid Waste Services;

(e) Schedule "E" - Rates, Fees and Charges;

(f) Schedule "F" - Specified Penalties; and

(g) Schedule “G” – Wastewater Overstrength Limits

18. Severability

Every provision of this Bylaw is independent of all other provisions and if any provision of this Bylaw is declared invalid for any reason by a Court of competent jurisdiction, all other provisions of this Bylaw shall remain valid and enforceable.

19. Repeal

This Bylaw repeals Bylaw 1320-20 The Utilities Bylaw.

20. Enactment

This Bylaw takes effect upon being passed.

READ a first time this ____ day of _____, 2022.

A PUBLIC HEARING was held this ____ day of _____, 2022.

READ a second time this ____ day of _____, 2022.

READ a third and time and finally PASSED on the ____ day of _____, 2022.

_____
Reeve,
Rick Lemire

_____
Chief Administrative Officer,
Roland Milligan

SCHEDULE "A"

GENERAL TERMS AND CONDITIONS OF UTILITY SERVICES

PART 1 - GENERAL WATER, WASTEWATER AND SOLID WASTE PROVISIONS

1. Duty to Supply

(1) The MD shall continue, insofar as there is sufficient capacity and supply, to supply Water Services, upon such terms as Council considers advisable, to any Customer within the MD situated along a Water Main owned and operated by the MD.

(2) The MD shall continue, insofar as there is sufficient capacity and supply, to supply Wastewater Services, upon such terms as Council considers advisable, to any Customer within the MD situated along a Wastewater Main owned and operated by the MD.

(3) The MD shall continue, insofar as is reasonably practicable, to supply Solid Waste Services, upon such terms as Council considers advisable, to any Customer within the Collection Area.

(4) All Utility Services provided by the MD shall be provided in accordance with these Terms and Conditions, and these Terms and Conditions shall apply to and be binding upon all Customers receiving Utility Services from the MD.

2. No Guarantee of Continuous Supply

(1) The MD does not guarantee or warrant the continuous supply of potable water and the MD reserves the right to change the operating pressure, restrict the availability of Water Services or to disconnect or shut-off Water Services, in whole or in part, with or without notice, in accordance with this Bylaw.

(2) Customers depending upon a continuous and uninterrupted supply or pressure of water or who require or have processes or equipment that require particularly clear or pure water shall provide such facilities, as they are considered necessary, to ensure a continuous and uninterrupted supply, pressure or quality of water required for this use. The MD assumes no responsibility for same.

(3) The MD does not guarantee or warrant the continuous capacity to collect, store and transmit Wastewater and the MD reserves the right to restrict the availability of Wastewater Services or to disconnect or shut-off Wastewater Services, in whole or in part, with or without notice, in accordance with this Bylaw.

(4) The MD does not guarantee or warrant the continuous capacity to collect, store and handle Solid Waste and the MD reserves the right to restrict the availability of Solid Waste Services or to discontinue Solid Waste Services, in whole or in part, with or without notice, in accordance with this Bylaw.

(5) The MD shall not be liable for any damages caused by the provision of Utility Services, including without limitation losses caused by a break within the MD's Water System or Wastewater System or caused by the interference or cessation of water supply including those necessary or advisable regarding the repair or proper maintenance of the MD's Water System or Wastewater System, or generally for any accident due to the operation of the MD's Water System, Wastewater System or Solid Waste Services or for the disconnection of a Service Connection or shut-off of a Utility Service, nor by reason of the water containing sediments, deposits, or other foreign matter.

3. Application for Service Connection

(1) A Customer requesting Utility Services involving a new Service Connection shall apply to the Chief Administrative Officer by submitting an application in a form acceptable to, or adopted by, the Chief Administrative Officer, paying all associated fees and supplying information regarding the location of the Property to be served, the manner in which the Service Connection will be utilized, and any other information that may be reasonably required by the Chief Administrative Officer.

(2) Upon receipt of all required application documents, information and fees, verification of the Customer's identity and the accuracy of the information, the Chief Administrative Officer will advise the Customer whether and on what terms the MD is prepared to supply Utility Services to the Customer, the type and character of the Service Connection(s) it is prepared to approve for the Customer, and any conditions, including without limitation, payments by the Customer, that must be satisfied as a condition of installation of a Service Connection(s) and supply of Utility Services.

4. Easements and Rights-of-Way

At the request of the Chief Administrative Officer, the Customer shall grant or cause to be granted to the MD, without cost to the MD, such easements or rights-of-way over, upon or under Property owned or controlled by the Customer as the MD may reasonably require for the construction, installation, maintenance, repair, and operation of the Water System or Wastewater System.

5. Design and Engineering Requirements for Service Connections

Detailed requirements for engineering and construction of Service Connections are set out in the Engineering Design Standards, or as may be otherwise directed by the Chief Administrative Officer. It is the Customer's responsibility to supply, at the Customer's cost, any plans and engineering reports pertaining to the Service Connection that the MD may reasonably require, signed and sealed by a professional engineer.

6. Construction of Service Connections

(1) The MD shall provide and install all Facilities up to the property line, but the Customer shall be responsible for, and shall pay, for the provision and installation of the Water Service Line or Wastewater Service Line as set out within Schedule “E”.

(2) The MD shall waive customer costs set out in subsection (1) if a Customer is located within the Hamlet of Beaver Mines and construction has occurred prior to December 31, 2022. Those costs will be paid for by the MD due to the bulk of the construction being installed under the MD’s supervision with use of grant funding to complete the work.

(3) The Customer shall be responsible for, and shall bear all costs associated with, the installation and condition of the Private Water Line or Private Drainage Line and all other piping and equipment or other Facilities of any kind whatsoever on the Customer's side of the property line and:

(a) shall ensure that the Customer's proposed Private Water Line or Private Drainage Line, as applicable receives approval from the MD prior to construction;

(b) shall ensure that all work undertaken on behalf of the Customer is performed by qualified workers holding appropriate certifications, in accordance with this Bylaw and applicable requirements set out in the Engineering Design Standards and the Utility Services Guidelines; and

(c) shall not backfill the excavation until such time as the MD has inspected and approved of the work.

(4) If an excavation is backfilled in contravention of subsection (3)(c), the Chief Administrative Officer may, in addition to any other rights and remedies that may be available to the MD, require the Customer in question to dig out and expose the said work at the Customer's cost.

7. Repair and Maintenance of Water and Wastewater Service Lines

The MD is responsible for the repair, maintenance and replacement of Water Service Lines and Wastewater Service Lines, but the Customer shall be responsible for, and shall pay, all costs incurred by the MD in connection with the maintenance, repair or replacement of the Water Service Line and Wastewater Service Line serving the Customer's Property.

8. Repair and Maintenance of Private Drainage and Water Lines

(1) The Customer is responsible for the repair, maintenance and replacement of Private Drainage Lines and Private Water Lines located on the Customer's Property, and for all associated costs.

(2) The Chief Administrative Officer may require a Customer to perform work described in subsection (1) if the Chief Administrative Officer, in his or her discretion, considers such work to be necessary or desirable for the protection or proper operation of the Water System or Wastewater System, as applicable.

(3) Where the Chief Administrative Officer requires a Customer to perform work pursuant to subsection (2), the Chief Administrative Officer shall establish a deadline by which the work in question must be completed by the Customer.

(4) If a Customer fails to complete, by the deadline established under subsection (3), all work required by the Chief Administrative Officer, to the satisfaction of the Chief Administrative Officer, the MD may, at its option, and in addition to any other remedy available, enter onto the Customer's Property and perform the said work.

(5) The Customer shall pay all costs incurred by the MD in performing work pursuant to subsection (4)

9. Customer Responsibility for Service Connection

(1) The Customer assumes full responsibility for the proper use of any Service Connection and any Utility Services provided by the MD and for the condition, suitability and safety of any and all devices or equipment necessary for receiving Utility Services that are located on the Customer's Property.

(2) The Customer shall be responsible for determining whether the Customer requires any devices to protect the Customer's Property from damage that may result from the use of a Service Connection or Utility Services, or to protect the safety or reliability of the Water System or Wastewater System. The Customer shall provide and install any such devices at the Customer's sole expense.

10. Compliance with Requirements and Use of Service Connection

(1) A Customer shall ensure that the Customer's facilities comply with the requirements of this Bylaw, all applicable statutes, regulations, codes, and standards and with the MD's specifications.

(2) A Customer shall not use a Service Connection or any Utility Service received in a manner so as to interfere with any other Customer's use of a Service Connection, or Utility Services.

(3) A Customer who has breached subsection (2) shall, at the Chief Administrative Officer's request, take whatever action is required to correct such interference or disturbance at the Customer's expense.

11. Abandonment of Service Connection

Whenever a Customer wishes to abandon a Service Connection, the Customer shall first obtain approval from the Chief Administrative Officer for the method and location of abandonment and the Customer shall assume responsibility for all costs associated with the same.

12. Ownership of Facilities

(1) The MD retains ownership of all Facilities necessary to provide Utility Services to a Customer, up to the property line, as well as the Curb Stop and Meter even if located on the Customer's Property, unless a written agreement between the MD and a Customer specifically provides otherwise.

(2) Payment made by a Customer for costs incurred by the MD for supplying and installing Facilities does not entitle the Customer to ownership of any such Facilities, unless a written agreement between the MD and the Customer specifically provides otherwise.

13. Access to Facilities

(1) No Person shall obstruct or impede the MD's free and direct access to any Facilities.

(2) A Customer shall be responsible for managing vegetation on the Property owned or controlled by the Customer to maintain adequate clearances and reduce the risk of contact with the MD's Facilities.

(3) A Customer shall not install or allow to be installed on Property owned or controlled by the Customer any temporary or permanent structures that could interfere with the proper and safe operation of the MD's Facilities or result in noncompliance with applicable statutes, regulations, standards or codes.

(4) Where a Customer contravenes any provision of this section and fails to remedy such contravention within ten (10) days after receiving from the Chief Administrative Officer a notice in writing to do so, then in addition to any other legal remedy available the Chief Administrative Officer may take any steps necessary to remedy the contravention and may charge any costs of doing so to the Customer's Account.

14. Interference with or Damage to Facilities

No Person shall interfere with or alter any Facilities or permit the same to be done by any Person other than an authorized agent of the MD, except as authorized by the Chief Administrative Officer.

15. Protection of Facilities on Customer's Property

The Customer shall furnish and maintain, at no cost to the MD, the necessary space and protective barriers to safeguard Facilities installed or to be installed upon the Customer's Property. If the Customer refuses, the Chief Administrative Officer may, at his or her option, furnish and maintain, and charge the Customer for furnishing and maintaining, the necessary protection. Such space and protective barriers shall be in conformity with applicable laws and regulations and subject to the Chief Administrative Officer's specifications and approval.

16. Customer to Pay Relocation Costs

The Customer shall pay all costs of relocating the MD's Facilities at the Customer's request, if such relocation is for the Customer's convenience, or if necessary to remedy any violation of law or regulation caused by the Customer. If requested by the MD, the Customer shall pay the estimated cost of the relocation in advance.

17. Prohibited Extension of Customer Owned Facilities

A Customer shall not extend or permit the extension of a Private Water Line, Private Wastewater Line or any other Customer-owned piping, equipment or other assets that are connected directly or indirectly to the Water System or Wastewater System, beyond the Property in respect of which they are used to supply Utility Services through a Service Connection.

PART Ill - UTILITY ACCOUNTS

18. Requirement for Account

(1) The Owner of a Property shall apply for an Account with the MD, in a form acceptable to the MD, and pay all applicable fees as a condition of obtaining Utility

Services, regardless of whether the provision of services requires installation of a new Service Connection(s) or construction of any new Facilities.

(2) In the case of a Multiple Dwelling, the Chief Administrative Officer may require that a separate Account be opened in respect of each Dwelling, as applicable, within the Multiple Dwelling, regardless of the number of Service Connections associated with the Multiple Dwelling.

(3) Except as provided under this Bylaw, the MD shall not grant Utility Services to, or open an Account in the name of, an Occupant that is not the Owner of the Property.

(4) lf, notwithstanding subsection (3), Utility Services are currently being provided to an Occupant that is not the Owner of the Property, the Owner of the Property shall forthwith inform the MD of this and apply for an Account with the MD, failing which the MD may deem an application to have been received from the Owner of the Property and open an Account in the Owner's name.

(5) Upon the change of ownership of a Property supplied with Utility Services, the new Owner shall apply for an Account with the MD, failing which the MD may deem an application to have been received from the new Owner of the Property and open an Account in the new Owner's name.

19. Security Deposits

(1) The Chief Administrative Officer may, in his or her sole discretion, at the time of a Customer's application for Utility Services or at any time thereafter require the Customer to post a security deposit or increase an existing security deposit.

(2) The Chief Administrative Officer may, in his or her sole discretion, determine that a Customer is not required to post a security deposit or is no longer required to maintain an existing security deposit.

(3) A deposit made by a Customer shall be returned to the Customer when a Customer's Utility Services are terminated and the Customer's Account is closed. Where a Customer's Utility Services are terminated and the Customer's Account is closed for non-payment, prior to any refund, the security deposit will be applied to the balance owing by the Customer to the MD.

(4) The MD is not obliged to pay interest on any security deposit held by the MD to a Customer.

20. Obligation to Pay

(1) The Chief Administrative Officer may add to a Customer's Account the charges for all Utility Services provided by the MD to the Customer, and the Customer is obligated to pay in full all such charges without reduction or set-off for any reason whatsoever, on or before the due date for the charges.

(2) For greater certainty, non-receipt of a bill or invoice does not relieve a Customer from the obligation to pay for Utility Services provided.

(3) No reduction in charges for Utility Services will be made because of any interruption of Utility Services supplied to or made available for use by any Customer due to any cause whatsoever.

(4) Billing shall be in accordance with the following:

(a) The amount of the billing shall be based upon the rates, fees and charges set out in this Bylaw, including, without restriction, Schedule "E";

(b) Customers shall be billed bi-monthly, or at such frequency as may be determined by the Chief Administrative Officer, in his or her discretion;

(c) For rates, fees and charges that are based on water consumption, the water consumption through Service Connections shall be determined by the applicable Meter reading, obtained at such frequency as may be determined by the Chief Administrative Officer in his or her discretion, with a

consumption estimate to be utilized in months for which no Meter reading is scheduled to occur;

(d) Where a Meter reading is not obtainable a water consumption estimate may, at the Chief Administrative Officer's discretion, be used;

(e) Where water consumption cannot be measured because a Meter has not been installed and Utility Service cannot be shut-off at the Curb Stop, the Customer will be charged the rates applicable to an "Unmetered Services" for Water Services.

(5) Where, pursuant to any provision of this Bylaw, a Service Connection that provides a Utility Service to a Customer has been disconnected, or a Utility Service has otherwise been shut-off or discontinued, the Customer shall continue, for the duration of the disconnection, shut-off or discontinuance of service, to be obligated to pay all applicable non-consumption related rates, fees and charges set out in this Bylaw, including, without restriction, all applicable flat rate or fixed rate charges for Water Services and Wastewater Services.

(6) Every Owner of a Property receiving Solid Waste Services shall pay the applicable rates, fees and charges for Solid Waste Services as set out in this Bylaw.

(7) Payment on Accounts may be made to the MD at such locations designated, and under any payment methods approved, by the Chief Administrative Officer from time to time.

21. Past Due Accounts

(1) A late payment charge shall be applied to all charges on a Customer's Account if the Customer's payment has not been received by the MD by the due date. The Customer may also be charged a dishonoured cheque charge for each cheque returned for insufficient funds.

(2) Any charge on a Customer's Account remaining unpaid after the due date will be in arrears and constitute a debt owing to the MD and is recoverable by any or all of the following methods, namely:

(a) by action, in any Court of competent jurisdiction;

(b) by disconnecting the Service Connection to the Customer or shutting-off a Utility Service, and imposing a re-connection fee prior to re-establishing Utility Services;

(c) by the Chief Administrative Officer adding the outstanding Account balance to the tax roll of an Owner of a Property in accordance with the *Municipal Government Act.*

22. Discontinuance of Utility Services

(1) In addition to any other remedy available, if the Chief Administrative Officer believes there is any actual or threatened danger to life or Property, or in any other circumstances the nature of which, in the Chief Administrative Officer's sole judgment, requires such action, the Chief Administrative Officer has the right to, without prior notice to the Customer, discontinue the provision of Utility Services to a Customer or Property.

(2) In addition to any other remedy available, the Chief Administrative Officer may discontinue the provision of Utility Services to a Customer or Property after providing forty-eight (48) hours advance notice to the Customer in the following circumstances:

(a) if the Customer neglects or refuses to pay when due any amounts required to be paid under this Bylaw, which amount is not the subject of a good faith dispute;

(b) as required by law;

(c) if the Customer is in violation of any provision of this Bylaw or any agreement between the Customer and the MD for the provision of Utility Services; or

(d) any other similar circumstances to those described above that the Chief Administrative Officer determines, in his or her sole discretion, acting reasonably, require the discontinuance of Utility Services upon forty-eight (48) hours' notice.

(3) When Utility Services are to be discontinued pursuant to subsection (1) or (2), the Chief Administrative Officer may use any means to discontinue the Utility Services, including, without restriction, disconnecting, shutting-off or sealing a Service Connection.

(4) The MD may impose, upon Customers, fees and charges, as set out in this Bylaw, for the discontinuance or disconnection of Utility Services and for the restoration or reconnection of Utility Services and may, in addition, require the Customer to reimburse the MD for any costs incurred by the MD in taking action under this section.

(5) Before the MD restores or reconnects Utility Services, the Customer shall pay:

(a) any amount owing to the MD for the provision of Utility Services;

(b) any amount owing pursuant to subsection (4); and

(c) any applicable security deposit.

23. Customer Requested Temporary Turn-off

(1) A Customer may request the MD to temporarily turn-off the water supply to the Customer's Property at the Curb Stop, subject to payment of the applicable fees and charges provided for in this Bylaw.

(2) A temporary turn-off of the water supply does not relieve the Customer from the obligation to pay any fixed rates or other charges associated with the Customer's Property being connected to the Water System.

24. The MD's Right of Entry

(1) As a condition of receipt of Utility Services and as operational needs dictate, authorized representatives of the MD shall have the right to enter a Customer's Property at all reasonable times, or at any time during an Emergency, for the purpose of:

(a) installing, inspecting, maintaining, replacing, testing, monitoring, reading or removing any facilities associated with the Water System or Wastewater System;

(b) investigating or responding to a Customer complaint or inquiry;

(c) conducting an unannounced inspection where the Chief Administrative Officer has reasonable grounds to believe that unauthorized use of water or interference with Facilities, including but not limited to a Meter, has occurred or is occurring; and

(d) for any other purpose incidental to the provision of Utility Services.

(2) The Chief Administrative Officer will make reasonable efforts to notify the Customer in advance of entering a Customer's property or to notify any other Person who is at the Customer's property and appears to have authority to permit entry, except:

(a) in cases of an Emergency;
(b) where entry is permitted by order of a court or other authority having jurisdiction;

(c) where otherwise legally empowered to enter;

(d) where the purpose of the entry is in accordance with subsection (1)(c) above.

(3) No Person shall hinder or prevent an Inspector from carrying out any of the Chief Administrative Officer's duties under this Bylaw.

(4) The Customer shall pay a no access fee sufficient to cover the MD's reasonable out-of-pocket and administrative costs, if the MD's lawful entry to a Customer's Property is prevented or hindered, whether by a Customer not keeping a scheduled appointment or for any other cause.

25. Removal of MD Facilities

Where any Customer discontinues Utility Services furnished by the MD, or the MD lawfully refuses to continue any longer to supply it, any authorized representative of the MD may at all reasonable times enter the Customer's Property to remove any Facilities in or upon such Property.

26. False Information

No Person shall supply false information or make inaccurate or untrue statements in a document or information required to be supplied to the MD pursuant to this Bylaw.

SCHEDULE "B"

TERMS AND CONDITIONS OF WATER SERVICES

PART 1 - GENERAL WATER SERVICES PROVISIONS

1. Water Conservation and Demand Management Measures

(1) The Chief Administrative Officer may, at such times and for such lengths of time as is considered necessary or advisable, implement Water Conservation and Demand Management Measures to restrict water usage in any or all parts of the MD.

(2) All water restrictions shall be duly advertised by posting on the MD's website or by use of local media, social media, print or otherwise, prior to taking effect.

(3) No Person shall contravene the terms or conditions of any Water Conservation and Demand Management Measures, without first obtaining the Chief Administrative Officer's authorization.

2. Requirement to Connect to Water System

(1) Subject to subsection (3), all developed Properties adjacent to a Distribution System Water Main must connect to the Water System on or before a date set by the Chief Administrative Officer.

(2) Subject to subsection (3), all new development, including redevelopment, on Property adjacent to a Water Main must connect to the Water System prior to occupancy.

(3) The Chief Administrative Officer may, in his or her discretion, exempt a given developed Property, new development or redevelopment from the connection requirement established by subsection (1) or (2), as applicable

(4) Where an exemption has been granted under subsection (3), the Chief Administrative Officer may, at any time after the granting of the exemption, require that the developed Property, new development or redevelopment in question be connected to the Water System within an alternate timeframe prescribed by the Chief Administrative Officer.

(5) If an Owner fails to take all required steps to connect the Owner's Property to the Water System when required, by this section, to do so, the MD may enter onto the Property in question and, at the Owner's sole expense, take any and all steps that the MD considers necessary to connect that Property to the Water System, including, without restriction, constructing a Private Water Line and related facilities on the Property.

3. Alternate Water Supply

(1) Subject to subsection (2), once a Property is connected to the Water System:

(a) no Person shall allow water to be supplied to that Property by way of a well, spring or other source of water supply that is not connected to the Water System; and

(b) any existing well, spring or other source of water supply not connected to the Water System, that is located on that Property, shall be decommissioned by the Owner, at the Owner's expense, in accordance with all applicable laws and regulations.

(2) The Chief Administrative Officer may allow a Person to maintain an alternate source of water supply subject to such terms and conditions as the Chief Administrative Officer deems necessary, which may include, without limiting the generality of the foregoing, restrictions on the period of time for which an alternate source of water supply may be used and the purposes for which it may be used.

(3) No Person who has been granted permission by the Chief Administrative Officer to maintain an alternate water supply under this section shall allow the alternate source of water to be connected, directly or indirectly, to the Water System.

4. Resale and Supply of Water

No Person shall, unless authorized by the Chief Administrative Officer in writing:

(1) resell water obtained from the Water System to any other Person;

(2) supply water obtained from the Water System to any Person who intends to sell the water; or

(3) supply water from the Water System to any Property that could be supplied with water through its own Service Connection.

5. Unauthorized Use of Water

(1) No Person shall use water from the Water System, or allow water obtained from the Water System to be used:

(a) in a manner that will impede water use by other Customers;

(b) in a manner that is wasteful;

(c) unless an Account has been opened by the Customer;

(d) unless the water has first passed through a Meter, except in a case where, pursuant to this Bylaw, unmetered supply of water is specifically authorized; or

(e) in any other unauthorized manner.

(2) If the Chief Administrative Officer finds an unauthorized use of water including, without restriction, as a result of any tampering with a Meter or other Facilities, the Chief Administrative Officer may make such changes in the MD's Meters, appliances, or other Facilities or take such other corrective action as may be appropriate to ensure only the authorized use of the Facilities, and also to ensure the safety of the general public.

(3) Upon finding an unauthorized use of water, the Chief Administrative Officer may immediately disconnect the Service Connection or shut-off the water supply, without notice, and shall charge the Person all costs incurred in correcting the condition, in addition to any other rights and remedies that may be available to the MD.

(4) A Person that uses water in contravention of this section shall pay the following charges:

(a) the applicable rate for the water used and, where necessary, based on an estimate by the Chief Administrative Officer of the amount of water used in contravention of this section;

(b) all costs incurred by the MD in dealing with the contravention; and

(c) any other applicable fees or charges provided for in this Bylaw.

6. Authorizations and Approvals for Private Water Line

(1) Except where the MD has caused the installation to be performed by a private contractor, in accordance with this Bylaw, The Customer shall be responsible for obtaining all permits, certificates, licenses, inspections, reports, and other authorizations necessary for the installation and operation of the Private Water Line.

(2) The MD shall not be required to commence Water Services to a Property unless and until the Customer has complied with the requirements of all governmental authorities, permits, certificates, licenses, inspections, reports and other authorizations, all right-of-way agreements, and all of the MD's requirements applicable to the installation and operation of the Private Water Line. The MD reserves the right, but is not obligated, to verify that all necessary authorizations have been obtained by the Customer.

7. Temporary Water Services

The MD may provide temporary Water Services wherever practicable to a Customer for purposes of facilitating construction of a new development. The Customer will pay a rate, charge or fee for such Water Services as specified in this Bylaw. A Customer who is receiving temporary Water Services for the construction phase of a development ceases to be entitled to take temporary Water Services at the construction rate and is required to apply for permanent metered Water Services when

(1) a MD final inspection is issued for the development; or

(2) the development is being used for its intended purpose; whichever event occurs first.

8. Bulk Water

(1) The MD may, at its discretion, make water available for sale at MD bulk water stations.

(2) The MD is not obligated to supply water at its bulk water stations and the supply of water may be interrupted for any reason.

9. Transmission System Service Connections

(1) The flow rate for any Transmission System Service Connection shall be 4 Litres per minute. All Service Connections on Rural Property and Redevelopments on Rural Property must be connected to a Cistern, Pressure Reducing Valve (PRV), and Flow Restriction device for pressurization of the Private Water Line, except as agreed to in writing by the Chief Administration Officer.

(2) Existing Transmission System Service Connections without a separate Agreement under subsection (1) that do not meet the requirements of subsection (1) shall be considered Schedule E “Residential – Non Cistern” rate Customers.

(3) Transmission System Service Connections are for residential, domestic, and municipal use only. Any Commercial or Agriculture use of water from the MD’s Rural Transmission System is unauthorized use and enforceable under Schedule F.

PART II -WATER METERS

10. Provision and Ownership of Meters

(1) All water supplied by the MD through each Service Connection shall be measured by one Meter unless the Chief Administrative Officer, in his or her sole discretion, has specified otherwise. A separate Curb Stop must be installed for each Meter.

(2) The MD shall, at the Customer's sole cost, supply one or more Meters for the purpose of measuring the volume of water delivered to a Customer by way of a Service Connection. Each Meter shall remain the sole property of the MD, notwithstanding the Customer has paid all applicable fees and charges of supply, unless the Chief Administrative Officer and the Customer have expressly agreed in writing otherwise.

(3) In the case of new construction on Property adjacent to a Water Main, a Customer's Property may only be occupied after the Meter is installed and an Account opened.

(4) If a Customer fails or refuses to permit a Meter to be installed on the Customer's Property, as required by this section, the MD may, without restricting any other remedies provided for in this Bylaw or by statute or under the common law, charge the Customer for Water Services at the rates prescribed in this Bylaw for an "Unmetered Service".

11. Responsibilities of Customer

(1) Each Customer shall ensure that a location on the Customer's Property for Meter installation is provided, and that access to the Meter is provided for the purpose of reading or servicing the Meter, in accordance with all applicable Water Service Guidelines.

(2) Each Customer shall provide adequate protection for the Meter supplied by the MD against freezing, heat or any internal or external damage.

(3) When a Meter is damaged due to frost, heat or any other condition or means against which the Customer neglected to provide adequate protection, the cost of removal and repair or replacement of the Meter shall be borne by the Customer.

12. General Meter Restrictions

(1) Unless written authorization is provided by the Chief Administrative Officer, no Person other than an authorized agent of the MD shall install, test, remove, repair, replace, or disconnect a Meter.

(2) No Person shall break, tamper, or interfere with any Meter including, without restriction, any seal attached thereto.

(3) If a Meter is lost, damaged or destroyed, the Customer shall pay all applicable fees and charges for the Meter removal, repair and reinstallation or for replacing the Meter.

(4) No Person· shall obstruct or impede direct and convenient access to Meters for the purpose of inspection, removal, repair, replacement or reading.

13. Access to Meters

(1) The Chief Administrative Officer may, at any reasonable time, read, inspect, remove, repair, replace or test a Meter installed on Property owned or controlled by the Customer.

(2) The Chief Administrative Officer may schedule and administer regular maintenance, inspection and replacement programs for Meters.

14. Remote Meter Reading

(1) Without limiting the generality of section 12 of this Schedule, the Chief Administrative Officer may, at any reasonable time, and at the Customer's sole cost, replace a Meter, or require a Meter to be replaced, with a Meter capable of being read remotely.

(2) If a Customer denies the Chief Administrative Officer access to the Customer's premises or in any way hinders or obstructs the Chief Administrative Officer's installation of a Meter that can be read remotely, or refuses to replace a Meter with a Meter that can be read remotely when required by the Chief Administrative Officer, then, without limiting any other remedy available pursuant to this Bylaw, by statute or common law, the Customer may be deemed to be an "Unmetered Service" and charged accordingly for Water Services even if the Customer has a pre-existing Meter.

15. Meter Readings

Where 3 consecutive estimated Meter readings have been used for billing purposes due to the Meter not being read by an authorized representative of the MD as a result of the Customer failing to provide or allow the MD access to the Meter during a billing period:

(1) a notice may be left at the Customer's address requesting the Customer to contact the Chief Administrative Officer within two (2) working days, advising of the date and time that the Chief Administrative Officer will be able to have access to the Meter for the purpose of obtaining an actual Meter reading; or

(2) in the case where the Customer does not contact the Chief Administrative Officer within two (2) working days, the MD may disconnect the Service Connection or shut-off Utility Services, without any further notice, until such time as an actual Meter reading can be obtained.

16. Meter Testing

(1) At the request of a Customer, the Chief Administrative Officer shall arrange for on-site Meter verification and, if necessary, shall arrange for a Meter to be tested by a

person qualified to perform such work. If, upon verification or testing or both, the Meter is found to be recording accurately, which for this purpose is defined as recording between 98.5% and 101.5% of actual consumption, then the Customer shall pay all applicable fees and charges for this service.

(2) If the Meter is found to be recording inaccurately, as defined above:

(a) the MD shall waive the Meter Test Charge set forth in Schedule "E" of this Bylaw; and

(b) the MD shall repair or replace, or require a Meter to be replaced, and perform any required testing. The Customer shall be responsible for, and shall pay any applicable fee or charge set forth in this Bylaw; and

(c) subject to subsection (3), the Account based on the readings of that Meter during the period of 3 months immediately preceding the date of the test or calibration shall be corrected to reflect the error in the Meter and the Customer shall pay, or shall be refunded, as the case may be, the amount so determined, which payment or refund shall be accepted by both the MD and the Customer in full settlement of any claim that may arise out of the error in the Meter.

(3) The Chief Administrative Officer may at any time inspect or test any Meter, on its own initiative, regardless of whether the Customer has requested inspection or testing. In such case no fees or charges are payable by the Customer.

17. Circumvention of Meter

(1) If under any circumstances, a Person other than an authorized agent of the MD prevents a Meter from accurately recording the total volume of water supplied, the MD may disconnect the Service Connection, shut-off Utility Services or take other appropriate actions to ensure access to accurate Meter data or both.

(2) The Chief Administrative Officer may then estimate the demand and amount of water supplied but not recorded by the Meter at the Service Connection. The Customer shall pay the cost of the estimated water consumption plus all costs related to the investigation and resolution of the matter.

PART III - FIRE PROTECTION

18. Use of Water from Fire Hydrants

(1) Unless authorized by the Chief Administrative Officer, no Person shall operate or interfere with a fire hydrant, whether owned by the MD or privately owned, except as necessary for firefighting, flushing, and maintenance purposes.

(2) A Customer requesting authorization to use water from a MD owned fire hydrant shall apply to the Chief Administrative Officer by paying all associated fees (per Schedule "E") and supplying information regarding the location of the fire hydrant to be accessed, the manner in which it will be used, and any other information that may be reasonably required by the Chief Administrative Officer.

(3) The Chief Administrative Officer will advise the Customer whether and on what terms the MD is prepared to authorize use of a MD owned fire hydrant and any conditions, including without limitation, payments by the Customer, Water Meter, valves, pipes and fittings required that must be satisfied as a condition of using a MD owned fire hydrant.

(4) The Chief Administrative Officer may, in his or her discretion, exempt a given Customer the associated fees established by subsection (2).

19. Interference with Fire Hydrants

(1) No Person shall do anything to obstruct access to, or interfere with the operation of, a fire hydrant.

(2) Each Customer who owns Property on which a fire hydrant is located or Property that is adjacent to Property on which a fire hydrant is located shall maintain a clearance

of at least 3 feet around a fire hydrant and shall not permit anything to be constructed, erected, placed or planted within that minimum clearance.

20. Private Fire Protection Equipment

(1) In this section "Private Fire Protection Equipment" means equipment, infrastructure or facilities, not owned by the MD, which is located on a Customer's Property and is intended to be used to provide fire protection, including, without limiting the generality of the foregoing, private fire hydrants, fire sprinklers and outlets for fire hoses.

(2) No Customer shall connect Private Fire Protection Equipment to the Water System without first applying for, and obtaining, the written approval of the Chief Administrative Officer.

(3) A Person applying for approval under subsection (2) shall pay any applicable fee and provide the Chief Administrative Officer with all information that the Chief Administrative Officer may require.

(4) The Chief Administrative Officer may, in his or her discretion, acting reasonably, approve or reject an application under subsection (2) and may, in granting an approval, impose conditions or requirements on the Customer, which may include, without restriction, a requirement that a separate Service Connection be constructed and installed, at the Customer's sole cost, for the purpose of supplying the Private Fire Protection Equipment.

(5) The MD does not guarantee or warrant that the Water System, or any portion thereof, will be capable of connecting to and/or adequately supplying Private Fire Protection Equipment on a Customer's Property and, without limiting the authority of the Chief Administrative Officer under subsection (4), an application under subsection (2) may be rejected if the Chief Administrative Officer determines that the Water System, or portion thereof, is not capable of connecting to or adequately supplying the proposed Private Fire Protection Equipment.

(6) A separate Service Connection for fire protection that is installed pursuant to subsection (4) shall only be utilized to supply water for fire protection purposes.

(7) Where a separate Service Connection for fire protection is required pursuant to subsection (4), the Chief Administrative Officer may require that a separate Meter be installed on that Service Connection at the sole expense of the Customer.

(8) A Customer that installs Private Fire Protection Equipment is responsible for complying with any applicable laws and regulations that relate to the installation, operation and maintenance of that Fire Protection Equipment.

(9) A Customer shall ensure that all Private Fire Protection Equipment located on the Customer's Property maintains an adequate volume, pressure and flow rate of water required for firefighting purposes.

(10) The Chief Administrative Officer may, at any reasonable time, inspect and test Private Fire Protection Equipment.

PART IV - CROSS CONNECTIONS

21. Cross Connections

(1) No Person shall install, or allow to exist, any Cross Connection that could cause or allow drinking water in any part of the Water System to become contaminated or polluted in any way.

(2) Where the Chief Administrative Officer determines that there exists a Cross Connection prohibited by this section, the Chief Administrative Officer shall give notice to the Customer to correct the Cross Connection at the expense of the Customer within the time specified in the notice and may, in addition to any other legal remedy, immediately disconnect the Service Connection or shut-off the water supply for such time as the prohibited Cross Connection continues.

22. Cross Connection Control Devices

(1) The Chief Administrative Officer may, in his or her discretion, require any Customer to install, at the Customer's expense, one or more Cross Connection Control Devices on Private Water Lines servicing the Customer's Property, in locations approved by the Chief Administrative Officer.

(2) A Customer is responsible, at the Customer's expense, for ensuring that Cross Connection Control Devices located on the Customer's Property are installed, and regularly inspected, repaired and maintained, by a Person certified and qualified to install, inspect, repair and maintain Cross Connection Control Devices.

PART V - OTHER FACILITIES

23. Operation of Curb Stops

(1) No Person, other than an authorized representative of the MD, shall operate a Curb Stop on any Property.

(2) No Person shall interfere with, damage or obstruct access to any Curb Stop.

24. Boilers

Where a boiler is supplied with water from the Water System, the Customer shall ensure that a safety valve or other appropriate device is installed to prevent danger from collapse or explosion if water supply to the Customer is disconnected or otherwise discontinued.

25. Water Softeners Prohibited

No Person shall cause or permit an Ion Exchange Water Softener to be installed along a Private Water Line or within any premises receiving Water Services.

SCHEDULE "C"

TERMS AND CONDITIONS OF WASTEWATER SERVICES

1. Unauthorized Use of Wastewater System

(1) No Person shall use the Wastewater System, or allow the Wastewater System to be used:

(a) in a manner that will impede the Wastewater System's use by other Customers;

(b) unless an Account has been opened by the Customer; or

(c) in any other unauthorized manner.

(2) If the Chief Administrative Officer finds an unauthorized use of the Wastewater System including without restriction any tampering with any of the Facilities, the Chief Administrative Officer may make such changes in its Facilities or take such other corrective action as may be appropriate to ensure only the authorized use of the Facilities, and also to ensure the safety of the general public.

(3) Upon finding an unauthorized use of the Wastewater System, the Chief Administrative Officer may immediately disconnect the Service Connection or shut-off Wastewater Services, without notice, and shall charge the Person all costs incurred in correcting the condition, in addition to any other rights and remedies that may be available to the MD.

(4) A Person that uses the Wastewater System in contravention of this section shall pay the following charges:

(a) the applicable rate for the Wastewater Services used based on an estimate by the Chief Administrative Officer of the value the contravention of this section;

(b) all costs incurred by the MD in dealing with the contravention; and

(c) any other applicable fees or charges provided for in this Bylaw.

2. Requirement to Connect to Wastewater System

(1) Subject to subsection (3), all developed Properties adjacent to a Wastewater Main must be connected to the Wastewater System on or before on or before a date set by the Chief Administrative Officer.

(2) Subject to subsection (3), all new development, including redevelopment, on Properties adjacent to a Wastewater Main must connect to the Wastewater System prior to occupancy.

(3) The Chief Administrative Officer may, in his or her discretion, exempt a given developed Property, new development or redevelopment from the connection requirement established by subsection (1) or (2), as applicable.

(4) Where an exemption has been granted under subsection (3), the Chief Administrative Officer may, at any time after the granting of the exemption, require that the developed Property, new development or redevelopment in question be connected to the Wastewater System within an alternate timeframe prescribed by the Chief Administrative Officer.

(5) If an Owner fails to take all required steps to connect the Owner's Property to the Wastewater System when required, by this section, to do so, the MD may enter onto the Property in question and, at the Owner's sole expense, take any and all steps that the MD considers necessary to connect that Property to the Wastewater System, including, without restriction, constructing a Private Drainage Line and related facilities on the Property.

(6) The Owner of a Property in respect of which the Chief Administrative Officer has provided an exemption under subsection (2) shall install, at the Owner's expense, a Private Wastewater Disposal System that meets the approval of the Chief Administrative Officer.

(7) An Owner who installs a Private Wastewater Disposal System pursuant to subsection (6) shall be responsible for obtaining, and complying with, all permits, certificates, licenses, inspections, reports, and other authorizations necessary for the installation and operation of the Private Wastewater Disposal System, and for complying with all applicable laws and regulations.

3. Alternate Wastewater System

(1) Subject to subsection (2), once a Property is connected to the Wastewater System:

(a) no Person shall, unless authorized in writing by the Chief Administrative Officer, continue to use any Private Wastewater Disposal System located on that Property for the collection or disposal of Wastewater; and

(b) any existing Private Wastewater Disposal System that is located on the Property shall be decommissioned, at the Owner's expense, in accordance with all applicable laws and regulations.

(2) The Chief Administrative Officer may allow a Person to maintain a Private Wastewater Disposal System subject to such terms and conditions as the Chief Administrative Officer deems necessary, which may include, without limiting the generality of the foregoing, restrictions on the period of time for which the Private Wastewater Disposal System may be used and the purposes for which it may be used.

(3) No Person who has been granted permission by the Chief Administrative Officer to maintain a Private Wastewater Disposal System shall allow that alternate facility to be connected, directly or indirectly, to the Wastewater System.

4. Authorizations and Approvals for Private Wastewater Line

(1) Except where the MD has caused the installation to be performed by a private contractor, in accordance with this Bylaw, the Customer shall be responsible for obtaining all permits, certificates, licenses, inspections, reports, and other authorizations necessary for the installation and operation of the Private Wastewater Line.

(2) The MD shall not be required to commence Wastewater Services to a Property unless and until the Customer has complied with the requirements of all governmental authorities, permits, certificates, licenses, inspections, reports and other authorizations, all right-of-way agreements, and all of the MD's requirements applicable to the installation and operation of the Private Wastewater Line. The MD reserves the right, but is not obligated, to verify that all necessary authorizations have been obtained by the Customer.

5. Discharge into Wastewater System

(1) Except as agreed to in writing by the Chief Administrative Officer, no Person shall discharge or permit to be discharged into the Wastewater System any matter other than domestic Wastewater resulting from normal human living processes.

(2) For greater certainty, and without in any way restricting subsection (1), no Person shall discharge or permit to be discharged into the Wastewater System:

(a) any matter containing Hazardous Waste;

(b) any substance that may cause the MD to be in violation of any regulatory or operating licence, approval or permit for the Wastewater System;

(c) any flammable liquid or explosive matter which, by itself or in combination with any other substance, is capable of causing or contributing to an explosion or supporting combustion, including, without restriction, hydrocarbon substances such as gasoline and diesel fuel;

(d) any matter which, by itself or in combination with any other substance, is capable of obstructing the flow of or interfering with the operation or performance of the Wastewater System including, without restriction, grease

and solid substances such as sand, grit, mud, plastics, rags, sanitary napkins and wet wipes;

(e) any matter with corrosive properties which, by itself or in combination with any other substance, may cause damage to the Wastewater System;

(f) any substance having a pH of less than 5.5 or greater than 1 O;

(g) pharmaceuticals;

(h) corrosive or toxic substances, including, without restriction, pesticides and herbicides;

(i) radioactive materials;

(j) condensing water,

(k) the contents of any privy vault, manure pit or cesspool;

(l) the contents of a sump pump;

(m) storm water or surface water; or

(n) any waste or by-product that has been generated by an Ion Exchange Water Softener

6. Commercial or Industrial Wastewater

(1) No Wastewater or other matter resulting from any commercial, trade, industrial or manufacturing process shall be discharged or permitted to be discharged into the Wastewater System unless prior approval has been granted by the Chief Administrative Officer and only then after any required pre-treatment of the Wastewater or other matter, as prescribed by the Chief Administrative Officer.

(2) All necessary pre-treatment equipment or works shall be installed by the Customer, at the Customer's sole expense, prior to the construction of the Service Connection and thereafter shall be continuously maintained and operated by the Customer.

7. Overstrength Surcharge

(1) In this section:

(a) "Additional Overstrength Concentration Limit" means the concentration limit, in mg/L, of a Substance set out in Schedule "G" of this Bylaw;

(b) "Additional Overstrength Surcharge Mass" means the mass, in kg, of a Substance, to which an Additional Overstrength Surcharge is applied, which mass is determined by applying the following formula:

Additional Overstrength Surcharge Mass = ((Measured Substance Concentration – Additional Overstrength Concentration Limit) x Water Volume) * 1/1,000,000 (to convert mg to kg);

(c) "Substance" means a substance identified in Schedule "G" of this Bylaw;

(d) "Overstrength Concentration Limit" means the concentration limit, in mg/L, of a Substance set out Schedule "G" of this Bylaw;

(e) "Overstrength Surcharge Mass" means the mass, in kg, of a Substance, to which an Overstrength Surcharge is applied, which mass is determined by applying the following formula:

Overstrength Surcharge Mass = ((Measured Substance Concentration – Overstrength Concentration Limit) x Water Volume) x 1/1,000,000 (to convert mg to kg)

(f) **"Measured Substance Concentration"** means the concentration, in mg/L, of a Substance found in Wastewater discharged, by the Customer, into the Wastewater System; and

(g)**"Water Volume"** means:

(i) In the case of a planned high discharge event, where the Customer has communicated their intention, to the MD, to discharge, into the Wastewater System, Wastewater containing one or more Substances with Measured Substance Concentrations that exceed the applicable Overstrength Concentration Limit, and the MD has confirmed the Customer's ability to do so during a specific date and time, the actual amount of Wastewater discharged by the Customer, measured in a manner acceptable to the MD; and

(ii) In all other situations:

i. if the Property in question receives metered water service from the MD, the volume of treated water delivered to, or consumed by, the Customer during the relevant period; and

ii. if the Property in question does not receive metered water service from the MD, the volume of Wastewater discharged by the Customer into the Wastewater System during the relevant period;

as determined by the MD.

(2) The MD may impose Overstrength Surcharges upon Customers who discharge, into the Wastewater System, Wastewater containing one or more Substances with Measured Substance Concentrations that exceed the applicable Overstrength Concentration Limit.

(3) The MD may impose Additional Overstrength Surcharges upon Customers who discharge, into the Wastewater System, Wastewater containing one or more Substances with Measured Substance Concentrations that exceed the applicable Additional Overstrength Concentration Limit, and, for greater certainty, such Additional Overstrength Surcharges shall be payable in addition to, not in lieu of, the applicable Overstrength Surcharge.

(4) The Overstrength Surcharges payable per unit of Overstrength Surcharge Mass and the Additional Overstrength Surcharges payable per unit of Additional Overstrength Surcharge Mass are set out within Schedule "E".

(5) Overstrength Surcharges and Additional Overstrength Surcharges are payable in addition to any other rates, fees and charges payable for, or in connection with, Wastewater Services.

(6) Testing to identify Substances present, and Measured Substance Concentrations, for the purpose of calculating Overstrength Surcharges and Additional Overstrength Surcharges, shall be conducted by the MD, or by the Customer to the satisfaction of the MD that a representative sample is obtained, using automated sampling devices or in accordance with the following manual sampling protocol:

(a) samples from the Wastewater produced at a location will be collected each day for a minimum of two days or for the duration of a planned high discharge event, whichever is shorter;

(b) a minimum of four samples of equal volume shall be taken each day or during a planned high discharge event. Such samples are to be taken at least one hour apart or, if a planned high discharge event is shorter than four hours, the time between the samples shall be reduced to ensure four samples are taken during the high discharge event;

(c) the analysis shall be conducted on a composite sample made of the samples noted in subsections (a) and (b); and

(d) the respective results of these tests for the times when samples are taken, shall be averaged to determine the characteristics and concentration of the Wastewater being discharged into the Wastewater System.

8. No Dilution

No Person shall dilute, or permit to be diluted, any Wastewater in order to enable its discharge in compliance with these Terms and Conditions.

9. Protection of Wastewater System

(1) No Person shall remove, damage, destroy, alter or tamper with any Facilities forming part of the Wastewater System, except as authorized by the Chief Administrative Officer.

(2) No Person shall interfere with the free discharge of any Wastewater Main or part thereof, or do any act or thing that may impede or obstruct the flow to, or clog up, the Wastewater System.

(3) No Person shall connect any storm drain, weeping tile or sump pump to any portion of the Wastewater System.

(4) In case of a blockage, either wholly in in part, of the Wastewater System by reason of negligence or the failure or omission to strictly comply with the provisions of this Bylaw, the Customer concerned or Person responsible shall be liable for all clogs and the cleaning of such blockages and for any other amount for which the MD may be held liable for due to such blockages.

10. Hauled Wastewater

(1) No Person shall discharge or permit the discharge of hauled Wastewater except at a hauled Wastewater discharge location approved by the Chief Administrative Officer and only then in accordance with any terms and conditions imposed by the Chief Administrative Officer, including payment of applicable fees and charges.

(2) If a hauled Wastewater discharge location has been identified, by the MD, as a Recreational Vehicle discharge or dump location, that location shall be used solely for the purpose of discharging Wastewater from Recreational Vehicles, and no Person shall discharge or permit the discharge, at that location, of Wastewater from any vehicle, container, structure or thing other than a Recreational Vehicle.

11. Food-Related Grease Interceptors

(1) Every Customer who is the Owner or operator of a restaurant or other commercial, institutional, Industrial, commercial or Institutional premises where food is cooked, processed or prepared, for which the premises is connected directly or indirectly to the Wastewater System, shall take all necessary measures to ensure that Oil and Grease are prevented from entering the Wastewater System in excess of the provisions of this Bylaw.

(2) The Customer referred to in subsection (1) shall install, operate, and properly maintain, at the Customer's expense, an Oil and Grease interceptor in any piping system at its premises that connects directly or indirectly to the Wastewater System. The Oil and Grease interceptors shall be installed in compliance with the most current requirements of the applicable Building Code and the National Plumbing Code of Canada.

12. Vehicle and Equipment Service Oil and Grease Interceptors

(1) Every Customer who is the Owner or operator of a vehicle or equipment service station, repair shop or garage or of a commercial, industrial or institutional premises or any other establishment where motor vehicles are repaired, lubricated or maintained and where the discharge is directly or indirectly connected to the Wastewater System shall install an Oil and Grease interceptor designed to prevent motor oil and lubricating grease from passing into the Wastewater System in excess of the limits in this Bylaw.

(2) The Customer referred to in subsection (1) shall install, operate, and properly maintain an Oil and Grease interceptor in any piping system at its premises that connects directly or indirectly to the Wastewater System. The Oil and Grease interceptors shall be installed in compliance with the most current requirements of the applicable Building Code and be maintained as recommended by the Canadian Fuels Association (formerly the Canadian Petroleum Products Institute).

13. Sediment Interceptors

(1) Every Customer who is the Owner or operator of premises from which sediment may directly or indirectly enter the Wastewater System, including but not limited to premises using a ramp drain or area drain and vehicle wash establishments, shall take all necessary measures to ensure that such sediment is prevented from entering the Wastewater System in excess of the limits in this Bylaw.

14. Spills

(1) Any Person who discharges or permits the discharge of any Wastewater or other matter contrary to this Bylaw shall, immediately after becoming aware of the discharge, notify:

(a) the Chief Administrative Officer and provide the following information:

(i) name of the Person causing or permitting the discharge;

(ii) location of the release;

(iii) name and contact· information of the Person reporting the discharge;

(iv) date and time of the discharge;

(v) type of material discharged and any known associated hazards;

(vi) volume of the material discharged; and

(vii) corrective action being taken, or anticipated to be taken, to control the discharge;

(b) the Owner of the Property, where the Person reporting the discharge is not the Owner and knows, or is readily able to ascertain the identity of the Owner; and

(c) any other Person whom the Person reporting knows or ought to know may be directly affected by the discharge.

(2) The Person who discharged or permitted the discharge pursuant to subsection (1) shall, as soon as the Person becomes aware or ought to have become aware of the discharge, take all reasonable measures to:

(a) confine, remedy and repair the effects of the discharge; and

(b) remove or otherwise dispose of the matter in a lawful manner so as to minimize all adverse effects.

SCHEDULE "D"

TERMS AND CONDITIONS OF SOLID WASTE SERVICES

1. Collection Services

(1) The Chief Administrative Officer is authorized to establish the Collection Schedule and establish methods of Waste collection and disposal.

(2) Regular Collection shall occur on a weekly basis in the Collection Area. Regular Collection for properties located outside the Collection Area shall be on an as needed basis, but shall not exceed four collections per month. Additional collections may be scheduled if and when required, at the discretion of Chief Administrative Officer. Customers shall pay the applicable fee or charge set forth in Schedule “E” of this Bylaw.

(3) Where feasible and practical for the MD, the Chief Administrative Officer may authorize Solid Waste Services for a Property located outside the Collection Area, subject to the Owner of that Property complying with all relevant portions of this Bylaw.

(4) The Owner or Occupant of any Property not described in subsection (1) or (2) shall, either personally or by employees, contractors or agents, and in compliance with all applicable federal, provincial and municipal laws, promptly remove and dispose of all Waste generated on the Property at an approved waste transfer station or landfill, at the Owner or Occupant's sole expense.

2. Prohibited Waste

(1) No Person shall set out, or permit to be set out, any Waste for collection other than Household Waste in accordance with this Bylaw including, without limiting the foregoing:

(a) Household Waste generated by any Property outside of the Collection Area;

(b) animal carcasses;

(c) Bulk Waste;

(d) Commercial Waste;

(e) Construction Waste;

(f) Hazardous Waste;

(g) hot ashes; or

(h) Liquid Waste.

3. Waste Collection Fees

(1) Every Owner of Property located within the Collection Area shall pay to the MD the Waste Collection Fee specified in Schedule "E" of this Bylaw.

(2) The Waste Collection Fee referred to in subsection (1) shall apply regardless of whether Waste is set out at the Property, the Property generates Waste or where all or a portion of a Residential Premises or Non-Residential Premises located on the Property is vacant.

(3) Every Owner of Property located outside of the Collection Area that has been authorized to receive Solid Waste Services in accordance with this Bylaw shall pay to the MD the Waste Collection Fee specified in Schedule "E" of this Bylaw.

(4) The Waste Collection Fee referred to in subsection (3) shall only apply while the Property receives Solid Waste Services.

4. Preparing Waste for Collection

(1) No Person shall set out, or permit to be set out, Waste for collection without ensuring that the Waste has been prepared for collection in accordance with the following:

(a) all Waste must be secured within a Waste Receptacle or a Garbage Bag;

(b) despite subsection (a), yard materials such as clippings from shrubs and trees may be compacted and securely tied in bundles not exceeding 1.2m in length and 25kg in weight, and placed beside the Waste Receptacle;

(c) wet Waste must be thoroughly drained, double-bagged and tied securely;

(d) light, dusty materials such as cooled ashes, sawdust, powders, vacuum cleaner bags, furnace filters and absorbents must be placed in a sealed disposable container;

(e) objectionable materials including animal feces and diapers must be double-bagged and tied securely; and

(f) sharp or dangerous items, including broken glass, razor blades, sheet metal scarps and items with exposed screws or nails must be contained within protective packaging (sturdy, sealed cardboard box or rigid disposable plastic container);

5. Waste Receptacles

(1) The contents of a Waste Receptacle must not be packed or jammed into the Waste Receptacle to the extent that the contents will not fall freely from the Waste Receptacle during Collection activities.

(2) The contents of a Waste Receptacle must not prevent the closure of the lid.

(3) Waste Receptacle lids must not be chained or tied to the Waste Receptacle.

(4) Waste Receptacles must not be chained or tied to fences or Waste Container enclosures.

(5) Animal Resistant Receptacles are required when deemed necessary.

(6) Animal Resistant Receptacles need to be latched and regularly cleaned to function as intended.

6. Curbside Collection

(1) All Waste Collection shall be from a front yard, curbside location unless otherwise authorized by the Chief Administrative Officer.

(2) A Person setting out Waste for Collection shall ensure that:

(a) all Waste Receptacles and Garbage Bags are placed near the front property line; and

(b) convenient and unobstructed access to Waste Receptacles and Garbage Bags is maintained at all times.

(3) No Person shall set out Waste for collection in a location that is unsafe, obstructed, poorly maintained, uneven or that otherwise prevents a Waste Collector from collecting Waste in a safe and efficient manner.

7. Setting Out Waste for Collection

(1) Waste must be set out for collection by 8:00 a.m. on the morning of the scheduled collection day.

(2) No Person shall set out Waste for collection before 5:00 p.m. on the day prior to the scheduled collection day.

(3) The Property Owner shall be responsible any litter created as a result of interference with the bag by any person or thing.

8. Waste Collection

(1) Waste collection from any location may occur at any time during the collection day (7:00 a.m. to 5:00 p.m.) and actual collection may vary on a weekly or seasonal basis.

(2) Collection shall occur on a weekly basis. Additional collections may be scheduled if and when required, at the discretion of Chief Administrative Officer.

(3) If a civic holiday occurs on the scheduled collection day, collection will be made within two (2) days of the holiday.

(4) In the event of severe weather or unusually large Waste volumes, the Chief Administrative Officer may alter the Collection Schedule for part or all of the Collection Area to include the day before and the day after the regularly scheduled collection day.

9. Ownership of Waste

(1) All Waste set out for collection remains the property of the Person placing the Waste for collection until accepted by the MD at the time of collection.

10. Withholding Collection Services

(1) Waste Collectors are authorized to withhold collection of improperly prepared Waste, prohibited Waste, excessive quantities of Waste, or Waste located at unsafe or non-compliant locations.

11. Damage to Waste Receptacles

(1) The MD is not responsible for damage to Waste Receptacles resulting from normal, repetitive activity or for lost Waste Receptacles, including lids.

12. Interference with Waste Receptacles

(1) No Person other than an authorized Waste Collector or the Person placing Waste in a Waste Receptacle or Garbage Bag shall interfere with, disturb, add to or remove the contents of a Waste Receptacle or Garbage Bag set out for collection.

13. Entering Private Property

(1) Waste Collectors shall not be required to enter onto private Property to collect Waste unless such entry is necessary or desirable, in the discretion of the Chief Administrative Officer.

(2) Waste Collectors are authorized to enter the front yard of any private Property at all reasonable times for the purpose of carrying out their duties.

(3) The MD will not be responsible for any damage to roads or infrastructure located on private Property resulting from legitimate operation of Waste collection vehicles during Waste collection activity on that private Property.

SCHEDULE "E"

RATES, FEES AND CHARGES

1. Water and Wastewater Rates

The rates for Water Services and Wastewater Services are as follows:

(1) **Bi-Monthly Rates – Hamlets and Distribution System Connections**

	Water Base (flat rate)	Consumption (/cubic metre)	Bulk Water (/cubic metre)	Sewer (flat rate)
Residential	$20.00	$1.15/$m^3$	-	$12.00
Commercial	$50.00	$1.50/$m^3$	$2.20/$m^3$	$50.00

(2) **Bi-Monthly Rates - Rural Transmission System Connections**

	Water Base (flat rate)	Consumption (/cubic metre)	Bulk Water (/cubic metre)	Sewer (flat rate)
Residential– Cistern/PRV	$20.00	$1.15/$m^3$	-	-
Residential – Non Cistern	$25.00	$1.32/$m^3$	-	-

(3) **Bulk Water Filling**

	Water Base (flat rate)	Consumption (/cubic metre)
Bulk Fill Stations	-	$2.64/$m^3$
Fire Hydrants	$5.00	$2.64/$m^3$

(4) **Monthly Water and Waste Water Service Rates Through Agreements**

Province of Alberta (Parks) Agreement - Castle River and Syncline

$200.00/line base rate for capital repair and replacement, @ $1.50/$m^3$ for consumption. The Province handles waste water and solid waste outside of this Bylaw. Repair and replacement of the distribution system within the Parks Zone will be as per Agreement with the Crown.

Village of Cowley Agreement

$300.00 base rate for capital repair and replacement, @ 1.15/m^3 for consumption. Repair and replacement of the distribution system within the Village of Cowley will be as per the Agreement.

Castle Mountain Resort Agreement

$2500.00 base rate for capital repair and replacement, @ $1.50/$m^3$ for consumption. CMR has its own system for waste water and another agreement for Solid Waste. Repair and replacement of the distribution system within the Resort will be the sole responsibility of CMR Inc.

Temporary Unmetered Water

$125.00 / month for residential water
$200.00 / month for commercial - for under 2″ meter size / line
$300.00 / month for commercial - for anything over 2″ meter size / line

2. New Service Connection Fees

The amounts payable for connecting the Private Water Line or Private Drainage Line, or both, on a Customer's Property to the MD's Water Main and/or Wastewater Main, as applicable, to complete a new Service Connection so that Water Services and/or Wastewater Services to the Customer's Property may be commenced are as follows:

(1) Water Services Only: Actual cost incurred by the MD in relation to the connection, plus 5%;

(2) Wastewater Services Only: Actual cost incurred by the MD in relation to the connection, plus 5%;

(3) Combined Water/Wastewater Services: Actual cost incurred by the MD in relation to the connection, plus 5%;

and such amounts shall be paid in accordance with the Utility Services Guidelines.

3. Additional Service Charges

The fees and charges payable for additional Water and Wastewater Services are as follows:

(1) Water Turn-On/Turn-Off Charge (at Customer request): $75.00 per visit

(2) Supply of Meter: Actual cost incurred by the MD in obtaining the Meter + 5%

(3) Meter Installation/Removal Charge: Actual cost incurred by the MD + 5%

(4) Meter Test Charge: $200.00

(5) Meter Repairs or Other Costs Associated with Meters: Actual cost incurred by the MD + 5%

4. Overstrength Surcharges

(1) The following Over Strength Surcharges and Additional Over Strength Surcharges are hereby established:

Substance	**Over Strength Surcharge (per kg of Over Strength Surcharge Mass)**	**Additional Over Strength Surcharge (per kg of Additional Over Strength Surcharge Mass)**
Biochemical Oxygen Demand (BOD)	$0.15	$0.15
Chemical Oxygen Demand (COD)	$0.15	$0.15
Oil and Grease (O&G) – Animal and Vegetable + Mineral and synthetic/hydrocarbon	$0.15	$0.15
Total *Suspended Solids* (TSS)	$0.10	$0.10
Total Kjeldahl Nitrogen(TKN)	$1.00	$1.00
Total Phosphorus (TP)	$6.25	$6.25

(2) For greater certainty, when the Measured Substance Concentration exceeds the corresponding Additional Over Strength Concentration Limit, an Additional Over Strength Surcharge will be payable in addition to, not in lieu of, the applicable Over Strength Surcharge.

5. Solid Waste Services

The rates for Solid Waste Services are as follows:

Bi-Monthly Rates – Collection Area

	Bi-Monthly	**Per Extra Trip**
Residential	$20.00	N/A
Commercial	$40.00	$40.00

6. Miscellaneous Service Fees and Charges

(1) A late payment charge of 1.5% per month, not compounded, will be applied to all charges on a Customer's Account, if the Customer's payment is not received by the MD within 30 days from the date of issuance of the bill in respect of the charges.

(2) A dishonoured cheque charge of $25.00 will be applied for each cheque returned for insufficient funds.

SCHEDULE "F"

SPECIFIED PENALTIES

	Section	**1st offence**	**2nd offence***
Obstruct an Authorized representative	s. 16	$200.00	$300.00
Backfill before Service Connection Inspection	Sch. A s. 6(3)(c)	$250.00	$500.00
Contravention of Repair and Maintenance Requirements	Sch. A s. 7	$200.00	$300.00
Interfere with Another Customer's Service Connection /Utility Services	Sch. A s. 10(2)	$500.00	$1,000.00
Obstruct access to Facilities	Sch. A s. 13(1)	$100.00	$250.00
Failure to manage vegetation on Property	Sch. A s. 13(2)	$100.00	$200.00
Install structure that interferes with proper and safe operation of Facilities	Sch. A. s. 13(3)	$200.00	$500.00
Interfere with or alter Facilities	Sch. A s. 14	$500.00	$1,000.00
Extend Customer owned infrastructure beyond Property	Sch. A s. 17	$500.00	$1,000.00
Supply false or Inaccurate information	Sch. A s. 26	$250.00	$500.00
Fail to comply with Water Conservation and Demand Management Measures	Sch. B s. 1(3)	$100.00	$250.00
Failure to connect to Water System by set Date	Sch. B s. 2(1)	$500.00	$1,000.00
Failure to connect to Water System prior to occupancy	Sch. B s. 2(2)	$500.00	$1,000.00
Unauthorized use of Alternate Water System	Sch. B s. 3	$500.00	$1,000.00
Unauthorized Resale or Supply Of Water	Sch. B s. 4	$250.00	$500.00
Unauthorized use of water	Sch. B s. 5(1)	$250.00	$500.00
Contravention of Customer Meter installation rules and Requirements	Sch. B s. 11(3)	$200.00	$300.00
Contravention of General Meter Restrictions	Sch. B s. 12	$200.00	$300.00
Unauthorized operation of a fire hydrant	Sch. B s. 18	$500.00	$1,000.00
Obstruct access to	Sch. B	$250.00	$500.00

or operation of a fire hydrant	s. 19		
Unauthorized Cross Connection	Sch. B s. 21	$250.00	$500.00
Customer fails to install Required Cross Connection Control Device	Sch. B s. 22(1)	$250.00	$500.00
Unauthorized Operation of Curb Stop	Sch. B s. 23	$200.00	$500.00
Unauthorized Use of Water Softener	Sch. B s. 25	$250.00	$1,000.00
Impede Wastewater Use of other Customers	Sch. C s. 1(1)(a)	$500.00	$1,000.00
Use Wastewater System without an Account	Sch. C s. 1(1)(b)	$500.00	$1,000.00
Use Wastewater System in unauthorized Manner	Sch. C s. 1(1)(c)	$250.00	$500.00
Failure to connect to Wastewater System by set Date	Sch. C s. 2(1)	$500.00	$1,000.00
Failure to connect to Wastewater System prior to occupancy	Sch. C s. 2(2)	$500.00	$1,000.00
Unauthorized use of Alternate Wastewater System	Sch. C s. 3	$500.00	$1,000.00
Unauthorized Hauled Wastewater	Sch. C s. 10	$500.00	$1,000.00

**** Second or subsequent offences.***

Council and their Chief Administrative Officer reserve the right to adjust the fines, up to a maximum of $10,000.00 based upon the seriousness of any given offence.

SCHEDULE "G"

WASTEWATER OVERSTRENGTH LIMITS

Substance	Overstrength Surcharge Concentration Limits, (mg/L)	Additional Overstrength Concentration Limits, (mg/L)
Biochemical Oxygen Demand (BOD)	300	3000
Chemical Oxygen Demand (COD)	600	6000
Oil and Grease , Total (O&G) – Animal and Vegetable + Mineral and Synthetic/Petroleum Hydrocarbons	100	400
Total Suspended Solids (TSS)	300	3000
Total Kjeldahl Nitrogen (TKN)	50	200
Total Phosphorus (TP)	10	75

Note: Concentrations become surchargeable with a second tier surcharge when reaching Additional Overstrength concentration Limits.

Recommendation to Council

TITLE: Regional Wastewater Treatment Feasibility Assessment; Alberta Community Partnership Grant			
PREPARED BY: David Desabrais		**DATE: November 16th, 2022**	
DEPARTMENT: Utilities & Infrastructure			
	November 16, 2022	**ATTACHMENTS:** 1. N/A	
Department Supervisor	**Date**		
APPROVALS:			
	NOV 16/22		2022/11/16
Department Director	**Date**	**CAO**	**Date**

REQUEST:

That Council support a submission of a 2022/23 Alberta Community Partnership Grant Application in support of the Regional Wastewater Treatment Feasibility Assessment project as a managing partner for the grant.

BACKGROUND:

The Alberta Community Partnership (ACP) Inter-municipal Collaboration Program provides funding to partnerships of 2+ municipalities to develop regional plans, service delivery frameworks, and regional service delivery efficiencies.

The grant covers up to $200,000 and requires no municipal contribution. The MD supported Cowley's ACP application last year for a regional infrastructure master plan, which was successful.

Administration already plans to move forward with a resiliency analysis on the Lundbreck lagoon to assess the lagoons current ability to handle wastewater and high strength discharge wastewater. If this grant is received, the costs of that study can be covered, and the scope can be expanded at no direct cost to the municipality to:

- Complete a more in-depth analysis of the Lundbreck lagoon
- Asses Lundbreck & Cowley's ability to handle trucked in flows as a temporary Plan B for Beaver Mines Wastewater
- Potentially cover some scoping/analysis costs related to the approved sewer repairs in 2023
- Complete a similar assessment on Cowley's lagoon
- Assess options & feasibility for regionalizing/upgrading deficiencies for the two (2) wastewater systems

Recommendation to Council

Both Council's must confirm their project involvement through council resolutions or motions. Cowley plans to review in their council meeting today.

The deadline for funding application is Dec 16, 2022.

FINANCIAL IMPLICATIONS:
No costs to the MD to prepare & submit grant.

If received, costs from Lundbreck Lagoon Resiliency Analysis can be retroactively covered.

Administration Guidance Request

TITLE: Request to waive finance charge – Castle Mountain Community Association	
PREPARED BY: Meghan Dobie	**DATE: November 15, 2022**
DEPARTMENT: Finance	
Department Supervisor / **Date**	**ATTACHMENTS:** **1. Email – G.Downey**

APPROVALS:

			2022/11/16
Department Director	**Date**	**CAO**	**Date**

REQUEST:

That Council consider waiving the finance charge of $261.34 applied on the outstanding dust control invoice #IVC06516 issued to the Castle Mountain Community Association (CMCA).

BACKGROUND:

- As per the email, G.Downey is asking the MD to waive the finance charge applied to an outstanding dust control invoice on CMCA's account because the invoice was not received. The amount is significant for the not for profit organization. CMCA became aware of the issue by follow-up from the MD on the overdue account.

- Per MD Policy C-FIN-530, a 1.5% finance charge is applied monthly to all unpaid balances.

FINANCIAL IMPLICATIONS:

TBD

Meghan Dobie

To: Joyce Mackenzie-Grieve
Subject: RE: CMR Association Invoice INC06516

-----Original Message-----
From: Glenn Downey <downeyglenn1@gmail.com>
Sent: November 13, 2022 10:00 AM
To: Joyce Mackenzie-Grieve <AdminTaxClerk@mdpinchercreek.ab.ca>
Cc: Judy Seleski <judyseleski@gmail.com>; Julie Heinrich <juliermt123@gmail.com>; Tania Janse van Rensburg <liewetania@yahoo.com>
Subject: Invoice INC06516

To : Joyce Mackenzie-Grieve
November 11, 2022
Dear Joyce,
I am writing to you in the hope that the MD of Pincher Creek can forgive the interest charges on invoice INC06516 for dust control application this past summer. This invoice was not received by us until Nov 7, 2022.
This interest charge is a significant number for Castle Mountain Community Association (CMCA) as we are a small not for profit organization that relies entirely on membership dues and donations for our revenue.
The following is an attempt to explain how this Dust Control initiative was organized and how the invoice was not received.
The dust control initiative was led by Dennis Miller to help control a significant dust problem at Castle Mountain Resort. Dennis would organize the application and raise the funds required. CMCA was to act as bank account to allow for e-transfers and accrual of funds to a dust control fund. CMCA would then pay the invoiced amount as approved by Dennis Miller from the fund.
The dust control was organized through the MD of Pincher Creek and a contract was signed 3 years ago. The mailing address used was Fraser Stewart's, PO Box 455. As President of CMCA he had let CMCA use this PO Box as their mailing address. Two and one half years ago Fraser moved and due to post office rules we weren't able to secure this PO Box number (or any PO Box as we don't have a building). Karen Perry, a resident at Castle is allowing us to use her PO Box number 884. Dennis Miller was aware of Fraser moving but not that the mailing address had to change. The contract information was not updated with the changed address.
The invoice was mailed by the MD on July 18, 2022 to the old address. We didn't receive it and while it should have been returned to to you as undeliverable, you didn't get it. An updated contract (significant price increase) should also have been mailed and met the same fate as the invoice.
Joyce Mackenzie-Grieve reached out to CMR (Lita Richards) on November 1 to inquire about the invoice and Lita then contacted CMCA and we finally received the invoice on November 7, 2022.
A cheque is in the mail for the full invoice but we respectfully ask you to forgive the interest penalty.
We are also setting up a committee at CMCA to ensure this won't happen again.
Sincerely
Glenn Downey
Past treasurer CMCA

Glenn Downey
Sent from my iPhone
587 894-9241
downeyglenn1@gmail.com

Recommendation to Council

TITLE: 2022 November Financial Update			
PREPARED BY: Meghan Dobie		**DATE: November 17, 2022**	
DEPARTMENT: Finance			
			ATTACHMENTS: 1. Actual vs Budget – Nov 2022 2. Consolidates Statement of Ops – Nov 2022 3. Reserves – Nov 2022
Department Supervisor		**Date**	
APPROVALS:			
	Nov 17, 2022		2022/11/17
Department Director	**Date**	**CAO**	**Date**

RECOMMENDATION:

That Council approve the additional expenses of $20,000 is Water Services - Contracted Services, $15,000 in Wastewater - Repairs and $250,000 in Public Works – Fuel, Oil and Grease with said funds coming from operations; and further

That Council receive the November 2022 Financial Summaries as information.

BACKGROUND:

- The Actuals vs Budget summary is the cash flow view. This view is used for budget purposes to ensure the MD generates enough cash to meet cash outflow requirements.
- The Consolidated Statement of Operations is the Generally Accepted Accounting Principles (GAAP) version that references to our year end financials. However, depreciation is not yet included here as it not booked until year end.
- The Reserves summary is a summary of funds that are internally restricted for future use. Reserves are not cash, but rather the revised net financial asset position.
- As per section 248(1) of the MGA, a council resolution is required for the following expenditure as it is in excess of the 2022 budget. Current MD practice is that departments as a whole need to be within or under budget as year end.
- Administration anticipates that the following departments will be over budget at year end:
    - Water Services – the changes to the Beaver Mines Lot Servicing Project were not factored into the operating budget. However, we have incurred $20k for associated work to draft a tender and other related services from Banner Engineering. These costs must now be written off.

Presented to: Council Meeting
Date of Meeting: November 22, 2022

- Wastewater Services – spending is on track to be over by year end by $15k due to an unforeseen sewer blockage.
- Public Works - spending is on track to be over by year end due to fuel costs. As of September 30, the MD has spent $430k on fuel. The budget for fuel is $400k. It estimated that this line may be over by $250k by year end.

- The MD is in a position to fund the shortfall through operations as a result of other favorable department line items.

FINANCIAL IMPLICATIONS:
TBD

Presented to: Council Meeting
Date of Meeting: November 22, 2022

Municipal District of Pincher Creek No 9.
Actual vs Budget
November 2022

	2022 Actual	2022 Budget	Variance	% of Budget Remaining	Comments
Wages					
Council	(102,764)	(170,800)	68,036	39.8%	
Administration	(1,096,597)	(1,555,730)	459,133	29.5%	Favorable
AES	(219,739)	(292,500)	72,761	24.9%	
Public Works and Water Services	(2,036,351)	(2,832,000)	795,649	28.1%	
Taxes and Requisitions	14,091,510	13,473,095	618,415	-4.6%	Favorable mainly due to timing. Tax revenue is recorded in May, however the MD has not made requisitions payments of approximately $600k to ASFF and Holy Spirit.
Investment Income	111,995	256,000	(144,005)	56.3%	Investment income on bonds is a year end entry.
Council	(23,841)	(85,210)	61,369	72.0%	Favorable due to less training, hotels, etc., and subscriptions not yet paid.
Administration	(701,470)	(872,210)	170,740	19.6%	Spending is on track at this point to be within budget, **with the exception of legal fees and memberships.**
Fire/PCREMO	(741,028)	(720,090)	(20,938)	-2.9%	
Bylaw	(26,290)	(211,670)	185,380	87.6%	Favorable as police funding costs (Q2 to Q4) will be paid in the following year based on the GOA year end. It is anticipated the MD will incur $215k in policing costs, of which $36k was been paid in Q1, leaving $179k likely to be incurred.
Public Works	(3,740,176)	(4,596,360)	856,184	18.6%	See note (A) below
Airport	46,260	(28,760)	75,020	260.8%	Favorable due to minimal repair and utility costs thus far and the PW labour allocation of $40k has not yet been posted.
Wastewater	(9,803)	(7,000)	(2,803)	-40.0%	**Spending is on track to be over by 10k to 15k at year end.** This is mainly due an unforeseen sewer blockage in Lundbreck for approximately 10k.
Waste Management	(252,904)	(387,700)	134,796	34.8%	The MD has paid Jan to Sep invoices to CNPC Landfill, therefore spending looks to be on track. The 2022 budget does consider some costs regarding the Eco-Centre, however, there could be some variances.
Regional Water	(318,483)	(433,910)	115,427	26.6%	**Spending is on track to be over by 20k to 30k at year end due to the write-off of the Beaver Mines Lot Servicing.** Currently, favorable due to remaining debenture payments of $50k and a $50k utility base rate transfer not yet moved. All other spending is on track to be fully spent.
Regional Water - BM Lot Servicing User Agreements	-	(450,000)	450,000	100.0%	The budget assumes a cash outflow of $450k required for private hook-ups in BM. Due to the proposed changes in the Utility Bylaw, this amount can be repurposed during year end.
Cemetery - Town of Pincher Creek	-	(55,140)	55,140	100.0%	The 2022 contribution has not yet been made.
Planning	42,560	(138,400)	180,960	130.8%	Favorable mainly due timing. The MD has not been fully invoiced or incurred expenses from ORSCC and Superior Safety codes. Additionally, the MD has set aside $20k for a Community Values Study.
Agricultural and Environmental Services	122,704	19,100	103,604	-542.4%	Unfavorable mainly due to timing. The MD has not yet received the annual ASB grant for $130k or invoiced AT, Parks and CPR for contractual work. This is offset by favorable spending as the MD has not yet incurred substantial charges for pesticides, contracted services and other various costs.
Recreation	(544,740)	(543,430)	(1,310)	-0.2%	
Community Services	(365,395)	(367,285)	1,890	0.5%	
Deficiency of Revenue over Expenses Before Other	**4,235,446**	**-**	**4,235,446**		
Depreciation	-	-	-		
Surplus (Deficiency) Including Depreciation	4,235,446	-	4,235,446		

Note - The financial information view above is not Generally Accepted Accounting Principles (GAAP), therefore will not tie to the 2022 financial statements. This view is used for budgeting purposes, to help ensure we are funding expenditures appropriately. For example - Transfers to/from reserves are not recorded on the statement of operations for financial reporting purposes, as they are not true revenue/expenses. For tracking and budget purposes they are included in the above summary.

Note A Public Works

Fuel is currently over budget	(30,627)
Labour Allocation not yet booked	(61,000)
No major equipment breakdowns to date	110,512
Gravel crushing and royalties in progress but not yet paid	772,500
Favorable spend on parts and fencing materials	66,445
Debenture payments are not yet made	67,760
Other	(69,407)
Total	**856,184**

Municipal District of Pincher Creek No 9
Consolidated Statement of Operations (Income Statement)
As of November 2022
Excluding Depreciation

	Budget	2022	2021	Actual vs Budget	Actual vs Prior Year
Net municipal property taxes	13,214,595	13,991,141	13,072,669	776,546	918,472
User fees and sales of goods	530,150	337,881	432,690	(192,269)	(94,808)
Government Transfer for Operating	295,900	344,306	513,226	48,406	(168,920)
Investment income	257,000	111,995	246,309	(145,005)	(134,315)
Penalties and costs of taxes	234,900	95,139	550,102	(139,761)	(454,964)
Licenses and permits	64,300	76,680	103,271	12,380	(26,591)
Proceeds from disposal of capital assets	-	-	-	-	-
Rental	126,535	61,197	166,723	(65,338)	(105,526)
Other	154,380	139,864	173,923	(14,516)	(34,059)
Total Revenue	14,877,760	15,158,202	15,258,912	280,442	(100,711)
				-	-
				-	-
Legislative	256,010	126,605	165,181	(129,405)	(38,575)
Administration	2,182,210	1,643,349	2,058,777	(538,861)	(415,429)
Protective Services	937,010	821,536	814,244	(115,474)	7,292
Roads, streets, walks and lighting	5,725,640	4,305,748	4,507,211	(1,419,892)	(201,463)
Airport	73,710	41,622	63,089	(32,088)	(21,466)
Water supply and distribution	590,650	305,904	447,003	(284,746)	(141,099)
Waste management	402,700	265,422	319,991	(137,278)	(54,570)
Wastewater treatment and disposal	19,000	20,655	27,052	1,655	(6,397)
Family and community support services	134,000	133,514	133,514	(486)	-
Cemeteries and crematoriums	55,140	-	46,714	(55,140)	(46,714)
Land use planning, zoning and development	410,200	143,793	388,605	(266,407)	(244,812)
Agricultural and environmental services	583,300	385,584	470,317	(197,716)	(84,733)
Parks and recreation	410,000	420,310	368,349	10,310	51,961
Culture - libraries, museums, halls	440,285	434,487	581,527	(5,798)	(147,041)
Total Expenses	12,219,855	9,048,528	10,391,573	(3,171,327)	(1,343,045)
				-	-
Deficiency Excess of Revenue over Expenses Before Other	2,657,905	6,109,673	4,867,339	3,451,768	1,242,334
				-	-
Government transfers for capital	9,000,355	3,640,987	4,035,835	(5,359,368)	(394,848)
				-	-
Deficiency Excess of Revenue over Expenses	11,658,260	9,750,660	8,903,174	(1,907,600)	847,486

Municipal District of Pincher Creek No 9
Expenses by Object
As of November 2022

Salaries, wages and benefits	5,026,120	3,529,485	3,944,302	(1,496,635)	(414,816)
Contracted and general services	2,891,420	1,487,612	2,291,470	(1,403,808)	(803,858)
Materials, goods, supplies and utilities	2,163,370	1,971,582	2,021,996	(191,788)	(50,413)
Bank charges and short term interest	10,000	6,738	7,826	(3,262)	(1,087)
Interest on long term debt	99,650	54,422	110,506	(45,228)	(56,085)
Other expenditures	297,480	222,022	230,603	(75,458)	(8,581)
Transfers to organizations and others	1,295,875	1,230,726	1,365,038	(65,149)	(134,311)
Transfer to Local Government	435,940	549,274	391,915	113,334	157,358
Amortization of tangible capital assets	-	(0)	-	(0)	(0)
Loss on disposal of tangible capital assets	-	(3,333)	27,918	(3,333)	(31,251)
Total Expenses by Object	12,219,855	9,048,528	10,391,573	(3,171,327)	(1,343,045)

Municipal District of Pincher Creek No. 9
Reserve Summary

November 2022

Reserve (Restricted Surplus) Accounts	Opening Balance	Transfer To Reserves*	Transfer From Reserve	Ending Balance	
Airport	329,771	-	-	329,771	
Bridge	2,682,850	400,000	-	3,082,850	
Building	200,000	-	(24,900)	175,100	(A)
Dam (Water Storage)	75,000	-	-	75,000	
Equipment	3,199,199	800,000	(17,501)	3,981,698	(B)
Emergency Management	61,001	-	-	61,001	
Next Year Completions	131,428	-	(37,958)	93,471	(C)
PCESC Equipment	100,000	100,000	(140,631)	59,369	
Road Infrastructure	2,701,219	350,000	(9,883)	3,041,336	(D)
Recycle Equipment	104,966	-	-	104,966	
Regional Community Initiatives	228,904	133,430	(112,500)	249,834	(E)
Seniors Housing	200,000	-	-	200,000	
Tax (Mill) Rate Stabilization	1,193,125	1,246,965	(18,280)	2,421,810	(F)
Water and Wastewater Infrastructure	1,541,295	58,140	(559,720)	1,039,715	(G)
	12,748,758	3,088,535	(921,373)	14,915,921	

**Transfers to Reserves are all the 2022 budgeted transfers unless stated otherwise below*

(A) **Building Reserve**

	Purchase Price	Budget
Lundbreck Shop Floor	24,900	30,000

(B) **Equipment Reserve**

Purchases	Purchase Price	Budget
2022 2500 DBL CAB - Purchase in 2021	2,501	-
Skid Steer		125,000
Sheepfoot Compactor	15,000	20,000
Loader Forks		15,000
Light Truck - Cancelled		50,000
Yukon XL - Cancelled		65,000
	17,501	275,000

(C) **Next Year Completion Reserve**

	Opening Balance	Transfer To Reserves	Transfer From Reserve	Ending Balance	
Admin Artwork	9,611			9,611	Art Committee - Active
Admin Safety Vests	443			443	Repurpose
Planning Documents	14,167			14,167	Municipal Development Plan - Comple
Recreation - Ag Society Roof	5,000		(5,000)	-	
AES MRF Setup	15,000			15,000	Repurpose
Chart of Accounts Project	20,000		(4,294)	15,706	E Timesheets - Active
DAM Study	47,210		(8,664)	38,546	Results and Follow-up - Active
Contribution to Airport Committee	20,000		(20,000)	-	
Rounding	(2)			(2)	
	131,428	-	(37,958)	93,471	

(D) **Road Infrastructure Reserve**

Project Name	Purchase Price	Budget
Gladstone		50,000
Boat Club Road (Res 22/348 + 20k)	9,883	
	9,883	50,000

(E) **Regional Community Initiatives Reserve**

	Transfers Out
Pincher Creek Agricultural Society (Res 22/093)	12,500
Contribution to PCCELC	100,000
	112,500

(F) **Tax (Mill) Rate Stabilization Reserve**

	Transfers Out
Town of PC - Fireworks (RES 22/152)	5,000
MCCAC (RES 22/150 + 15k)	
GIPOT Write-Off (Res 22/255)	8,280
	13,280

(G) **Wastewater and Water Infrastructure Reserve**

Project Name	Transfers Out	Budget
Eco Station	173,098	225,000
Cowley (Res 22/135 + 6k)	5,743	
Beaver Mines Standpipe (Res 22/135 + 113k)	106,507	
Pincher Creek Standpipe (Res 22/135 + 296.5k)	274,371	
	559,720	225,000

2023

Municipal District of Pincher Creek No. 9 Budget

1037 Herron Ave.
PO Box 279
Pincher Creek, AB
T0K 1W0
p. 403.627.3130
f. 403.627.5070
info@mdpinchercreek.ab.ca
www.mdpinchercreek.ab.ca

November 22, 2022

Dear MD Ratepayers;

As the first year of our four year term on MD Council draws to a close, this letter is intended to provide some background related to the recently approved 2023 Municipal Budget. This is the first budget passed by this Council. This budget attempts to anticipate a number of potential challenges, such as the reduction of federal and provincial grants, provincial anticipated changes to assessment models, a new police funding model, and the reality of ongoing supply chain issues coupled with soaring inflation percentages.

The 2023 Budget seeks to fund the services that you have come to expect and in a fiscally responsible manner. Some of the highlights and challenges of the 2023 budget include:

Economic Outlook

The economic climate continues to put pressure on MD finances. Currently, like many of you, the MD is facing soaring prices and supply chain issues. In addition, the MD has felt the impact of declining grant funding opportunities. In anticipation of this, the MD previously directed more funds to the Tax Rate Stabilisation Reserve. In 2023, the MD plans to pull funds from the Tax Rate Stabilization Reserve in order to avoid passing on shortfalls to our residents. We are fortunate to be in a position where the actions of past Councils, through past budgets, benefit us as a community today.

Contribution to the Pincher Creek Community Early Learning Centres (PCCELC)

In 2020 the MD committed a $1M contribution to the PCCELC over a 5 year period, $700k has been paid to date, with $100k committed to be paid for each of the next three years.

Contributions to Pincher Creek Emergency Service and Policing

In 2023, the Municipal Tax Levy will continue to include the costs for Policing and Pincher Creek Emergency Services (PCESC). The 2022 amount for Policing is expected to be $324,100, up from $215,920 in 2022, and $162,050 in 2021.

The 2022 amount for PCESC is expected to be approximately $837,000, up from $565,000 in 2022. Mediation talks dealing with how PCESC is funded are ongoing. The MD is optimistic the process will conclude in the coming months with a fair and equitable funding model within a revised membership agreement.

Utility Bylaw – Solid Waste Services

In 2023 the MD is anticipating changes to the current Utility Bylaw on the provision of solid waste services offered by the municipality. The proposed changes include moving towards a cost recovery model, and for those rate payers whom receive the benefit of the service to pay for that service in full. We continue to work with the Crowsnest Pincher Creek Landfill Association to ensure we can provide this service in an efficient and fiscally responsible way.

Beaver Mines Project Update

Considerable effort has been made by Council, staff and residents to ensure the Beaver Mines Water and Wastewater projects continues to move forward. We look forward to the planned completion of these projects by the end of 2023.

MD Council

Municipal District of Pincher Creek No 9
Consolidated Statement of Operations (Income Statement)

	2023 Budget	2022 Actuals	2022 Budget
Net municipal property taxes	13,348,620	14,648,684	13,214,595
User fees and sales of goods	435,050	267,168	530,150
Government Transfer for Operating	450,900	334,654	295,900
Investment income	266,000	55,730	257,000
Penalties and costs of taxes	70,900	81,529	234,900
Licenses and permits	64,300	75,680	64,300
Proceeds from disposal of capital assets	-	-	-
Rental	125,635	61,121	126,535
Other	140,570	144,864	154,380
Total Revenue	14,901,975	15,669,430	14,877,760
Legislative	306,000	114,730	256,010
Administration	2,246,605	1,387,722	2,182,210
Protective Services	1,248,015	616,519	937,010
Roads, streets, walks and lighting	5,615,560	4,173,303	5,725,640
Airport	106,310	38,541	73,710
Water supply and distribution	826,885	289,717	590,650
Waste management	406,555	265,422	402,700
Wastewater treatment and disposal	89,080	20,655	19,000
Family and community support services	134,000	133,514	134,000
Cemeteries and crematoriums	50,000	-	55,140
Land use planning, zoning and development	249,650	134,829	410,200
Agricultural and environmental services	681,170	377,409	583,300
Parks and recreation	465,850	419,748	410,000
Culture - libraries, museums, halls	448,125	439,487	440,285
Total Expenses	12,873,805	8,411,596	12,219,855
Deficiency Excess of Revenue over Expenses Before Other	2,028,170	7,257,834	2,657,905
Government transfers for capital	12,575,000	3,429,461	9,000,355
Deficiency Excess of Revenue over Expenses	14,603,170	10,687,295	11,658,260

Expenses by Object

	2023 Budget	2022 Actuals	2022 Budget
Salaries, wages and benefits	4,920,405	3,363,710	5,026,120
Contracted and general services	3,015,715	1,307,931	2,891,420
Materials, goods, supplies and utilities	2,399,485	1,880,498	2,236,730
Bank charges and short term interest	10,000	6,336	10,000
Interest on long term debt	92,110	54,422	99,650
Other expenditures	362,000	222,295	224,120
Transfers to local boards, agencies, organizations and others	1,394,250	1,030,463	1,295,875
Transfer to Local Government	679,840	549,274	435,940
Amortization of tangible capital assets	-	(0)	-
Loss on disposal of tangible capital assets	-	(3,333)	-
Total Expenses by Object	**12,873,805**	**8,411,596**	**12,219,855**

Above numbers do not include depreciation

Operating Budget Summary by Department

	2021	2022	2023	Variance	2022 vs 2023 Variance Highlights
Revenue					
School and PCF Requisitions	4,029,110	3,175,215	3,165,215	(10,000)	
Council	10,000	10,000	-	(10,000)	
General	351,030	495,030	340,030	(155,000)	Unfavorable due to a lower amount of outstanding taxes resulting, which results in less penalty revenue.
Administrative Services	25,760	29,205	30,550	1,345	
Planning & Development	134,710	64,800	64,800	-	
Law Enforcement	10,250	10,250	15,150	4,900	
Fire	108,650	95,000	-	(95,000)	Unfavorable as there is no transfer from the carry forward reserve to fund PCREMO and billing changes at PCESC.
Public Works	674,880	269,630	265,850	(3,780)	Unfavorable due to the landfill road agreement set to expire in 2022.
Agriculture & Environmental Services	309,900	309,900	354,900	45,000	Favorable due to grant funding from WRRP and ALUS
Airport	94,950	41,480	39,235	(2,245)	
Waste Management	73,070	15,000	20,000	5,000	
Water Services	202,500	226,900	313,440	86,540	Favorable mainly due to a transfer from the carry forward reserve for the dam outcomes and the Environment and Sustainable Resource Development Grant, offset slightly by lower utility revenue.
Wastewater Services	39,400	12,000	19,000	7,000	
Community Services	311,730	207,000	207,000	-	
Parks & Recreation	-	-	-	-	
Cemeteries	-	-	-	-	
Total Revenues	**6,375,940**	**4,961,410**	**4,835,170**	**(126,240)**	
Expense					
School and PCF Requisitions	4,029,110	3,165,215	3,165,215	-	
Council	276,550	266,010	306,000	39,990	Unfavorable due to the council room AV upgrade and strategic plan
Administrative Services	2,244,205	2,199,710	2,256,605	56,895	
Planning & Development	390,160	410,200	249,650	(160,550)	Favorable due to the change in head count and removal of the community values study.
Law Enforcement	168,050	221,920	330,100	108,180	Unfavorable due to an increase in costs paid to the Province for policing.
Fire	186,565	715,090	917,915	202,825	Unfavorable due to an increase in contributions to PCREMO and PCESC.
Public Works	6,086,395	5,725,640	5,615,560	(110,080)	Favorable mainly due a sufficient supply of gravel inventory, offset by outsourcing the mowing program and rising fuel costs.
Agriculture & Environmental Services	587,920	583,300	681,170	97,870	
Airport	86,850	73,710	106,310	32,600	Unfavorable due to crack sealing, line painting and MCCAC furnace upgrades
Waste Management	405,750	402,700	406,555	3,855	
Water Services	526,930	590,650	826,885	236,235	Unfavorable due to work provided by Fintegrate, increasing cost as a result of a new pipeline and dam outcomes.
Wastewater Services	16,600	19,000	89,080	70,080	Unfavorable due to correcting wastewater reporting and the Lundbreck Lagoon Resiliency Analysis.
Community Services	645,670	574,285	582,125	7,840	
Parks & Recreation	406,500	410,000	465,850	55,850	Contributions to Town Rec budgeted at 2.5% from previous year actuals
Cemeteries	55,140	55,140	50,000	(5,140)	
Total Expenses	**16,112,395**	**15,412,570**	**16,049,020**	**636,450**	
Deficiency of Revenue Over Expenses	**9,736,455**	**10,451,160**	**11,213,850**	**762,690**	
Transfer to/from Tax Rate Stabilization		46,965	(154,585)	(201,550)	
Tax Levy Operating Reserves	685,625	233,430	195,800	(37,630)	
Tax Levy Capital Reserves	1,683,140	1,666,540	1,722,105	55,565	
Debt Principal	368,790	375,970	383,390	7,420	
Water Hookups		450,000	-	(450,000)	
Municipal Tax Levy	**12,474,010**	**13,224,065**	**13,360,560**	**136,495**	
Note: Amortization expense to be include	*3,350,000*	*3,350,000*	*3,350,000*		

3 Year Operating Budget Summary by Department

Required per MGA (283.1)	2023	2024	2025	2026
Requisitions	3,165,215	3,165,215	3,165,215	3,165,215
Council	-	-	-	-
General	340,030	340,030	340,030	340,030
Administrative Services	30,550	30,285	30,285	30,285
Planning & Development	64,800	64,800	64,800	64,800
Law Enforcement	15,150	20,150	20,150	20,150
Fire	-	-	-	-
Public Works	265,850	236,950	232,940	232,940
Agriculture & Environmental Services	354,900	374,900	374,900	319,900
Airport	39,235	39,235	39,235	39,235
Waste Management	20,000	20,000	20,000	20,000
Water Services	313,440	194,900	194,900	194,900
Wastewater Services	19,000	19,000	19,000	19,000
Community Services	207,000	207,000	207,000	207,000
Parks & Recreation	-	-	-	-
Cemeteries	-	-	-	-
Total Revenues	**4,835,170**	**4,712,465**	**4,708,455**	**4,653,455**
Requisitions	3,165,215	3,165,215	3,165,215	3,165,215
Council	306,000	271,480	291,535	295,160
Administrative Services	2,256,605	2,238,552	2,243,238	2,280,655
Planning & Development	249,650	256,200	263,030	264,900
Law Enforcement	330,100	330,100	330,100	330,100
Fire	917,915	940,755	963,945	987,630
Public Works	5,615,560	5,643,930	5,722,300	6,755,970
Agriculture & Environmental Services	681,170	684,460	683,880	619,930
Airport	106,310	76,110	107,110	81,110
Waste Management	406,555	409,865	413,245	416,705
Water Services	826,885	667,910	681,523	694,445
Wastewater Services	89,080	62,360	70,045	70,235
Community Services	582,125	575,470	582,230	480,155
Parks & Recreation	465,850	476,200	486,200	497,200
Cemeteries	50,000	55,140	55,140	55,140
Total Expenses	**16,049,020**	**15,853,747**	**16,058,736**	**16,994,550**
Deficiency of Revenue Over Expenses	**11,213,850**	**11,141,282**	**11,350,281**	**12,341,095**
Transfer to/from Tax Rate Stabilization	(154,585)	66,553	117,649	(602,265)
Tax Levy Operating Reserves	195,800	295,800	295,800	295,800
Tax Levy Capital Reserves	1,722,105	1,721,250	1,723,675	1,726,145
Debt Principal	383,390	394,620	404,300	408,560
Municipal Tax Levy	**13,360,560**	**13,619,505**	**13,891,705**	**14,169,335**

Property Tax

Municipal	2022 Actuals	Bylaw	Variance	Tax Revenue 2023 (2% Increase Farmland; 1.5% Increase)	Additional Revenue in 2023 Budget
Residential	2,887,238	2,896,068	(8,830)	2,930,550	43,312
Farmland	435,048	435,024	24	443,750	8,702
Non-Residential (NR)	9,743,089	9,769,635	(26,546)	9,889,250	146,161
NR - Small Commercial	90,586	90,586	()	91,940	1,354
Minimum Tax	5,069	5,100	(31)	5,070	-
	13,161,031	**13,196,413**	**(35,382)**	**13,360,560**	**199,528**

2023 Property Tax Bylaw

Municipal		Tax Levy	Assessment	Tax Rate
Residential		2,930,550	620,887,470	4.7199
Farmland		443,750	58,799,800	7.5468
Non-Residential		9,889,250	954,634,640	10.3592
NR - Small Commercial		91,940	10,310,600	8.9170
Minimum Tax		5,070		
	Total	**13,360,560**	**1,644,632,510**	
Alberta School Foundation Fund				
Residential and Farmland		1,688,199	678,462,370	2.4883
Non-Residential		1,219,357	313,773,080	3.8861
Pincher Creek Foundation		306,335	1,642,214,110	0.1865
Designated Industrial Property		71,691	935,914,230	0.0766
	Grand Total	**16,646,142**		

General

2023 Net Budget	$	13,688,190
2022 Net Budget	$	13,615,900
% Change		0.5%

The 'General' section of the budget addresses the following items:

- Municipal Tax Revenue
- The Alberta School Foundation Fund, Designated Industrial Property and Senior Housing which are collected from special tax levies on behalf of those agencies.
- Tax arrears, penalty, other revenues, and property assessment adjustments
- Investment income and interest expenses
- Unconditional grants that are not identified to a specific department.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Municipal Property Taxes	13,134,000	13,351,290	2% ↑on farmland, 1.5% ↑on other assessment categories.
Tax Penalties and Costs	234,900	70,900	↓ Outstanding taxes
Investment Income	257,000	266,000	
Taxation Collected for Requisition	3,175,215	3,165,215	
Total Revenues	**$ 16,781,115**	**$ 16,853,405**	
Requisitions	3,165,215	3,165,215	
Net Revenue	**$ 13,615,900**	**$ 13,688,190**	

Council and Other Legislative

2023 Net Budget	(306,000)
2022 Net Budget	(256,010)
% Change	19.5%

The Council budget area deals with all costs associated and incurred by Municipal Council including stipends, per diems and fees for meetings and conferences.

M.D. Council members sit on various internal and external boards including: Agricultural Services Board, Agricultural Service Appeal Committee, Airport Committee, Alberta Southwest Regional Alliance, Beaver Mines Community Association, Castle Mountain Community Association, Chinook Arch Regional Library Board, Crowsnest Pincher Creek Landfill Association, Economic Development, Facilities Planning Study Steering Committee, Family & Community Support Services, Housing Committee, Inter Collaborative Framework Committee, Inter Municipal Development Committee, Lundbreck Citizens Council, Oldman River Regional Services Commission, Pincher Creek Emergency Services Commission, Pincher Creek Foundation, Pincher Creek Municipal Library Board, Pincher Creek Regional Emergency Management Organization, Recycling Management Committee and Regional Emergency Livestock Plan.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Sales of Good & Services	10,000	-	
Total Revenues	**10,000**	**-**	
Personal Costs	170,800	174,215	
Training, Workshops, Conferences, Etc. Paid	13,500	13,500	
Mileage	16,250	19,825	
Hotels and Accommodation	17,000	17,000	
Meals	10,000	8,000	
Airfare	7,000	2,000	
Information Technology	5,000	20,000	
Election Costs	3,500	3,500	
Memberships and Subscriptions	19,960	19,960	
General Purchases	3,000	28,000	
Total Expenses	**266,010**	**306,000**	
Net Operations	**(256,010)**	**(306,000)**	

Administration

2023 Net Budget	(2,171,470)	Administration Services provided are: • Finance • Reception • Information Technology • Health and Safety • Human Resources
2022 Net Budget	(2,217,470)	
% Change	-2.1%	

2022 Key Accomplishments

- Implementation of digital systems for Health and Safety, Payroll and Asset Management. Some examples of digital upgrades include reporting for incidents, JHSC inspections, e-timesheets, e-billing, and GIS locates for assets register information.
- Continued to improve on practices to protect and promote the health, safety and wellness of employees through mandatory training requirements and other opportunities.

2023 Initiatives

#1 Continue to expand asset management within the MD. Integrating asset management into MRF Geosystems, continue to build processes that will feed into decision making, define levels of service expectations, and attend the RMA Intermediate level cohort.

#2 The Software upgrade processes remains ongoing. In 2022/23-24 the MD is working towards correcting inventory and fixed asset modules with our financial software.

#3 Provide supervisors the tools and skills required to transition towards a culture of commitment within their immediate teams and across the MD of Pincher Creek regarding Health, Safety, and Wellness.

Summary Budget

	Budget 2021	Budget 2022	Budget 2023	2022 vs 2023 Variance Highlights
Sales of Good & Services	10,980	10,750	10,750	
Leases, Rentals and Other	14,780	18,455	19,800	
Total Revenues	**$ 25,760**	**$ 29,205**	**$ 30,550**	
Personnel Costs	1,291,070	1,348,730	1,301,000	
General Purchases	223,180	228,240	225,390	
Insurance	144,855	152,090	159,695	General ↑ on all policies
Training	25,250	25,250	28,750	
Health and Safety	12,430	17,430	32,530	↑ Health and Safety risk assessment and external audit.
Information Technology	176,520	101,170	123,440	↑ Computer replacements, security audit and next generation fees
Legal Fees	41,000	28,000	50,000	General ↑ based on prior year trends
Contracted Services	301,900	270,800	282,400	
Local Government Transfers	-	-	33,400	↑ Shared cost agreement with Town
Bank Charges	10,000	10,000	10,000	
Bad Debts	18,000	18,000	10,000	
Subtotal Expenses	**$ 2,244,205**	**$ 2,199,710**	**$ 2,256,605**	
Transfer to Reserves	169,285	46,965	(54,585)	Transfers to building reserve and from the tax rate stabilization reserve.
Total Expenses	**$ 2,413,490**	**$ 2,246,675**	**$ 2,202,020**	
Net Operations	**(2,387,730)**	**(2,217,470)**	**(2,171,470)**	

Planning

2023 Net Budget	(184,850)
2022 Net Budget	(345,400)
% Change	-46.5%

Planning & Development department ensures all development within M.D. conforms with the policies and requirements of the municipal planning documents and Provincial legislation or regulations that affect land development within the M.D.

Services provided include:

- Development and utility permits
- Compliance certificates
- Geographical Information System inquiries
- Land use bylaw amendments
- Liaison between the public and Council regarding road closures

2022 Key Accomplishments

- Completed development and began operation of the Pincher Creek Waste & Recycle Centre (the Eco-Centre) in partnership with The Town of Pincher Creek and Crowsnest/Pincher Creek Landfill Association.

2023 Initiatives

#1 Explore a Municipal Business Licensing system.

#2 Explore a Traffic Bylaw and Littering Bylaw

Other Highlights

Oldman River Regional Services Commission is contracted to provide the following services:

- Subdivision processing
- Statutory plans and bylaw amendments as required
- Advice and assistance
- Regional Subdivision and Development Appeal Board

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Sales of Good & Services	8,500	8,500	
Fees and Other	6,300	6,300	
Safety Codes	50,000	50,000	
Total Revenues	**64,800**	**64,800**	
Personnel Costs	207,000	90,200	↓ Change in planning head count
General Purchases	12,450	10,950	
Safety	-	-	
Training	3,250	2,000	
Legal Fees	10,000	5,000	
Contracted Services	157,500	131,500	↓ Removal of the community values study
Right of Way Purchases	20,000	10,000	
Subtotal Expenses	**410,200**	**249,650**	
Net Operations	**(345,400)**	**(184,850)**	

Law Enforcement

2023 Net Budget	(314,950)
2022 Net Budget	(211,670)
% Change	48.8%

Bylaw enforcement operates on a complaint basis. The related bylaws are:

- Land use
- Community services
- Unsightly premises
- Noise
- Animal Control

2022 Key Accomplishments Continued to develop relationship with Town Bylaw officers by communications regarding misuse at the Eco-Centre.

2023 Initiatives

#1 Develop and implement a hamlet traffic bylaw and a littering bylaw.

Other Highlights A sale of service agreement was signed with the Town of Pincher Creek to use Town bylaw officers enforce animal control and noise complaints.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Licenses	250	150	
RCMP Fines	10,000	15,000	
Government Grants	-	-	
Total Revenues	**10,250**	**15,150**	
Police Costing	215,920	324,100	↑ Provincial download - Police Funding Model (30% Recovery)
Local Government Transfers	6,000	6,000	
Subtotal Expenses	**221,920**	**330,100**	
Net Operations	**(211,670)**	**(314,950)**	

Fire/PCREMO

2023 Net Budget	(917,915)
2022 Net Budget	(720,090)
% Change	27.5%

Items included in the Fire budget are:
- Contribution to Pincher Creek Emergency Services Commission (PCESC)
- Contribution to Pincher Creek Regional Emergency Management Organization (PCREMO)
- Revenue/expense for M.D. residents requiring fire services
- M.D. fire hall utility costs
- Contribution to Pincher Creek Search & Rescue

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Sale of Service	40,000	-	
Transfer from Reserves	55,000	-	↓ Transfer from Carry Forward to fund 2022 PCREMO
Total Revenues	**95,000**	**-**	
General Purchases	1,000	1,500	
Contracted Services	40,000	-	
Contributions to PCESC	597,800	837,320	↑Contribution to PCESC
Contributions to PCREMO	65,000	67,965	↑Contribution to PCREMO
Contributions to Other Agencies	11,290	11,130	PC Search and Rescue
Subtotal Expenses	**715,090**	**917,915**	
Transfer to Reserves	100,000	-	
Total Expenses	**815,090**	**917,915**	
Net Operations	**(720,090)**	**(917,915)**	

Public Works

2023 Net Budget	(6,880,260)	The Public Works department provides oversight to all municipal infrastructure including 5 hamlets, 5 dams, approx. 1,205 km of roads, 160 bridges, the airport, regional water system, wastewater systems, all buildings and the equipment fleet.
2022 Net Budget	(7,181,360)	
% Change	-4.2%	

2022 Key Accomplishments

- The 2022 gravel and dust control programs were completed using a different methodology than previous years. This helped to increase the longevity and stabilization component of the products.
- Surface rehabilitation and shoulder maintenance were completed on several sections of road.
- Gravel pit reclamation and closure have been a major focus of 2022. Three Class 2 pits and one Class 1 pit have been closed and fully reclaimed. An additional class 1 pit is partially completed.
- Several small cattle guards have been replaced in the Cabin Creek and Olin Creek area to improve service levels.

2023 Initiatives

#1 Work on improving efficiency in our maintenance operation by providing high level training to equipment operators.
#2 Use the new fleet equipment, simplify road surface rehabilitation and shoulder maintenance in order to improve our road network quality and service levels.
#3 Continue the assessment and initiative on reducing the gravel reclamation liability.
#4 Continue to improve on the application methods and efficiencies for the dust control program.

Summary Budget

	Budget 2021	Budget 2022	Budget 2023	2022 vs 2023 Variance Highlights
Sales of Good & Services	42,600	42,600	42,600	
Sale of Gravel & Asphalt	45,000	20,000	20,000	
Sale of Dust Control	50,000	43,750	43,750	
Government Grants	50,000	50,000	50,000	
Contribution from agencies	51,280	52,280	48,500	Debenture Revenue from the Landfill
Transfer from Reserves	185,000	-	-	
Interdepartmental Changes	251,000	61,000	61,000	
Total Revenues	674,880	269,630	265,850	
Personnel Costs	2,560,825	2,585,000	2,580,000	
General Purchases	986,650	1,043,750	1,298,890	↑ Fuel (200K) and other increases on repairs, parts and other general purchases
Contracted Services	202,000	175,400	210,600	↑ Line painting and increase in allocation for misc. projects
Safety	28,180	21,870	21,870	
Training	33,250	33,250	68,250	↑ Operator training with DK Blade Services
Information Technology	96,670	90,170	102,470	
Gravel Hauling	270,000	270,000	320,000	↑ Hauling for Maycroft and Christie Mines Road
Gravel Crushing	527,500	502,500	-	↓ Sufficient gravel inventory, no crushing anticipated until 2026
Gravel Royalties	270,000	270,000	20,000	↓ Sufficient gravel inventory, no crushing anticipated until 2026
Gravel Pit Reclamation	185,000	50,000	50,000	
Mowing	-	-	250,000	↑ Outsourcing part of the mowing program
Bridge Repairs	50,000	25,000	25,000	
Engineering & Surveying	46,000	66,000	46,000	↓ 10 year bridge study compete in 2022
Dust Control & Cold Mix Product	648,000	528,000	563,000	↑ for additional length added to Maycroft in 2022
Long Term Debt Interest	69,720	64,700	59,480	
Subtotal Expenses	5,973,795	5,725,640	5,615,560	
Transfer to Reserves	1,850,000	1,550,000	1,350,000	
Long Term Debt Principal	170,300	175,350	180,550	
Total Expenses	7,994,095	7,450,990	7,146,110	
Net Operations	(7,319,215)	(7,181,360)	(6,880,260)	

Agricultural and Environmental Services

2023 Net Budget	(326,270)	The Agricultural and Environmental Services department provides oversight to the municipal obligations of the Weed Control Act, Pest Act and the Soil Conservation Act. Services include: • Weed control (primary task) • Extension services for residents to assist with farm and ranch productivity • Manage the MD dams and water requirements to benefit residents downstream.
2022 Net Budget	(273,400)	
% Change	19.3%	

2022 Key Accomplishments

- The Alternative Land Use Systems (ALUS) program is actively up and running within the MD.
- Implemented digital record keeping within the GIS software.

2023 Initiatives

#1 Continue to improve public awareness on environmental stewardship programs.

#2 Ensure that municipal land owners are aware of weed removal obligations.

#3 Digitalize historical data to allow ease in searching prior period information.

Summary Budget

	Budget 2021	Budget 2022	Budget 2023	2022 vs 2023 Variance Highlights
Sales of Good & Services	73,600	141,000	121,000	↓ in contract with AB Parks
Government Grants	183,360	138,900	193,900	↑ in provincial grant for ALUS and Watershed Resiliency and Restoration Program (WRRP)
Deadstock Program	30,000	35,000	40,000	
Misc. Revenue		(5,000)		
Transfer from Reserves	5,000	-	-	
Total Revenues	**291,960**	**309,900**	**354,900**	
Personnel Costs	329,070	292,500	305,500	
Training	8,000	9,750	10,300	
General Purchases	120,930	117,680	132,500	
Contracted Services	30,000	62,500	141,500	↑ ALUS Project
Safety	6,850	9,340	9,840	
Information Technology	6,140	6,530	6,530	
Chemical	70,000	75,000	65,000	
Interdepartmental	10,000	10,000	10,000	
Subtotal Expenses	**580,990**	**583,300**	**681,170**	
Net Operations	**(289,030)**	**(273,400)**	**(326,270)**	

Airport

2023 Net Budget	(67,075)
2022 Net Budget	(32,230)
% Change	108.1%

The Pincher Creek Airport is managed by the M.D. There is minimal activity; therefore, there is little revenue generated. M.D. is responsible for:

- Grass Cutting
- Maintenance of Facility
- Snow Removal

2022 Key Accomplishments

- The Regional Airport Committee was re-established in 2021. The Airport Master Plan was to presented to the Joint Committee.

2023 Initiatives

#1 The Airfield Lighting Replacement project is scheduled to be complete in early 2023.

#2 Adopt and put in place a governance model for the airport

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Leases	36,480	34,235	
Interdepartmental Changes	5,000	5,000	
Total Revenues	**41,480**	**39,235**	
Personal Costs	950	950	
General Purchases	25,260	38,660	↑ MCCAC building upgrades
Contracted Services	7,500	26,700	↑ crack sealing and line painting every two years
Interdepartmental	40,000	40,000	
Subtotal Expenses	**73,710**	**106,310**	
Transfer to Reserves	-	-	
Net Operations	**(32,230)**	**(67,075)**	

Waste Management

2023 Net Budget	(386,555)
2022 Net Budget	(387,700)
% Change	-0.3%

Solid waste services are provided within this department by the Crowsnest Pincher Creek Landfill Association as a contractor to the M.D. The most significant service provided is the placement of roll off bins for residents to place their solid waste for pick-up. Curbside pickup is provided to the Hamlets of Beaver Mines and Lundbreck.
The MD continues to explore recycling options through the development of an Eco Station.

2022 Key Accomplishments The Eco Centre opened for business in August of 2022 as a joint initiative between the Town, MD and CNPC Landfill.

2023 Initiatives

#1 Through a new Utility Bylaw, address the issues with bins located outside Hamlets.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Waste Management Fees	15,000	20,000	↑ Based on actual utility bylaw data
Total Revenues	**15,000**	**20,000**	
Bin Rentals/Pickups	155,500	158,610	2023 budget does not consider any changes to bin
Tipping Fees	133,000	99,660	↓ Drive-in tipping reduced, as offsetting with Eco Centre.
Eco Centre and Other Recycling	114,200	148,285	MD portion of the Eco Centre
Contracted Services	-	-	
Subtotal Expenses	**402,700**	**406,555**	
Net Operations	**(387,700)**	**(386,555)**	

Water Services

2023 Net Budget	(988,390)
2022 Net Budget	(1,130,910)
% Change	-12.6%

The Water Services Segment provides potable water for the Hamlet of Lundbreck, Castle Parks, Castle Mountain Resort and contracts potable water treatment and delivery services to the Village of Cowley.
Additional services are being currently installed for the Hamlet of Beaver Mines.
Water services also temporarily includes Dams (Other Environmental Use and Protection) for financial reporting purposes.

2022 Key Accomplishments

- Continued to move the Beaver Mines projects forward. It is expected that by the end of 2022 the underground work for water distribution to property edge will be 90% complete.
- Constructed two bulk water standpipes in Beaver Mines and Pincher Creek. Updated software by adding a credit/debit service to all standpipes. Decommissioned the old Pincher Creek standpipe.

2023 Initiatives

#1 The completion of the Beaver Mines Water and Wastewater system by December 31, 2023.

#2 Water Conservation and Demand Management implementation.

#3 Anticipate receiving long term Cowley to Beaver Mines and Castle water licenses.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Sales of Good & Services	226,900	174,900	↓ Based on actual utility bylaw data
Government Grants	-	100,000	↑ Environment and Sustainable Resource Development Grant (Fintegrate)
Transfer From Reserves	-	38,540	↑ Transfer from Carry Forward Reserve for dam outcomes
Total Revenues	**226,900**	**313,440**	
Personnel Costs	247,000	247,000	
Training	10,000	10,000	
General Purchases	174,200	235,725	General ↑ due to new pipeline rising costs
Contracted Services	124,500	236,530	↑ Work provided by Fintegrate under the Environment and Sustainable Resource Development Grant, increasing utilities and other fees associated with a new pipeline
Long Term Debt Interest	34,950	32,630	
Miscellaneous*	-	65,000	↑ Dam Study recommendations
Subtotal Expenses	**590,650**	**826,885**	
Transfer to Capital Reserves	116,540	272,105	
Transfer for Hook-Ups (LOANS)	450,000	-	↓ Residential Loans - BM Hookups
Long Term Debt Principal	200,620	202,840	
Additional Cash Required	**767,160**	**474,945**	
Net Operations	**(1,130,910)**	**(988,390)**	

Wastewater Services

2023 Net Budget	(70,080)	Wastewater services are provided to the Hamlet of Lundbreck by Water Operations personnel. These services include: • Inspections • Flushing • General maintenance
2022 Net Budget	(7,000)	
% Change	901.1%	

2022 Key Accomplishments

•Continued to move the Beaver Mines Water and Wastewater projects forward. Underground work to property edge expected to be 90% complete by year end. Construction started on the Beaver Mines Treatment System and Lift Station.

2023 Initiatives

#1 The completion of the Beaver Mines Water and Wastewater system by December 31, 2023.

#2 Lundbreck collection system rehabilitation work, post aeriation system resiliency analysis and assessments for users

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
User Fees	12,000	19,000	↑ Based on actual utility bylaw data
Total Revenues	**12,000**	**19,000**	
General Purchases	18,500	35,570	↑ Utilities and other repair and maintenance
Contracted Services	500	53,510	↑ More accurate split between water and wastewater and the Lundbreck Lagoon Resiliency Analysis
Subtotal Expenses	**19,000**	**89,080**	
Net Operations	**(7,000)**	**(70,080)**	

Community Services

2023 Net Budget	(425,125)
2022 Net Budget	(367,285)
% Change	15.7%

Community Services includes the following services:

- Family and Community Support Services
- Joint Funding Program – The MD and the Town decide together to fund local organizations on a per capita basis.
- Chinook Arch Regional Library & Pincher Creek Library
- Community funding and donations
- ICF Funding Objectives
- Pincher Creek Community Early Learning Centre (PCCELC) contribution

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Government Grants	107,000	107,000	FCSS Provincial
Reserve Transfer	100,000	100,000	Transfer from Regional Community Initiative Reserves for PCCELC
Total Revenues	**207,000**	**207,000**	
FCSS Grants	134,000	134,000	
PC Library and Chinook Arch	139,840	147,050	
Town - PCCELC	100,000	100,000	
Town - CRC and Fireworks	60,000	53,790	
Humane Society	21,000	23,000	
Joint Funding	85,265	98,685	↑ new census data available
Other Contributions to Groups*	34,180	25,600	↓ additional funds for Grant Writer
Subtotal Expenses	**574,285**	**582,125**	
Transfer to Operating Reserves	-	50,000	Seniors Housing Reserve
Total Expenses	**574,285**	**632,125**	
Net Operations	**(367,285)**	**(425,125)**	

*Includes contributions to Ag For Life, Rural Crime Watch, STARS, Heritage Acres, and the annual misc. allocations determined at a later date

Parks & Recreation

2023 Net Budget	(611,650)
2022 Net Budget	(543,430)
% Change	12.6%

Maintained by MD personnel:
- Patton Park in the Hamlet of Lundbreck
- Foothills (Fishburn) Park on RR 28-4
- Beaver Mines Park

Contracted Maintenance:
- Castle River Rodeo Grounds & Campground
- Bobby Burns Fish Pond

2022 Key Accomplishments Connected the Patton Park sprinkler and drip system to the MD's water distribution line.

2023 Initiatives

#1 Work with the Beaver Mines Community Association and other related parties on the potential phase 1 pathway development.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Transfer from Reserves	-	-	
Total Revenues	**-**	**-**	
General Purchases	3,500	3,500	
Contracted Services	14,700	14,700	
Interdepartmental	11,000	11,000	
Contributions to Town Rec	355,800	411,650	2.5% ↑ from previous years actuals
Contributions to CNP Rec	25,000	25,000	
Subtotal Expenses	**410,000**	**465,850**	
Transfer to Operating Reserves	133,430	145,800	↑ New census data available. Rate set at $45/capita
Total Expenses	**543,430**	**611,650**	
Net Operations	**(543,430)**	**(611,650)**	

Cemeteries

2023 Net Budget	(50,000)	The Municipal District of Pincher Creek agreed to an annual contribution to the Town as part of ICF.
2022 Net Budget	(55,140)	
% Change	-9.3%	Cemeteries throughout the MD are maintained by local residents at no cost to the MD.

Summary Budget

	Budget 2022	Budget 2023	Variance Highlights
Transfer from Reserves	-	-	
Total Revenues	**-**	**-**	
Contributions to Town	55,140	50,000	
Subtotal Expenses	**55,140**	**50,000**	
Net Operations	**(55,140)**	**(50,000)**	

Long Term Debt

2022 Debt Limit

The Municipal Government Act requires municipalities to keep long term debt below thresholds determined by annual revenues. The debt (total debt) and debt servicing (annual payments of principal and interest) limits as at December 31, 2022 are:

Debt Limit (1.5 times revenue)	22,352,963
Actual Debt	3,071,668
Debt Servicing Limit (0.25 times revenue)	3,725,494
Actual Debt Servicing	475,474

Debt as of December 31, 2022	Principal Owing	Interest Rate	Annual Principal Payment	Annual Interest	Repayment Date
Lundbreck Water Reservoir	561,050	2.9420%	49,023	16,148	Dec 2032
Lundbreck Regional Water System	318,310	2.9420%	27,813	9,162	Dec 2032
Landfill Road (75% Landfill Association)	1,549,731	2.9420%	135,410	44,604	Dec 2032
Landfill Road (25% MD)	516,577	2.9420%	45,137	14,868	Dec 2032
Cowley Waterworks Purchase	126,000	2.9420%	126,000	7,309	Dec 2023
Total Debt	**3,071,668**		**383,383**	**92,091**	

Debt as of December 31, 2023	Principal Owing	Interest Rate	Annual Principal Payment	Annual Interest Payment	Repayment Date
Lundbreck Water Reservoir	512,027	2.9420%	50,476	14,695	Dec 2032
Lundbreck Regional Water System	304,505	2.9420%	28,637	8,337	Dec 2032
Landfill Road (75% Landfill Association)	1,482,520	2.9420%	139,423	40,591	Dec 2032
Landfill Road (25% MD)	494,173	2.9420%	46,474	13,530	Dec 2032
Cowley Waterworks Purchase	-	2.9420%	-	-	Dec 2023
Total Debt	**2,793,225**		**265,010**	**77,153**	

STAFF COUNT

	2022 Budget	2022 Actual*	2023 Budget
Public Works			
Superintendent	1	1	1
Road Foreman	1	1	1
Field Lead	1	1	1
Buyer	1	1	1
Admin	1	0	0
Technical Assistant	1	1	1
Full Time Union - Operator 4	10	9	9
Full Time Union - Operator 3	0	0	1
Full Time Union - Operator 2	3	4	4
HDM - Union	2	2	2
Labourer	0	0	1
Seasonal Operator 1	1	1	1
Seasonal Operator 3	4	4	4
Temp Union	1	0	0
Total PW	**27**	**25**	**27**
AES			
Environmental Specialist	1	1	1
Summer Student (Temp weed inspector - Short)	4	4	4
Summer Student (Temp weed inspector - Long)	2	2	2
Seasonal (Operator PAC)	2	1	2
Total AES	**9**	**8**	**9**
Admin			
CAO	1	1	1
Director of Finance	1	1	1
Director of Development and Community Services	0.25	0	0
Infrastructure and Utilities	1	1	1
Human Resources and Payroll	1	1	1
Safety	1	1	1
Financial and Asset Management	1	1	1
IT Specialist	1	1	1
Executive Assistant	1	1	1
Financial Service Clerk	1	1	1
Customer Service Clerk	1	1	1
Temp - Mat Leave Cover	0	0	1
Summer Student	1	0	0
Total Admin	**11.25**	**10**	**11**
Planning			
Director of Development and Community Services	0.75	0	0
Development Officer	0	0	1
Assistant Development Officer	1	1	0
Total Planning	**1.75**	**1**	**1**
Water and Wastewater			
Water Plant Operator	2	1	2
Total Water and Wastewater	**2**	**1**	**2**
Staff Total	51	45	50
Council	5	5	5
Grand Total	56	50	55

*2022 Actuals are as of October 2022

2023 Capital Budget Summary

Service Area	Description	2023 Total Cost	Sources of Project Funding: Grants	Debt	Reserves	Trust	Total Revenue
Bridges	Bridge File #2488 Fischer Bridge						
Bridges	Bridge File #75265 Heath Creek						
Bridges	Bridge File #76294 RR 15 Over a Tributary to Castle River						
Bridges	Bridge File #7743 Local Road over Gladstone Creek						
Bridges	Bridge File #74048 RR 30A Over Todd Creek						
Bridges	Bridge File #70175 Spread Eagle Road Over Yarrow Creek						
Bridges	Bridge File #75801 RR 14 Over Oldman Tributary						
Roads	Station Street						
Roads	Bitango Road RR 1-2						
Roads	Patton Avenue						
Water/Wastewater	Lundbreck Sewer System Repairs, Flush, & Inspection						
Water/Wastewater	Beaver Mines Distribution and Collection						
Water/Wastewater	Beaver Mines Lift Station and Forcemain						
Water/Wastewater	Beaver Mines Waste Water Treatment Facility						
Infrastructure Total		10,698,000	10,416,000	-	282,000	-	10,698,000
AES	Hydroseeder						
Public Works	Grader						
Public Works	Gravel/Plow Truck						
Public Works	Tractor						
Public Works	Stone Crusher						
Public Works	Snow Blade						
Public Works	Sand Box						
Public Works	Snow Plow						
Public Works	Heavy Duty Set						
Public Works	AC Recovery Machine						
Equipment Total		1,672,000	1,125,000	-	547,000	-	1,672,000
AES	Heavy Truck						
Public Works	F150 Lightning						
Public Works	1/2 Ton Truck						
Fleet Total		235,000	14,000	-	221,000	-	235,000
Airport	Airfield Lighting Replacement						
Admin	Renewable Energy Installation						
Public Works	Concrete Pad						
Public Works	Quonset Overhead Door						
Facilities Total		1,170,000	1,020,000	-	150,000	-	1,170,000
Parks	Beaver Mines Trail						
Parks Total		20,000	-	-	-	20,000	20,000
		13,795,000	**12,575,000**	**-**	**1,200,000**	**20,000**	**13,795,000**

Long Range Plan

		2024	2025	2026	2027	2028	
Bridges	Bridge File #70175 Spread Eagle Road Over Yarrow Creek						
Bridges	Bridge File #74260 Tributary to Foothills Creek						
Bridges	Bridge File #74048 RR 30A Over Todd Creek						
Bridges	Bridge File #75801 RR 14 Over Oldman Tributary						
Bridges	Bridge File #75481 TWP RD 9-3B Over Olin Creek Tributary						
Bridges	Bridge File #01113						
Bridges	Bridge File #70417						
Bridges	Bridge File #00470						
Bridges	Bridge File #07080						
Bridges	Bridge File #76203						
Bridges	Bridge File #71542						
Bridges	Bridge File #13960						
Bridges	Bridge File #01077						
Bridges	Bridge File #76636						
Bridges	Bridge File #01348						
Bridges	Bridge File #02187						
Bridges	Bridge File #00673						
Bridges	Bridge File #74110						
Bridges	Bridge File #08685						
Roads	Gladstone Road						
Roads	Snake Trail						
Infrastructure Total		980,000	1,400,000	6,543,000	3,518,000	2,455,000	-
Public Works	Grader						
Public Works	Welder						
Public Works	Backhoe						
Public Works	Airport mower						
Public Works	Packer						
Public Works	Snow Blower - Airport						
Public Works	Loader						
Agriculture	Quad						
Agriculture	Truck mounted intelligent sprayer						
Equipment Total		525,000	914,300	600,000	875,000	1,100,000	
Public Works	Light Truck						
Public Works	Water Truck						
Agriculture	Light truck						
Fleet Total		80,000	160,000	530,000	80,000	160,000	
Information Services Total		-	-	-	-		
Admin	Boiler Replacement						
Public Works	HVAC Upgrade						
Water Services	Standpipe Concrete Pads						
Facilities Total		45,000	70,000	-	20,000	-	
		1,630,000	2,544,300	7,673,000	4,493,000	3,715,000	
Grants							
Reserves							
Operations							
		1,630,000	2,544,300	7,673,000	4,493,000	3,715,000	

Capital Grants & Reserves Summary

Capital Grants Summary

Available Grant Funding*	2023	2024	2025	2026	2027
Beginning of year	13,388,991	14,173,991	14,958,991	15,743,991	16,528,991
Grant Funding Received	785,000	785,000	785,000	785,000	785,000
Expenditures	-	-	-	-	-
End of year	14,173,991	14,958,991	15,743,991	16,528,991	17,313,991

Capital Reserve Summary

	Equipment	Road Construction	Bridges	Buildings	Water and Wastewater Infrastructure
Annual Transfer to Reserve	700,000	250,000	400,000	100,000	272,105
Projected End of the Year Balance					
2022	3,832,000	3,001,000	3,083,000	175,000	996,000
2023	4,532,000	3,251,000	3,483,000	275,000	1,268,105
2024	5,232,000	3,501,000	3,883,000	375,000	1,540,210
2025	5,932,000	3,751,000	4,283,000	475,000	1,812,315
2026	6,632,000	4,001,000	4,683,000	575,000	2,084,420
2027	7,332,000	4,251,000	5,083,000	675,000	2,356,525

Project Name	Bridge File 2488 - Fischer Bridge over Crowsnest River
Project Number	22_01_BF 2488
Priority	5 - High
Service Area	Public Works - Bridges
Division	Division 5
Project Description	Single lane bridge replacement, NW 26-007-02 W5M
Project Cost	
Funding Sources	Other: In 2022 the MD was successful in receiving grant funding of 75% up to a maximum of $930,150 under the Local Roads & Bridges Program through STIP. The remaining portion will be funded through the Municipal Sustainability Initiative (MSI) Grant.
Timeline	Complete in 2023
Rationale for Need	The bridge was built in 1927 and is closed due to its poor condition. Engineering, Supply, & Construction was awarded in 2022 after STIP funding was received. Construction will not be fully completed until 2023.
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) was estimated at 39 vehicles/day in 2019.
Treatment of asset replaced	Bridge to be removed as part of contract
Implications of deferral	Local residents and travelers will continue to detour 4.9km over HWY 3, 22 and local roads. STIP Funding expires March 31, 2025. Delaying would result in contractual issues and incurred costs for supply and construction contractors which have been awarded.
Other options to Recommendation	N/A; bridge construction awarded and underway

Project Name	Bridge File 75265 - RR 1-1A Over Heath Creek
Project Number	22_01_BF 75265
Priority	5 - High
Service Area	Public Works - Bridges
Division	Division 4
Project Description	Culvert replacement, NE-11-010-01 W5M
Project Cost	
Funding Sources	Federal Gas Tax Fund The MD will submit a application for grant funding under the Local Roads & Bridges Program under STIP (AB Transportation). For Budget purposes this project will flow through the guaranteed Federal Gas Tax Fund (GTF) funding.
Timeline	Complete in 2023
Rationale for Need	The bridge structure was constructed in 1960 and facilitates the passage of a local road over Heath Creek near Cowley, AB. The bridge culvert is currently in poor condition. This is due to cracked longitudinal seams with 55 mm of steel remaining in ring 4 and 68 mm of steel remaining in ring 3. Poor alignment and a significant scour hole downstream.
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 32 vehicles/day.
Treatment of asset replaced	
Implications of deferral	The project was scheduled in 2022 but was cancelled after the tender significantly exceeded the budget. Further delay may result in further deterioration and possible road closure. There is no available detour for residents as the road is a dead end.
Other options to Recommendation	A bridge liner and metal struts were reviewed but due to the condition of the culvert it isn't recommended.

Project Name	Bridge File 76294 - RR 1-5 Over a Tributary to Castle River
Project Number	22_01_BF 76294
Priority	5 - High
Service Area	Public Works - Bridges
Division	Division 3
Project Description	Culvert replacement, SW 32-006-01 W5M
Project Cost	
Funding Sources	Municipal Sustainability Initiative Grant - Capital The MD will submit a application for grant funding under the Local Roads & Bridges Program under STIP (AB Transportation). For Budget purposes this project will flow through the guaranteed Municipal Sustainability Initiative (MSI) funding.
Timeline	Complete in 2023
Rationale for Need	The bridge culvert was built in 1965. The structure has roof and sidewall deflection along with extensive perforations due to corrosion in Ring 2 & 3. A low rating notification was filed with the MD. Inspection cycle is currently 6 months.
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 134 vehicles/day.
Treatment of asset replaced	Recycle steel
Implications of deferral	Delay in reconstruction of this bridge could result in further deterioration and (eventual) road closure & an increase in inspection resource requirements. Engineering costs have been incurred. Detour is approximately 32km.
Other options to Recommendation	A steel liner would be the preferred maintenance strategy, but a liner is not actually expected to save cost at this location as liners typically provide savings when excavation costs (for replacement) are high in relation to material costs. The lliner would result in under sizing for expected flow conditions and would negatively impact upstream and downstream alignment. Other options considered included larger CSP, dual CSP, other material/structure types. Alternatives have a higher capital cost.

Project Name	Bridge File #7743 Local Road over Gladstone Creek
Project Number	PW-BF-2
Priority	5 - High
Service Area	Public Works - Bridges
Division	Division 3
Project Description	Capital repairs, SW 23-05-02-W5
Project Cost	
Funding Sources	Federal Gas Tax Fund
Timeline	Complete in 2023
Rationale for Need	The bridge structure was constructed in 1908 and facilitates the passage of a local road over Gladstone Creek near Pincher Creek, AB. The bridge is in poor condition due to repairs in strip decking, wheel guards, bridge rails, stringers, pilings and minor plank replacement.
Impact on future operating costs	
Impact on other departments	
Treatment of asset replaced	
Implications of deferral	Delay in reconstruction of this bridge will result in further deterioration and road closure. Detour is 79km.
Other options to Recommendation	N/A; bridge construction awarded and underway

Project Name	Bridge File 74048 RR 3-0A Over Todd Creek
Project Number	
Priority	5 - High
Service Area	Public Works - Bridges
Division	Division 5
Project Description	Culvert maintenance/replacement. NW-36-009-03 W5M
Project Cost	
Funding Sources	Reserve - Bridge Repair and Replacement
Timeline	2023 - Engineering 2024 - Complete
Rationale for Need	The culvert was built in 1962. This structure has 13% roof deflection (R=3), but minimal sidewall deflection. Minor corrosion, but no erosion concerns. Struts are estimated to extend the life of this structure 10 years. Preliminary engineering is required to determine if struts are feasible, or if replacement will be the required solution. A preliminary report will be completed with a net present value analysis. In order of structural condition rating and sufficiency rating, this culvert was in 2nd worst condition in the MD at time of 10 year study completion (June 2022).
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 20 vehicles/day.
Treatment of asset replaced	
Implications of deferral	Delay could result in further deterioration and an increase in inspection resource requirements, and a lesser ability to maintain. No detour available.
Other options to Recommendation	

Project Name	Bridge File 70175 - Spread Eagle Rd. Over Yarrow Creek
Project Number	
Priority	4 - Medium/High
Service Area	Public Works - Bridges
Division	Division 1
Project Description	Bridge Maintenance, NW-22-003-30 W4M
Project Cost	
Funding Sources	Federal Gas Tax Fund
Timeline	2023 - Engineering 2024 - Complete
Rationale for Need	The main truss was built in 1908 and installed over Yarrow Creek in 1957. A recent inspection and level 2 timber coring report indicated there are timber substructure components with extensive rot resulting in a low rating notification recommending annual inspection. There is also some significant erosion along the west bank and other minor repairs required. This bridge was rated were in 5th worst condition in the MD at time of 10 year study completion (June 2022).
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 60 vehicles/day.
Treatment of asset replaced	
Implications of deferral	Delay in maintenance could result in deterioration which would require load rating reductions (in 2-5 years) and an increase in inspection resource requirements. Detour is 13 km.
Other options to Recommendation	Replacement was not considered due to feasibility of maintenance and significant cost of replacement ($1,300,000)

Project Name	Bridge File 75801 - RR1-4 Over Oldman Tributary
Project Number	
Priority	5 - High
Service Area	Public Works - Bridges
Division	Division 4
Project Description	Culvert maintenance, SW 09-010-01 W5M
Project Cost	
Funding Sources	Reserve - Bridge Repair and Replacement
Timeline	2023 - Engineering 2024 - Complete
Rationale for Need	The culvert was built in 1953. The structure has 15% roof deflection and 13% sidewall deflection. There is also a minor scour hole downstream, but the culvert is in good shape otherwise. Vertical steel struts are estimated to extend the life of this structure 10-15 years and are anticipated to be feasible. In order of structural condition rating and sufficiency rating, this culvert was in 3rd worst (respectively) condition in the MD at time of 10 year study completion (June 2022).
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 132 vehicles/day.
Treatment of asset replaced	
Implications of deferral	Delay in maintenance could result in further deterioration and an increase in inspection resource requirements. Further deterioration could impact ability to maintain as an alternate to replacement.
Other options to Recommendation	Replacement of the culvert is another alternative. It is anticipated this option would cost $390,000.

Project Name	Station Street
Project Number	PW-R-2
Priority	4 - Medium/High
Service Area	Public Works - Roads
Division	Division 4
Project Description	Repair subgrade and install new asphalt. Approximately 70m at the intersection of 3rd Avenue and Station Street and 375m on Station Street going east. Install culvert across 3rd Avenue to drain water from the north side of Station Street.
Project Cost	
Funding Sources	Municipal Sustainability Initiative Grant - Capital
Timeline	Complete in 2023
Rationale for Need	Increase the level of service to businesses within the Hamlet of Pincher Station by providing easier access for heavy trucking.
Impact on future operating costs	Reduced repair and maintenance costs.
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 81 vehicles/day.
Implications of deferral	Increase in ongoing repair and maintenance costs. An increase in subgrade failure and drainage issues will continue to create strain on the road structure.
Other options to Recommendation	Other options include: 1. Pulverize existing road and return to gravel. 2. Wait until the MD can explore water and wastewater options at Pincher Station, to allow the MD to do both at one time.

Project Name	Bitango Road (RR1-2)
Project Number	PW-R-1
Priority	5 - High
Service Area	Public Works - Roads
Division	Division 3
Project Description	Upsize and replace 64m of existing culvert with a 36" smooth wall steel pipe culvert by Jack Boring method (non destructive) and repair slides and sink hole on side slope. The existing structure will be abandoned and grouted in place.
Project Cost	
Funding Sources	Municipal Sustainability Initiative Grant - Capital
Timeline	Complete in 2023
Rationale for Need	The culvert is undersized, it has separated in a few locations forcing the water to go upward. This has created sliding and slope failures.
Impact on future operating costs	
Average Daily Traffic Count	The Average Daily Traffic (AADT) is estimated at 30 vehicles/day.
Implications of deferral	The potential of road failure and concern for public safety could result in road closure. If the road had to be closed, the detour is approximately 15 km.
Other options to Recommendation	ISL Engineering recommends that the MD consider using a 54” smooth wall steel pipe culvert. Advantages of the 54” smooth wall steel pipe installation would be the possibility of installing a 36” culvert liner in the future while still achieving freeboard with the design flow. This option is estimated to cost $500,000.

Project Name	Patton Avenue
Project Number	PW-R-3
Priority	2 - Low/Medium
Service Area	Public Works - Roads
Division	Division 5
Project Description	Improve drainage on the east boulevard of Patton Avenue to create positive drainage to the catch basin on the north end.
Project Cost	
Funding Sources	Reserve - Road Construction
Timeline	Complete in 2023
Rationale for Need	Provide proper drainage and avoid water pooling in front of residences.
Impact on future operating costs	Reduce the potential for pavement failure and reduced maintenance costs.
Average Daily Traffic Count	
Implications of deferral	Increased potential for complaints. Frustration from residents along the street.
Other options to Recommendation	

Project Name	Lundbreck Sewer System Repairs, Flush, & Inspection
Project Number	
Priority	5 - High
Service Area	Wastewater
Project Description	Excavation, replacement, and repair of surface works for the manhole misalignment on Robinson, misalignment on Robinson Street, and misalignment outside of manhole on Hamilton.
Project Cost	
Funding Sources	Reserve - Water and Wastewater Infrastructure
Timeline	Complete in 2023
Rationale for Need	A preliminary inspection was completed in November 2020 in support of identifying the root cause of issues with respect to Lundbreck's wastewater lagoon. Dissolved sulphates were found and camera inspections were completed throughout the system. Harmful sulphur was also found in the lagoon and groundwater seepage into the sewer system was identified as a potential cause of this seepage. The inspections identified 3 main sections of pipe in significant disrepair in the Lundbreck Wastewater System.
Impact on future operating costs	Decreased risk of overloading lagoon.
Impact on other departments	Repair work on roads.
Treatment of asset replaced	
Implications of deferral	Potential for further seepage into lagoon system and continued overloading. Potential result being inability to discharge from lagoon system.
Other options to Recommendation	Staged construction approach over 2023/2024 (sites individually completed).

Project Name	Beaver Mines Distribution and Collection
Project Number	BMDC
Priority	5 - High
Service Area	Water Services
Project Description	Install a water distribution system and wastewater collection system at Beaver Mines followed by rehabilitation of the road surface (MPE).
Project Cost	
Funding Sources	Other: The MD has received funding under Small Community Funds (SCF). Effective June 30th 2020 (resolution 20/287) the MD will fund the Beaver Mines Distribution and Collection project, where eligible, by applying SCF (66.67%), followed by MSI (100%). Funding under SCF is shared equally between the Federal, Provincial and Municipal District of Pincher Creek.

	2019-2022	2023	Total
SCF	2,490,000	1,610,000	4,100,000
MSI	1,209,000	805,000	2,014,000
Reserve	185,000	-	185,000
Total	$ 3,884,000	$ 2,415,000	$ 6,299,000

Timeline	Complete in 2023 As of July 8, 2021, the MD received final approval from Alberta Environment and Parks. The MD plans to complete this section the Beaver Mines Water and Wastewater project in 2023. For budget purposes, the MD has estimated approximately 60% in 2022, with the remaining 40% incurred in 2023.
Rationale for Need	Beaver Mines presently relies on point of use wells/cisterns for potable water and septic systems for wastewater collection and treatment. There are health and safety issues due to bacteria found in the water samples as well as septic systems in a state of deterioration.
Impact on future operating costs	Increased time for water treatment and wastewater collection personnel to monitor and maintain the system.
Impact on other departments	Health and safety issues will continue and may increase. Project costs may also increase.
Treatment of asset replaced	Land owners are responsible for the abandonment and reclamation of existing wells and septic systems.
Implications of deferral	
Other options to Recommendation	

Project Name	Beaver Mines Lift Station and Forcemain
Project Number	BMLF
Priority	**5 - High**
Service Area	Wastewater
Project Description	Lift station and forcemain up to the tie in location (MPE)
Project Cost	
Funding Sources	Other: The MD has received funding under Alberta Municipal Water, Wastewater Partnership (AMWWP) and Small Community Funds (SCF). Effective June 30th 2020 (resolution 20/287) the MD will fund the Beaver Mines Lift Station and Forcemain, where eligible, by applying SCF (66.67%), followed by AMWWP (75%) and MSI (100%).

	2019-2022	2023	Total
SCF	643,000	624,000	1,267,000
AMWWP	325,000	1,301,000	1,626,000
MSI	1,000	413,000	414,000
Reserves	-	-	-
Total	$ 969,000	$ 2,338,000	$ 3,307,000

Timeline	Complete in 2022 As of July 8, 2021, the MD received final approval from Alberta Environment and Parks. The MD plans to complete this section the Beaver Mines Water and Wastewater project in 2023.
Rationale for Need	Beaver Mines presently relies on point of use wells/cisterns for potable water and septic systems for wastewater collection and treatment. There are health and safety issues due to bacteria found in the water samples as well as septic systems in a state of deterioration.
Impact on future operating costs	Increased operating costs when system is fully functional.
Impact on other departments	
Treatment of asset replaced	
Implications of deferral	
Other options to Recommendation	

Project Name	Beaver Mines Waste Water Treatment Facility
Project Number	BMWW
Priority	**5 - High**
Service Area	Wastewater
Project Description	Banner Environmental Engineering Ltd. has been chosen to design and build infrastructure following the tie-in point, treatment, at grade system and access road (Banner).
Project Cost	
Funding Sources	Other: The MD has received funding under Alberta Municipal Water, Wastewater Partnership (AMWWP) and Small Community Funds (SCF). Effective June 30th 2020 (resolution 20/287) the MD will fund the Beaver Mines Waste Water Treatment System, where eligible, by applying SCF (66.67%), followed by AMWWP (75%) and MSI (100%).

	2019-2022	2023	Total
SCF	633,000	-	633,000
AMWWP	901,000	2,035,000	2,936,000
MSI	170,000	759,000	929,000
Reserves	30,000		30,000
Total	$ 1,734,000	$2,794,000	$ 4,528,000

Timeline	Complete in 2023 As of July 8, 2021, the MD received final approval from Alberta Environment and Parks. The MD plans to complete this section the Beaver Mines Water and Wastewater project in 2023. For budget purposes, the MD has assumed approximately 40% of the remaining capital expenditures will be incurred in 2022, with the remaining 60% incurred in 2023.
Rationale for Need	Beaver Mines presently relies on point of use wells/cisterns for potable water and septic systems for wastewater collection and treatment. There are health and safety issues due to bacteria found in the water samples as well as septic systems in a state of deterioration.
Impact on future operating costs	
Impact on other departments	
Treatment of asset replaced	
Implications of deferral	
Other options to Recommendation	

Project Name	Hydroseeder
Project Number	
Priority	3 - Medium
Service Area	AES - Equipment
Project Description	Skid mounted Turbo Turf 400 Gallon Electric Start Hydroseeder
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	The cost of seed has doubled over the past year. Currently, we are using the method of seeding with the lowest efficiency (surface spreading). With a hydroseeder, we can drastically improve our success in seeding areas such as: public parks, culvert replacements, gravel pit reclamation etc.
Impact on future operating costs	Would reduce re-seeding costs and re-seeing labour hours.
Impact on other departments	Would benefit PW as seeding projects would be completed in the first year instead of two to three years later.
Implications of deferral	Time wasted on ineffective seeding of bare areas, money wasted on increasingly expensive seed that blows away or doesn't germinate.
Other options to Recommendation	Getting a small tractor operated seed drill.

Project Name	Grader
Project Number	
Priority	4 - Medium/High
Service Area	Public Works - Equipment
Project Description	Purchase a new 150M CAT Grader.
Project Cost	
Funding Sources	Municipal Sustainability Initiative Grant - Capital
Timeline	Complete in 2023
Rationale for Need	Unit 61: 9358 hrs, 2011 model - Reason for replacement is that Unit 61 is having transmission issues and has a leaking clutch pack. Engine is getting close to rebuild at 10,000 hrs.
Impact on future operating costs	Reduced potential for unplanned major grader repairs. Unit 61 value is estimated at $160,000. This unit would be sold with any proceeds put into the Equipment Reserve.
Impact on other departments	
Implications of deferral	Increased down time. Potential for strain on the level of service in the winter. Increase in repair and maintenance cost. The cost of a new grader consistently rising due to the high equipment demand.
Other options to Recommendation	Grader Rebuild for $475,000

Project Name	Gravel/Plow Truck
Project Number	
Priority	5 - High
Service Area	Public Works - Equipment
Project Description	New truck with gravel box, plow attachment and sand box
Project Cost	
Funding Sources	Municipal Sustainability Initiative Grant - Capital
Timeline	Complete in 2023
Rationale for Need	Replacement of Unit 412 (Western Star plow) because it is no longer usable on the highway. Unit 412 is 16 years old and has 364,000 kms. Extensive work is required (transmission, engine and new sand box) to make it operational again. Approximate cost would be $125,000.
Impact on future operating costs	Reduced operating and maintenance costs, possible warranty coverage.
Impact on other departments	
Implications of deferral	Increased downtime, longer response time with snow removal on hard surfaces.
Other options to Recommendation	If possible, the MD will look to purchase this piece of equipment via auction or another used source. Any proceeds from the sale will be put back into the equipment reserve.

Project Name	Tractor
Project Number	
Priority	2 - Low/Medium
Service Area	Public Works - Equipment
Project Description	Purchase a used Tractor 1000 rear PTO and 540 front PTO
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	Replacement and upgrade of Unit 41 (John Deer 6410) and Unit 12 (Kubota M6800) to accommodate horsepower requirements to efficiently utilize compacting equipment. Unit 41 is 22 years old and has 4,500 machine hours. There is potential for more attachment additions in the future such as heavy duty snow blade and front attach snow blower.
Impact on future operating costs	New tractor will be under warranty. Unit 41 and Unit 12 will be send to auction, with any proceeds (75k) added directly into the equipment reserve.
Impact on other departments	
Implications of deferral	Strain on existing tractor, not enough horse power.
Other options to Recommendation	If possible, the MD will look to purchase this piece of equipment via auction or another used source.

Project Name	Stone Crusher
Project Number	
Priority	2 - Low/Medium
Service Area	Public Works - Equipment
Project Description	Multi-Function Head for tractor (Pull Behind)
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	A stone crusher would be an addition to our fleet to efficiently recondition rocky and hard road surface to increase quality of the road network. This attachment enables ground stabilization, milling of asphalt and cold mix, slabs of rocks and crushing of stone up to a depth of 28cm.
Impact on future operating costs	Reduction in maintenance cost and contracted services to re-habilitate road surfaces.
Impact on other departments	
Implications of deferral	
Other options to Recommendation	

Project Name	Snow Blade
Project Number	
Priority	4 - Medium/High
Service Area	Public Works - Equipment
Project Description	New hydraulic angle snow blade for Unit 07 (CAT 938 Loader)
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	The snow blade will allow the MD to provide better snow removal service in Hamlets. The existing blade is not appropriate for snow removal in hamlet streets as it is not articulated.
Impact on future operating costs	Increased operational efficiencies with Hamlet snow removal. Reduced need for multiple pieces of equipment will provide fuel savings.
Impact on other departments	
Implications of deferral	Challenges in providing better service levels. The complaint level will likely to stay the same as we are unable to address the current shortfall.
Other options to Recommendation	If possible, the MD will look to purchase this piece of equipment via auction or another used source. Any proceeds from the sale will be put back into the equipment reserve.

Project Name	Sand Box
Project Number	
Priority	2 - Low/Medium
Service Area	Public Works - Equipment
Project Description	Sand Box for Dodge 5500 (Unit 402)
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	Expand and increase our snow removal service in the Hamlets and provide a faster response.
Impact on future operating costs	Increase in wear in tear of unit 402 and maintenance cost.
Impact on other departments	
Implications of deferral	No implications
Other options to Recommendation	Keep the same level of service

Project Name	Snow Plow
Project Number	
Priority	2 - Low/Medium
Service Area	Public Works - Equipment
Project Description	Snow plow for Dodge 5500 (Unit 402)
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	Expand and increase our snow removal service in the Hamlets and provide a faster response.
Impact on future operating costs	Increase in wear in tear of unit 402 and maintenance cost.
Impact on other departments	
Implications of deferral	No implications
Other options to Recommendation	Keep the same level of service

Project Name	Heavy Duty Scan Tool
Project Number	
Priority	3 - Medium
Service Area	Public Works - Operations
Project Description	Heavy duty scan tool.
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	Heavy duty scan tools for light and heavy equipment are outdated. Repair and service of equipment now limited. This scan tool has the ability to do both light and heavy equipment.
Impact on future operating costs	Equipment warranty.
Impact on other departments	Used on AES equipment as well.
Implications of deferral	Loss of ability to service equipment internally.
Other options to Recommendation	Not replace, outsource some repair.

Project Name	AC Recovery Machine
Project Number	
Priority	3 - Medium
Service Area	Public Works - Operations
Project Description	A/C recovery and analysis machine.
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	AC Recovery unit outdated and parts are becoming hard to acquire.
Impact on future operating costs	Equipment warranty
Impact on other departments	Used on AES equipment as well.
Implications of deferral	Losing ability to service equipment internally.
Other options to Recommendation	Not replace, outsource some repair.

Project Name	AES Light Truck
Project Number	ASB -02
Priority	3 - Medium
Service Area	AES - Equipment
Project Description	A Heavy Duty, 3/4 ton, long box, super/double cab (depends on make).
Project Cost	
Funding Sources	Reserve - Equipment Replacement
Timeline	Complete in 2023
Rationale for Need	Truck replacement is required on Unit #600 - 17 yrs. old with 182,000 km's.
Impact on future operating costs	Reduced maintenance costs on older vehicles.
Impact on other departments	
Implications of deferral	For AES, the most important considerations are road worthiness and stability under heavy load. Heavy loads, even after ten years, makes the vehicles more risky to drive. Reliability, downtime and increased maintenance costs play a factor
Other options to Recommendation	

Project Name	Light Trucks Half Tons X2
Project Number	
Priority	4 - Medium/High
Service Area	Public Works - Equipment
Project Description	Light Trucks - 1/2 ton crew cab and F150 Lightning
Project Cost	
Funding Sources	Reserve - Equipment Replacement The MD will submit a application on the Lightning for the grant funding under the MCCAC electric vehicles for municipal vehicles program. **This purchase is contingent on the success of this grant application** which will cover $14,000 of the total capital costs. The remainder, will be funded through the equipment reserve.
Timeline	Complete in 2023
Rationale for Need	Replacements for Unit 640 and Unit 493. Unit 640 is 15 years old and has 240,000 kms, Unit 493 is 17 years old and has 248,000 kms. Two trucks were approved in 2021 Budget, however only one was able to be ordered. The MD wishes to explore the potential of using an electric vehicle. Fuel costs are the most significant energy cost for the MD. Piloting alternative solutions will assist with gaining internal knowledge related to fleet alternatives.
Impact on future operating costs	For the electric F150, assuming 12,000km/year at 17.5L/100km, 2% cost inflation, and carbon tax, it is anticipated that the MD will see fuel savings of $2,600/year in 2023 to upwards of $3,750/year in 2030, maintenance savings of $600/year, and life savings over $32,000.
Impact on other departments	
Implications of deferral	Continue spending money on gas and maintenance.
Other options to Recommendation	

Project Name	Airfield Lighting Replacement
Project Number	
Priority	5 - High
Service Area	Airport
Division	Division 3
Project Description	Full redesign and capital rehabilitation of the failed lighting system for the airport to meet Transport Canada's current regulations. A review of the runway length is also included and potential repainting/flight chart work if feasible.
Project Cost	
Funding Sources	Other: In 2022 the MD was successful in receiving grant funding of 75% up to a maximum of $585,000 under the Community Airport Program through STIP. The remaining portion will be funded through the Municipal Sustainability Initiative (MSI) Grant.
Timeline	Complete in 2023
Rationale for Need	Capital work for the Airport Airfield Lighting Replacement project was approved by council May 2022 upon receipt of a successful STIP Application. In 2022, design-build contract was awarded for the lighting project. Additionally, the contractor reviewed the potential to move runway thresholds and determined it was feasible to extend the runway. Flight charts and flight design planning was revised and construction design is expected to be complete in 2022. Construction is proposed to start in Spring 2023. Project will replace the 40+ year old electrical infrastructure and re-establish the ability to fly at nighttime and during inclement weather.
Impact on future operating costs	Reduced power usage with LED lighting. Reduced downtime of facility, potential increase in usage/revenue.
Impact on other departments	Increased service level for fire, emergency medical, and private aviation.
Treatment of asset replaced	
Implications of deferral	
Other options to Recommendation	

Project Name	Renewable Energy Installation
Project Number	
Priority	3 - Medium
Service Area	Airport
Division	Division 3
Project Description	Renewable energy installation, on MD land near the Airport, to generate clean energy and reduce long term operating costs.
Project Cost	
Funding Sources	Reserve - M.D. Buildings The MD will submit a application on for the grant funding under the Alberta Municipal Solar Program. **This project is contingent on the success of this grant applicatio**n which will cover 30% (or $30,000) of the total capital costs. The remainder, will be funded through the building reserve.
Timeline	Complete in 2023
Rationale for Need	Reduces long term infrastructure operational costs through energy savings which can in turn be passed off as cost savings to the residents, or generating passive renewable income.
Impact on future operating costs	A $100,000 solar array would be expected to reduce energy and therefore operational costs by $4,000-$8,000 per year. The pay back period is expected to be 9-13 years with an expected life of 30+ years.
Impact on other departments	
Treatment of asset replaced	
Implications of deferral	Price escalation and extension of any payback period from generating passive income.
Other options to Recommendation	

Project Name	Concrete Pad
Project Number	
Priority	4 - Medium/High
Service Area	Public Works - Operations
Project Description	Construct a concrete pad between the Public Works Shop and Quonset in order to provide proper water collection while washing equipment.
Project Cost	
Funding Sources	Reserve - M.D. Buildings
Timeline	Complete in 2023
Rationale for Need	Drainage is directly next to the Public Works Shop and Quonset causing issues with the buildings and pooling is presenting a significant safety hazard in the winter with ice. Frequent cleaning during winter will extend equipment life by reducing wear and tear on parts.
Impact on future operating costs	Reduce the potential for water damage within Public Works yard, Shop, Parking Area, and Quonset. Reduced maintenance costs on equipment.
Impact on other departments	AES can use wash bay pad as needed.
Implications of deferral	Potential costs of damages and ongoing serious safety hazard.
Other options to Recommendation	

Project Name	Quonset Overhead Door
Project Number	
Priority	5 - High
Service Area	Public Works - Operations
Project Description	20' x 16' Overhead door with chain hoist.
Project Cost	
Funding Sources	Reserve - M.D. Buildings
Timeline	Complete in 2023
Rationale for Need	Safety concern as the existing door hard to open and in extremely poor condition.
Impact on future operating costs	No impact.
Impact on other departments	AES storing chemicals in the quonset.
Implications of deferral	High potential for injuries or failure.
Other options to Recommendation	

Project Name	Beaver Mines Trail
Project Number	
Priority	2 - Low/Medium
Service Area	Parks
Project Description	Provide 400m of 2m width limestone walking pathway for Beaver Mines residences west of the highway between 5th and 4th street.
Project Cost	
Funding Sources	Public Trust Reserve $5,000: MPE (Donation for on-site recognition)
Timeline	Complete in 2023
Rationale for Need	The Beaver Mines Community Association has requested a trail be completed as part of project closeout for the Water Distribution & Collection System. Alberta Transportation was consulted regarding the section along with HWY, and confirmed that a permit would be required for the work. The trail will need to be designed to AT standards and details will need to be provided such as type of trail, drainage details, cross section drawings from edge of pavement, etc. The costs for this work include completing a design to meet AT requirements. If current contractors cannot complete the construction portion of the work for a reasonable amount, a brief tender would be completed. It is anticipated that a section of the proposed phase 1 portion of the pathway, between 4th street and the new firehall site, can be included as part of the Water Distribution & Collection System. Therefore this portion is not considered here.
Impact on future operating costs	Gravel maintenance, mowing, weeding, etc.
Impact on other departments	Maintenance required by Public Works and AES
Implications of deferral	Restoration needs to occur for the waterworks regardless. Deferring would result in slightly increased costs due to duplicating reclamation
Other options to Recommendation	Complete entire Ph. 2 Trail (complicated design along HWY ROW, unclear if feasible prior to completion of engineering work). Design as a paved 3m pathway: Additional $20,000

AES, November, 2022

- November 1 – 10, digitize past paper spray records and mapping into MRF (Jesson)
- November 1 – 25, Records & Billing (Province, Gravel Pits etc.)
- November 1 – 30, adding past records and mapping into Excel and MRF
- November 1, ordering parts, invoicing, beaver removal license application & organization
- November 2, airport (when mentioned this usually entails snow removal, runway inspection and report, coordinate with PW, beyond the usual half hour or less) dams, rental equipment, reporting
- November 3, airport, dams, shop, safety (forms, facility inspection)
- November 4, Invoicing, tire change, rental equipment, deadstock
- November 7, Safety forms & records, shop, deadstock, burn weeds & yard cleanup
- November 8, Climate Resiliency meeting with town, yard & shop cleanup
- November 9, PW Safety Meeting, JHS meeting, change out windsock
- November 10, last day for Jesson, focus on tying up projects he's involved with
- November 11, STAT
- November 14, Bob Stenhouse Workshop
- November 15, airport, General Office duties, rental equipment
- November 16, airport, Acts & Policies, reporting, Association of Alberta Agricultural Fieldman [AAAF] (as hosting region for AAAF IST 2023 & ASB Provincial Conference, 2024, both in Lethbridge)
- November 17, PCREMO Tabletop Exercise for Emergency Management
- November 18, Safety (bistrainer, organization for 2023, acting on notes for improvements and additions as seen from 2022, etc.)
- November 21 – 30, ALUS general duties with coordinator
- November 21, Asset Management meeting, Safety, airport, shop
- November 22, Billing, dams, deadstock, Seed Cleaning Plant inspection
- November 23, Safety Forms/Bistrainer (SWP, Hazard Assessment, Emergency Response) reviews
- November 24, ASB Agenda items, meet with AISC coordinator
- November 25, Dams, budget, deadstock, ordering biocontrol for 2023
- November 28, Inventory, AAAF duties for IST, ALUS meeting with coordinator
- November 29, Inventory, budget and purchasing
- November 30, Prep for AAAF IST in Grande Prairie (Dec. 5 – 9)

Sincerely,

Shane Poulsen,
Agricultural Services Manager

CHIEF ADMINISTRATIVE OFFICER'S REPORT

October 21, 2022 to November 17, 2022

Discussion:

October 24	Asset Management Check In
October 24	AEP Meeting, Alluvial Fan Flood Hazards
October 25	Council Committee and Council Meetings
October 27	ARMAA/LGAA Meeting, Coalhurst
November 1	Special Council Meeting
November 1	Subdivision Authority Meeting
November 1	Municipal Planning Commission Meeting
November 2	Pincher Creek Emergency Advisory Committee (EAC) Meeting
November 3	PCREMO Core Working Group Meeting
November 4	Pincher Creek Emergency Advisory Committee (EAC) Meeting
November 6-10	RMA Fall Convention, Edmonton
November 11	Remembrance Day Statutory Holiday
November 14	Risk Informed Management Training
November 15	PCREMO Pre-exercise Meeting
November 15	Joint Town and MD Council Meeting
November 16	Clem-Geo Meeting
November 17	PCREMO Exercise
November 18-30	Vacation

RECOMMENDATION:

That Council receive for information, the Interim Chief Administrative Officer's report for the period October 21, 2022 – November 17, 2022.

Prepared by: CAO, Roland Milligan Date: November 16, 2022

Respectfully presented to: Council Date: November 22, 2022

Administrative Support Activity since last Council Meeting
– prepared by Jessica McClelland, EA

Letters from last Council:

Organizational Letters

Advertising/social:

Public Hearings Bylaw 1337-22 (Blak Star Globes) and 1345-22 (River Bend Ranch Houses)
Coffee with Council – November 3 in Twin Butte - CANCELLED
Beaver Mines Project Update
Special Council Meeting – November 15, 2022
Eco Centre closure for Remembrance Day
Snow piling safety message

Other Activities:

KBPV Spooky Town – October 29, 2022
Packages: Committee/Council/Public Hearings 1337-22 (Blak Star Globes) and 1345-22 (River Bend Ranch Houses)
Invitations to Council: Lorne Thompson – checking his schedule, will be in early New Year
Invitations to Council: Heritage Acres – December 2022
Submitted Nomination for Queen Jubilee Award

Upcoming Meetings of Importance:

Regular Committee, Council – November 22, 2022
Public Hearings – November 22, 2022 for 1337-22 (Blak Star Globes) and 1345-22 (River Bend Ranch Houses)
Beaver Mines Open House – December 1, 2022 6:30pm
MD Christmas Party – December 2, 2022
Regular Committee, Council – December 13, 2022
The MD offices are closed from December 24, 2022 to January 3, 2023 this year for the Holiday Break

Recommendation to Council

TITLE: APPOINTMENT TO BOARDS	
PREPARED BY: JESSICA MCCLELLAND	DATE: November 14, 2022
DEPARTMENT: ADMINISTRATION	
Department Supervisor / Date	ATTACHMENTS: None

APPROVALS:

Department Director	Date	CAO	Date
			2022/11/16

RECOMMENDATION:

That Council appoint Sandra Baker to the Pincher Creek Regional Library Board, effective immediately.

And that Council determine which Councilors will sit on the IMDP/Pincher Creek Housing Committees.

BACKGROUND:

Council appoints committee members annually at the Organizational Meeting in October. At that time it was missed to appoint Sandra Baker to the Pincher Creek Library Board. She is a long standing member and does wish to stay on the board.

At the Special Meeting of November 15, 2022, Council requested that a member be authorized to sit on the Town of Pincher Creeks Housing Committee.

Committee members for the IMDP's (Intermunicipal Development Plan) need to be appointed for the following areas (2 Councilors and an alternate) *in the past the 2 Divisional Councilors closest to the boarder were appointed.

- Municipality Crowsnest Pass – Divisions 3 and 5
- MD of Ranchlands – Divisions 4 and 5
- MD of Willow Creek – Divisions 2 and 4
- Cardston County – Divisions 1 and 2

FINANCIAL IMPLICATIONS:

No changes at this time.

Recommendation to Council

TITLE: CANCELLATION OF DECEMBER MEETING			
PREPARED BY: JESSICA MCCLELLAND		**DATE: November 14, 2022**	
DEPARTMENT: ADMINISTRATION			
			ATTACHMENTS: None
Department Supervisor		**Date**	

APPROVALS:

Department Director	**Date**	**CAO**	**Date**
			2022/11/16

RECOMMENDATION:

That the regularly scheduled Council and Committee Meeting on December 27, 2022 be cancelled.

BACKGROUND:

The MD offices are closed from December 24, 2022 to January 3, 2023 this year for the Holiday Break.

FINANCIAL IMPLICATIONS:

None at this time.

To whom it may concern

Nov 10, 2022

On behalf of the U18 Pincher Creek Huskies hockey team we are inquiring about your interest in providing a donation for our upcoming home tournament December 2nd, 3rd, and 4th 2022. We will be hosting 5 teams for the weekend, coming from Cochrane, Creston, 2 from Red Deer and Strathmore. Your business will be mentioned in the program for the weekend.

Your dontation could come in the form fo a prize for our raffle table or as funds to put towards larger raffle prizes.

Please include a business card for us to display at the tournament

Thank you and we look forward to your supoort.

Chrissy Larson - Hockey Mom

Shannon Mitchell - Hockey Mom

Lisa Stuckey - Team manager

October 19, 2022

The Honorable Tyler Shandro
Minister of Justice and Solicitor General, Deputy House Leader
Office of the Minister
204 Legislature Building
10800 - 97 Avenue
Edmonton, AB T5K 2B6
ministryofjustice@gov.ab.ca

RE: Victim Services Redesign

Dear Minister Shandro,

The Town of Fox Creek has recently become aware of the proposed Victim Services Redesign and is greatly concerned about the negative impacts it would have on our community. Losing the incredibly valuable service the Victim Services Unit provides our residents to a centralized area, would prove to be detrimental.

We realize efforts and resources were put into the MLA review; however, we strongly believe conversations and discussions should have been held with municipalities and Victim Services Units while putting this plan together. Municipal consultation should have been considered an integral component of a redesign.

Potential negative effects could leave our community and its people without the much-needed resources and support the Victim Services Unit provides. In rural Alberta, Victim Services Staff are as critical as First Responders and their ground zero efforts are invaluable. The proposed areas in the redesign are incredibly large, we are very concerned about where our services would be provided from, and the amount of time victims would have to wait to receive such valuable services. We have been made aware that it is being proposed to replace 17 police-based Victim Services Units in Western Alberta with one board that will more than likely be based in an Urban Center. Once again, Rural Albertans will be the one's to suffer from the decisions made by the Government. Rural Alberta has different needs than urban centers, one's that often do not go hand in hand with the needs of our urban neighbours. We firmly believe that these needs should be addressed in the proposed redesign.

We have also been informed that in the proposal is the loss of support for non-criminal trauma. Victim Services Units work closely and collaboratively with local RCMP to handle any trauma that requires support. Not all trauma involves a criminal nature, and often these traumas are felt throughout a close-knit community. We are a small community, one where people know each other, look out for each other, and support each other. I am sure you can imagine how a tragedy can very quickly touch the lives of many in Rural Alberta. In a community that has lost many of its previously supported programs, having the support of the Victim Services Unit is more valuable now than ever and once again, the loss of this support or change of how the support is being offered will have huge negative impacts.

Our Victim Services Unit is a non-profit unit serving victims of trauma by offering information and referrals to agencies or programs and helping with court preparation. Our advocates are volunteers having experience in dealing with trauma, shock and unexpected loss, who, in the middle of the night, get up to deal with people at the worst time in their lives who need support immediately. The people offering these supports are local. They are part of the fabric that makes up the Community that we love and the ones that support us in times of need. Centralizing these services means we lose the people who know the ins and outs of how Rural Alberta Works, the people who spend time caring about their neighbours, and dedicate countless hours to keeping them safe, checking in on them and being the olive branch they need.

Our Victim Services Unit has not received any funding increases since 2008 yet have still managed to fully service and support victims of crime. Additional fundraising is done throughout the year to support victims of non-criminal trauma to fill the void in our communities and now this would end under the proposed redesign.

The Town of Fox Creek agrees with Woodlands County's suggestion of looking at a Crown model (Alberta Crown prosecution office zones). This would increase the areas of service, but not as drastically as the current proposal and we believe these smaller areas could be managed more effectively allowing rural communities' voices to be heard and considered.

We sincerely hope that the province delays moving forward with the current redesign proposal and stops to consult with the municipalities and current Victim Services Units. This is an opportunity to build and create a better plan that will benefit all Albertans and Victim Services Units throughout the Province.

Sincerely,

Sheila Gilmour
Mayor
sheila@foxcreek.ca

cc: The Honourable Danielle Smith, Premier of Alberta
Arnold Viersen, MP, Peace River – Westlock
Todd Loewen, MLA, Central Peace – Notley
Alberta Municipalities Members
Tina Prodaniuk, Program Manager - Eagle Tower Victim Services

Southwest Alberta Sustainable Community Initiative

August/September 2022
Grant Specialist report for general circulation.

In working through Joint Council applications, it became clear that the lack of ongoing operational funding has reached a crisis point for many of our non-profit organizations. Loss of income over the last few years for those that have the ability to raise their own funds coupled with rising costs is a real problem.

There are a few Federal opportunities around right now that we are trying to take advantage of these being. New Horizons for Seniors, Enabling Accessibility Fund and the Enhanced Capacity Fund. I am working with a few agencies on applications.

I have had to ask administrative staff at both Town and MD for short notice letters of support and would like to thank everyone for their support in getting them to me for the organizations so swiftly. These letters can make a huge difference.

SASCI would like to share two items of interest:

1) SASCI recently received **$42,086** CAD funding from Enel Greenpower to support projects under SASCI and three other local community organizations.
2) SASCI is overhauling its website and will unveil the new site at the same time it rebrands as Pincher Creek Community Development Initiative (PCCDI).

If any Council members have questions, or ideas for projects through the agencies they support, please feel free to communicate directly with me.

Fast Facts

Total Applications made since May 2018	Funding received to date (This is money in the bank for organizations)	Funding outstanding. (This is applications made, but yet to have responses from funders)
$ 7,078,695.00	$ 1,735,365.00	$ 1,288,912.00

We appreciate your support.
Liza Dawber
Pincher Creek Community Grant Specialist – Grants@pccdi.ca or 403-682-7421

Projects for 2022

Thank you once again to the citizens of Pincher Creek, the M.D, and surrounding communities. 2021 was an amazing year with Windy Slopes meeting and exceeding our fundraising goal to purchase consumables for Novasure Endometrial Ablation to facilitate gynaecological surgeries within our Health Centre. This was all made possible due to the generous donations of our wonderful community.

Thank you!

The Windy Slopes Health Foundation

has chosen projects to align with this years Health Centre focus on pediatric and neo-natal patients.

The following projects were selected and approved from a list provided from our new site manager, Tracey Correia.

The Broselow Pediatric Cart & Lifepak 15 will be a great asset to our pediatric unit, as it will provide everything our Doctors & Nurses need for each pediatric age group in the event of an emergency.

The addition of the Lifepak to the cart is specific for pediatric use, and can be transported within our Health Centre wherever a Code Blue is in progress.

The Windy Slopes Health Foundation has set our goal to raise $27,000 to cover all the costs for this equipment purchase.

We feel that this will be an excellent addition to the services already provided by the Pincher Creek Health Centre. The Trustees of Windy Slopes are so excited to bring this gift to our VALUED Doctors, Nurses, and Staff.

We are so grateful for your support in enhancing patient care for Pincher Creek and area. We couldn't do it without YOU!!

THANK YOU

FOR YOUR KIND GIFT

TO TREES OF HOPE

Name:_____

Mailing Adress:_____

Town:_____Postal Code:_____

Phone:_____Amount: $_____

Email Address:_____

In Memory of:_____

Or Merry Christmas to:_____

Receipt Required: Yes_____ No_____

Tax Receipt
Preference: Email _____Mail_____

Please make cheques payable to:
Windy Slopes Health Foundation
Box 2554
Pincher Creek, AB T0K 1W0

Visit Us

Visit the Foundation
online at www.windyslopes.ca
E-Transfers accepted at
www.windyslopespc@gmail.com
For updates, like us on Facebook
Charitable Registration # 89070 9223 RR0001

32nd Annual Trees of Hope Campaign Windy Slopes Health Foundation

Enhancing Care
at the Pincher Creek Health Centre