



**Town of Crossfield**  
**AGENDA**  
**Regular Council Meeting**  
**Tuesday, September 16, 2025 07:00 PM**

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**1. CALL TO ORDER**

**2. AGENDA**

2.1 September 16, 2025 agenda

**3. MINUTES**

3.1 September 2, 2025 meeting minutes Page 3

**4. DELEGATION**

4.1 RCMP Quarterly Update - Sgt. Ian Patey Page 9

**5. SUBDIVISION**

5.1 Application 2024-7000100-PH5 - Vista Crossing Phase 5 Page 19

**6. ACTIONS AND DECISIONS**

6.1 Letters of Support for the Whoo's Crew Parent Society Page 35

6.2 Wastewater Treatment Master Plan - Treated Effluent Disposal Options Page 39

6.3 National Depression Screening Day - Oct. 9 Proclamation Page 115

**7. COUNCILLOR'S BUSINESS**

**8. ADMINISTRATIVE UPDATE**

8.1 Outstanding Items List

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**9. CORRESPONDENCE**

9.1 Marigold Library Board Update - August 2025

Page 118

**10. ADJOURN**



**Regular Council Meeting  
Minutes**

**Tuesday, September 02, 2025**

**Council Chambers  
900 Mountain Avenue,  
Crossfield, Alberta, T0M 0S0**

**PRESENT:** Mayor Harris  
Deputy Mayor Brennan  
Councillor Fox  
Councillor Gustafson  
Councillor Knight  
Councillor Lambert  
Councillor Vang

**STAFF:** Acting CAO, Russ Nash, Director of Community & Protective Services  
Amber Ouellette, Chief Finance Officer  
Steve Altena, Director of Infrastructure and Community Growth  
Lindsey Nash, Legislative and Administrative Services Manager (Recording Secretary)

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**1. CALL TO ORDER**

Mayor Harris called the council meeting to order at 7:01 p.m.

We would like to take this opportunity to acknowledge the traditional territories of the Indigenous peoples of the Treaty 7 territory and the Otipemisiwak (o-tey-pe-mi-si-wak) Metis Government, District 4. We respect the histories, languages, and cultures of First Nations, Metis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our community.

**2. AGENDA**

2.1 September 2, 2025 Agenda

**191-2025**

**MOVED by Councillor Knight that the September 2, 2025, agenda be amended to include a budget adjustment request under Actions & Decisions.**

**CARRIED**

### **3. MINUTES**

3.1 July 15, 2025 meeting minutes

**192-2025**

**MOVED by Councillor Vang that the July 15, 2025 minutes be accepted as presented.**

**CARRIED**

### **4. DELEGATIONS**

4.1 Introduction of Fire Chief Dax Huba and Peace Officer Keith Arndt

### **5. PUBLIC HEARING**

5.1 Bylaw 2025-10 - Being a bylaw of the Town of Crossfield to amend Bylaw No. 2018-14, being the Town of Crossfield Land Use Bylaw to redesignate from UR (Urban Reserve) to I-1 (Light Industrial and Commercial District) and I-2 (Medium Industrial District).

A public hearing is being held on Bylaw 2025-10 Being a bylaw of the Town of Crossfield to amend Bylaw No. 2018-14, being the Town of Crossfield Land Use Bylaw to redesignate from UR (Urban Reserve) to I- 1 (Light Industrial and Commercial District) and I-2 (Medium Industrial District) pursuant to Section 216.4 of the Municipal Government Act.

Mayor Harris declared the public hearing for Bylaw 2025-10 open at 7:16 p.m.

This request was first considered at the Council Meeting on July 15, 2025, and given first reading was given. Today's Public Hearing Notice was posted on the Town of Crossfield's website, and Town Social Media Sites.

There were no responses received in support or opposition during the Public Hearing notification period, and no person has registered to participate electronically at this hearing.

Director of Infrastructure and Community Growth Steve Altena presented opening Administrative remarks and an overview of the proposed amendments.

The applicant Fabio Coppola presented a presentation on his redesignation application.

Following the applicant's presentation, Mayor Harris asked three times if there was anyone present who wished to speak in favour of the Bylaw 2025-10. There were no responses.

Mayor Harris asked three times if there was anyone present who wished to speak in opposition to the Bylaw 2025-10. There were no responses.

Mayor Harris closed the public hearing for Bylaw 2025-10 at 7:51 p.m.

193-2025

MOVED by Deputy Mayor Brennan that Bylaw 2025-10 be given second reading.

CARRIED

194-2025

MOVED by Councillor Lambert that Bylaw 2025-10 be given third and final reading.

CARRIED

195-2025

MOVED by Councillor Knight that the Advance Crossfield Concept Plan be adopted as a framework to guide development within subject lands.

CARRIED

## 6. BYLAWS

6.1 Bylaw 2025-11 - Designated Officers Bylaw

196-2025

MOVED by Councillor Fox that the Designated Officer Bylaw 2025-11 be given first reading.

CARRIED

197-2025

MOVED by Deputy Mayor Brennan that the Designated Officer Bylaw 2025-11 be given second reading.

CARRIED

198-2025

MOVED by Councillor Knight that the Designated Officer Bylaw 2025-11 be given unanimous consent to go to third and final reading.

CARRIED

199-2025

MOVED by Councillor Lambert that the Designated Officer Bylaw 2025-11 be given third and final reading.

CARRIED

200-2025

MOVED by Councillor Knight that Bylaw 2021-09 Chief Administrative Officer Bylaw be repealed.

CARRIED

6.2 Bylaw 2025-12 - Council Procedural Bylaw

201-2025

MOVED by Councillor Gustafson that the Council Procedural Bylaw 2025-12 be given first reading.

CARRIED

202-2025

MOVED by Councillor Vang that the Council Procedural Bylaw 2025-12 be given second reading.

CARRIED

**203-2025**

**MOVED by Deputy Mayor Brennan that the Council Procedural Bylaw 2025-12 be given unanimous consent to go to third and final reading.** **CARRIED**

**204-2025**

**MOVED by Councillor Lambert that the Council Procedural Bylaw 2025-12 be given third and final reading.** **CARRIED**

**205-2025**

**MOVED by Councillor Fox that Bylaw 2025-06 Council Procedural Bylaw be repealed.** **CARRIED**

## **7. ACTIONS AND DECISIONS**

7.1 Crossfield Community Wellness Day Proclamation

**206-2025**

**MOVED by Mayor Harris that Council declare September 7th, 2025, as Crossfield Community Wellness Day.** **CARRIED**

7.2 Rescind Health and Safety Committee Policy 2020-03

**207-2025**

**MOVED by Councillor Knight that Council rescind Health and Safety Committee Policy 2020-03.** **CARRIED**

7.3 Budget Adjustment Request

**208-2025**

**MOVED by Councillor Fox that Council approve a budget increase of \$67,250 for the Athabasca Crescent sewer main replacement project, to be funded from unallocated 2025 Local Government Fiscal Framework (LGFF) capital funds.** **CARRIED**

## **8. COUNCILLOR'S BUSINESS**

**Mayor Harris**

- Attended the Crossfield Farmers Market though out the summer
- August 23 - Attended the Crossfield Elks Demolition Derby
- Continue to attend the Mid-size Mayor's Caucus meetings with an additional meeting with the Minister of Municipal Affairs, Minister Williams to discuss the Mid-Sized Mayor's Caucus. The Mid-Size Mayor's Caucus represents 27 or 84 towns across Alberta with populations from 1,000 to 14,999.
- Continue to meet with the CAO weekly
- In early August, Mayor Harris met with Dominic, a local youth. He was interested in the arena and area uses and he provided creative ways the arena could be used year around.
- In August, Mayor Harris also met with a few residents in Vista Crossing, regarding weeds and fox tails within this subdivision. Mayor Harris thanked Director Altena and

Director Nash for working with the developer on getting the proposed school site cleaned up.

**Deputy Mayor Brennan**

- August 20 – Attended a Marigold Library Board meeting

**Councillor Fox** - Nothing further to report

**Councillor Gustafson**

- August 23 - Volunteered at the Crossfield Elks Demolition Derby

**Councillor Knight**

- As the Chairperson of the Mountain View Regional Water Services Commission, he continues to meet with the Commission Administrator John Vanduserberg throughout July and August
- August 28 – Attended the MVRWSC Golf Tournament

**Councillor Lambert** – Nothing further to report.

**Councillor Vang**

- August 23 - Attended the Car show & the Crossfield Elks Demolition Derby
- Attended the Crossfield Farmers Market throughout the summer

**209-2025**

**MOVED by Councillor Knight that the Councillor Business be accepted as presented.**

**CARRIED**

**9. ADMINISTRATIVE UPDATE**

9.1 Administrative Update

**210-2025**

**MOVED by Councillor Vang that the Administrative Update be accepted as presented.**

**CARRIED**

9.2 Quarterly Corporate Update

**211-2025**

**MOVED by Deputy Mayor Brennan that the second quarter corporate update be accepted as presented.**

**CARRIED**

9.3 Outstanding Items List

**212-2025**

**MOVED by Councillor Knight that item 024, 065, 066, 067, 068 be removed from the Outstanding Items list.**

**CARRIED**

**10. CORRESPONDENCE**

10.1 Letter from RCMP introducing new Commanding Officer.

10.2 Rocky View Foundation Community Impact Report - 2025

**213-2025**

**MOVED by Deputy Mayor Brennan that the items under correspondence be accepted for information.**

**CARRIED**

**11. ADJOURN**

**214-2025**

**MOVED by Councillor Vang that the Council meeting adjourn at 9:08 p.m.**

**CARRIED**

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Mayor Harris

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Russ Nash  
Acting Chief Administrative Officer

## Report to Council



**Meeting Date:** 2025-09-16  
**Meeting Type:** Council Meeting  
**Prepared By:** Russ Nash, Director of Community & Protective Services  
**Presented By:** Russ Nash, Director of Community & Protective Services  
**Subject:** RCMP Quarterly Update  
**Department:** Community Services

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### REPORT PURPOSE:

To provide Council with the relevant reports and updates relating to the RCMP's first quarter (Q1).

### RECOMMENDATION:

THAT Council accept the RCMP Q1 update for information.

### BACKGROUND:

The RCMP are attending Council to present their Quarter 1 (Q1) update, representing stats and information from April 1 to June 30, 2025 (note: the RCMP fiscal year is April 1 to March 31 as opposed to the calendar year).

In attendance for the RCMP are Sgt. Ian Patey and Cst. Corey Hall.

### ANALYSIS:

#### Strategic Alignment

- Sustainable Community Growth
- Town Infrastructure
- Parks, Recreation & Beautification
- Social Development & Emergency Services
- Communications & Public Relations

### ATTACHMENTS:

- Q1 2025-26 Crossfield Community Letter
- Q1 2025-26 Airdrie Provincial Community Report - Crossfield
- Q1 2025-26 Town of Crossfield Crime Statistics



August 14, 2025

Mayor and Council  
Town of Crossfield  
Crossfield, AB

Dear Mayor and Council,

Please find attached the quarterly Community Policing Report covering the period from April 1<sup>st</sup> to June 30<sup>th</sup>, 2025. This report provides a snapshot of human resources, financial data, and crime statistics for Crossfield.

I would like to take this opportunity to introduce our new Commanding Officer, Deputy Commissioner Trevor Daroux. Many of you may be familiar with Deputy Commissioner Daroux as he was the Criminal Operations Officer in Alberta before taking on this new role. He believes all Alberta RCMP employees are empowered to lead, collaborate, and contribute at all levels, and knows that they are the strength of the service. Through collaboration and partnership with the communities we serve, Deputy Commissioner Daroux knows together we are supporting safer, stronger, and more connected communities across Alberta.

Deputy Commissioner Daroux has 37 years of policing experience and has also served with the Calgary Police Service. He has served as a Deputy Chief in Charge of the Bureau of Community Policing in Calgary, and as the Director General National Crime Prevention and Indigenous Policing Services for the RCMP, among many other operational and administrative roles. Deputy Commissioner Daroux is focused on continuing to build a modern, progressive police service – one that values innovation, embraces change, and reflects the diverse needs of Alberta.

Thank you for your ongoing support and engagement. As your Chief of Police for your community, please do not hesitate to contact me with any questions or concerns.

Best regards,

*Lauren Weare*

Inspector Lauren Weare (M.O.M)  
Officer in Charge  
Airdrie/Beiseker Detachments





## Alberta RCMP - Provincial Policing Report

### Detachment Information

**Detachment Name**

Beiseker Provincial - Crossfield

**Detachment Commander**

Inspector Lauren Weare

**Report Date**

August 14, 2025

**Fiscal Year**

2025-26

**Quarter**

Q1 (April - June)

### Community Priorities

#### Priority #1: Rural Crime - Crime Reduction

**Updates and Comments:**

Airdrie/Beiseker Integrated Rural, using Project AirOW, have been monitoring 7 subjects in the rural area. Checks on the subjects monitored by Project AIROW have shown them to be mostly compliant. During this period, some subjects have been removed and new ones added.

There were 25 checks conducted during this reporting period and all were compliant except for two, which resulted in the subjects being breached on their conditions.

The Airdrie Crime Reduction Unit (CRU) has worked on 9 files in the rural areas which resulted in numerous arrests, charges, drug seizures and stolen property being recovered. The CRU also worked in partnership with the Integrated Retail Crime Unit for a two-day shoplifter target blitz at the Cross Iron Mills Mall. This blitz resulted in a number of arrests, charges and recovery of stolen goods.

#### Priority #2: Rural Crime – Community Engagement

**Updates and Comments:**

The Airdrie/Beiseker Integrated Rural Unit is very engaged in each of the 5 communities and two counties they police, with a Detachment member meeting with various schools and doing presentations before summer break. Sgt. Ian PATEY has assigned specific rural members to each community school to conduct regular visits, patrols and presentations.





On May 8, 2025, eight Rural members participated in the Winds of Change Disaster Day Mock scenario with Rocky View County. The members participated in various roles and obtained valuable knowledge and experience working together with other Emergency Services and Community Agencies.

The RCMP Crossfield Enhanced Policing position works closely with Town of Crossfield management and partner agencies within the Town of Crossfield. The Crossfield Community Peace Officer position remained partially vacant with the CPO dropping from full time to casual. RCMP calls for service increased, along with property crimes, during this quarter. The Crossfield Elementary School was very busy with a number of students with mental health and behavioral issues. In response, Cst MCWHINNIE worked with the school board to craft a formal Violence Threat Risk Assessment (VTRA). The Town of Crossfield became a finalist in the Kraft Hockeyville national competition. Cst MCWHINNIE assisted with events for this including promotional videos. Cst HALL transitioned into the RCMP Enhanced Policing position in late May. Cst. Hall has made great efforts to continue representing the RCMP in the community policing model with the Town of Crossfield. Cst. Hall recorded all activities and events attended as well as other stats listed below for the end of Q1 2025.

#### APRIL:

Traffic Enforcement: 3 (one speeding, two registration)

Joint Traffic Initiatives: 2 (one check-stop with Traffic Services, one traffic op with CPO)

Calls for Service: 9

Patrols: 30

School Visits: 13

Over 50 Club: 2

Community Events: Career Day, Kraft Hockeyville, Volunteer Awards Dinner, Rodeo Dinner, After School Program at library, and reading day with Kindergarten class

#### MAY:

Traffic Enforcement: 3 (one cellphone, one impaired driving IRS)

Joint Traffic Initiatives: 2 (one check-stop with Traffic Services approximately 40 MAS demands with no violators, one traffic op with CPO)

Calls for Service: 10

Patrols: 12

School Visits: 8

Over 50 Club: 1

Community Events: Mock Disaster Training Day, Graduation Ceremony Dinner, and the Airdrie Rural Crime Watch Meeting

#### JUNE:

Traffic Enforcement: 6 (speeding/other TSA)

Joint Traffic Initiatives: 0 (No CPO in Crossfield currently)

Calls for Service: 33 (Majority of file load on one major case management file)

Patrols: 24

School Visits: 12





Over 50 Club: 3

Community Events: Crossfield Rodeo, Crossfield Parade, Crossfield Parade of yard sales, and the Airdrie Rural Crime Watch Meeting

### Priority #3: Rural Crime – Road Safety

#### **Updates and Comments:**

Members of the Airdrie / Beiseker Integrated Rural detachment area conduct regular patrols and enforce traffic laws as applicable. In this quarter there have been at least 147 traffic enforcement activities which include tickets and warnings.

Members of the Airdrie / Beiseker Integrated Rural detachment area conducted 24 impaired driving related investigations, with 11 of those investigations resulting in impaired sanctions and/or suspensions.

The Integrated Traffic Unit which operates in the Airdrie / Beiseker Integrated Rural detachment area conducted 6 impaired driving related investigations in this area, with 5 of those investigations resulting in impaired sanctions and/or suspensions.





## Community Consultations

### Consultation #1

Date	Meeting Type
May 21, 2025	Meeting with Stakeholders
<b>Topics Discussed</b>	
Enhanced Policing Position	
<b>Notes/Comments:</b>	
Sgt PATEY had a meeting with Russ NASH, the Director of Community & Protective Services for Crossfield, to discuss the RCMP Enhanced Policing Position and for an introduction of the new member, Cst. HALL, into this position.	

### Consultation #2

Date	Meeting Type
June 3, 2025	Meeting with Elected Officials
<b>Topics Discussed</b>	
Q4 Crime Stats	
<b>Notes/Comments:</b>	
Sgt. PATEY and Cst. HALL attended the Crossfield Council meeting to present the Q4 Crime Stats Report.	

### Consultation #3

Date	Meeting Type
June 12, 2025	Community Connection
<b>Topics Discussed</b>	
Media Release	
<b>Notes/Comments:</b>	
Sgt. PATEY sent a Media Release for distribution to their local social media platform encouraging residents to use province-wide phone line for non-emergency police reporting - 310-RCMP.	



## Consultation #4

Date	Meeting Type
June 20, 2025	Community Connection
<b>Topics Discussed</b>	
Media Release	
<b>Notes/Comments:</b>	
Sgt. PATEY sent a Media Release sent for distribution to their local social media platform of an information ALERT regarding increased occurrences of Distraction Thefts.	





## Provincial Service Composition

Staffing Category	Established Positions	Working	Soft Vacancies	Hard Vacancies
Regular Members	14	11	2	1
Detachment Support	4	3	0	1

### Notes:

1. Data extracted on June 30, 2025 and is subject to change.
2. Soft Vacancies are positions that are filled but vacant due to maternity/paternity leave, medical leave, etc. and are still included in the overall FTE count.
3. Hard Vacancies reflect positions that do not have an employee attached and need to be filled.

### Comments:

Police Officers: There are 14 regular members with 2 soft vacancies (1 medical and 1 Paternity leave) There is 1 hard vacancy with staffing actions ongoing to identify a backfill.

Detachment Support: There are 4 public service employees supporting operations, three positions are filled with 1 hard vacancy with staffing actions ongoing.





## Town of Crossfield - Airdrie Detachment Crime Statistics (Actual) January to June: 2022 - 2025

All categories contain "Attempted" and/or "Completed"

July 10, 2025

CATEGORY	Trend	2022	2023	2024	2025	% Change 2022 - 2025	% Change 2024 - 2025	Avg File +/- per Year
Offences Related to Death		0	0	0	0	N/A	N/A	0.0
Robbery		1	0	1	1	0%	0%	0.1
Sexual Assaults		18	1	5	0	-100%	-100%	-5.0
Other Sexual Offences		8	1	1	0	-100%	-100%	-2.4
Assault		8	11	13	18	125%	38%	3.2
Kidnapping/Hostage/Abduction		0	1	0	0	N/A	N/A	-0.1
Extortion		0	0	0	2	N/A	N/A	0.6
Criminal Harassment		6	4	5	5	-17%	0%	-0.2
Uttering Threats		4	6	8	4	0%	-50%	0.2
<b>TOTAL PERSONS</b>		<b>45</b>	<b>24</b>	<b>33</b>	<b>30</b>	<b>-33%</b>	<b>-9%</b>	<b>-3.6</b>
Break & Enter		13	5	2	6	-54%	200%	-2.4
Theft of Motor Vehicle		6	5	7	9	50%	29%	1.1
Theft Over \$5,000		2	0	0	3	50%	N/A	0.3
Theft Under \$5,000		33	19	17	14	-58%	-18%	-5.9
Possn Stn Goods		6	2	3	1	-83%	-67%	-1.4
Fraud		12	9	11	12	0%	9%	0.2
Arson		1	0	0	0	-100%	N/A	-0.3
Mischief - Damage To Property		22	10	11	14	-36%	27%	-2.3
Mischief - Other		3	6	2	4	33%	100%	-0.1
<b>TOTAL PROPERTY</b>		<b>98</b>	<b>56</b>	<b>53</b>	<b>63</b>	<b>-36%</b>	<b>19%</b>	<b>-10.8</b>
Offensive Weapons		0	1	1	1	N/A	0%	0.3
Disturbing the peace		5	2	3	2	-60%	-33%	-0.8
Fail to Comply & Breaches		12	1	2	5	-58%	150%	-2.0
<b>OTHER CRIMINAL CODE</b>		<b>3</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>67%</b>	<b>0%</b>	<b>0.9</b>
<b>TOTAL OTHER CRIMINAL CODE</b>		<b>20</b>	<b>6</b>	<b>11</b>	<b>13</b>	<b>-35%</b>	<b>18%</b>	<b>-1.6</b>
<b>TOTAL CRIMINAL CODE</b>		<b>163</b>	<b>86</b>	<b>97</b>	<b>106</b>	<b>-35%</b>	<b>9%</b>	<b>-16.0</b>



## Town of Crossfield - Airdrie Detachment Crime Statistics (Actual) January to June: 2022 - 2025

All categories contain "Attempted" and/or "Completed"

July 10, 2025

CATEGORY	Trend	2022	2023	2024	2025	% Change 2022 - 2025	% Change 2024 - 2025	Avg File +/- per Year
Drug Enforcement - Production		1	0	0	0	-100%	N/A	-0.3
Drug Enforcement - Possession		0	0	1	0	N/A	-100%	0.1
Drug Enforcement - Trafficking		2	1	0	2	0%	N/A	-0.1
Drug Enforcement - Other		0	0	0	0	N/A	N/A	0.0
<b>Total Drugs</b>		<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>-33%</b>	<b>100%</b>	<b>-0.3</b>
Cannabis Enforcement		0	0	0	0	N/A	N/A	0.0
Federal - General		1	0	1	0	-100%	-100%	-0.2
<b>TOTAL FEDERAL</b>		<b>4</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>-50%</b>	<b>0%</b>	<b>-0.5</b>
Liquor Act		1	1	2	1	0%	-50%	0.1
Cannabis Act		0	3	0	0	N/A	N/A	-0.3
Mental Health Act		15	15	19	16	7%	-16%	0.7
Other Provincial Stats		12	12	8	5	-58%	-38%	-2.5
<b>Total Provincial Stats</b>		<b>28</b>	<b>31</b>	<b>29</b>	<b>22</b>	<b>-21%</b>	<b>-24%</b>	<b>-2.0</b>
Municipal By-laws Traffic		1	0	0	1	0%	N/A	0.0
Municipal By-laws		4	1	2	6	50%	200%	0.7
<b>Total Municipal</b>		<b>5</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>40%</b>	<b>250%</b>	<b>0.7</b>
Fatals		0	0	0	0	N/A	N/A	0.0
Injury MVC		0	4	1	2	N/A	100%	0.3
Property Damage MVC (Reportable)		12	14	1	16	33%	1500%	-0.1
Property Damage MVC (Non Reportable)		2	6	3	6	200%	100%	0.9
<b>TOTAL MVC</b>		<b>14</b>	<b>24</b>	<b>5</b>	<b>24</b>	<b>71%</b>	<b>380%</b>	<b>1.1</b>
Roadside Suspension - Alcohol (Prov)		0	1	1	5	N/A	400%	1.5
Roadside Suspension - Drugs (Prov)		0	0	0	0	N/A	N/A	0.0
<b>Total Provincial Traffic</b>		<b>24</b>	<b>20</b>	<b>33</b>	<b>57</b>	<b>138%</b>	<b>73%</b>	<b>11.2</b>
<b>Other Traffic</b>		<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>N/A</b>	<b>0%</b>	<b>0.3</b>
<b>Criminal Code Traffic</b>		<b>1</b>	<b>4</b>	<b>6</b>	<b>7</b>	<b>600%</b>	<b>17%</b>	<b>2.0</b>
<b>Common Police Activities</b>								
False Alarms		15	6	3	6	-60%	100%	-3.0
False/Abandoned 911 Call and 911 Act		8	12	5	2	-75%	-60%	-2.5
Suspicious Person/Vehicle/Property		15	11	18	31	107%	72%	5.5

# Report to Council



**Meeting Date:** 2025-09-16  
**Meeting Type:** Council Meeting  
**Prepared By:** Steve Altena, Director of Infrastructure and Community Growth  
**Presented By:** Steve Altena  
**Subject:** **Subdivision Item - Vista Crossing Phase 5**  
**Department:** Planning & Development  
**File No:** 2024-7000100-PH5

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## REPORT PURPOSE:

The purpose of this report is for the Subdivision Authority to assess the proposed subdivision of ±6.482 ha (±16.017 ac) of SW 35-28-1-W5M to create Vista Crossing Phase 5 consisting of 49 R-1B lots (Residential Single Detached Medium Parcel District), 50 R-1C lots (Residential Single Detached Small Parcel District) and 3 MUN lots (Municipal and Institutional District).

The application was reviewed in accordance with the Municipal Government Act, the Subdivision and Development Regulations, the Town's Municipal Development Plan (MDP), the Vista Crossing Area Structure Plan (ASP) and the *Land Use Bylaw*. The proposed development aligns the intent and policies of these documents.

Administration notes that the subdivision application was not advanced due to concerns regarding the Town's wastewater disposal capacity. The Town has received a Letter of Authorization from Alberta Environment and Protected Areas that allows for an additional limited release of treated effluent to Nose Creek in 2026 and 2027 to support development in the short term while the Town works to improve wastewater disposal capacity.

With these considerations, Administration recommends that the Subdivision Authority approve the Vista Crossing Phase 5 Subdivision Application.

## RECOMMENDATION:

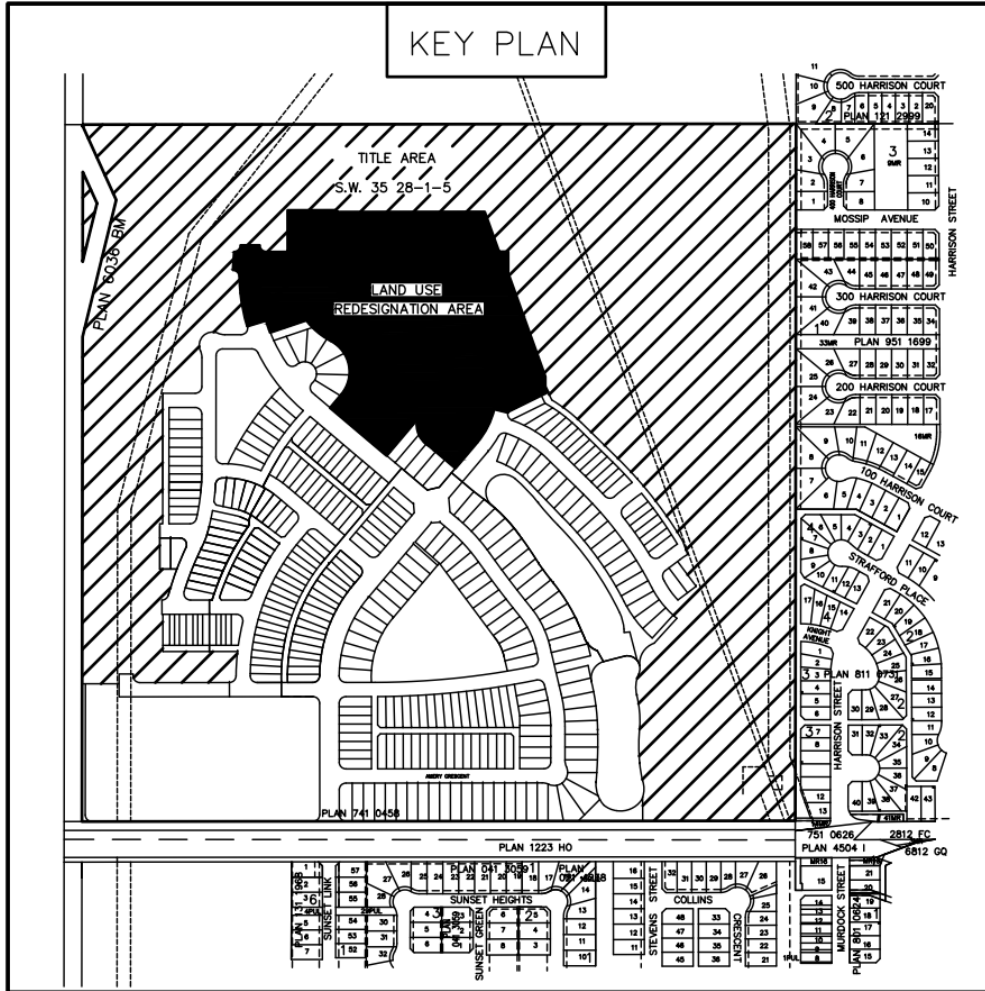
Administration recommends:

THAT the Vista Crossing Phase 5 Subdivision Application be approved with the conditions noted in Attachment 'A'.

**BACKGROUND:**

**Location**

The subject lands are located within the central portion of the Vista Crossing Area Structure Plan (ASP).



**Site Context**

The Vista Crossing ASP was approved for the subject lands in 2015 and amended in 2024.

The redesignation of the subject lands to R-1B, R-1C and MUN was approved by Council on May 6, 2025 to support the proposed subdivision.

**Intermunicipal and Agency Circulation**

A portion of the proposed development is located within the Rocky View / Crossfield Intermunicipal Development Plan (IDP) Policy Area and is subject to the policies of this statutory plan.

Rocky View County was circulated on the application along with several agencies including Alberta Transportation and Economic Corridors, Rocky View Schools, ATCO, Fortis and Telus, as well as internal Town departments. The circulation comments received by the Town are presented in Attachment 'C'.

### Landowner Circulation

The application was circulated to adjacent landowners from July 15, 2024 to August 16, 2024. No responses were received during this circulation period.

### Development Proposal

Vista Crossing Phase 5 is proposed to consist of 99 residential lots including 49 R-1B (Residential Single Detached Medium Lot District) lots and 50 R-1C (Residential Single Detached Small Parcel District) lots. In addition, 3 MUN (Municipal and Institutional District) lots will be created for green space and stormwater management. The tentative plan is shown in Attachment 'B'.

#### Vista Crossing Development Areas and Density – Existing and Proposed Phases

Phase	Development Area (ac)	Number of Units	Density (units per acre)
1	28.911	150	5.2
2	10.351	44	4.3
3	6.079	52	8.6
3A	9.983	0	0.00
4	12.385	71	5.7
5	16.657	99	5.9
<b>TOTAL</b>	<b>84.366</b>	<b>416</b>	<b>4.9</b>

### ANALYSIS:

#### Relevant Statutes / Master Plans / Town Documents

The proposed Vista Crossing Phase 5 development must conform with the following statutory plans:

- Rocky View / Crossfield Intermunicipal Development Plan (IDP)
- Town of Crossfield Municipal Development Plan (MDP)
- Vista Crossing Area Structure Plan (ASP)

#### Policy Analysis

The proposed development is compliant with the policies of the Rocky View / Crossfield IDP, Town MDP, Vista Crossing ASP and Town LUB as detailed in Attachment 'D'.

Policy 6.2(g) of the Vista Crossing ASP states that approval of land use redesignation will confirm that sanitary capacity is available for the redesignation area. The Town has received a Letter of Authorization from Alberta Environment and Protected Areas that allows for an additional limited release of treated effluent to Nose Creek in 2026 and 2027 to support development in the short term while the Town works to improve wastewater disposal capacity.

The proposed density of Vista Crossing Phase 5, as per the development proposal, remains aligned with Policy 4.9.16 of the Town MDP, which states that the target density is 6 unit per acre.

The subdivision proposes parcel sizes that conform with the LUB, and specifically with Figure 3 regarding irregular lots. It is important to note that there is a discrepancy for the measurement of irregular lots in the LUB between Figure 3 and Section 1.6.2, however, the Town has previously followed the calculation method shown in Figure 3.

**COMMUNICATIONS AND ENGAGEMENT:**

The application was circulated to adjacent landowners and to relevant agencies from July 15, 2024 to August 16, 2024.

**FINANCIAL IMPLICATIONS:**

No financial implications have been identified at this time.

**ALTERNATIVES/IMPLICATIONS:**

Administration does not propose an alternative action for Council.

**ATTACHMENTS:**

Attachment 'A' – Approval Conditions

Attachment 'B' – Tentative Plan

Attachment 'C' – Circulation comments

Attachment 'D' – Policy Analysis

## **ATTACHEMENT A: APPROVAL CONDITIONS:**

### Part A:

The application to create **49 R-1B lots** (Residential Single Detached Medium Parcel District), **50 R-1C lots** (Residential Single Detached Small Parcel District), **3 MUN lots** (Municipal and Institutional District) within SW 35-28-01-W05M having been evaluated in terms of Section 654 of the Municipal Government Act and Section 7 and 14 of the Subdivision and Development Regulations, and having considered adjacent landowner submissions, is approved as per the Tentative Plan for the reasons listed below:

1. The application is consistent with the Statutory Policy;
2. The subject lands hold the appropriate land use designation;
3. The technical aspects of the subdivision proposal have been considered and are further addressed through the conditional approval requirements.

### Part B:

The Owner is required, at their expense, to complete all conditions attached to and forming part of this conditional subdivision approval prior to the Town of Crossfield (the Town) authorizing final subdivision endorsement. This requires submitting all documentation required to demonstrate that each specific condition has been met, or agreements (and necessary securities) have been provided to ensure the conditions will be met, in accordance with all Town Policies, Standards, and Procedures, to the satisfaction of the Town, and any other additional party named within a specific condition. Technical reports required to be submitted as part of the conditions must be prepared by a qualified professional, licensed to practice in the province of Alberta within the appropriate field of practice. The conditions of this subdivision approval do not absolve an Applicant/Owner from ensuring all permits, licenses, or approvals required by Federal, Provincial, or other jurisdictions are obtained.

### Part C:

Further, in accordance with Sections 654 and 655 of the Municipal Government Act, the application is approved subject to the following conditions:

#### *Survey Plan*

1. The subdivision shall be affected by a Plan of Survey, pursuant to Section 657 of the Municipal Government Act, or by such other means as is satisfactory with the Registrar of Land Titles, Alberta Registries. Plan of Survey shall be as per the tentative plan submitted by Geoffrey J. Frame, A.L.S. of Measurement Sciences Inc. on behalf of Dream Developments indicating **49 R-1B lots** (Residential Single Detached Medium Parcel District), **50 R-1C lots** (Residential Single Detached Small Parcel District), **3 MUN lots** (Municipal and Institutional District).
2. Prior to plan endorsement, it is the responsibility of the applicant that the submission of a Plan of Survey including CAD file, the Owner's Consent to Register, and the Surveyor's Affidavit are received by the Town of Crossfield.

3. Concurrent with registration, municipal reserve requirements shall be satisfied by land dedication, deferred reserve, or payment of cash-in-lieu as shown on the Tentative Plan, to the satisfaction of the town of Crossfield.
4. Concurrent with registration, Utility Right of Way 221 007 463 shall be discharged over Lot 38, Block 7 and new Utility Right of Way established to the satisfaction of the Town.

#### *Development Agreement*

5. The landowner shall enter into a Subdivision Servicing Agreement/Development Agreement pursuant to Section 655 of the Municipal Government Act and shall include the following:
  - a) Design and construction of an internal public road system in accordance with the approved engineering plans and the tentative plan;
  - b) Design and construction of landscaping features for all public pathways, public roadways and open space, in accordance with the approved landscaping plan;
  - c) Design and construction of a piped potable water and a piped sanitary collection system in accordance with the approved engineering plans;
  - d) Construction of oversized or excess capacity infrastructure in accordance with the approved engineering plans that benefits other lands and associated cost recovery;
  - e) Design and construction of a stormwater management system including any pond facilities and piped networks in accordance with the approved engineering plans and stormwater management plan;
  - f) Registration of any overland drainage easements and/or restrictive covenants, as determined in the approved stormwater management plan to the satisfaction of the Town and Alberta Environment and Protected Areas;
  - g) Design and construction of a gated emergency access road to the satisfaction of the Town.
  - h) All necessary site grading;
  - i) Implementation of an approved construction management plan and an approved erosion and sedimentation control (ESC) plan;
  - j) Installation of power, natural gas and telecommunications infrastructure;
  - k) Implementation of the recommendations of other studies, including, but not limited to: biophysical impact assessment, environmental site assessment and geotechnical assessments.

#### *Site Servicing*

6. All access rights-of-way, easements, overland drainage rights-of-way and agreements are to be provided and registered to the satisfaction of the Town of Crossfield.
7. All utility rights-of-way, easements, and agreements required by utility companies are to be provided and registered to be registered to the satisfaction of the utility companies and the Town of Crossfield.

8. Prior to entering into a Subdivision Servicing Agreement/Development Agreement, engineering plans shall be approved based on the current requirements of the Town's engineering standards.
9. The Owner shall submit a landscaping plan for public pathways, public roadways and open space. The landscaping plan shall include types of plants, pathway material, lighting, grades, site furniture, fencing, public art, and soil conditions.
10. The Owner shall implement the approved stormwater management plan that meets the requirements of the Town's master drainage plan, the Vista Crossing ASP staged master drainage plan and the Nose Creek Watershed Water Management Plan. Implementation of the stormwater management plan shall include:
  - a. Registration of any required easements and/or utility rights-of-way;
  - b. Provision of any necessary approvals and compensation to Alberta Environment and Protected Areas for wetland loss and mitigation;
  - c. Provision of any necessary Alberta Environment and Protected Areas registration documentation and approvals for stormwater infrastructure;
11. The Owner shall submit a plan to establish a gated emergency access road that meets NFPA standards with the registration of any required easements and/or rights-of-way to the Town's satisfaction.
12. The Owner shall submit and implement a construction management plan to address weed management, sedimentation and erosion control monitoring, traffic accommodation, construction waste management, dust control and noise in accordance with the Town's Community Standards Bylaw 2019-12, Noise Bylaw 2024-06 and other applicable bylaws and policies.

#### *Levies and Payments*

13. The Owner shall provide payment of off-site levies in accordance with Off-Site Levy Bylaw 2023-03. Levies shall be paid in accordance with the schedule implemented by the development agreement.
14. The Owner shall enter into a Cost Contribution Agreement with the Town pursuant to Section 655 of the Municipal Government Act to proportionally contribute funds to wastewater disposal improvements required to service the development:
  - a. The developer shall pay \$3,951.61 per dwelling to a total of \$391,209.39 for the proposed 99 residential lots.
  - b. The amount shall be paid according to the Town's standard schedule for levy payments with 20% provided upon execution of the Cost Contribution Agreement, 30% at 6 months after the first Construction Completion Certificate or one year from the date of

signing the Agreement and 50% prior to the first Final Acceptance Certificate or two years from the date of signing the Agreement.

- c. Prior to the second and third payments the Town will adjust the payment amounts to reflect actual costs, grants, other external funding sources, new off-site levy structure and other factors. The amount owing shall not exceed the total set out in Condition 14(a).

15. The Owner shall pay the subdivision endorsement fee in accordance with the Fees and Rates Bylaw 2025-08 for the creation of 102 new lots.

#### *Taxes*

16. Prior to plan endorsement, all outstanding property taxes current from the date of the application to be paid to the Town of Crossfield, pursuant to Section 654 (1) of the Municipal Government Act.

#### *Miscellaneous*

17. Obtaining all applicable Provincial and Federal Approvals shall be the responsibility of the Developer.
18. Prior to the submission of any final documents to the Municipality, we advise that it is the applicant's responsibility to ensure that all the conditions of approval are met within one year of the approval date and that the municipality has received documented evidence to this effect.

Pursuant to the Municipal Government Act, an appeal or dispute from this decision, or the conditions, may be commenced within fourteen (14) days from the date of this letter by:

- a) The applicant;
- b) A Government Department where a referral is required pursuant to the Subdivision and Development Regulation; and/or
- c) A school authority with respect to reserve.

An appeal to this decision rests with the Subdivision and Development Appeal Board. In order to register an appeal, the Municipality must receive a written submission of a Notice of Subdivision Appeal outlining reasons for the appeal.

Due to the possibility of appeals, any development or steps necessary to meet the conditions of subdivision approval should not occur within fourteen (14) days of conditional approval.



## CIRCULATION COMMENTS VISTA PHASE 5 SUBDIVISION:

The application was circulated to all relevant external agencies and adjacent landowners for commenting. Responses are summarized below. **New comments added in red April 9, 2025 in response to new documentation provided.**

**Please note:** *It is the responsibility of the applicant to review and meet all requirements or conditions from agencies.*

<b>ATCO Pipelines:</b>	<ul style="list-style-type: none"> <li>No comments received</li> </ul>
<b>ATCO Gas:</b>	<ul style="list-style-type: none"> <li>Right-of-ways will be required for the gas mains within the property. See attached for details.</li> </ul>
<b>Rogers:</b>	<ul style="list-style-type: none"> <li>No concerns with the plan</li> </ul>
<b>TELUS:</b>	<ul style="list-style-type: none"> <li>No concerns with the plan</li> </ul>
<b>Fortis:</b>	<ul style="list-style-type: none"> <li>No comments received</li> </ul>
<b>Alberta Transportation:</b>	<ul style="list-style-type: none"> <li>The requirements of Section 18 of the Regulation are not met. The department anticipated minimal impact on the highway from this proposal. Pursuant to Section 20(1) of the Regulation, Transportation and Economic Corridors grants approval for the subdivision authority to vary the requirements of Section 18 of the regulation.</li> <li>The requirements of Section 19 of the Regulation are not met. There is no direct access to the highway and there is sufficient local road access to the subdivision and adjacent lands. Pursuant to Section 20(1) of the Regulation, Transportation and Economic Corridors grants approval for the subdivision authority to vary the requirements of Section 19 of the regulation.</li> </ul>
<b>Canada Post:</b>	<ul style="list-style-type: none"> <li>No comments received</li> </ul>
<b>Calgary Catholic School District:</b>	<ul style="list-style-type: none"> <li>No comments received</li> </ul>
<b>Rocky View County:</b>	<p>The County requests:</p> <ul style="list-style-type: none"> <li>that the applicant contact the County Road Operations department to determine if there will be any impacts to County roads as a result of construction, and if required, the applicant shall enter into a Road Use Agreement.</li> <li>If one is available, a copy of the Stormwater Management Plan for Vista Crossing Phase 5. Stormwater should be managed within Town limits and shall not cause direct impact to the County.</li> <li>Any off-site impacts with regards to traffic, odour, dust, lighting, noise, debris, stormwater etc., are appropriately addressed and mitigated during and post-construction with consideration for neighbouring lands.</li> </ul>
<b>Rocky View County School District:</b>	<ul style="list-style-type: none"> <li>No comments received.</li> </ul>
<b>Alberta Health Services:</b>	<ul style="list-style-type: none"> <li>No concerns with the proposal, based on the information provided.</li> <li>As this subdivision continues to grow, please consider some healthy community by design (HCBD) principles and concepts that can help create sustainable, healthy, complete neighborhoods in the town. More information on HCBD</li> </ul>



<p><b>325 Thomas LD Plan/Profile:</b></p> <p><b>326 Thomas LD Plan/Profile:</b></p> <p><b>327 Thomas MR Plan/Profile:</b></p> <p><b>328 Vista Road Plan/Profile:</b></p> <p><b>329 Mossip AV Road Plan/Profile:</b></p> <p><b>330 Mossip AV Plan/ Profile:</b></p> <p><b>Stormwater Management Plan Review:</b></p>	<ul style="list-style-type: none"> <li>• Please indicate horizontal water main pipe curvature, insulation requirement and requirements for vertical bends.</li> <li>• Please indicate horizontal water main pipe curvature, insulation requirements and requirements for vertical bends.</li> <li>• Sanitary mains indicate 200 mm PVC slopes below the minimum of 0.80%. Please address.</li> <li>• Sanitary inverts between S-53 and S-52B appear to mismatch with plan view. Please address.</li> <li>• Sanitary inverts between S-53 appear to mismatch with plan view. Please address.</li> <li>• Sanitary mains indicate 200 mm PVC slopes below the minimum of 0.80%. Please address.</li> <li>• Storm inverts at ST-62 appear to mismatch with plan view. Please address.</li> <li>• Sanitary mains indicate 200 mm PVC slopes below the minum of 0.80%. Please address.</li> <li>• Please provide vertical sag curve information.</li> <li>• Traplow (TL5-3) with a total depth is 0.313m in the 1:100 year event is entering adjacent properties. Please address.</li> </ul>
<p><b>CP Rail:</b></p>	<ul style="list-style-type: none"> <li>• No comments received</li> </ul>
<p><b>Town of Crossfield Fire Department:</b></p>	<ul style="list-style-type: none"> <li>• No comments received</li> </ul>
<p><b>Town of Crossfield Operations/Water/Wastewater Department:</b></p>	<ul style="list-style-type: none"> <li>• No comments received</li> </ul>
<p><b>Adjacent Landowners:</b></p>	<ul style="list-style-type: none"> <li>• No comments received</li> </ul>
<p><b>Alberta Environment</b></p>	<ul style="list-style-type: none"> <li>• No comments received</li> </ul>
<p><b>Alberta Land Titles</b></p>	<ul style="list-style-type: none"> <li>• No concerns with the plan</li> </ul>
<p><b>Canada Post</b></p>	<ul style="list-style-type: none"> <li>• No comments received</li> </ul>

**2024-70000100-PH5 - Vista Crossing Phase 5 Redesignation - Policy Review**

<b>Definitions</b>		
Compliant	Generally Compliant	Not Compliant
Clearly meets the relevant requirements and intent of the policy.	Meets the overall intent of the policy but there may be minor areas of misalignment with policy that are not critical to the implementation of an appropriate development.	Clear misalignment with the relevant policy that may create planning, technical or other challenges.

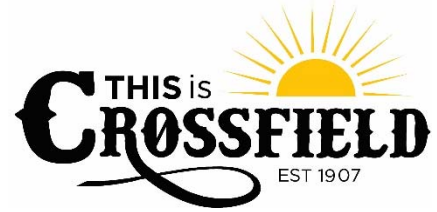
Compliance	Policy Number	Policy	Comments
<b>Intermunicipal Development Plan (IDP)</b>			
Compliant	7.4.2	Both municipalities shall refer any land use applications, projects, or studies to the Intermunicipal Collaborative Planning Team should the proposals fall within the IDP Plan Area.	The application was referred to Rocky View County who responded with comments. The Town has addressed those comments and the County has indicated no concerns with development.
<b>Municipal Development Plan (MDP)</b>			
Compliant	4.6.1	A mix of housing types is encouraged in this policy area, including single-detached-small parcel, single-detached-medium parcel, duplex/semi-detached, secondary suite, and medium density housing forms such as triplex-fourplex, apartment (i.e., urban apartment, courtyard garden apartment) and neighbourhood commercial.	A housing mix is provided with 49 R-1B lots and 50 R-1C lots proposed for subdivision.
Compliant	4.6.5	Development should include a collection of lot sizes, lot widths, lot depths, and setbacks based on the specific housing type (i.e., single-family homes, semi-detached units, townhomes etc.).	A variety of lot sizes, width, depth and shapes is proposed.
Compliant	4.6.6	Developments should utilize shorter block lengths (typically between 100-185 metres in length).	Shorter blocks are used to achieve connectivity with the longest block being approximately 200 m.
Compliant	4.6.9	Connectivity between blocks should be provided through the provision of streets, alleyways and sidewalks.	The proposed plan area is well connected with streets that include sidewalks as well as pathways within the MUN parcels.
Compliant	4.6.16	Community design should incorporate public spaces, such as pocket parks, and maximize unique views, to add interest to open space design.	Public green space and pathways are provided via the centrally located MUN lots.
Compliant	4.9.11	Plans for new development will be established through an Area Structure Plan (ASP).	The Vista Crossing ASP has been adopted to support residential development.
Compliant	4.9.16	For new residential, the target density is 6 units per acre (UPA) of gross developable area. The target is not a minimum or maximum, but rather a recommended density that developers are encouraged to meet.	The proposed density of Phase 5 is 5.9 units per acre.

Compliant	5.3.5	As determined by the Town, Municipal Reserve shall only be taken as credit when it contributes to the open space system, is aligned with the definition of Municipal Reserve, and is considered useable, functional Municipal Reserve with opportunities for passive and or active recreation	The proposed MR space consists of green space adjacent to a stormwater pond including pathways that contribute to the open space system within Vista Crossing.  The overall MR dedicated for the Vista Crossing inclusive of Phases 1-5 is 19.9%.
Compliant	5.3.14	The Town of Crossfield shall protect the natural areas and systems within the Town identified as semi-native grassland, woodland, tall shrub, stream complex, and wetland in Figure 5 — Natural Areas.	Proposed development area does not include any natural areas as identified in Figure 5 of the MDP.
<b>Vista Crossing Area Structure Plan (ASP)</b>			
N/A	2.3.3(a)	Areas identified on Figure 4: Biophysical Areas of Ecological Significance, shall require a field level biophysical assessment to be completed prior to land use approval, and implementation of any recommendations from the assessment on any affected parcel of land.	The proposed development does not include biophysical areas of ecological significance as shown in Figure 4 of the ASP.
Compliant	3.3.1(a)	Land Use should be in general accordance with Figure 6: General Land Uses.	The proposed development includes low density residential development in alignment with Figure 6 of the ASP.
Compliant	3.3.1(b)	Low density residential forms shall be the predominant housing type within the plan area.	The proposed land use districts support low density residential forms.
Compliant	3.3.1(c)	The low density residential area shall include a variety of single-detached housing sizes, ranging in lot width, as well as semi-detached housing form.	The lot widths vary based on the proposed land use districts.
Compliant	3.3.1(d)	No single land use designation shall comprise more than 50% of the total units in the community and as such, the applicant shall provide a housing mix summary with each tentative plan of subdivision.	A housing mix is provided with 49 R-1B lots and 50 R-1C lots proposed for subdivision.
Compliant	3.3.1(e)	Laned housing product should be incorporated to provide additional diversity in housing choice within the low density residential area and shall not require an ASP amendment should more lanes be added in subsequent phases.	The purpose of the proposed R-1C District is to support single detached dwellings on small parcels within laned subdivisions.
N/A	3.3.1(g)	Any development adjacent to the Naturalized Area (MR) as shown in Figure 6: General Land Uses shall have its parcel drainage directed away from the Naturalized Area (MR) to the satisfaction of the town.	The proposed development is not adjacent to an area designated as Naturalized Area (MR) in Figure 6 of the ASP.
Compliant	3.3.3(a)	Residential density for the ASP area shall be no greater than 15 dwelling units per gross developable hectare (6 units per gross developable acre).	The proposed density of Phase 5 is 5.9 units per acre.

Compliant	3.3.5(a)	Vehicular and pedestrian access points shall align with existing roads and pathways in the Town.	The development is a logical extension of vehicle and pedestrian infrastructure from the existing development.
Compliant	4.1(c)	A system of local and regional pathways shall be incorporated within linear open spaces to enhance circulation	The proposed development includes green space to support pathway connections as per Figure 7 of the MDP.
Compliant	4.1(e)	Municipal Reserve dedication shall be a minimum of 10% of developable lands within the plan area. Dedication of municipal reserve over 10% is considered voluntary and compensation from the Town to the landowner for the over-dedication of municipal reserve is deemed to be \$1.	The overall MR dedicated for the Vista Crossing inclusive of Phase 5 is 19.9%.
N/A	5.1(g)	An update to the Transportation Impact Assessment shall be required for each phase of the development if changes to the land use, distribution of traffic or road network within the ASP area are proposed or as a result of changes to background traffic volumes, land use or road networks due to new developments.	No changes to land use or the road network are proposed. No new developments have been initiated near Vista Crossing that would impact the existing road network or background traffic volumes.
Compliant	5.2(a)	A connected system of sidewalks and pathways shall be provided throughout the community.	The proposed development includes green space to support pathway connections as per Figure 7 of the MDP.
Compliant	5.2(c)	Pathways should be incorporated within linear open spaces to provide additional routes and connections for active transportation modes.	The proposed development includes green space to support pathway connections as per Figure 7 of the MDP.
Compliant	6.1(a)	The details of the water servicing system for the subject site, including water main sizing, flows, and pressures at all lot locations under various scenarios shall be provided in a Water Network Analysis report if changes to the land use, population densities, or distribution of the road network within the ASP area are proposed. With each Land Use Application confirmation of the oversize and developer size watermains will be made.	Detailed engineering drawings have been received and reviewed for the propose development including for details on watermain size.
Compliant	6.2(g)	A Sanitary Servicing Analysis will be prepared in support of each Land Use Redesignation application to evaluate proposed sanitary flows in comparison to the downstream capacity of the Town's system at the time of the respective Land Use application. Approval of the Land Use Redesignation by the Town, with or without conditions, will confirm that capacity is available for the Land Use Redesignation area.	The Town has received a Letter of Authorization from Alberta Environment and Protected Areas that allows for an additional limited release of treated effluent to Nose Creek in 2026 and 2027 to support development in the short term while the Town works to improve wastewater disposal capacity.
Compliant	7.1(b)	A general phasing plan is provided in the ASP. Deviations in size or direction of phasing supported by technical and planning rationale	The proponent is choosing to proceed with the Phase 6 area in the ASP as Phase 5. This is a logical

		shall be permitted without the requirement of ASP amendment, at the discretion of the Approving Authority.	extension of developed area and infrastructure from Phases 2 & 4.
<b>Land Use Bylaw (LUB)</b>			
<b>Municipal and Institutional District (MUN)</b>			
Compliant	14.1.1	Purpose The purpose of the Municipal and Institutional District (MUN) is to provide for public, community, municipal, and institutional uses that provide public services and amenities to the community.	The proposed development will provide parcels for green space and pathways, and stormwater infrastructure consistent with the use for MUN.
<b>Residential Single Detached Medium Lot District (R-1B)</b>			
Compliant	11.2.5	Minimum Requirements a) parcel depth: 25.91 m (85.00 ft); b) parcel width: 12.19 m (40.00 ft);	The proposed parcel sizes conform with the Land Use Bylaw including with Figure 3 of the LUB for irregular lots. There is a discrepancy for the measurement of irregular lots in the LUB between Figure 3 and Section 1.6.2, however, the Town has previously followed the calculation method shown in Figure 3.
<b>Residential Single Detached Small Parcel District (R-1C)</b>			
Compliant	11.3.5	Minimum Requirements a) lot depth: 22.86 m (75.00 ft); b) lot width: 9.14 m (30.00 ft);	The proposed parcel sizes conform with the Land Use Bylaw including with Figure 3 of the LUB for irregular lots. There is a discrepancy for the measurement of irregular lots in the LUB between Figure 3 and Section 1.6.2, however, the Town has previously followed the calculation method shown in Figure 3.

## Report to Council



**Meeting Date:** 2025-09-16  
**Meeting Type:** Council Meeting  
**Prepared By:** Nicole Vandenberghe, FCSS & Community Development Coordinator  
**Presented By:** Nicole Vandenberghe, FCSS & Community Development Coordinator  
**Subject:** Letters of Support for the Whoo's Crew Parent Society  
**Department:** Community Services

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### REPORT PURPOSE:

The Whoo's Crew Parent Society has reached out to the Town of Crossfield for a letter of support for their Alberta Blue Cross Built Together grant application, and their Rocky View County Community Recreation and Culture Capital Assistance Grant application for the Crossfield Elementary School Playground Replacement.

### RECOMMENDATION:

THAT Council signs the letters of support for the Whoo's Crew Parent Society for their playground replacement project at the Crossfield Elementary School.

### BACKGROUND:

On Wednesday, September 10<sup>th</sup>, the Whoo's Crew Parent Society reached out to the Family and Community Support Services department to inquire about receiving a letter of support from Mayor Harris and Council for their grant applications for grants from the Alberta Blue Cross Built Together Program, and Rocky View County Community Recreation and Culture Funding for the replacement of the playground at the Crossfield Elementary School.

The existing playground at the Crossfield Elementary School is over 20 years old and is nearing the end of its lifespan. The Whoo's Crew Parent Society, who is the fundraising society for the Crossfield Elementary School, has taken on the task of fundraising and applying for grants to ensure a replacement playground will be available to future Crossfield Elementary School Student's and residents in Crossfield.

The Built Together program helps Albertans build spaces for active living in their community. Whether it be a skate park, playground, outdoor gym or sports court, Alberta Blue Cross is giving back to Albertans and helping them live their best lives. Each year, this Alberta grant awards \$50,000 grants in Edmonton, Calgary, a secondary city, a rural community, and an Indigenous community. Priority for this grant is given to projects that reflect the Built Together mandate of promoting active living and wellness at a grassroots community level, with emphasis on children.

To ensure province-wide representation, Alberta Blue Cross splits grants with 1 in each of the following communities: Edmonton, Calgary, a secondary city, a rural community, and an Indigenous community with a focus on ensuring grants are equitably distributed on a regional basis over the life of the program. The Town of Crossfield will also be applying to the Alberta Blue Cross Built Together Grant for our Pump Track Project. This grant application deadline is September 22, 2025.

The Rocky View County capital grant funding through their Community Recreation and Culture Grant program provides capital grant funding to non-profit organizations that operate a community amenity providing recreational or cultural services that are open for the use and enjoyment of all County residents. This grant application deadline is October 1, 2025.

#### **ANALYSIS:**

##### **Strategic Alignment**

- Sustainable Community Growth
- Town Infrastructure
- Parks, Recreation & Beautification
- Social Development & Emergency Services
- Communications & Public Relations

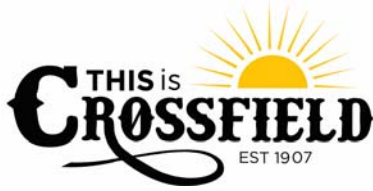
#### **FINANCIAL IMPLICATIONS:**

No financial implications.

#### **ATTACHMENTS:**

Letter of Support from Council – AB Blue Cross

Letter of Support from Council – RVC Capital Grant



September 16, 2025

Whoo's Crew Parent Society  
PO Box 1295  
Crossfield, AB  
T0M 0S0

**RE: Letter of Support  
Playground Replacement, 1120 Mountain Ave, Crossfield, Alberta  
Alberta Blue Cross Built Together Grant**

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The Town of Crossfield is pleased to support the Whoo's Crew Parent Society in applying for the Alberta Blue Cross Built Together Grant for the playground replacement at the Crossfield Elementary School. The Town of Crossfield recognizes the importance of healthy lifestyles amongst residents and this project will positively impact our community by enhancing the longevity of the playground at the Crossfield Elementary School and ensuring active living in our community for years to come.

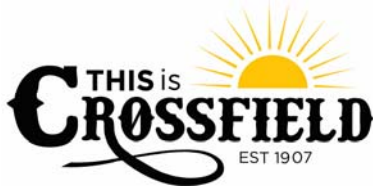
Please consider this our letter of support for the Whoo's Crew Parent Society's efforts in securing funding from the Alberta Blue Cross Built Together Grant.

We trust this to be the information you require. Should you have any questions please do not hesitate to contact our office at (403) 946-5565.

Sincerely,  
TOWN OF CROSSFIELD

Mayor Harris

/nv



September 16, 2025

Whoo's Crew Parent Society  
PO Box 1295  
Crossfield, AB  
T0M 0S0

**RE: Letter of Support  
Playground Replacement, 1120 Mountain Ave, Crossfield, Alberta  
Rocky View County Community Recreation and Culture – Capital Assistance Grant**

---

The Town of Crossfield is pleased to support the Whoo's Crew Parent Society in applying for the Rocky View County Community Recreation and Culture Capital Assistance Grant for the playground replacement at the Crossfield Elementary School. The Town of Crossfield recognizes the importance of healthy lifestyles amongst residents and this project will positively impact our community by enhancing the longevity of the playground at the Crossfield Elementary School and ensuring active living in our community for years to come.

Please consider this our letter of support for the Whoo's Crew Parent Society's efforts in securing funding from the Rocky View County Community Recreation and Culture Grant.

We trust this to be the information you require. Should you have any questions please do not hesitate to contact our office at (403) 946-5565.

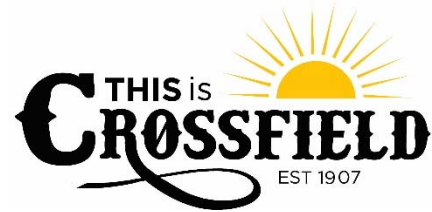
Sincerely,  
TOWN OF CROSSFIELD

Mayor Harris

/nv

## Report to Council

**Meeting Date:** 2025-09-16  
**Meeting Type:** Council Meeting  
**Prepared By:** Steve Altena, Director of Infrastructure and Community Growth  
**Presented By:** Steve Altena  
**Subject:** Wastewater Treatment Master Plan – Treated Effluent Disposal Options  
**Department:** Water & Wastewater



---

### REPORT PURPOSE:

The purpose of this report is update Council on the findings of the Wastewater Treatment Master Plan prepared by Magna Engineering Services Ltd. (Magna). This study was initiated following the Interim Effluent Disposal Strategy by Magna Engineering which explored two options: increased treated effluent irrigation of Town owned-lands and a polishing treatment wetland. The interim disposal study concluded that increased irrigation of Town owned-lands, including agricultural lands and at the golf course, offers limited development support. The study recommended that a further feasibility study be undertaken to work towards improving treated effluent quality to allow for more frequent discharges to Nose Creek.

The Wastewater Treatment Master Plan draws on the findings of the Interim Effluent Disposal Strategy to further study large-scale agricultural irrigation and a polishing treatment wetland system. Magna recommends advancing a phased implementation of a polishing treatment wetland to enable a second discharge to Nose Creek as an interim strategy. The study finds that a polishing treatment wetland offers a more economical path for long-term capacity of up to 2040, with a lower capital and lifecycle cost, improved effluent quality and lower operational risk. This alternative offers reduced operations and maintenance (O&M) demands and offer climate resilience unlike weather dependent irrigation. The study identifies that the long-term strategy would likely consider a regional wastewater servicing option, noting that this will involve significant intermunicipal coordination, capital costs and regulatory approvals.

### RECOMMENDATION:

THAT Council direct Administration to initiate the next steps for implementing a polishing treatment wetland system, including:

- Conduct geotechnical assessment and groundwater monitoring in Fall 2025 using the remaining 2025 funds from the Interim Effluent Disposal Study;
- Submission of grant applications to secure funding;
- Engagement with neighbouring municipalities and the Nose Creek Watershed Partnership;
- Submission of a pilot discharge application to Alberta Environment and Protect Areas; and,
- Inclusion of the environment assessments, design and construction of a polishing treatment wetland system in the 2026 budget to be considered by Council.

## **BACKGROUND:**

### **Interim Effluent Disposal Strategy**

The 2024 MPE Wastewater Disposal Study identified that the Town's treated effluent storage cell had likely reached capacity. Administration engaged Magna Engineering in December 2024 to complete an interim effluent disposal strategy with goals to:

- Establish the water balance for the treated effluent storage cell
- Assess if additional irrigation could support town growth in the short term
- Identify next steps to work towards a medium and/or long term treated effluent disposal solution

#### *Water Balance*

The water balance for the effluent storage cell has confirmed the assessment that the effluent cell reached capacity in 2024 and that additional effluent disposal or storage is required to support continued growth.

#### *Additional Irrigation Impact*

Magna determined that an additional 93,400 m<sup>3</sup> of treated effluent could be disposed by expanding effluent irrigation on both the farmland owned by the Town and on the golf course. Costing approximately \$2,350,000, the irrigation would support approximately 315 more homes, which could accommodate the existing approved lots along with most development in Vista Crossing Phase 5 and Hawks Landing Phase 1.

The interim disposal study concluded that implementation of just the farmland irrigation option does not dispose of enough volume to enable any of the new development from proposed subdivisions, and that inclusion of the golf course irrigation comes at a high cost, only supporting new developments proposed in 2025.

#### *Next Steps*

The report recommended that a further feasibility study be undertaken to work towards improving treated effluent quality to allow for more frequent discharges to Nose Creek.

### **Wastewater Treatment Master Plan**

To address capacity constraints of the treated effluent storage cell, the Wastewater Treatment Master Plan evaluated two near-term options: expansion of effluent irrigation infrastructure and implementation of a polishing treatment wetland to enable a second seasonal discharge through a Letter of Authorization under the existing Code of Practice registration, piloting the Small Tributary Impact Assessment (STIA) framework. Both options provide regulatory-compliant strategies to delay the need for major capital investment while serving additional population growth.

Magna has been working with Alberta Environment and Protected Areas (EPA) to develop the STIA framework to understand the impacts to local small tributaries by proposed lagoon wastewater and

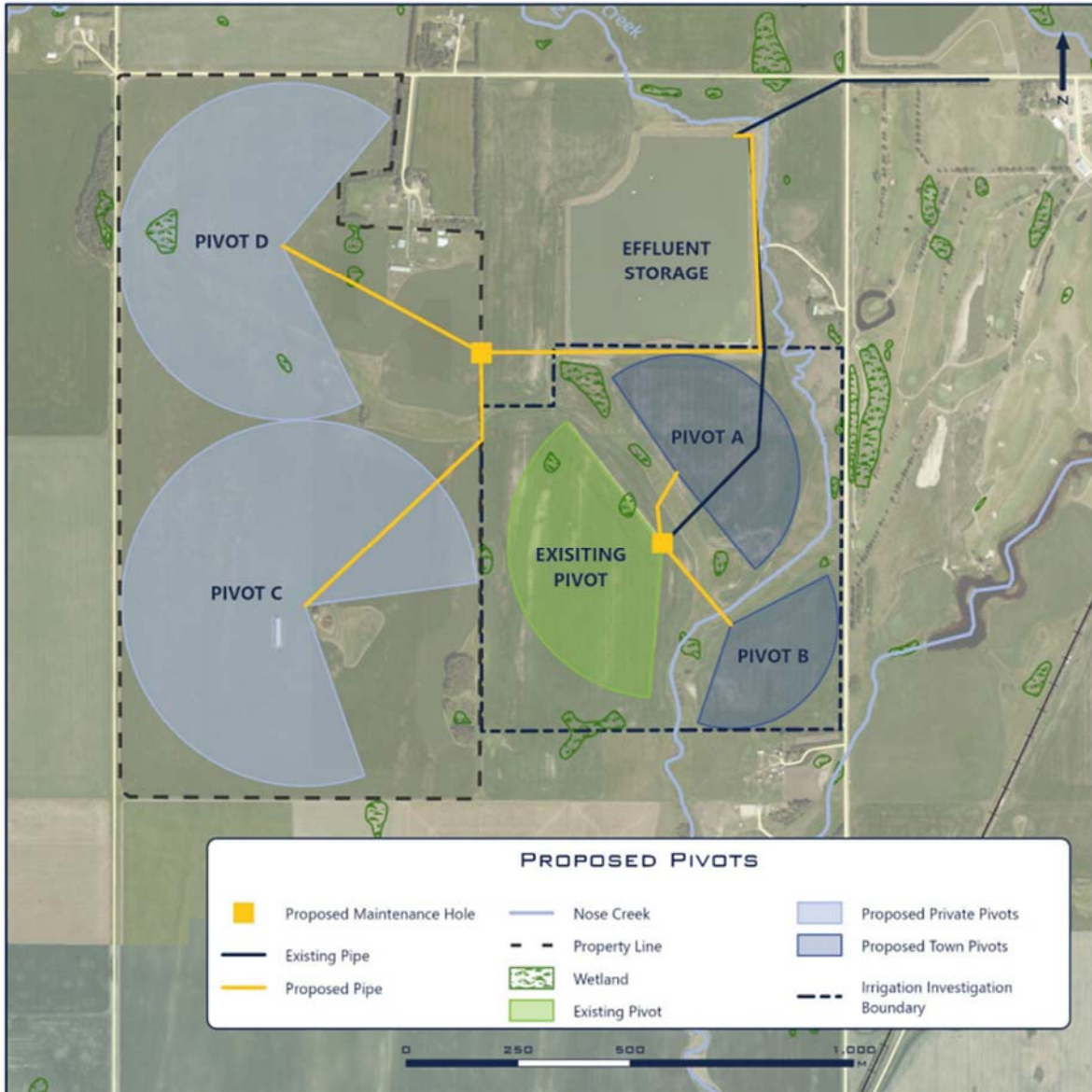
stormwater discharges. The intent of the framework is to support long-term environmental health and infrastructure sustainability for smaller communities. It is meant to serve as a practical approach to allow smaller communities to accommodate growth without the prohibitive costs and delays associated with more stringent regulatory processes. It is proposed to pilot this approach in Crossfield so that EPA may assess the framework for other communities in Alberta.

The study presents a comparative analysis of the alternatives as summarized below:

Category	Base Irrigation Expansion		Optimized Irrigation Expansion		Polishing Treatment Wetland	
	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2
Capital Cost	<b>\$5,474,000</b>		<b>\$10,623,000</b>		<b>\$6,185,000</b>	
	\$4,244,000	\$1,230,000	\$9,393,000	\$1,230,000	\$3,898,000	\$2,210,000
Land Acquisition	\$3,600,000	-	\$3,600,000	-	-	-
Storage Cell Expansion	-	-	\$5,185,000	-	-	-
Potential AMWWP Grant Coverage	<b>47%</b> <b>\$2,572,780</b>		<b>47%</b> <b>\$4,992,810</b>		<b>47%</b> <b>\$2,906,950</b>	
Life Cycle Cost	<b>\$4,893,100</b>		<b>\$10,128,900</b>		<b>\$6,261,000</b>	
Potential Increase in Capacity (m <sup>3</sup> )	<b>127,400</b>		<b>436,900</b>		<b>392,700</b>	
	50,400	77,000	195,000	241,900	117,200	275,500
Project Capacity Year	2029	2032	2030	2039	2032	2040
Lifecycle Cost per Volume	<b>\$38/m<sup>3</sup></b>		<b>\$23/m<sup>3</sup></b>		<b>\$16/m<sup>3</sup></b>	
Cost per Additional Equivalent Person	<b>\$3,147/person</b>		<b>\$2,330/person</b>		<b>\$1,450/person</b>	

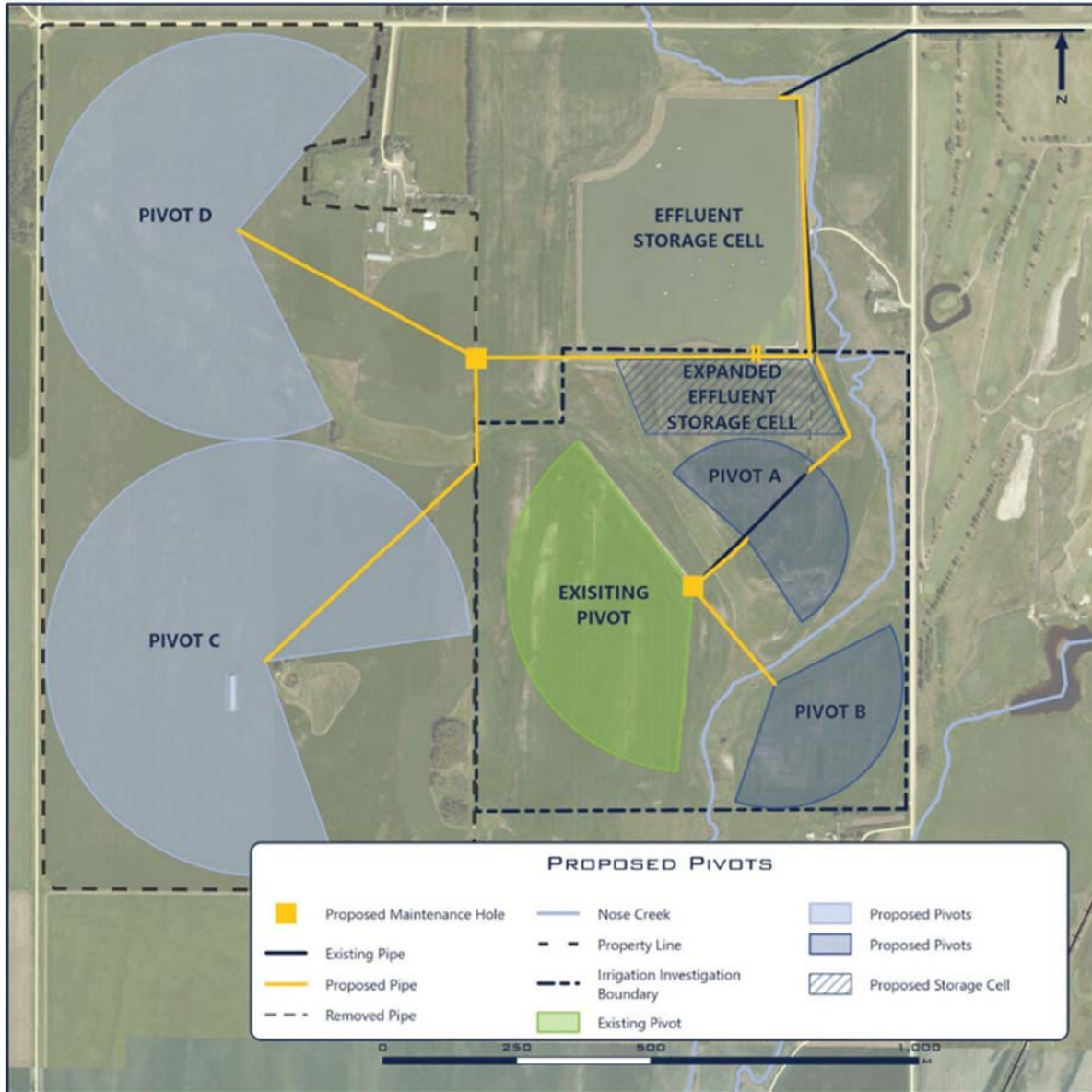
#### *Base Irrigation Option*

For the base irrigation expansion, Phase 1 is the installation of Pivots A and B as well as purchasing the land to support Pivots D and C. Phase 2 is the installation of Pivots D and C. However, the base irrigation expansion is constrained by the capacity of the treated effluent storage cell and the need to hold effluent over the winter. Provincial standards require wastewater systems disposing of effluent through irrigation to provide a minimum of seven months of storage. The proposed configuration of the base irrigation expansion is as shown below.



*Optimized Irrigation Option*

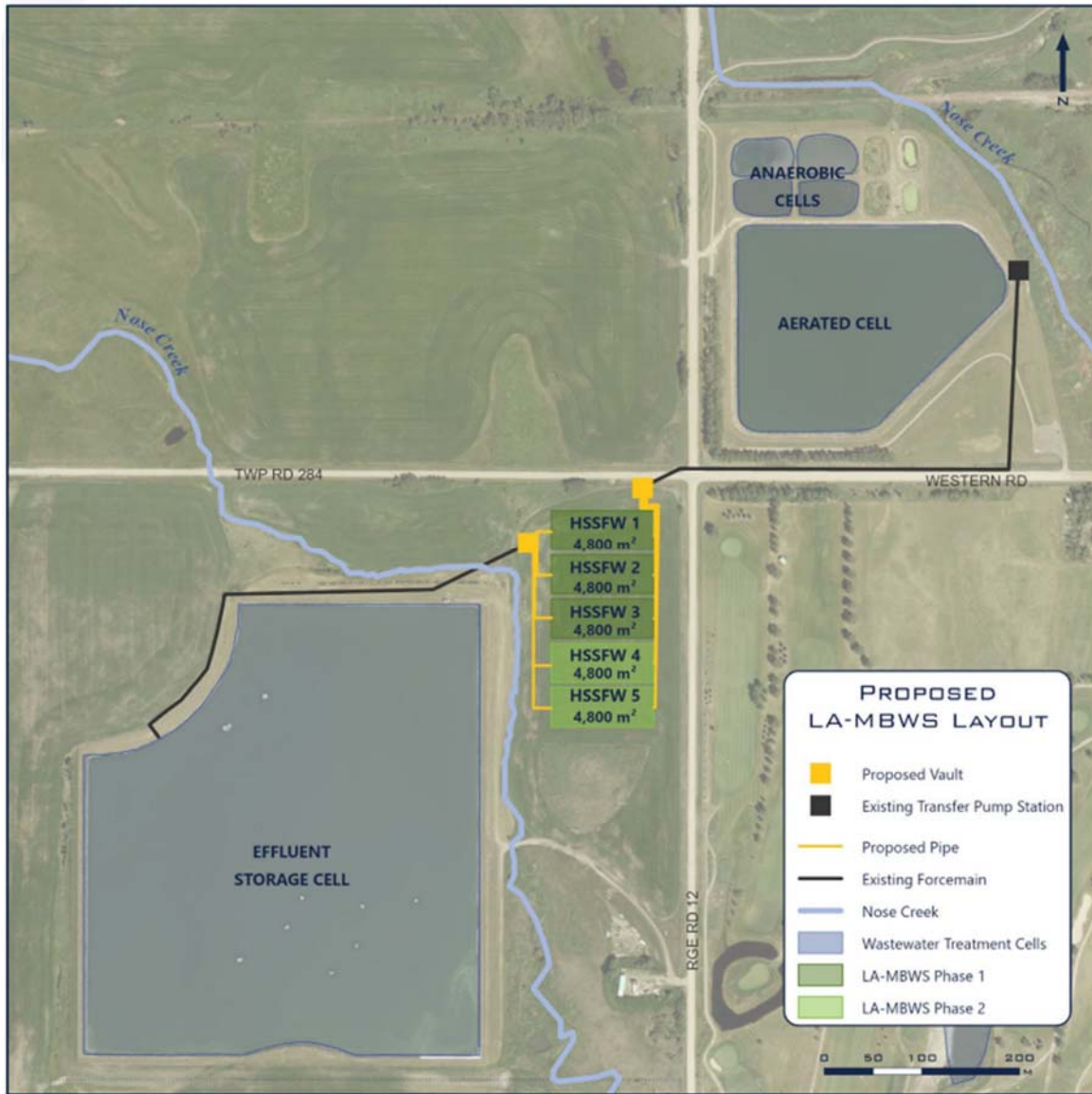
To optimize the irrigation an expansion of the treated effluent storage cell is needed. The cost and increased discharge capacity for both the base irrigation expansion and the optimized irrigation expansion is shown in the table above. The optimized irrigation expansion offers significant improvements for discharge capacity over the base case, however there is a substantial cost increase to construct an additional 145,000 m<sup>3</sup> storage cell. The storage cell expansion would be constructed in Phase 1 along with Pivots A and B. Pivots C and D would follow in Phase 2. The proposed configuration for the optimized irrigation is presented below.



*Polishing Treatment Wetland Option*

The polishing treatment wetland alternative, offers an option to traditional solutions for improving effluent quality that include costly, complex mechanical treatment plants, which require extensive O&M and more specialized staff. This option is intended to strike a balance between treatment performance, cost, simple O&M and environmental benefits. In the Wastewater Master Plan, Magna explores the LA-MBWS as an example of a polishing treatment wetland that can suit the Town’s needs. Two phases are proposed with Phase 1 including the installation of three wetlands to meet capacity requirements to 2032 and Phase 2 including the installation of two wetlands to bring the total to 5 wetlands and extending the system capacity to 2040 when the Town will reach winter flow limits. While only 4 wetlands are needed, an additional wetland is proposed to offer redundancy to assist with managing

peak load events, accommodate maintenance downtime and enhance operational flexibility. The proposed configuration is shown below.



### Long-Term Considerations

The Wastewater Treatment Master Plan notes that regardless of the selected upgrade option, the treated effluent storage cell is projected to reach capacity by 2040 due to winter discharge restrictions. Nose Creek has little to no flow in the winter, and therefore, effluent cannot be discharged during this period. The Town must consider alternative receiving streams, such as constructing a forcemain east to the Rosebud River, or establishing a regional connection with Calgary. For a regional connection the study suggests that planning should start in 2030 to be successfully concluded by 2040.

**ANALYSIS:**

**Strategic Alignment**

- Sustainable Community Growth
- Town Infrastructure
- Parks, Recreation & Beautification
- Social Development & Emergency Services
- Communications & Public Relations

**Community Growth:**

To support continued community growth the Town needs to increase its capacity to dispose of wastewater. Should improvements not be implemented, the Town may need to consider a development moratorium, which would likely slow and stagnant both economic and population growth.

**Risks and Opportunities**

Both the irrigation and polishing treatment wetland alternatives present risks and opportunities. These are summarized below as taken from the Wastewater Treatment Master Plan with additional commentary from Administration:

Category	Irrigation Expansion	Polishing Treatment Wetland
Opportunities	<p><b>Potential For Phased Infrastructure Upgrades</b> The Town can expand irrigation incrementally, parcel by parcel, reducing upfront capital demands and allowing for more deliberate planning of future upgrades until the effluent storage cell reaches winter capacity.</p> <p><b>Decreased Water Discharge into Nose Creek</b> Applying treated wastewater to land decreases hydraulic and nutrient loading on Nose Creek compared to seasonal discharges, supporting improved watershed health.</p> <p><b>Normal Regulatory Oversight</b> Expanding the irrigation system requires normal provincial oversight through existing approval and monitoring pathways.</p> <p><b>Acquisition of new Town-Lands</b> Large scale irrigation will require the acquisition of approximately 300 acres of agricultural land. Should the long-term</p>	<p><b>Potential for Phased Expansion</b> The polishing wetland can be implemented in phases, with each unit designed to handle one-fourth of the projected 2040 ADWF. This approach reduces upfront capital demands and allows the Town to expand capacity as needed, minimizing financial and operational risk.</p> <p><b>Minimal O&amp;M and Passive System Design</b> The polishing wetland operates passively with pumps as the only mechanical components. Operational demands are low, requiring only routine monitoring and sampling by staff.</p> <p><b>Reduced Operational Risk Over Time</b> The polishing wetland has been sized for and operates reliably in all weather conditions. The polishing wetland will consistently polish the wastewater to meet seasonal discharge criteria.</p>

	<p>solution include a regional connection or similar, these lands may not be needed once this long-term solution is implemented. The Town may then realize opportunities to sell the lands, develop, create park space or other amenities.</p>	<p><b>Improved Water Quality for Irrigation</b> Improved effluent quality minimizes the risk of solids accumulation within irrigation infrastructure, thereby reducing long-term O&amp;M costs and mitigating the potential for system blockages and performance degradation.</p>
<p>Risks</p>	<p><b>Weather Dependency, Especially in Spring</b> Irrigation is highly sensitive to precipitation and wind. Heavy rainfall increases hydraulic loading on the effluent storage cell, while prohibiting irrigation, creating a significant risk when storage capacity is already constrained.</p> <p><b>Effluent Water Quality</b> The current treated wastewater has moderate levels of EC and SAR, along with elevated pH. Without additional treatment, there is a risk that these parameters could increase and accumulate in the soil over time, potentially degrading long-term soil health and limiting future land application suitability.</p> <p><b>Regulatory Storage Capacity</b> While the irrigation expansion extends capacity to 2038, the effluent storage cell is projected to reach its seven-month threshold by 2032. However, because the Town utilizes a dual disposal strategy, including discharge to Nose Creek, there is a strong opportunity to engage AEPA for approval to defer costly storage upgrades, thereby maximizing the use of existing infrastructure</p>	<p><b>Regulatory Engagement and Authorization</b> Temporary discharge under STIA will require provincial and municipal coordination, with the Town piloting the approach. Securing a Letter of Authorization from the province is necessary to proceed. Ongoing engagement with the regulator is required to ensure the Town meets the objectives of the pilot.</p> <p><b>Increased Monitoring Requirements</b> As part of piloting STIA and discharging wastewater effluent more frequently into Nose Creek, the Town can expect increased monitoring obligations to ensure the proposed discharge regime is not having a worsening impact on the creek.</p> <p><b>Intermunicipal Engagement</b> Crossfield’s downstream neighbours include Airdrie, Rocky View and Calgary. All party to the Nose Creek Watershed Partnership, which has studied the creek extensively. Proposing additional discharge to the creek may be challenged or opposed by some of these downstream parties.</p>

**FINANCIAL IMPLICATIONS:**

The planning, design and construction of a system to increase the treated effluent disposal capacity for a medium-term period (to 2040) will have significant costs for the Town, with the presented cost estimates ranging from \$6,185,000 to \$10,623,000.

Administration will pursue grant funding to support the chosen option. The Town has already applied to the Canada Housing Infrastructure Fund (CHIF) requesting \$3,535,815 to upgrade the wastewater treatment facility. Administration will prepare a grant submission for the Alberta Municipal Water/Wastewater Partnership, which may fund approximately 47% of the project. The Town may also be eligible under the Water for Life Program for funding, and has recently received funding through this program from 2024's Wastewater Treatment and Disposal Study prepared by MPE.

Based on Council's direction, Administration will include the chosen option as a project for the 2026 budget to be deliberated by Council in November 2025. Additional financial implications will be presented to Council at that time.

Administration's initial assessment is that the financial implications for the phased development of the base irrigation option or polishing treatment wetland can be appropriately managed by the Town, especially if successful with grant funding. The implementation of the optimized irrigation option, even with grant funding, may be challenging to manage within the Town's means while still supporting other capital needs within the community.

Both the irrigation options and the polishing treatment wetland option require further soils and/or geotechnical investigation. Administration estimates that the 2025 capital budget remaining for the Interim Effluent Disposal Strategy can cover most or all of these costs. Once an option is selected Administration will work to hire a consultant to conduct these activities and will return to Council with a budget adjustment as necessary.

**ALTERNATIVES/IMPLICATIONS:**

THAT Council receive this report for information and direct Administration to return this item to the next Council meeting for further consideration.

**ATTACHMENTS:**

Attachment A - Wastewater Treatment Master Plan



# WASTEWATER TREATMENT MASTER PLAN

## FINAL REPORT

**PREPARED ON:** 9/11/2025      **VERSION:** 1      **PREPARED FOR:** Town of Crossfield

**PREPARED BY:**

MAGNA Engineering Services Inc.  
275 – 1011 9 Avenue SE  
Calgary, AB T2G 0H7  
403-770-9050

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# EXECUTIVE SUMMARY

The Town of Crossfield’s (the Town) existing wastewater treatment and disposal infrastructure is approaching its design capacity due to projected population growth and limited effluent storage volume. This Wastewater Treatment Master Plan outlines near- and long-term strategies to address treatment performance, effluent storage, and regulatory compliance while accommodating future development through 2050. This Master Plan includes high-level cost estimates, phased timelines, and regulatory pathways to support strategic decision-making and secure wastewater capacity beyond 2040.

A detailed review of the wastewater treatment system confirmed that current treatment meets Alberta Environment and Protected Areas (AEPA) and federal Wastewater Systems Effluent Regulations (WSER) discharge standards. However, the effluent storage cell is projected to reach capacity in 2027, which will constrain the Town’s development. To address these constraints, the Wastewater Treatment Master Plan evaluates two near-term options: expansion of effluent irrigation infrastructure and implementation of a polishing treatment wetland (LA-MBWS) to enable a second seasonal discharge through a Letter of Authorization under the existing Code of Practice registration, piloting the Small Tributary Impact Assessment (STIA) framework. Both options provide regulatory-compliant strategies to delay the need for major capital investment while serving additional population growth. A comparative analysis was conducted to identify the most feasible interim disposal strategy, outlined in **Table E.1** below.

**Table E.1: Comparative Analysis of Interim Disposal Strategies**

CATEGORY	IRRIGATION EXPANSION		OPTIMIZED IRRIGATION EXPANSION		LA-MBWS	
	PHASE 1	PHASE 2	PHASE 1	PHASE 2	PHASE 1	PHASE 2
Capital Cost	\$5,474,000		\$10,623,000		\$6,185,000	
	\$4,244,000	\$1,230,000	\$9,393,000	\$1,230,000	\$3,898,000	\$2,210,000
Land Acquisition	\$3,600,000	-	\$3,600,000	-	-	-
Storage Cell	-	-	\$5,185,000	-	-	-
Potential AMWWP Grant Coverage	47%		47%		47%	
Life Cycle Cost	\$2,572,780		\$4,992,810		\$2,906,950	
Potential Increase in Capacity [m <sup>3</sup> ]	127,400		436,900		392,700	
	50,400	77,000	195,000	241,900	117,200	275,500
Projected Capacity Year	2029	2032	2030	2039	2032	2040
Volumetric Lifecycle Cost [\$/m <sup>3</sup> ]	\$38		\$23		\$16	
Cost per Additional Equivalent Person [\$/equivalent person]	\$3,147		\$2,330		\$1,450	

AMWWP - Alberta Municipal Water/Wastewater Partnership

MAGNA Engineering Services Inc. (MAGNA) recommends moving forward with the phased implementation of the LA-MBWS to enable a second discharge to Nose Creek. The LA-MBWS offers a more economical path for long-term capacity (to 2040), with a lower capital and lifecycle cost, improved effluent quality, and lower operational risk. Its passive design reduces O&M demands, and its year-round climate resilience addresses key limitations associated with weather-dependent irrigation.

In the long term, regional wastewater servicing options will be explored. This is likely to be a connection to the City of Calgary’s Bonnybrook Wastewater Treatment Facility (WWTF) via the Airdrie trunk line. This option would permanently resolve storage and discharge constraints, but would involve significant intermunicipal coordination, capital costs, and regulatory approvals.

# 1.0 INTRODUCTION

MAGNA Engineering Services Inc. (MAGNA) has been engaged by the Town of Crossfield (the Town) to develop a Wastewater Treatment Master Plan that explores expanding the existing irrigation system and implementing a treatment wetland for effluent polishing, as a phased interim solution to address the wastewater treatment facility's (WWTF) capacity deficit.

The objectives of this report are to:

- Summarize the proposed transitional water quality objectives for the increased discharge frequency developed through consultation with Alberta Environment and Protected Areas (AEPA).
- Summarize the design basis for the interim effluent disposal options.
- Discuss the feasibility of expanding the existing irrigation system for the disposal of wastewater effluent.
- Discuss the feasibility of using a treatment wetland, using the LA-MBWS as an example, to improve treatment performance to allow for increased discharge frequency.
- Offer feedback on phased wastewater treatment options.
- Provide recommendations and next steps.
- Highlight the timeframe for when a long-term, large-scale solution will be required.

## 1.1 PROJECT UNDERSTANDING

Due to growth within the community, the Town's WWTF is currently at capacity and is unable to service approved future development. The *Wastewater Treatment and Disposal Study*, completed by MPE Engineering Ltd. (MPE) in June 2024, highlighted the storage deficits in the Town's effluent storage cell. Long-term, a mechanical WWTF has been recommended by MPE to facilitate continuous discharge to Nose Creek; however, an interim strategy to address immediate capacity concerns and enable residential development is required.

In early 2025, MAGNA completed a detailed water balance assessment to estimate flows into and out of the Town's WWTF effluent storage cell to determine storage volume deficits. The Town's proposed development plans were then analysed to project future deficits in storage capacity. The remaining volume within the effluent storage lagoon can support 63 of the 159 currently approved and unoccupied lots. Based on the projected growth rate provided by the Town, an additional 21,100 m<sup>3</sup> of effluent storage is required in 2028. To support existing approved lots and 2025 residential subdivision applications, 91,900 m<sup>3</sup> of additional effluent storage or disposal is required by 2031.

The purpose of this project is to address the immediate capacity deficits of the WWTF by evaluating the feasibility of both an irrigation system expansion and the implementation of a wetland for effluent polishing, to allow for increased discharge to Nose Creek. Water quality objectives for the increased discharge frequency into Nose Creek have been developed through engagement with Alberta Environment and Protected Areas (AEPA). Implementation of one or both of these options in a phased approach will allow the Town to continue residential development and allow for additional time to pursue a long-term mechanical treatment plant or regional solution.

## 2.0 PROJECT BACKGROUND

This section provides an overview of the project area, highlighting key constraints for expansion such as existing buildings and green spaces. It also summarizes the current WWTF, describing the function of each treatment unit and the operation of the existing wastewater irrigation pivot. Key data gaps and assumptions that inform the development of the Wastewater Treatment Master Plan have been summarized to show how data gaps affect the accuracy of the analysis.

### 2.1 PROJECT AREA

The Town of Crossfield is located 27 km north of Calgary, west of Highway 2. The WWTF is located on the southwest side of the Town, adjacent to the golf course. An illustration of the Town's location is shown in **Figure 2.1**.

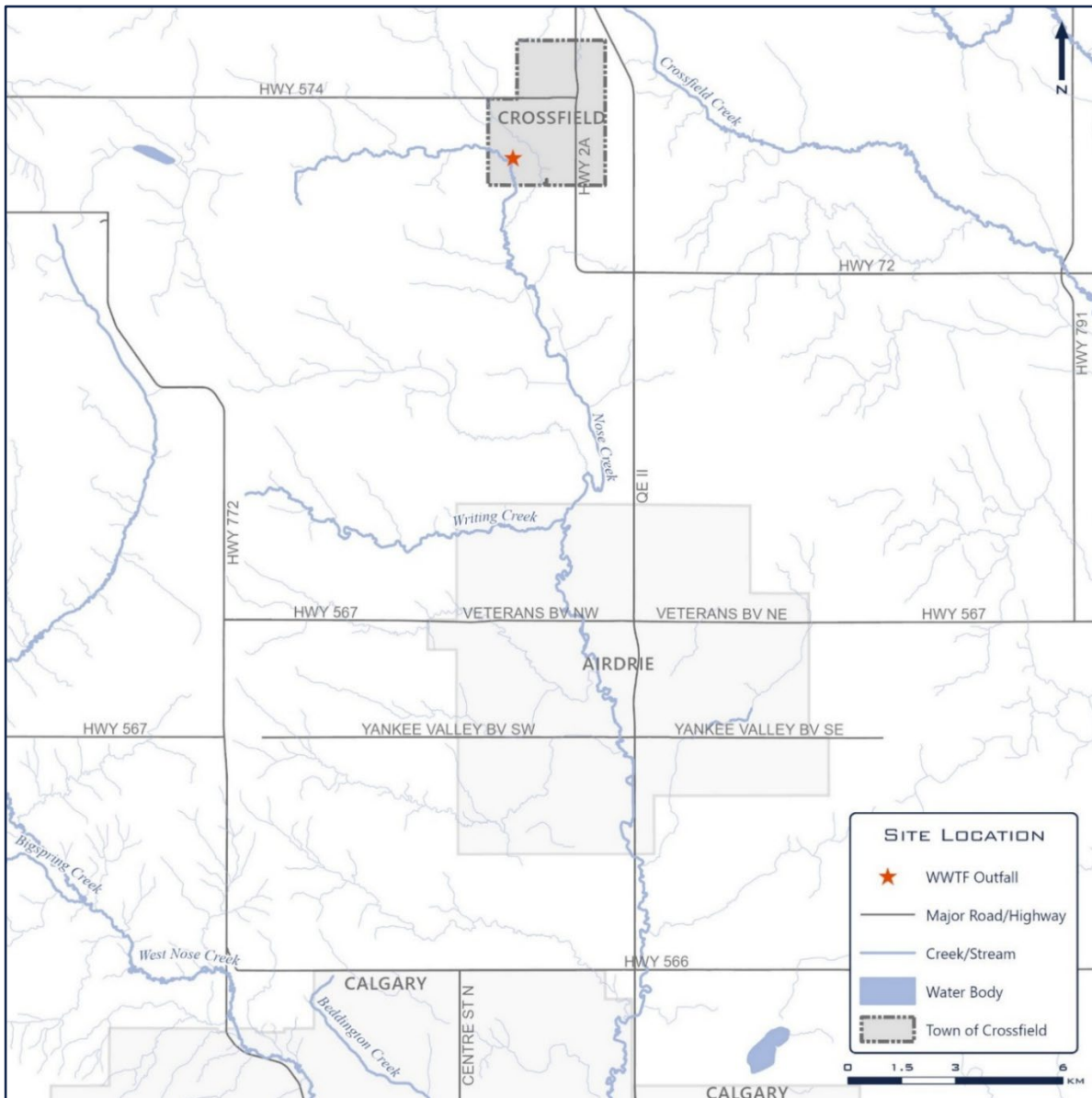


Figure 2.1: Location of the Town of Crossfield

The current WWTF consists of four anaerobic cells, one aerated cell, a transfer pump, one effluent storage cell, and a gravity outfall, discharging to Nose Creek. **Figure 2.2** shows an aerial view of the facility, highlighting the separation between the main treatment cells in the top right, and the larger effluent storage cell to the bottom left. The outlet of the effluent storage cell on the northeast side leads directly into Nose Creek.



**Figure 2.2: Satellite Image of the Town of Crossfield's WWTF**

This WWTF is operated under Registration No. 581-02-00 from Alberta Environment (AE; currently known as AEP), adhering to the *Code of Practice for Wastewater Systems using a Wastewater Lagoon* (AE, 2003). This registration allows the Town to discharge from the effluent storage cell to Nose Creek once per year between April 1 and November 30, over a maximum period of three consecutive weeks.

The existing site contains opportunities and constraints for both irrigation expansion and treatment wetland placement. The site has green spaces, drainage ditches, potential wetlands, and buildings, as shown below in **Figure 2.3**.



**Figure 2.3: Site Review for Potential Irrigation and Treatment Wetland**

The green spaces shown in are non-agricultural and contain natural features such as trees, wetlands, and drainage areas that may fall under regulatory protection. While some of these areas could potentially be modified or removed for a pivot or treatment wetland, it has been assumed they are non-irrigable and cannot be touched. The buildings in the private farmland have been assumed to be removable for pivot placement.

## 2.2 EXISTING FACILITIES

This section outlines each treatment unit, focusing on its role in downstream treatment processes and its impact on wastewater disposal. The existing pivot and golf course irrigation systems will be reviewed.

### 2.2.1 WASTEWATER TREATMENT CELLS

The wastewater treatment units at the Town's WWTF are summarized, focusing on their roles in treatment and disposal processes. The review covers the anaerobic cells, an aerated cell, and an effluent storage cell, highlighting performance and compliance with provincial standards.

#### **ANAEROBIC CELLS**

The raw wastewater from the Town first enters a series of four anaerobic cells, which serve as the primary stage of treatment within the WWTF. These cells are designed to facilitate the settling of solids, resulting in significant removal of total suspended solids (TSS), and partial reduction of biochemical oxygen demand (BOD) and chemical oxygen demand (COD).

#### **AERATED CELL**

The aerated cell provides aerobic secondary treatment of the wastewater. The blower's primary function is to sustain dissolved oxygen (DO) levels above 2 mg/L while mixing the wastewater as a secondary benefit. The increase in DO supports effective BOD removal and facilitates nitrification. The aerated cell is designed to ensure that both carbonaceous biochemical oxygen demand (CBOD) and TSS in the secondary effluent are less than 25 mg/L.

#### **STORAGE CELL**

The effluent storage cell was designed per the Alberta Environment and Sustainable Resource Development's (AESRD; currently Alberta Environment and Protected Areas [AEPA]) *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems Part 3* (2013) (the Standards). The Standards outline the requirements for lagoon design and require effluent storage cells to be designed to hold a minimum of 12 months of average daily design flow. This storage volume can be reduced to a minimum of seven months if treated wastewater is disposed of through irrigation. The design capacity of the effluent storage cell is summarized below in **Table 2.1**.

**Table 2.1: Effluent Storage Cell Design Capacity**

CELL	DESIGN VOLUME [m <sup>3</sup> ]	DEPTH (m)	AREA (m <sup>2</sup> )	REQUIRED RETENTION TIME
Storage	385,000	2.5	159,550	12 months

Source: Town of Crossfield - Wastewater Treatment and Disposal Study (MPE, 2024)

The *Wastewater Treatment and Disposal Study* completed by MPE in June 2024 highlighted that the effluent storage cell does not have enough capacity for 12 months of storage at the Town's current average daily flow. Additionally, the HDPE liner within the cell has minor whaling, as highlighted in red in **Figure 2.4** (on the next page). Reductions in the effluent storage cell's volume due to the displaced liner or sludge accumulation have not been included in this assessment. During a site visit on December 23, 2024, the Town's operations noted that the effluent storage cell is plagued by invasive Prussian Carp. During the November 2024 discharge, a temporary pump with a screen was used to prevent the Prussian Carp from being released into Nose Creek. The Town is currently working on installing a permanent screen at the outlet of the effluent storage cell to protect Nose Creek.

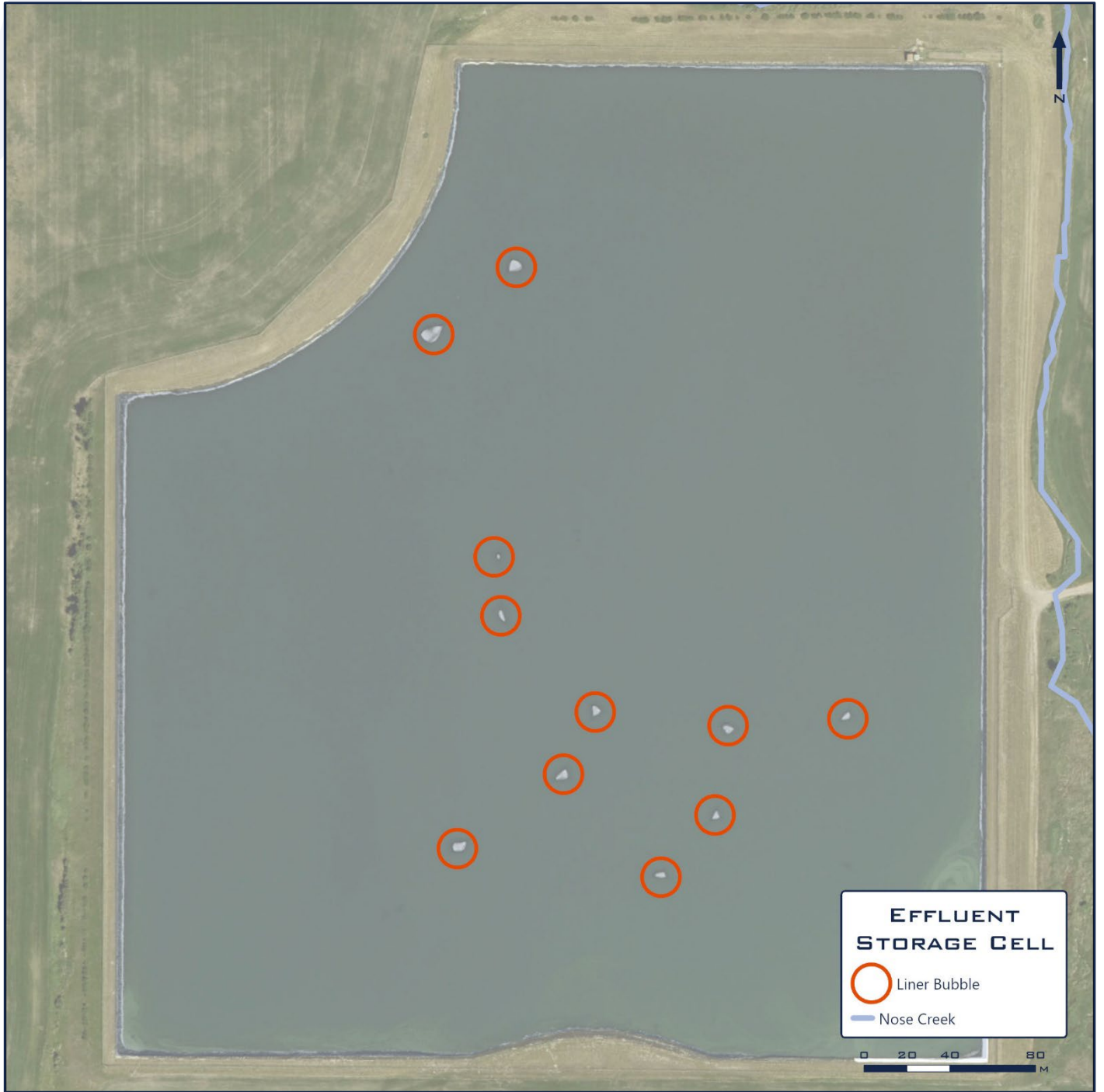
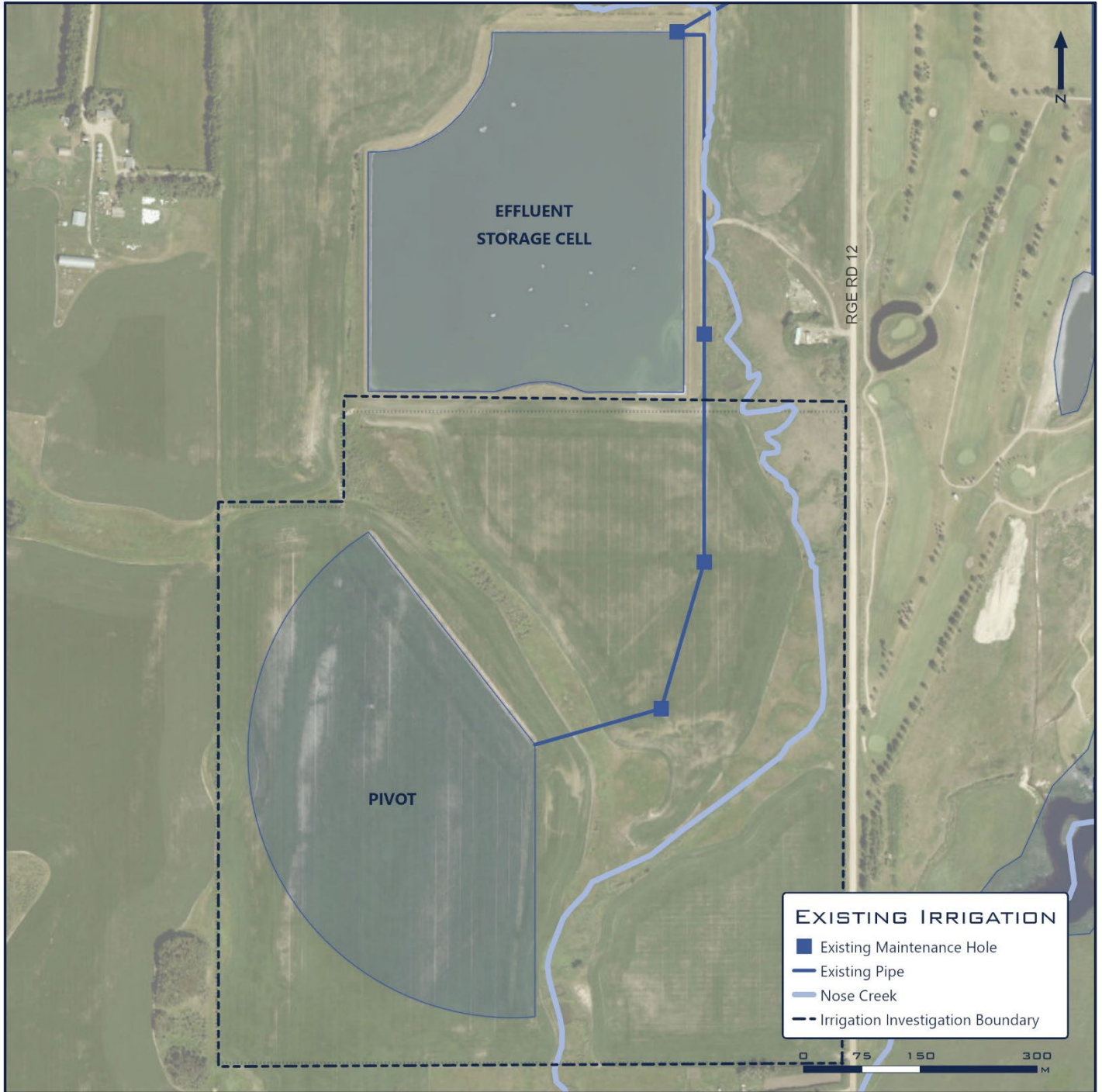


Figure 2.4: Visible Liner Bubbles in the Town's Effluent Storage Cell

## 2.2.2 FARMLAND PIVOT

The Town currently has an existing irrigation pivot that disposes of treated effluent south of the effluent storage cell to support the capacity of the WWTF. Cross Rock Ranch Ltd. (Cross Rock Ranch) leases the farmland from the Town and has been using effluent wastewater on one of the parcels to irrigate alfalfa, as shown in **Figure 2.5**.



**Figure 2.5: Existing Wastewater Irrigation Layout**

Treated effluent is pumped from the outlet of the effluent storage cell to a pivot south of the cell. Cross Rock Ranch has expressed interest in helping address the Town’s capacity deficit by proposing the use of treated wastewater to irrigate two additional plots east of the existing site. Irrigation of the existing plot began in 2023; however, operational issues throughout the summer limited effluent disposal. The system was fully operational in 2024. **Table 2.2** details the irrigation usage during the summer of 2024.

**Table 2.2: Farmland Irrigation Demand**

CALENDAR YEAR	EFFLUENT VOLUME IRRIGATED [m <sup>3</sup> ]	AREA IRRIGATED [m <sup>2</sup> ]	IRRIGATION RATE [mm]
2024	39,656	137,593	288

### 2.2.3 GOLF COURSE

Collicut Siding Golf Course (the golf course) borders the WWTF’s storage cell to the east and has been using effluent wastewater for irrigation to supplement diversions from Nose Creek. Effluent is chlorinated at the outlet of the current storage cell before being sent to a pond in the centre of the golf course. This pond feeds the irrigation system for a portion of the west side of the course. The irrigation layout is shown in **Figure 2.6**.



**Figure 2.6: Existing Collicutt Golf Course Irrigation Layout**

The remainder and majority of the golf course are irrigated using water from Nose Creek using the Town’s diversion license. The Town has expressed that a full replacement of the usage from Nose Creek to wastewater effluent is not feasible due to the poor cost efficiency of the infrastructure changeover and many holes are within the setback distances from Nose Creek. **Table 2.3** details the golf course’s irrigation usage from both sources over the past four years.

**Table 2.3: Golf Course Irrigation Demand**

YEAR	NOSE CREEK DIVERSION [m <sup>3</sup> ]	TREATED EFFLUENT IRRIGATION [m <sup>3</sup> ]	TOTAL VOLUME IRRIGATED [m <sup>3</sup> ]
2022	62,456	20,180	82,636
2023	54,117	32,000	86,117
2024	47,741	21,614	69,355
<b>Average</b>	<b>52,130</b>	<b>24,598</b>	<b>79,369</b>

## 3.0 DESIGN BASIS

This section examines the Town's wastewater treatment system, analyzing population and development trends, design flows and water balance, applicable regulations for irrigation and treatment wetlands, and influent and effluent water quality requirements for wetland and irrigation applications.

### 3.1 POPULATION AND DEVELOPMENT

The Town is projecting significant growth in the next five years from approved and planned developments in the residential sector. Historical and current population were studied to understand growth projections, while planned development gave insight into the maximum residential growth that the Town can house in the next five years. The population growth was projected for the next 25 years to estimate the expected long-term wastewater treatment capacity.

The Town has a substantial commercial and industrial (C&I) sector that contributes to the total wastewater volume generated. This analysis considers both the residential population and an equivalent non-residential population derived from the C&I wastewater generation rates. As these land uses grow at different rates, separating these projections will give a more accurate estimate of the future wastewater generation.

Two lift stations service the Town. The West Lift Station (WLS) services most of the Town, including all the residential properties, while the private lift station services the Collicut Siding Golf Club, MaXfield, and CRM. The population and development projections are only for the WLS, while no development is assumed for the private lift station in the next 25 years.

#### 3.1.1 RESIDENTIAL

The residential population growth assumptions, shown in **Table 3.1**, is based on the assumptions and calculations provided by the Town and previous engineering studies. Based on a review of the Town's census data and prior engineering reports by Allnorth and MPE, the assumed population per home was adjusted from 2.5 in the previous project to 2.7 in the current project. This revision to 2.7 persons per household better aligns with observed demographic trends and provides a more accurate basis for population projections.

**Table 3.1: Residential Growth Assumptions**

ASSUMPTION	VALUE	UNIT
Assumed Population per Home <sup>1</sup>	2.7	Persons/Unit
2024 Base Population (Dec 31) <sup>2</sup>	4,316	Persons
Residential Growth Rate <sup>3</sup>	4.5	Percent

1. 2024 Town Census (MMA, 2024).

2. Estimate provided by the Town.

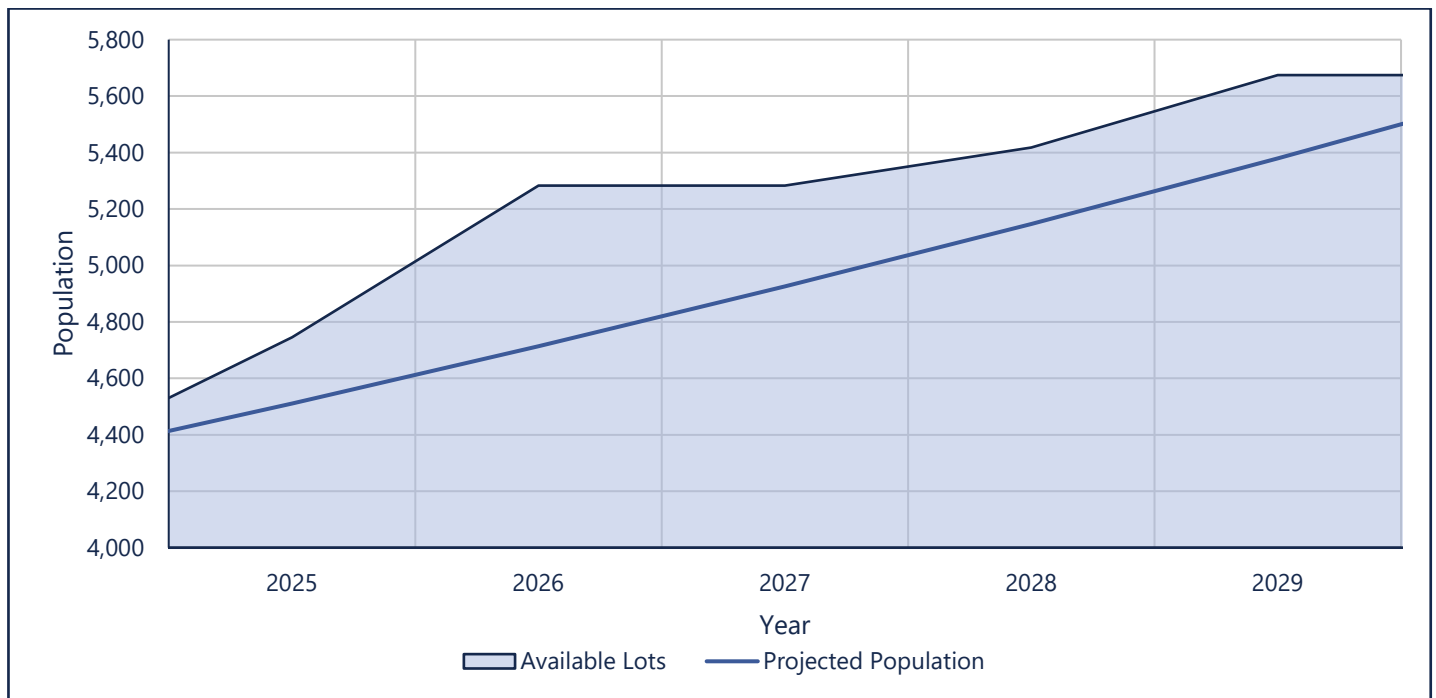
3. Growth rate is derived from a current projected average of 78 new homes per year, as provided by the Town.

**Table 3.2** summarizes the existing unoccupied approved lots and pending residential subdivision applications for the same period. Creation Communities has not provided any additional subdivision details for Iron Landing or Hawks Landing, beyond 2025.

**Table 3.2: Subdivision Details**

CALENDAR YEAR	APPROVED/PENDING SUBDIVISIONS	LOTS	SUPPORTED POPULATION INCREASE (PERSONS)
2025	Approved, unoccupied lots	159	441
	Dream – Vista Crossing Phase 5	99	248
	Creation Communities – Hawks Landing Phase 1	100	250
2026	N/A	0	0
2027	Dream – Vista Crossing Phase 6	50	125
2028	Dream – Vista Crossing Phase 7	95	238
<b>Total</b>		<b>503</b>	<b>1,258</b>

Using the approved/pending subdivisions as the potential growth, and the 4.5% AAGR as the projected actual growth, the projected growth within the next 5 years can be estimated, as shown in **Figure 3.1**.



**Figure 3.1: Available Lots and Projected Population from 2025 to 2029**

### 3.1.2 COMMERCIAL AND INDUSTRIAL

The Town estimates 2 ha of development per year for the combined C&I land, as demand for this land use is low. At a rate of 27.4 equivalent populations per hectare, this provides an equivalent population of 55 people per year in addition to the 4.5% residential growth rate supplied by the Town (Allnorth, 2020). The respective equivalent C&I population growth is summarized in **Table 3.3**.

**Table 3.3: C&I Equivalent Population Projected Growth**

CALENDAR YEAR	INCREASE IN AREA [HA]	C&I AREA [HA]	EQUIVALENT POPULATION INCREASE [PERSONS]	EQUIVALENT POPULATION [PERSONS]
2024	2	207	55	1,550
2025	2	209	55	1,605
2026	2	211	55	1,661
2027	2	213	55	1,716
2028	2	215	55	1,772

### 3.1.3 DESIGN POPULATION

The design population for determining adequate sizing and capacity requirements is derived by combining projected residential and C&I populations. A summary of estimated population growth for both residential and C&I sectors is provided in **Table 3.4** below.

**Table 3.4: Total Population Growth**

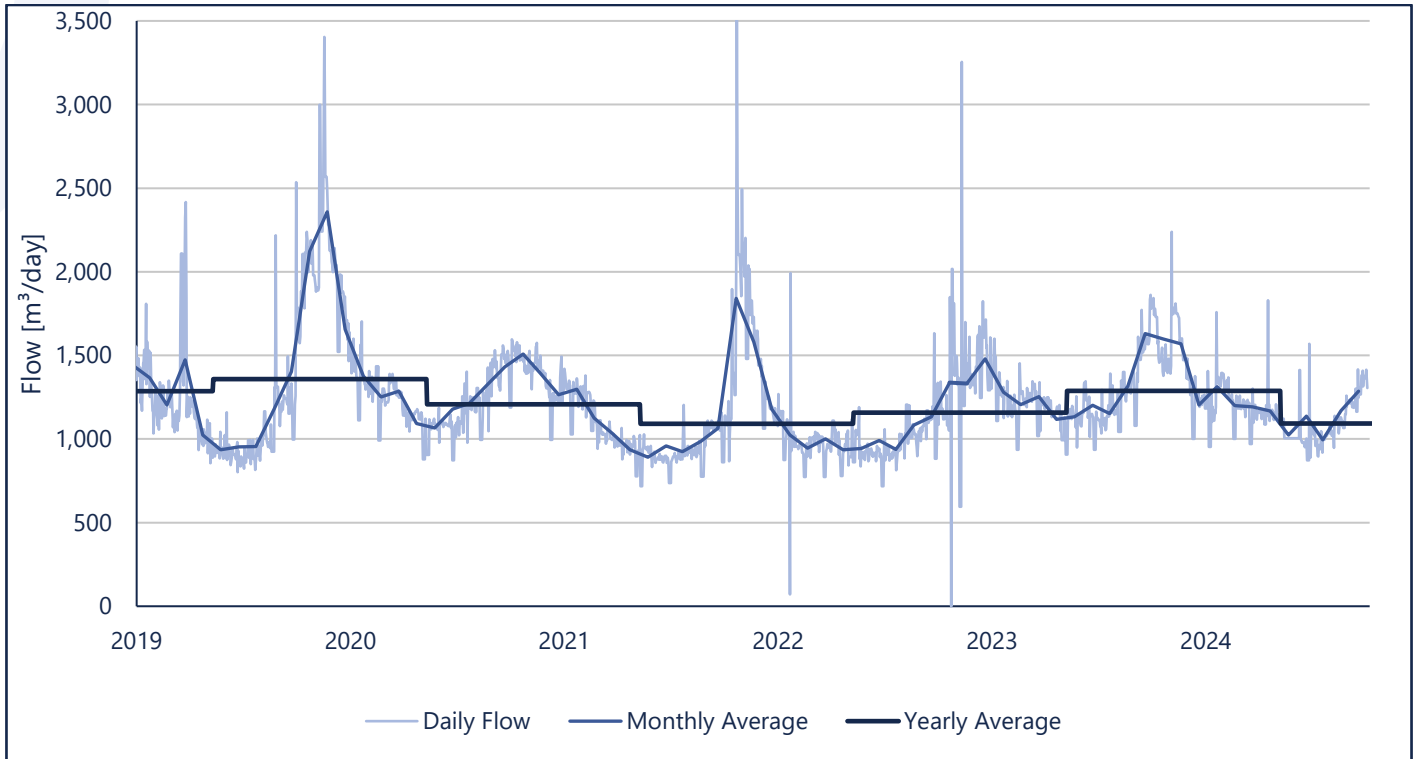
CALENDAR YEAR	RESIDENTIAL POPULATION [PERSONS]	C&I EQUIVALENT POPULATION [PERSONS]	TOTAL EQUIVALENT POPULATION [PERSONS]
2025	4,511	1,605	6,116
2030	5,621	1,880	7,501
2035	7,005	2,155	9,160
2040	8,729	2,430	11,160
2045	10,878	2,705	13,584
2050	13,556	2,980	16,537

## 3.2 FLOW SUMMARY

This section will review the projected wastewater flows for the next 25 years by analyzing the residential, C&I, and private lift station flows. The projected flows were used to conduct an updated water balance on the Town’s effluent storage cell for seasonal discharge to determine the required sizing and maximum capacity year for seasonal discharge.

### 3.2.1 HISTORICAL FLOWS

Investigating historical wastewater flow is crucial in determining the Town’s average wastewater consumption per resident, peak flow factors, and establishing appropriate hydraulics capacities for WWTFs. Daily wastewater flow data from the WLS was collected from August 2019 to May 2025. **Figure 3.2** illustrates the daily incoming flow data from the WLS.



**Figure 3.2: Daily Wastewater Inflow from West Lift Station**

The data set provided did not have totalizer logs on the weekends and holidays, as the operators do not go to the site on these occasions. Values missing, that are following weekends or holidays, have been averaged across the corresponding number of days to account for cumulative flows during these periods. As a result, potential anomalies or spikes that may have occurred during weekends or holidays are not distinctly identifiable. Monthly flow averages represent the aggregated average of daily flows for each respective month, while annual flows are derived from the cumulative monthly totals over the full calendar year.

While short-term variability in flow exists daily, long-term flows have remained relatively consistent, with average daily flows of 1,216 m<sup>3</sup>/day from August 2018 to May 2025. The residential ADWF, C&I ADWF, generation rate per person, and max month flow for each year from this data set are provided below in **Table 3.5**. The design flow factors were calculated by taking the maximum monthly volume from 2018 to 2025 and dividing it by the average monthly volume, as the same for peak day flow. The generation per person is 225 L/d, the historical max month factor is 1.95, and the peak day factor is 2.92.

Commercial and industrial flows have been estimated based on the generation by area, as discussed in **Section 3.1.2**. Using these estimates, the residential ADWF was calculated with its respective generation per person.

**Table 3.5: Historical Inflow Flow Characteristics by Year**

CALENDAR YEAR	TOTAL ADWF [m <sup>3</sup> /DAY]	PRIVATE LIFT STATION ADWF [m <sup>3</sup> /DAY]	C&I ADWF [m <sup>3</sup> /DAY]	RESIDENTIAL ADWF [m <sup>3</sup> /DAY]	RESIDENTIAL POPULATION <sup>1</sup> [PERSONS]	GENERATION RATE [m <sup>3</sup> /PERSON/DAY]	MAX MONTH FLOW [m <sup>3</sup> /DAY]
2019 <sup>2</sup>	1,285	N/A	396	909	3,295	0.276	1,473
2020	1,382	24	400	982	3,397	0.289	2,358
2021	1,221	13	404	817	3,727	0.219	1,508
2022	1,113	22	408	705	3,889	0.181	1,840
2023	1,179	22	412	767	3,941	0.195	1,479
2024	1,307	19	415	892	4,045	0.220	1,631
2025 <sup>3</sup>	1,112	27 <sup>4</sup>	419	693	4,309	0.161	1,286

1. Source: (ATFB, 2025)
2. August 1 to December 31, 2019.
3. January 1 to May 29, 2025.
4. Estimated

### 3.22 DESIGN FLOWS

The flow analysis was conducted using the measured historical flow monitoring data from the Town’s WLS. The WLS services most of the Town, while a private lift station services three commercial and industrial properties to the east of the WWTF. No flow monitoring data is available for the private lift station; therefore, wastewater generation was estimated using potable water consumption data and a 1:1 return to sewer ratio.

The Town’s projected wastewater flow is divided into residential flow and C&I flow. As residential growth occurs at a different rate from C&I growth, separating these flows into distinct projections provides a more accurate estimate of future wastewater volumes.

Based on the projected AAGR 4.5%, as outlined in **Section 3.1**, the Town’s population is expected to increase to 300% of its current population by 2050. The projected wastewater flow is assumed to be proportional to population growth. The generation per person will be the historical average generation per person of 225 L/person/day, while C&I developments are expected to generate 0.1 L/s/ha (Allnorth, 2020).

Using projected residential growth and recommended C&I growth, the projected wastewater flow is summarized in **Table 3.6**.

**Table 3.6: Projected Design Flows**

YEAR	RESIDENTIAL FLOW [M <sup>3</sup> /DAY]	C&I FLOW [M <sup>3</sup> /DAY]	PRIVATE FLOW [M <sup>3</sup> /DAY]	TOTAL ADWF [M <sup>3</sup> /DAY]	YEARLY VOLUME [M <sup>3</sup> /YEAR]
2025	971	349	27	1,347	491,822
2030	1,210	411	27	1,649	601,868
2035	1,508	473	27	2,009	733,407
2040	1,879	535	27	2,443	891,731
2045	2,342	598	27	2,968	1,083,433
2050	2,919	660	27	3,607	1,316,731

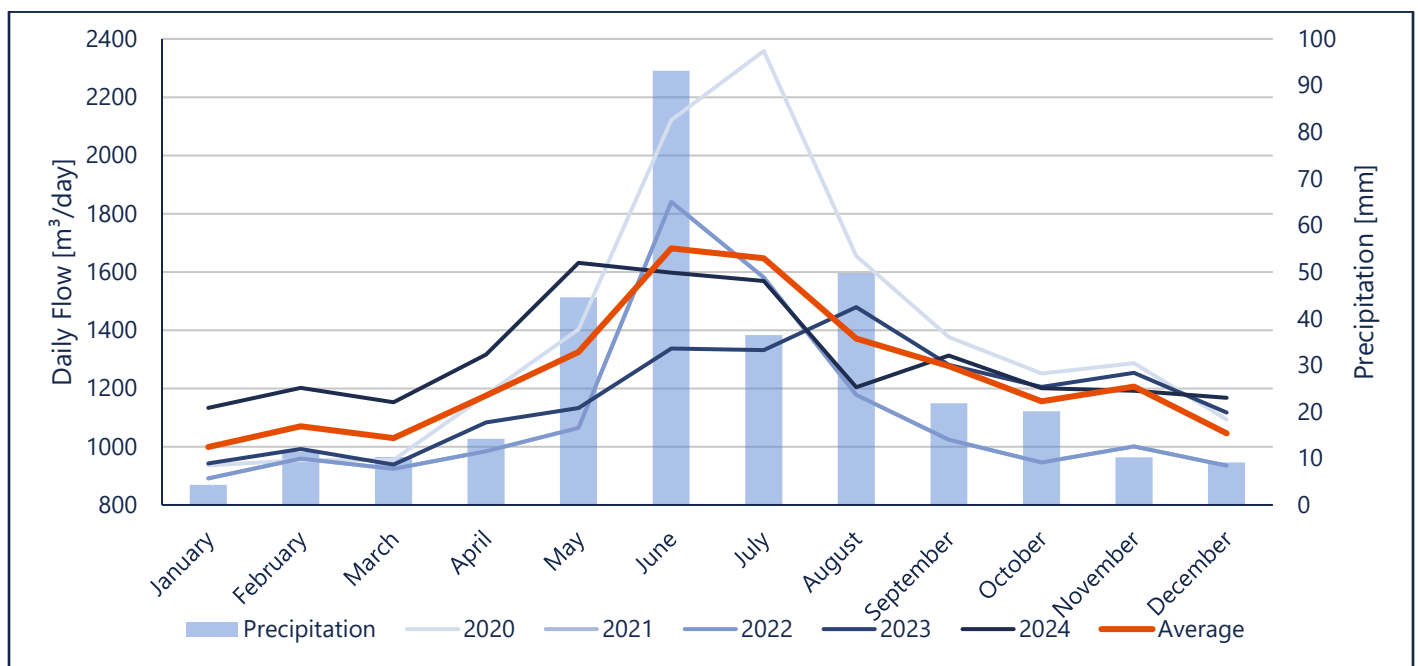
### 3.23 UPDATED WATER BALANCE

The updated flows for the Town’s effluent storage cell are reviewed, including wastewater generation, climate conditions, and irrigation practices, along with the projected discharge volumes for the next 25 years. An updated water balance was

developed to assess the additional capacity from seasonal discharge allowed by improving quality from the wetland’s treatment, and how long the WWTF can operate before the effluent storage cell reaches capacity for seasonal discharge.

Seasonal discharges are planned for April (spring discharge) and October (fall discharge), aligning with historical practices and providing a six-month interval that remains within regulatory requirements. The water balance is divided accordingly, with cold months defined as October through March and warm months as April through September. The warm months coincide with the irrigation season, when higher flows result from increased water use and seasonal rainfall. This seasonal distinction is critical for sizing the LA-MBWS, managing variability, and projecting maximum capacity requirements.

Seasonal variation in flow plays a critical role in the hydraulic loading of a WWTF, directly influencing flow rates, treatment demands, and system capacity. During warmer months, increased residential and recreational activities often lead to elevated influent volumes, placing greater demand on treatment infrastructure and reducing available capacity. Conversely, colder months may see reduced flow but increased operational complexity due to temperature-sensitive treatment methods. **Figure 3.3** overlays the seasonal monthly inflow from the WLS from 2020 to 2024 with precipitation.



**Figure 3.3: Seasonal Wastewater Inflow from West Lift Station**

Historically, summer generation has been 12.9% higher than the annual average, while winter generation has been 12.9% lower. These seasonal adjustments to the ADWF were used to calculate the warm and cold season wastewater generation.

The analysis identified the maximum capacity year as the point when projected discharge volumes exceed the effluent storage cell’s available capacity. The ADWF of the capacity year was used as the design flow for the treatment wetland.

**Table 3.7** and **Table 3.8** summarize the water balance over the next 25 years for the seasonal discharges.

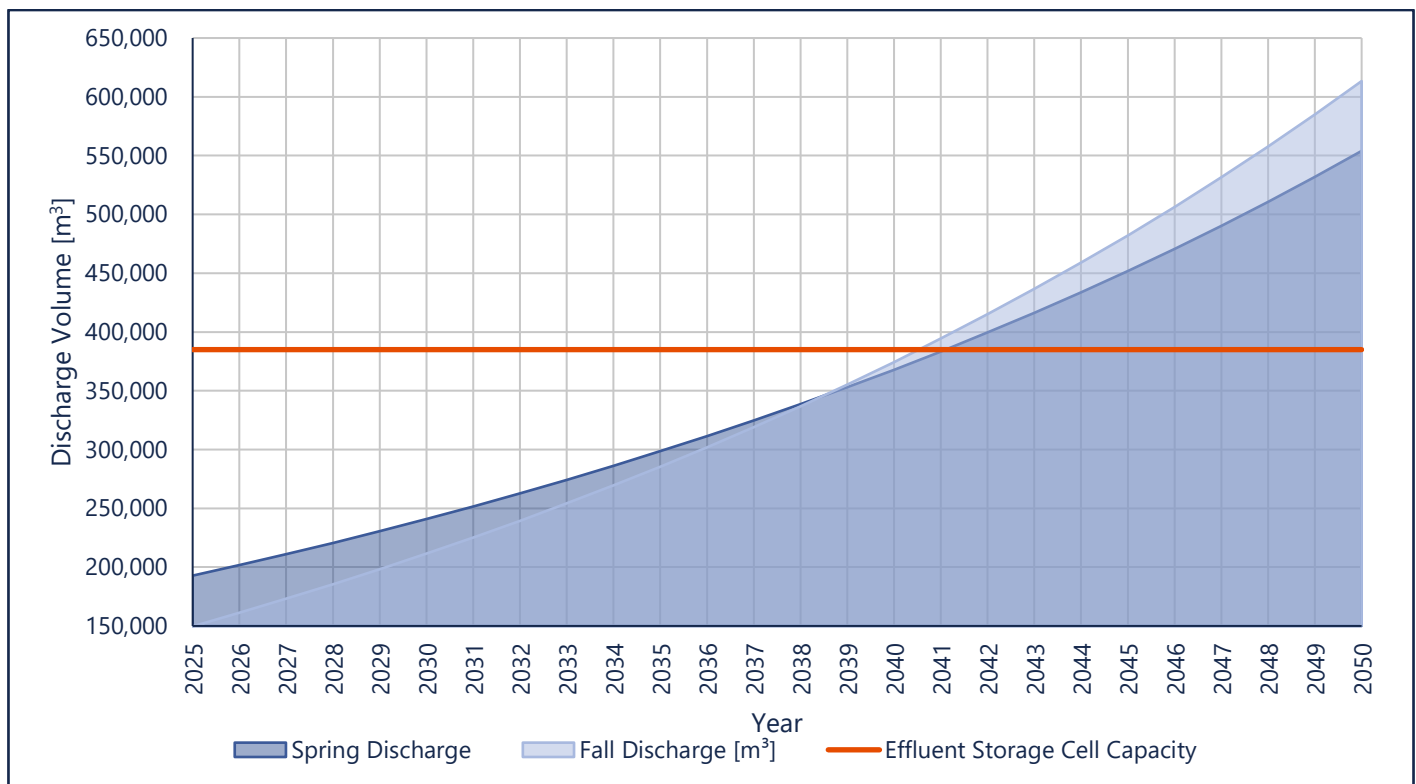
**Table 3.7: Projected Fall Discharge Water Balance**

YEAR	ADWF [M <sup>3</sup> ]	PRECIPITATION [M <sup>3</sup> ]	TOTAL IN	IRRIGATION [M <sup>3</sup> ]	EVAPORATION [M <sup>3</sup> ]	TOTAL OUT [M <sup>3</sup> ]	DISCHARGE VOLUME [M <sup>3</sup> ]
2025	277,148	54,530	331,678	60,000	120,959	180,959	150,719
2030	339,161	54,530	393,691	60,000	120,959	180,959	212,732
2035	413,285	54,530	467,815	60,000	120,959	180,959	286,856
2040	502,502	54,530	557,032	60,000	120,959	180,959	376,073
2045	610,529	54,530	665,059	60,000	120,959	180,959	484,100
2050	741,995	54,530	796,525	60,000	120,959	180,959	615,566

**Table 3.8: Projected Spring Discharge Water Balance**

YEAR	ADWF [M <sup>3</sup> ]	PRECIPITATION [M <sup>3</sup> ]	TOTAL IN	IRRIGATION [M <sup>3</sup> ]	EVAPORATION [M <sup>3</sup> ]	TOTAL OUT [M <sup>3</sup> ]	DISCHARGE VOLUME [M <sup>3</sup> ]
2025	214,674	13,718	228,392	0	36,720	36,720	191,672
2030	262,707	13,718	276,425	0	36,720	36,720	239,705
2035	320,123	13,718	333,840	0	36,720	36,720	297,121
2040	389,229	13,718	402,947	0	36,720	36,720	366,227
2045	472,904	13,718	486,622	0	36,720	36,720	449,902
2050	574,736	13,718	588,453	0	36,720	36,720	551,734

Figure 3.4 illustrates the projected seasonal discharge volumes, highlighting the capacity years.



**Figure 3.4: Projected Seasonal Discharge Volumes**

The effluent storage cell is projected to reach capacity by 2040 due to summer-season flows, which can be mitigated with irrigation expansion. Winter-season flows are expected to be constrained by 2041 regardless of irrigation expansion or adjustments to seasonal discharge.

### 3.3 REGULATORY REVIEW

This section evaluates federal and provincial regulations governing the proposed irrigation expansion and treatment wetland, alongside a summary of the STIA for temporary discharge authorization for the anticipated water quality improvements from the treatment wetland.

#### 3.3.1 FEDERAL

Developed under the *Fisheries Act* by the Government of Canada in 2012, WSER govern wastewater releases to surface water frequented by fish by systems designed to collect an average daily influent volume of 100 m<sup>3</sup> or more. WSER limits are achievable through the secondary treatment of wastewater. The Town has a current ADWF of 1,347 m<sup>3</sup>/day and discharges to Nose Creek, a fish-bearing stream; therefore, WSER applies to this system.

Authorization for intermittent wastewater treatment system discharges must ensure that the effluent is not acutely lethal and complies with target limits for deleterious substances, including CBOD, TSS, total chlorine residual (TCR), and un-ionized ammonia (UA). The effluent limits for wastewater systems are shown in **Table 3.9** (GoC 2024). TCR limits apply to facilities using chlorine as a component of wastewater treatment.

**Table 3.9: WSER Effluent Quality Requirements for Intermittent Discharge**

PARAMETER	UNITS	LIMIT
Carbonaceous Biochemical Oxygen Demand	mg/L	Average <25
Total Suspended Solids	mg/L	Average <25
Unionized ammonia, as nitrogen at 15°C±1°C	mg/L	Maximum <1.25
Chlorine	mg/L	Average <0.02
Acute Lethality	100%	Pass/Fail

Source: *Wastewater Systems Effluent Regulations (SOR/2012-139)* (GoC 2024)

Effluent is considered acutely lethal when undiluted; it kills more than 50% of the rainbow trout submerged in it over a 96-hour period. The acute lethality test must be performed by an accredited laboratory per *Biological Test Method: Reference Methods for Determining Acute Lethality of Effluents to Rainbow Trout*. (GoC 2024b). Although there is no acute lethality sampling frequency listed for systems with an average daily flow less than 2,500 m<sup>3</sup>/day, effluent must not be acutely lethal. By 2050, the Town is projected to be required to test for acute lethality.

For intermittent discharge systems, the average daily effluent volume must be calculated annually by summing daily recorded volumes at the final discharge point. Monitoring equipment is required to provide a continuous measure of influent or effluent.

#### 3.3.2 PROVINCIAL

Provincial requirements are stipulated within the *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems: Part 3 Wastewater Systems Standards for Performance and Design* (the Standards) and *Part 4 Wastewater Systems Guidelines for Design, Operating and Monitoring* (the Guidelines) (AESRD 2013). The Standards provide technical and regulatory detailed requirements on effluent quality, discharge criteria, land application practices, and system design to ensure environmental protection and regulatory compliance, while the Guidelines serve as a critical resource for design, operations, and monitoring of wastewater in Alberta.

In Alberta, wastewater treated effluent quality depends on population served, treatment technology, and the receiving stream conditions. For alternative treatment technologies not listed in the Standards, MAGNA has engaged extensively with the Province of Alberta to ensure AEPAs approval of the process and performance evaluations for innovative technologies.

## WATER QUALITY

Requirements for effluent disposal to water in Alberta dictate that wastewater lagoons designed and operated per AEPA standards are allowed to seasonally discharge without any effluent limits or requiring a Water Quality Based Effluent Limit (WQBEL) study. In all other cases, as per Policy 1-2 in the *Municipal Effluent Limits - Policy and Overview* (AEPA, 2024, p1-1), “when treated municipal wastewater is discharged to a water body, the effluent limits will be based on adopting the more stringent requirement of technology or water quality-based assessments.”

The water quality impact approach applies effluent limits based on the ability of the water body to receive the effluent and its associated contaminants while still maintaining instream water quality objectives. This is evaluated through receiving water assessments using the *Water Quality Based Effluent Limits Procedures Manual* (AEP, 1995). MPE is currently conducting a receiving water quality assessment to determine effluent quality objectives for more frequent discharge to Nose Creek. Due to the ephemeral nature of Nose Creek, and poor existing water quality, it is expected that this study will impose strict effluent limits on discharge to the creek that will not support development in the community.

The technology-based assessment uses design effluent standards based on established technology that is technically proven to meet a minimum required treatment level. These are categorized by their ability to remove certain conventional pollutants. For smaller communities with a population under 20,000, this only includes the ability to remove or reduce organic matter, measured by CBOD and TSS. Best practicable technology and technology standards for municipalities with a current population of less than 20,000 are shown in **Table 3.10**.

**Table 3.10: Best Practicable Technology Standards for Municipalities with Current Population <20,000**

TYPE OF SYSTEM	PARAMETER(S)	DESIGN STANDARD
Secondary (mechanical)	CBOD TSS	25 mg/L 25 mg/L
Aerated lagoons	CBOD	25 mg/L
Wastewater Lagoons <sup>1</sup>	None defined	None defined

1. Lagoons built to the specified design configuration and drained once a year between late spring and fall do not have a specified effluent quality standard.
2. Source: *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems* (AESRD 2013)

In addition to discharge requirements, effluent intended for irrigation must meet a separate, more stringent set of water quality standards to ensure environmental safety and agricultural suitability. Treated wastewater must be sampled at the irrigation distribution system inlet and analyzed for quality twice per year, once before and once after major irrigation events. The treated effluent quality for wastewater irrigation shall meet the standards specified in **Table 3.11** for the disposal to land outlined in the *Guidelines for Municipal Wastewater Irrigation* (AESRD 2000).

**Table 3.11: Quality Requirements for Wastewater Reuse for Irrigation**

PARAMETER	STANDARD
Total Chlorine Residual (TCR)	< 2.0 mg/L
Carbonaceous Biochemical Oxygen Demand (CBOD)	< 100 mg/L
Chemical Oxygen Demand (COD)	< 150 mg/L
Total Suspended Solids (TSS)	< 100 mg/L
Electrical Conductivity (EC)	< 2.5 ds/m
Sodium Adsorption Ratio (SAR)	< 9
pH	6.5 to 8.5

Source: *Guidelines for Municipal Wastewater Irrigation* (AE, 2000) and *Code of Practice for Wastewater Systems Using a Wastewater Lagoon* (AE, 2003)

## MONITORING

AESRD classifies monitoring into three main types: operational monitoring, compliance and treatment performance monitoring, and issue-specific or follow-up monitoring. **Table 3.12** highlights the operational monitoring for wastewater lagoons.

**Table 3.12: Wastewater Lagoon Operational Monitoring**

REQUIREMENTS	MONITORING FREQUENCY
Dates and Duration of Discharge	Annually, for every discharge
Discharge Volume	Annually, for every discharge
Inspection of Discharge Route	Prior to each discharge the discharge route should be inspected to identify changes / site-specific concerns and modify discharge practice, as necessary. Issues such as stream flows, other discharges either upstream or downstream, stream blockage, etc., should be documented and addressed, as necessary.

**Table 3.13** highlights the treatment performance and compliance monitoring for intermittent discharge aerated lagoons designed for a population of less than 20,000.

**Table 3.13: Aerated Lagoons Treatment Performance and Compliance Monitoring (Population <20,000)**

PARAMETER	POINT OF MEASUREMENT	REQUIREMENT	TYPE OF SAMPLE	MINIMUM MONITORING FREQUENCY
CBOD	Prior to storage cell	Monthly average of weekly samples shall not exceed 25 mg/L	Grab	Weekly during the period of discharge to storage cell
CBOD	Prior to outfall	None	Grab	Once, on the second day of the discharge period. Discharge period should not exceed three weeks unless local conditions preclude this rate of discharge.

## SETBACK DISTANCES

Setback distances from wastewater treatment facilities, whether lagoons or mechanical plants, are established to minimize odour impacts, ensure public safety, and protect surrounding infrastructure such as buildings and roads. These setbacks help avoid odour and disturbance issues during standard plant operations. Setback distances for wastewater lagoons and mechanical treatment plants, including aerated lagoons, can be found in **Table 3.14**. The setback distances for all best practicable technologies are identical.

**Table 3.14: Minimum Setback Distances**

DISTANCES ARE FROM THE "WORKING AREA" OF THE SYSTEM TO	TREATMENT FACILITY SETBACK <sup>2</sup> [M]	IRRIGATION AREA <sup>2</sup> SETBACK [M]
The property line of the land where the system is located	30	15
The designated right-of-way of a rural road or railway	30	30
The designated right-of-way of a primary or secondary highway	100	30
A "building site" <sup>1</sup> for school, hospital, food establishment, or residential use	300	60 Preferred 100

Source: *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems (AESRD 2013)*

1. Minimum setback distance from the "working area" of the system to a "building site" on the property of a "privately owned development" which the lagoon serves may be reduced to 100 m.
2. Setback distances may be varied with the written consent of the "Director."

### 3.3.3 TEMPORARY DISCHARGE AUTHORIZATION

Capacity constraints are the primary factor prompting small communities to consider upgrading or expanding their wastewater lagoon systems. In systems with seasonal discharges, capacity is typically limited by both storage volume and the ability to release effluent within a defined discharge window, which is generally restricted to a single three-week period annually in either the spring or fall.

To implement more frequent or higher-volume discharge windows, municipalities are required to obtain approval under the *Environmental Protection and Enhancement Act* (EPEA). Discharge limits are established through this approval process and are informed by the findings of a WQBEL study, which assesses the capacity of the receiving stream to accept a discharge without significant negative effects successfully. A lagoon treatment system cannot typically meet the WQBEL requirements, meaning municipalities would need a full mechanical treatment plant to meet the discharge objectives. These are often quite costly in comparison to the comparative benefit for a community, making this option for most small municipalities not financially sustainable.

To address this, MAGNA has engaged with AEPA to develop the STIA as a policy framework to allow a Letter of Authorization (LOA) to be issued to a municipality for an interim approval of an additional discharge under the existing *Code of Practice for Wastewater Systems using a Wastewater Lagoons* (AE, 2003). It serves as a pragmatic “bridge” solution, enabling the Town to accommodate population growth without the prohibitive costs and delays associated with the current EPEA Approval process. While not yet formally adopted by AEPA, the department has expressed its support for piloting this approach in the town of Crossfield to evaluate and refine the methodology.

The STIA adopts a threshold of 20,000 people or 10,000 m<sup>3</sup>/day (based on 500 L/person/day), whichever occurs first, as the practical cut-off for distinguishing small systems from large ones. This threshold aligns with practices in Alberta and other jurisdictions, recognizing the point where system scale, complexity, and risk warrant heightened regulatory scrutiny. The Town’s current and projected population falls under this threshold, making it an appropriate candidate for the proposed interim process.

The STIA methodology involves developing the following components for inclusion in an application to AEPA:

1. Receiving Stream Risk Profile
2. Proposed Discharge Regime
3. Monitoring Plan

For this feasibility study, the Proposed Discharge Regime will be the focus to determine the required effluent wastewater quality of the Town’s WWTF for temporary discharge authorization.

#### **PROPOSED DISCHARGE REGIME**

The STIA Guidelines recommend that a second discharge be allowed for the duration the term of the LOA, providing the Town with a defined grace period to address capacity limitations while enhancing monitoring opportunities for both effluent quality and receiving water health. The timing of discharge events should be evaluated in the context of the receiving stream’s flow characteristics to optimize dilution, minimize flood risk, and avoid sensitive ecological periods such as fish spawning. The timing of the additional discharge is assessed through the development of the receiving stream risk profile.

The proposed approach sets new effluent concentration limits based on maintaining the same total annual mass load of CBOD and TSS as the current single-discharge regime. By distributing the same mass over a greater volume or more frequent discharges, effluent concentrations must be reduced proportionally. This helps minimize acute effects on the

receiving creek by lowering peak concentrations during discharge events, while chronic impacts remain unchanged, as the total yearly loading to the system does not increase.

Yearly mass loads for CBOD and TSS are calculated by multiplying the effluent concentration (mg/L) by the total discharge volume (m<sup>3</sup>/year) and applying the appropriate conversion factor:

$$\text{Mass Load (kg/year)} = \text{Concentration(mg/L)} \times \text{Total Volume(m}^3\text{/year)} \times 0.001$$

For an existing lagoon system discharging once annually over 21 days, the total mass load is calculated using the average daily discharge flow and effluent concentration limits of 25 mg/L for CBOD and TSS, as specified by WSER. Although WSER technically applies only to systems designed to receive more than 100 m<sup>3</sup>/day, it is assumed that lagoons designed and operated according to Alberta’s regulations (AESRD, 2013) are generally expected to meet or perform better than these limits under normal conditions. These values represent regulatory limits rather than measured effluent quality, serving as a benchmark for expected lagoon performance.

The new effluent concentration limits can be calculated using the following equation, using the discharge factor calculated above.

$$\text{Proposed Concentration (mg/L)} = \frac{\text{Existing Concentration (mg/L)}}{\text{Discharge Factor}}$$

Since two discharges are being proposed with polished effluent, the maximum discharge factor is two. **Table 3.15** details the proposed effluent limits for discharge into Nose Creek.

**Table 3.15: Proposed Effluent Quality Limits**

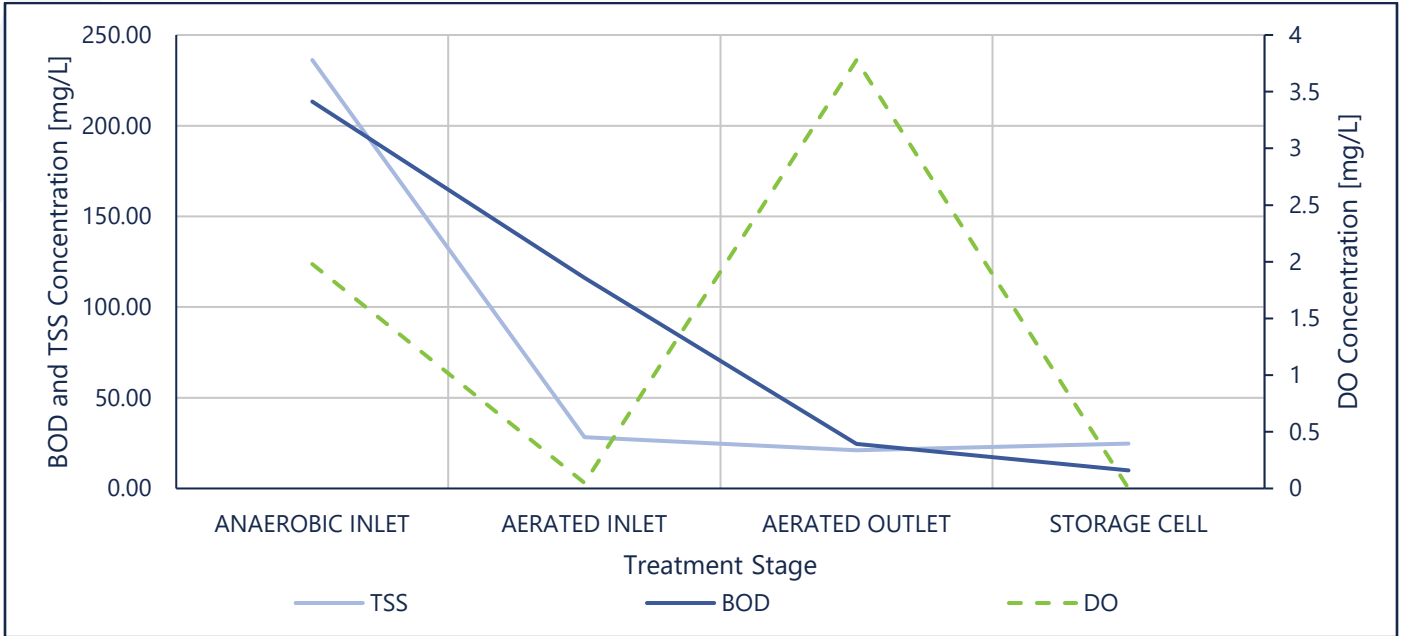
PARAMETERS	UNIT	CBOD	TSS
Existing Concentration	mg/L	25	25
Proposed Concentration	mg/L	12.5	12.5
Mass Load	kg/year	9,500	9,500

## 3.4 WASTEWATER QUALITY

This section will summarize the wastewater quality throughout the WWTF, and the existing and required effluent wastewater quality. The section gives direction on the design influent quality for the treatment wetland from the aerated cell.

### 3.4.1 INTERCELL TREATMENT

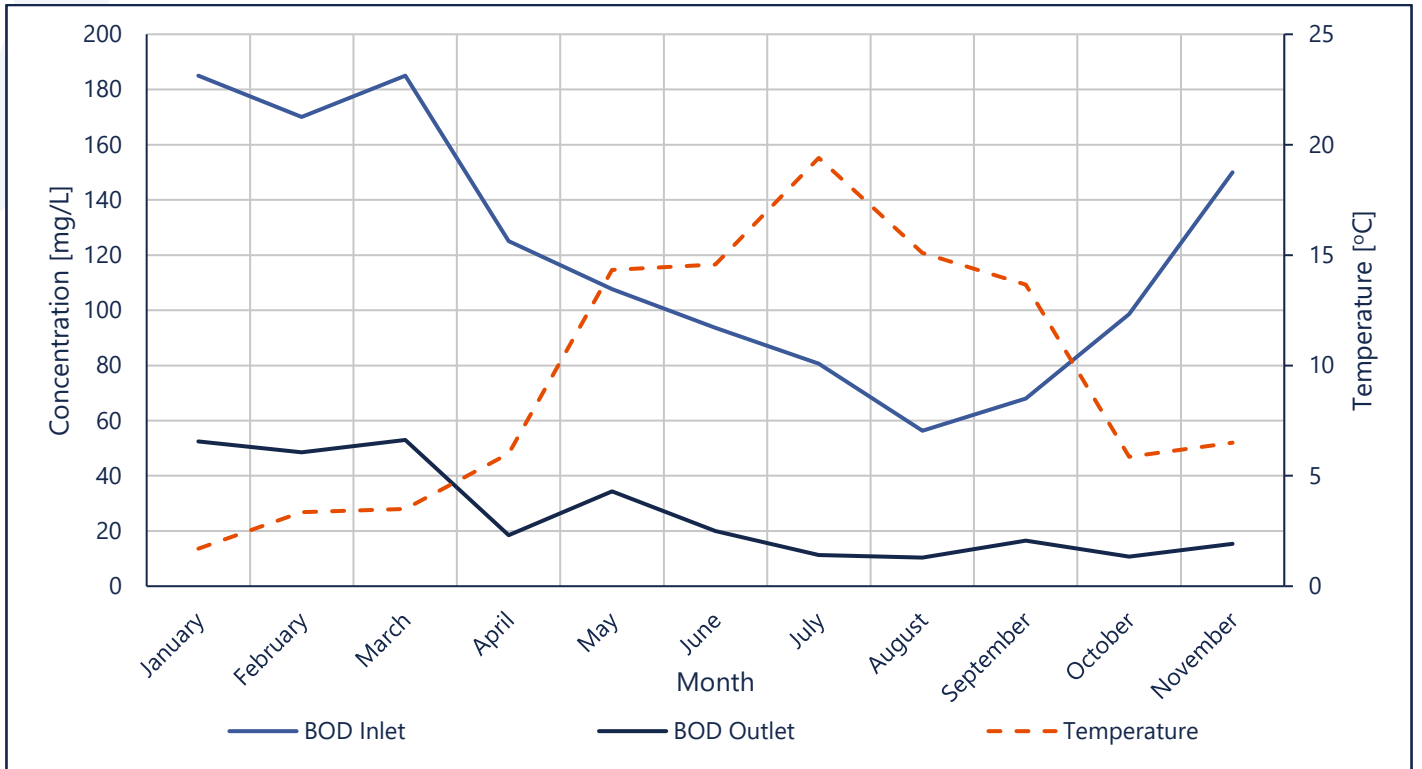
This section reviews WWTF treatment performance and treatment of wastewater before discharge to the LA-MBWS. It examines the anaerobic and aerated cells and their influence on LA-MBWS design. TSS and BOD concentrations were analyzed at each stage to assess their removal and determine the treatment capacity required for the LA-MBWS. The results of TSS and BOD removal are shown in **Figure 3.5**.



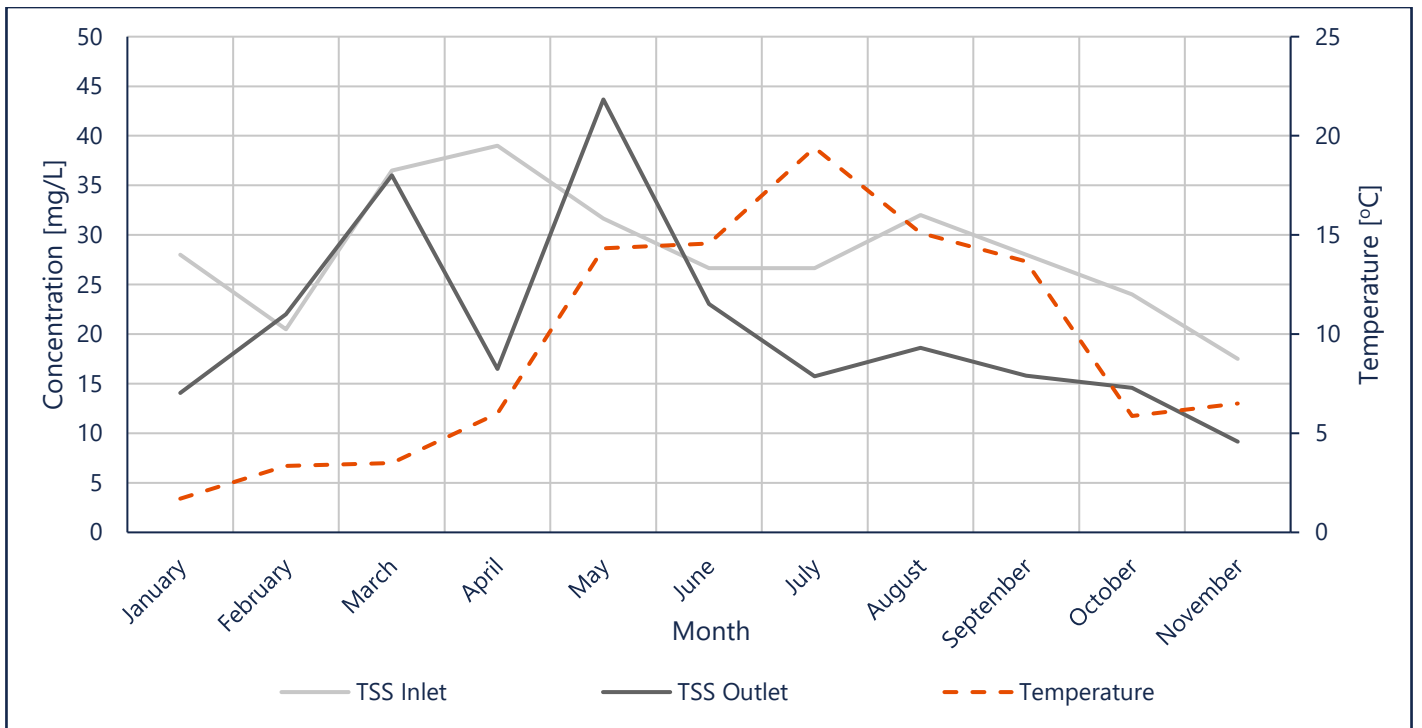
**Figure 3.5: BOD and TSS Concentrations throughout the WWTF**

**Figure 3.5** shows how each stage of the WWTF contributes to the removal of key wastewater quality parameters. These stages also demonstrate the critical pre-treatment provided for the LA-MBWS, which is detailed by treatment stage. As outlined in **Section 2.2.1**, the anaerobic cells are primarily responsible for the effective removal of most TSS, while also achieving partial BOD reduction. The subsequent aerated cell further enhances treatment by removing most of the remaining BOD to meet effluent quality standards.

Mixing from the blowers prevents substantial TSS settling, though removal can occur via convection cells that form between diffusers. (Pond Pro, 2022). To capture seasonal variations in wastewater quality, influent data is averaged monthly from 2022 to 2024. **Figure 3.6** and **Figure 3.7** illustrates the seasonal BOD concentrations entering and exiting the aerated cell.



**Figure 3.6: Seasonal BOD Removal in the Aerated Cell**



**Figure 3.7: Seasonal TSS Removal in the Aerated Cell**

While the system is designed to maintain effluent concentrations below 25 mg/L, and highlights periods of higher influent BOD and reduced treatment efficiency during colder months, which directly influence the sizing of the LA-MBWS. A decrease in BOD concentrations was observed from April to September, likely attributable to increased precipitation during this period.

The summer and winter effluent concentrations were averaged, with the higher seasonal averages selected as the baseline influent for the LA-MBWS, as shown in **Table 3.16**.

**Table 3.16: Seasonal Average Influent Wastewater Quality from 2022-2024<sup>1</sup>**

PARAMETER	SUMMER	WINTER
BOD [mg/L]	17	22 <sup>1</sup>
TSS [mg/L]	22	19

1. BOD concentrations in January to March 2023 were removed due to equipment difficulties.

A blower malfunction from December 2022 to January 2023 led to elevated effluent concentrations, averaging 75 mg/L between January and March and skewing the winter data. With the issue resolved, effluent performance improved in the 2023–2024 winter, which is considered representative of normal operations.

Although the historical estimated seasonal maximum influent concentration to the LA-MBWS is 22 mg/L, the effluent concentration is expected to rise as flows and wastewater loading to the aerated cell approach its design limit of 25 mg/L by 2030. It is assumed that the aeration system will be reviewed for operations by capacity year 2030. To incorporate contingency for variability, account for increased loading, and ensure reliable wetland performance, a design concentration of 25 mg/L was adopted as the governing case.

### 3.4.2 EFFLUENT WASTEWATER QUALITY

This section evaluates the quality of treated effluent for two potential end uses: irrigation and discharge to Nose Creek. Current irrigation water quality testing provides insight into whether the existing effluent meets the standards for safe and effective reuse in irrigation. Additionally, an assessment of effluent quality for discharge will determine whether further treatment or polishing is necessary to comply with the requirements for a Temporary Discharge Authorization.

#### IRRIGATION

As detailed in **Section 2.2.2**, the Town currently disposes of a portion of the treated wastewater by irrigating Town-owned farmland south of the effluent storage cell. As per the Standards, the Town tests the treated wastewater before irrigation for the respective parameters detailed in the Standards. The results of the irrigation sample analysis are summarized in **Table 3.17**.

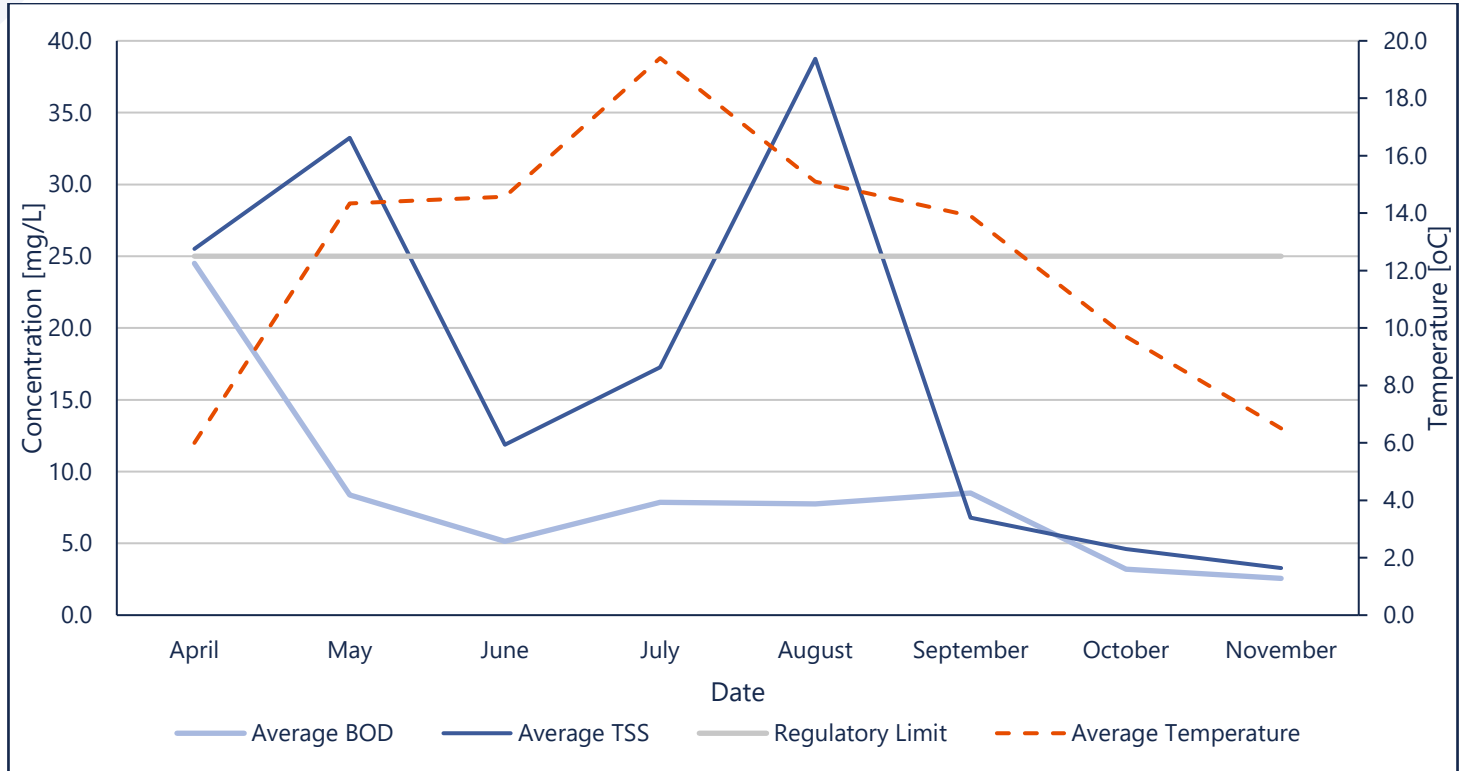
**Table 3.17: Historical Sampling Results for Irrigation**

SAMPLE DATE	CBOD [mg/L]	TSS [mg/L]	SODIUM ADSORPTION RATIO	COD [mg/L]	CONDUCTIVITY [DS/M]	pH	E. COLI DST [MPN/100 mL]	FECAL COLIFORMS [MPN/100 mL]	TOTAL COLIFORMS [MPN/100 mL]
AE Limit	100	100	<9	150	<2.5	6.5 to 8.5	N/A	200	1,000
2021-05-06	8	51	3	118	1.4	8.63	52	31	250
2023-07-28	5.6	13	3.6	80	1.5	8.24	-	-	-
2024-07-30	16	32	3.4	102	1.3	8.81	-	-	-

In above, the concentrations of the parameters are mostly within required limits for municipal wastewater irrigation. The exception to this is the pH of 8.63 in 2021 and 8.81 in 2024, which exceeded the maximum limit of 8.5 for pH. Acid can be used to adjust the pH of the wastewater for irrigation, as noted by the Town.

## DISPOSAL TO NOSE CREEK

Seasonal monitoring was conducted by the Town, which assists in assessing fluctuations in wastewater quality throughout the year. Data collected from 2022 to 2024 show BOD, TSS, along with temperature levels in the effluent storage cell remained within regulatory limits during the designated discharge period in November, as illustrated in **Figure 3.8**.



**Figure 3.8: Average BOD, TSS, and Temperature Concentrations in the Effluent Storage Cell**

Snowmelt in April can increase solids concentration due to runoff, but May showers typically reduce TSS levels in the effluent storage cell. As the precipitation increases in June, TSS concentrations decrease. However, throughout the summer, elevated temperatures lead to an increase in TSS, peaking in August. This rise, along with higher pH levels (as shown in ), may signal algae growth, which is fueled by elevated nitrogen and phosphorus concentrations.

## 3.5 GAPS AND ASSUMPTIONS

The following key assumptions underpin the design and analysis of the Town's wastewater treatment and effluent disposal systems. These assumptions reflect historical trends, current system performance, and regulatory considerations:

### EXISTING SYSTEM

- The aerated lagoon cell is assumed to consistently achieve effluent concentrations of less than 25 mg/L for both CBOD and TSS.
- The available effluent storage volume does not account for potential reductions due to liner deformation (whaling) or sludge accumulation.
- High pH in irrigation effluent is assumed to be manageable through the application of acid dosing.

### **POPULATION AND DEVELOPMENT**

- The average household occupancy rate has been updated from 2.5 to 2.7 persons per household based on recent demographic data.
- C&I land is projected to develop at a rate of 2 hectares per year, contributing an estimated 55 persons per year in equivalent population.
- No future growth is anticipated in the service area connected via the private lift station over the next 25 years.

### **FLOWS**

- Wastewater flows from the private lift station are estimated using a 1:1 ratio of wastewater to potable water usage.
- The per capita wastewater generation rate is assumed to be 225 litres per person per day.
- Future wastewater flows are assumed to increase proportionally with population growth.
- Effluent discharge to receiving environments is assumed to occur during the months of April and October.

### **SYSTEM DESIGN**

- The system is designed with the expectation that maximum hydraulic loading will occur by the year 2040.
- A design influent concentration of 25 mg/L is applied for the proposed LA-MBWS.

## 4.0 TECHNOLOGY OVERVIEW

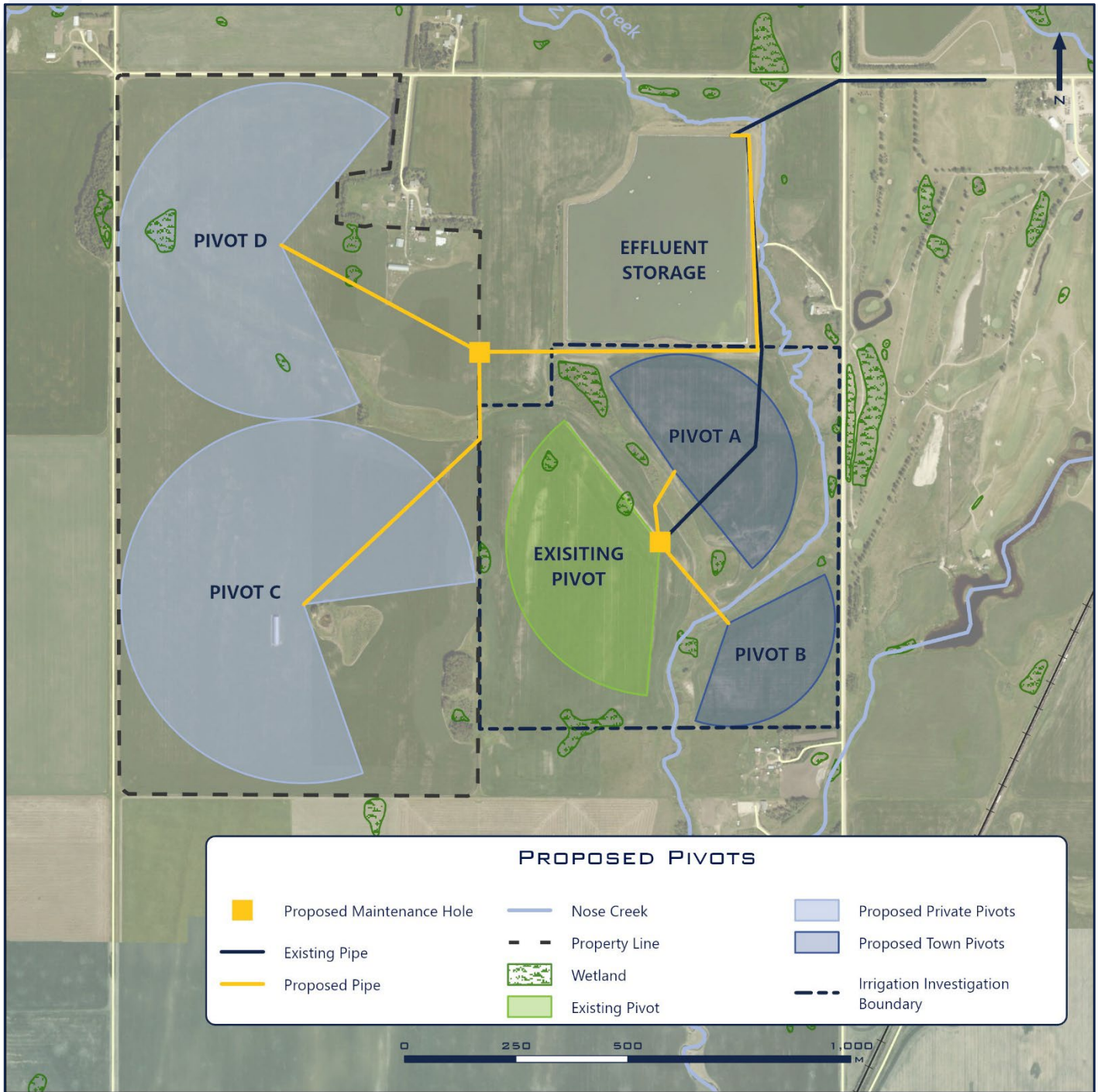
This section assesses technology options to support increased capacity at the Town's WWTF. It includes an assessment of irrigation system expansion and the implementation of a treatment wetland, using the LA-MBWS system as a representative example. Proposed designs, high-level cost estimates, phasing options and preliminary construction schedules are presented. This assessment aims to analyze the feasibility of implementing these technologies as part of a phased approach to achieving the Town's long-term wastewater treatment and disposal objectives.

### 4.1 IRRIGATION EXPANSION

The treated wastewater disposal options through irrigation are presented to address the capacity constraints of the effluent storage cell and reduce the volume of treated wastewater discharged into Nose Creek. MAGNA has assessed the feasibility of expanding the existing irrigation system, utilizing Town-owned land south of the effluent storage cell and privately owned land to the west. This expansion aims to optimize land use for the disposal of treated wastewater while ensuring regulatory compliance. The proposed pivots are expected to be operated by the same entity, employing comparable crop types and irrigation rates to facilitate a consistent comparison. The designs will be presented alongside estimated wastewater disposal volumes. A high-level cost estimate will be provided, including both total project costs and cost per additional resident served. Additionally, a preliminary construction timeline will be summarized to support planning and implementation efforts.

#### 4.1.1 IRRIGATION SYSTEM

The proposed irrigation design for the Town-owned (Pivots A and B) and privately owned (Pivots C and D) farmland is presented, outlining the required infrastructure and providing estimates of treated wastewater disposal volumes. The proposed pivots for the available farmland are designed to maximize irrigated surface area across the two available parcels. The layout of these pivots is illustrated in **Figure 4.1**.



**Figure 4.1: Layout of Proposed Pivots**

The Town’s irrigation expansion will follow a phased implementation strategy. Phase 1, scheduled to begin before 2027, includes the construction of Pivots A and B, and the acquisition of private land. These upgrades will extend the Town’s wastewater irrigation capacity until 2030, allowing sufficient time to complete land acquisition and initiate Phase 2, which involves constructing additional pivots on private land. This phased approach helps reduce capital strain on the Town and provides flexibility for planning and coordination with Phase 2.

The Town-land pivot system is designed to maximize the irrigation area while minimizing distance to the tie-in location. A maintenance hole (MH) will connect the pivots to the existing pump, which the pivots will operate at 450 GPM (half of its 900 GPM design capacity) such that both proposed pivots will operate simultaneously.

For the Private-land pivot system, pivots have been designed to avoid protected green spaces and meet all buffer zone requirements. Supporting infrastructure includes a 1,200 GPM pump with a variable-frequency drive (VFD) and pressurized irrigation piping from the effluent storage cell outlet to a new lift station at the property line. The lift station will distribute flow to pivots C and D via PVC piping.

The Town's existing irrigation diversion license will be utilized to source freshwater for field flushing. Freshwater requirements for the proposed flushing program will be quantified during detailed design to confirm compliance with the volumetric limits specified in the license. The existing dam on Nose Creek at Collicut Siding Golf Club will serve as the freshwater source for flushing. A temporary overland pump will be rented to transfer water to the irrigation parcels. Flushing of the irrigated fields is planned for late September to flush accumulated salts below the root crop zone and maintain soil health. Depending on the quantity of precipitation during the off-season, freshwater may not be necessary. As the golf course applies approximately 100 mm/year of treated wastewater, about one-third of the application rate for alfalfa, a freshwater flush is not anticipated to be necessary for the golf course. Annual costs for the flushing program have been included in **Appendix B**.

### **STORAGE CONSTRAINT**

Provincial standards (AERSD, 2013) require wastewater systems disposing effluent exclusively through irrigation to provide a minimum of seven months of storage capacity to accommodate periods when irrigation is not permitted to reduce the operational risk associated with this disposal pathway. For communities, like the Town, discharging to both waterways and to land, an engineer's risk assessment is required to determine the appropriate storage capacity based on an assessment of worst-case conditions.

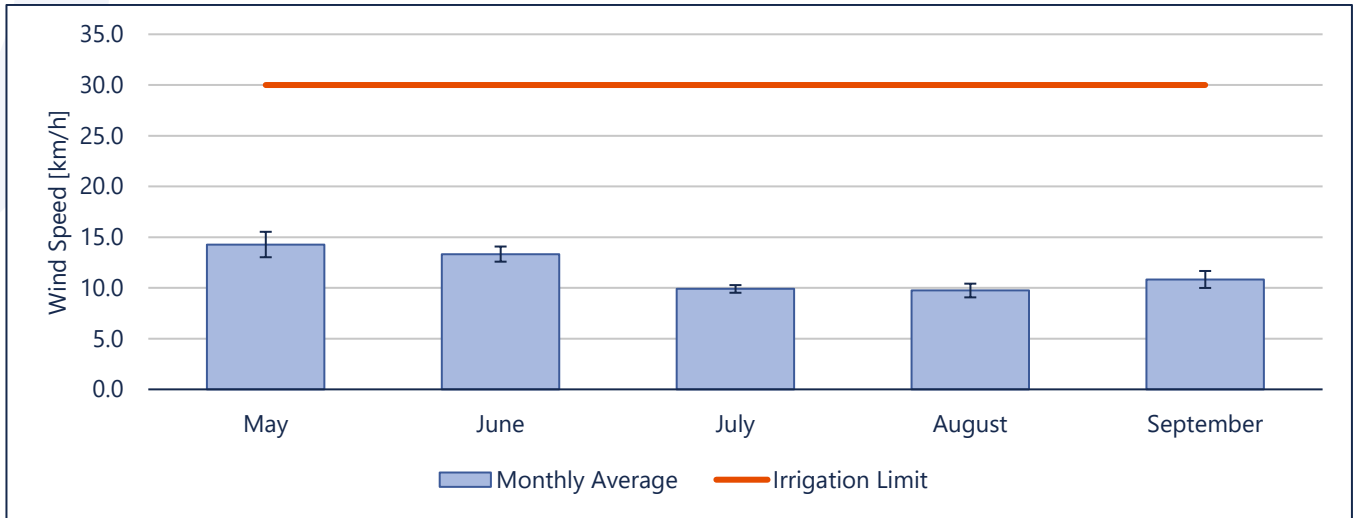
The designated irrigation season runs from May 1 to September 30, and irrigation is prohibited:

- When wind speeds exceed 30 km/hr,
- During intense or prolonged precipitation, or
- When temperatures fall below freezing (AE,2000).

This section evaluates both the wind and precipitation seen during the irrigation season in Crossfield, to provide a recommendation for the storage capacity required to adequately manage operational risk.

### **Wind Speed Risk Assessment**

Wind data was obtained from the Nier ATGM station, located approximately 9 km southwest of the Town (ACIS, 2025). Monthly wind speeds from 2016 to 2025 were analyzed, including averages and standard deviations. **Figure 4.2** illustrates the monthly average wind speeds and the range within one standard deviation (representing approximately two-thirds of observed values).



**Figure 4.2: Monthly Averaged Wind Speeds with Standard Deviation from Nier ATGM from 2016-2025**

Wind is not a significant limiting factor. Most recorded wind speeds fall well below the 30 km/hr threshold, indicating minimal risk of irrigation disruption due to wind.

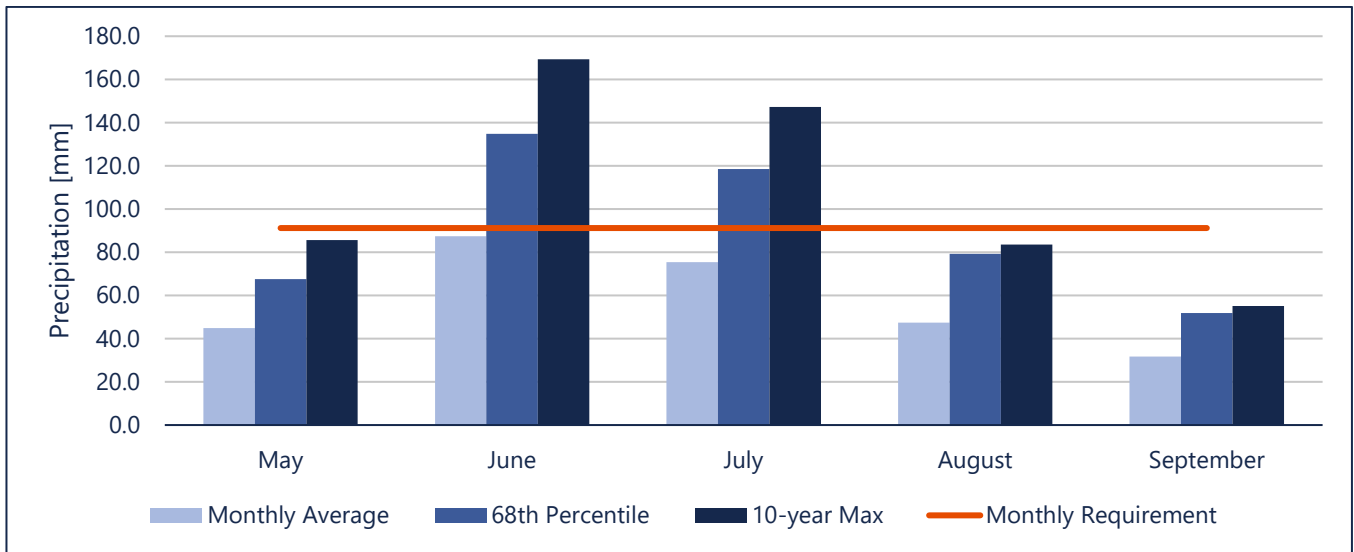
### Precipitation Risk Assessment

Precipitation data from the same station were analyzed to determine:

- The range within which two-thirds of monthly precipitation typically falls.
- The maximum monthly precipitation observed over the past ten years.

Wastewater irrigation is not recommended during intense or prolonged rainfall, as it provides little benefit to crops and increases the risk of runoff. Alfalfa, which has a net seasonal consumptive use of 506 mm (Matrix, 2016), was used as a benchmark for maximum expected water uptake, assuming a five-month growing season.

**Figure 4.3** presents the average monthly precipitation, 68<sup>th</sup> percentile, and 10-year maximums from 2015 to 2025.



**Figure 4.3: Monthly Precipitation Rates from 2015-2025**

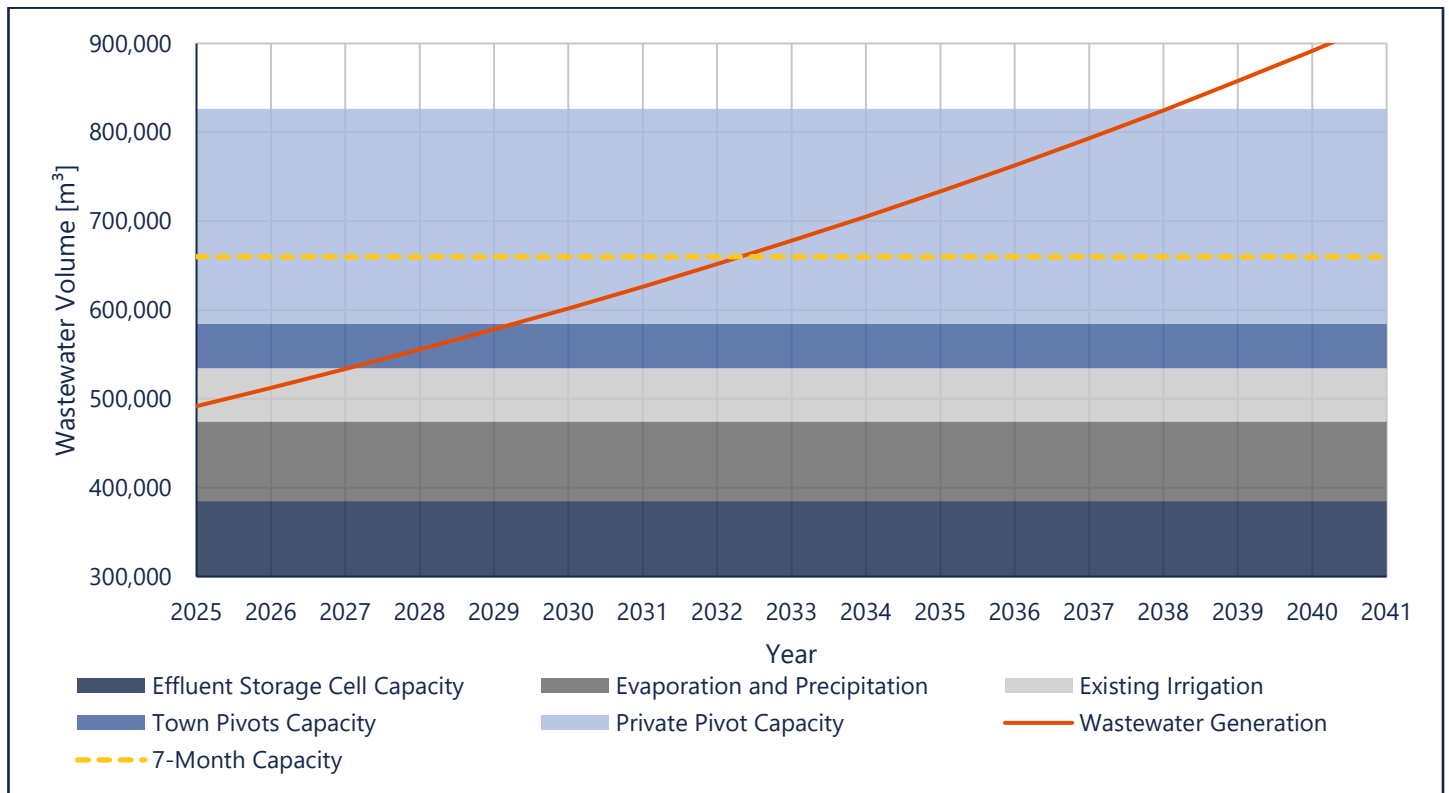
The findings from the historical data are:

- September poses the least risk for excessive rainfall.
- August is low risk.
- June and July are high-risk months due to frequent, intense, or prolonged precipitation events.
- May is moderate risk, with a 40% chance of an intense rainfall event. Historical data show that when May experiences excessive rainfall, June and July are likely to be worse, with half of the past ten years showing prolonged rainfall that will restrict wastewater irrigation.

Given the high risk of rainfall events in June and July that frequently limit irrigation volumes, MAGNA recommends maintaining the full seven-month effluent storage capacity. This approach mitigates the risk of restricted irrigation due to precipitation and provides additional flexibility to accommodate increased volumes during arid summers.

### Storage Capacity Requirements

Due to the restricted irrigation season (May 1 to September 30), the effluent storage cell must accommodate flows from October 1 to April 30. The current storage volume of 385,000 m<sup>3</sup> will reach capacity for seven months of storage in 2032, limiting the Town’s ability to fully maximize the irrigation potential of the system expansion detailed in **Section 4.1.1**. To ensure wastewater irrigation remains a viable disposal strategy, MAGNA recommends maintaining or expanding the storage capacity to meet regulatory requirements and mitigate seasonal precipitation risks. **Figure 4.4** illustrates the projected capacity increase, showing the net annual wastewater volume after accounting for existing irrigation disposal.



**Figure 4.4: Projected Wastewater Generation and Capacity Increase from Proposed Pivots**

The additional capacity available to the Town from the pivots is summarized in **Table 4.1**.

**Table 4.1: Proposed Wastewater Irrigation Pivot Summary**

PARAMETER	TOWN PIVOTS	PRIVATE PIVOTS	TOTAL
-----------	-------------	----------------	-------

Area Covered [m <sup>2</sup> ]	175,000	840,000	1,015,000
Estimated Irrigation Volume [m <sup>3</sup> ]	50,000	242,000	292,000
Estimated Additional Capacity [m <sup>3</sup> ]	50,000	77,000	127,000
Additional Supported Equivalent Population	614	941	1,555
Additional Supported Residents	449	712	1,164
Additional Dwellings Supported [units]	167	265	433

The supported equivalent population, residents and dwellings for the private pivots and total irrigation system are constrained by the storage capacity and are therefore limited to the 2032 populations. This does not realize the full potential of the expanded irrigation system. The proposed private land pivots are anticipated to dispose of approximately five times the volume of treated wastewater compared to the Town land pivots. It is assumed that the implementation of the private land pivots would occur in conjunction with the installation of the proposed Town land pivots.

### **COST ESTIMATE**

The capital cost estimate for the proposed pivot irrigation systems encompasses the purchase of the private land at its current listed price, along with costs for infrastructure and equipment, including pivot systems, pipework, a pump with a VFD, electrical infrastructure for pivot operation, and a forcemain MH for system integration. Additionally, the cost estimate covers installation and testing, construction mobilization, erosion and sediment control, surveying, and environmental protection and restoration measures. Land acquisition costs are excluded from contingency, engineering design, and construction management estimates due to their low associated risk.

The proposed pivots on both Town-owned and privately-owned land will be evaluated and summarized in terms of cost, wastewater disposal volume, and the resulting increase in capacity, expressed in equivalent persons, residents, and dwellings supported. The equivalent population supported in terms of capacity will inform how much development can be serviced in the short-term future. The cost summary of the proposed pivots is shown in **Table 4.2**.

**Table 4.2: Cost Summary for Pivots**

CATEGORY	PHASE 1	PHASE 2	TOTAL
Capital Cost	\$4,244,000	\$1,230,000	\$5,474,000
Annual O&M [\$/year]	\$5,000	\$15,400	\$20,400
Annual Leasing Revenue [\$/year]	\$7,900	\$37,500	\$45,400
Lifecycle Cost	\$4,215,100	\$678,000	\$4,893,100
Volume Actually Irrigated [m <sup>3</sup> ] <sup>1</sup>	50,400	77,298	127,698
Volume Available for Irrigation [m <sup>3</sup> ]	50,400	241,920	292,320
Volumetric Lifecycle Cost [\$/m <sup>3</sup> ]	\$84	\$9	\$38
Cost per Equivalent Person [\$/EP]	\$6,868	\$720	\$3,147
Cost per Resident [\$/resident]	\$9,316	\$952	\$4,178
Cost per Dwelling [\$/unit]	\$25,093	\$2,556	\$11,221

1. Volume irrigated constrained by seven-month storage capacity

A detailed breakdown of the capital and O&M costs is shown in **Appendix B**.

## 4.1.2 OPTIMIZED IRRIGATION SYSTEM

To address the effluent storage cell constraint, a storage cell expansion has been proposed to optimize the wastewater irrigation disposal volume. The expansion is designed for a 15-year planning horizon, with the seven-month storage capacity projected to meet requirements through 2040. The new cell will be constructed south of the existing effluent storage cell, on adjacent farmland, with an estimated surface area of 50,000 m<sup>2</sup> and a storage volume of 145,000 m<sup>3</sup>.

This expansion will increase the Town's total effluent storage capacity to 530,000 m<sup>3</sup>, providing the capacity to support seven months of storage through to 2040, and supporting future irrigation phases. Previous observations from the Town noted that only 450,000 m<sup>3</sup> of effluent could be discharged in a three-week period without causing notable downstream overland flooding. Refinement of this figure through studies of the streams' hydromorphology would be required if this option is pursued.

The proposed irrigation design for the expanded storage cell, Town-owned (Pivots A and B) and privately owned (Pivots C and D) farmland, is presented. It outlines the supporting infrastructure and provides estimates of treated wastewater disposal volumes. The proposed pivots for the available farmland are designed to maximize irrigated surface area across the two available parcels. The layout of these pivots is illustrated in **Figure 4.5**.

The Town's irrigation expansion will follow a similar phasing approach as the original design. Phase 1 will include the construction of the expanded storage cell.

The optimized irrigation system will largely replicate the original layout, with two notable adjustments:

- The existing irrigation line serving Town-owned land will be rerouted to accommodate the new storage cell footprint.
- Pivot A will be slightly reduced in size.

The additional capacity available to the Town from the pivots is summarized in **Table 4.3**.

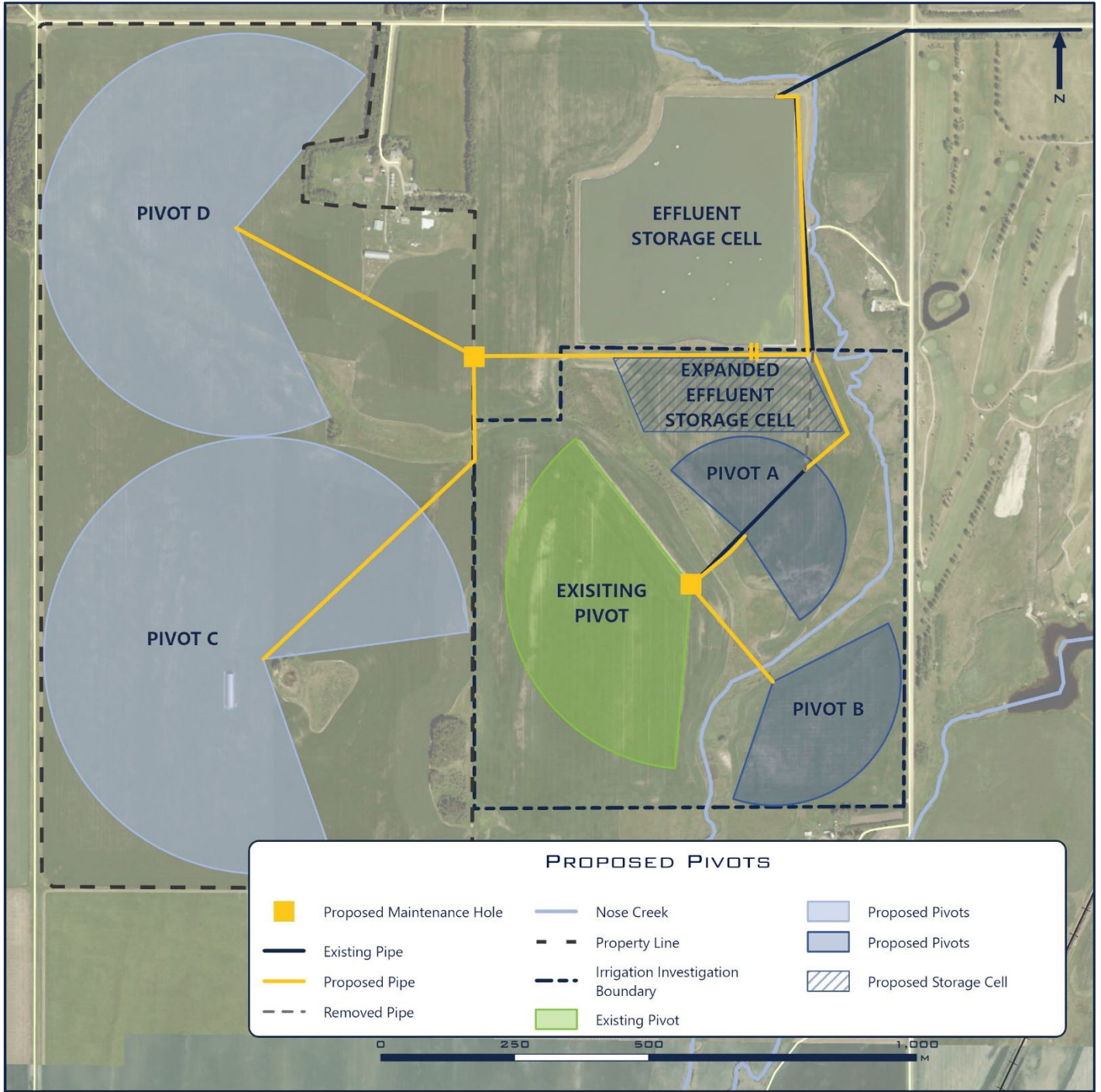
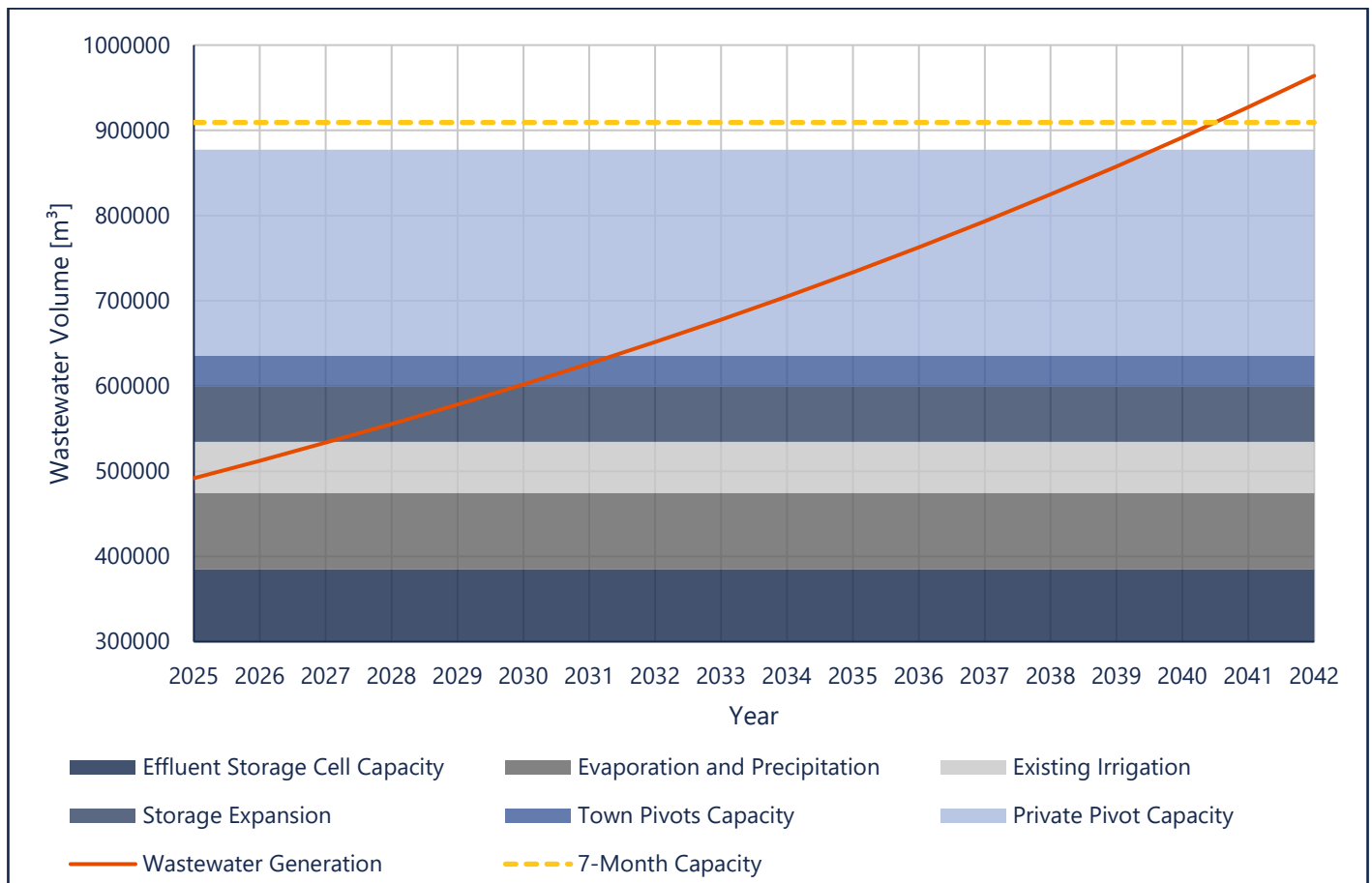


Figure 4.5: Layout of Proposed Pivots

**Table 4.3: Proposed Wastewater Irrigation Pivot Summary**

PARAMETER	PHASE 1	PHASE 2	TOTAL
Irrigation Area Covered [m <sup>2</sup> ]	125,000	840,000	1,015,000
Storage Cell Area [m <sup>2</sup> ]	50,000	N/A	50,000
Volume Irrigated [m <sup>3</sup> ]	35,000	242,000	277,000
Additional Discharge Volume [m <sup>3</sup> ]	145,000	-	145,000
Additional Supported Equivalent Population	2,075	2,275	4,350
Additional Supported Residents	1,550	1,790	3,340
Additional Dwellings Supported [units]	575	665	1,240

**Figure 4.6** illustrates the projected capacity increase, showing the net annual wastewater volume after accounting for existing irrigation disposal.



**Figure 4.6: Projected Wastewater Generation and Capacity Increase from Proposed Pivots**

**COST ESTIMATE**

The proposed pivots on both Town-owned and privately-owned land will be evaluated and summarized in terms of cost, wastewater disposal volume, and the resulting increase in capacity, expressed in equivalent persons, residents, and dwellings supported. The equivalent population supported in terms of capacity will inform how much development can be serviced in the short-term future. The cost summary of the proposed pivots is shown in **Table 4.4**.

**Table 4.4: Cost Summary for Phased Irrigation Expansion**

CATEGORY	PHASE 1	PHASE 2	TOTAL
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Capital Cost	\$9,393,000	\$1,230,000	\$10,623,000
Land Cost	\$3,600,000	-	\$3,600,000
Infrastructure and Engineering Costs	\$608,000	\$1,230,000	\$1,838,000
Storage Cell Cost	\$5,185,000	-	\$5,185,000
Annual O&M [\$/year]	\$5,000	\$15,400	\$20,400
Annual Leasing Revenue [\$/year]	\$3,850	\$37,500	\$41,350
Lifecycle Cost	\$9,450,900	\$678,000	\$10,128,900
Total Volume Disposed [m <sup>3</sup> ]	177,000	242,000	419,000
Volumetric Lifecycle Cost [\$/m <sup>3</sup> ]	\$48.50	\$2.80	\$24.20
Cost per Additional Equivalent Person [\$/EP]	\$4,560	\$300	\$2,330
Cost per Additional Resident [\$/resident]	\$6,100	\$380	\$3,040
Cost per Additional Dwelling [\$/unit]	\$16,440	\$1,020	\$8,170

A detailed breakdown of the capital and O&M costs is shown in **Appendix B**.

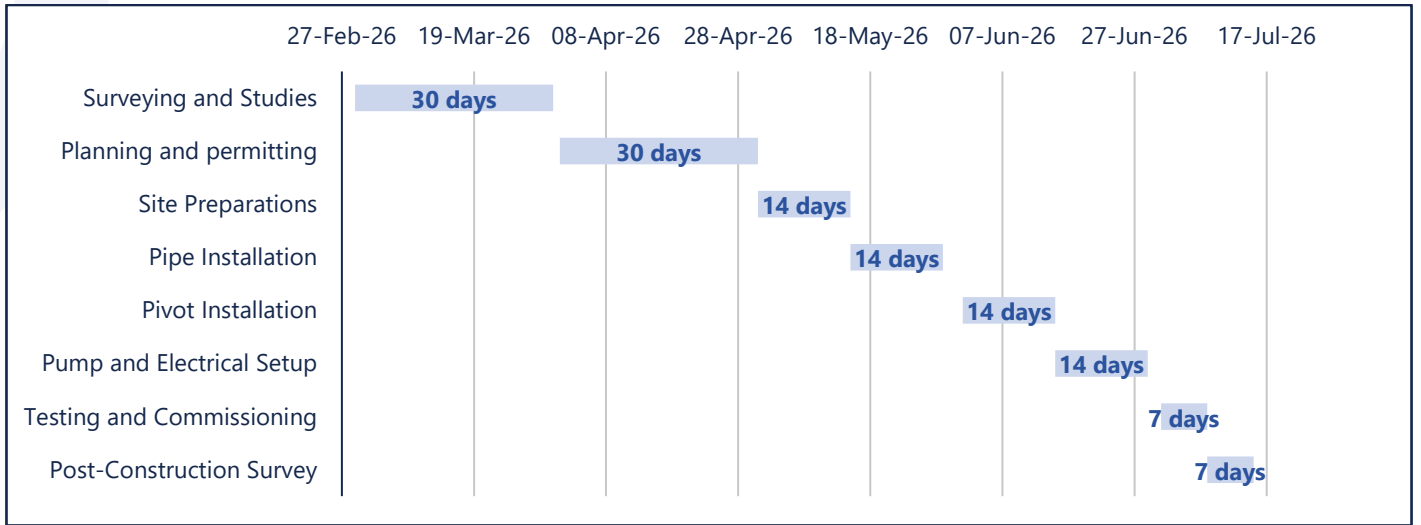
### 4.1.3 CONSTRUCTION SCHEDULE

To support the designs and opinions of probable costs, a preliminary construction schedule is presented to show the anticipated timeline for effective planning and execution of the treated wastewater irrigation system expansion. The schedule is structured into key phases:

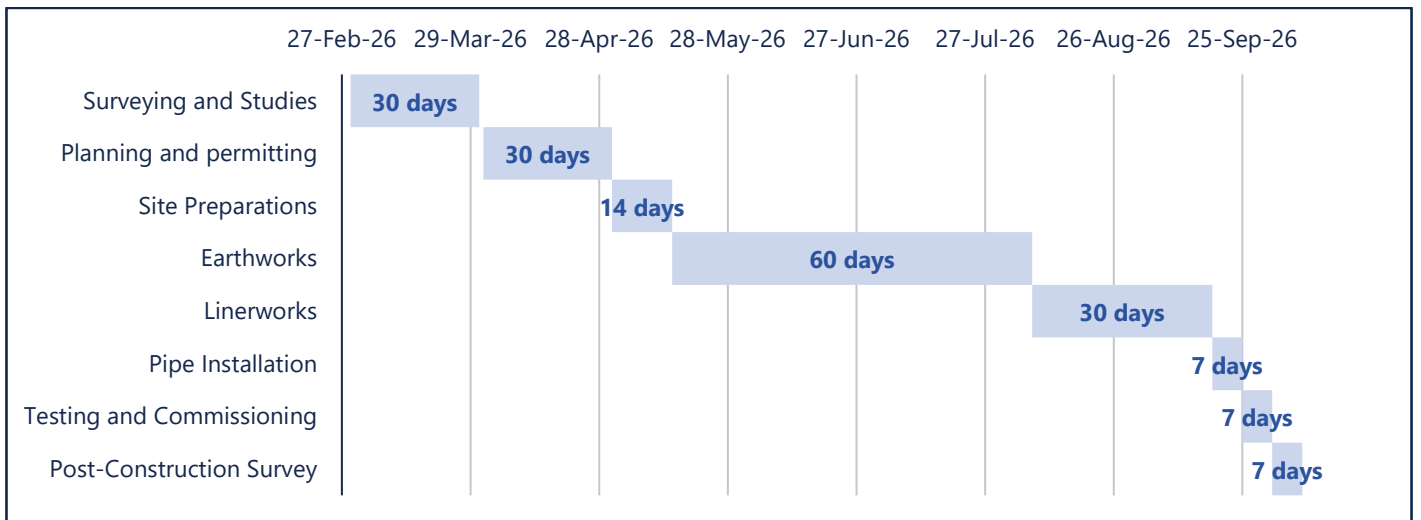
1. Planning and permitting, including land acquisition, land use change, and regulatory approvals.
2. Earthwork and Liner work, as necessary.
3. Installation of pipework, pivot systems, and infrastructure.
4. Mechanical and electrical setup, encompassing wiring, pump, and VFD integration.
5. Commissioning and surveying, incorporating pressure testing and performance evaluations to ensure compliance with Alberta Environment’s *Guidelines for Municipal Wastewater Irrigation* (AE, 2000).

#### **PHASE 1**

The construction of the proposed wastewater irrigation pivots on Town-owned land encompasses comprehensive planning and resourcing, site preparation with grading and earthworks for the pivot and forcemain, installation of the forcemain manhole, pressurized irrigation pipeline, and pivot system, setup of essential mechanical and electrical infrastructure, pressure testing and commissioning, and post-construction surveying and system startup. Gantt charts, illustrated in **Figure 4.7** and **Figure 4.8**, are presented as an anticipated timeline for the construction of the Town-land pivots and expanded storage cell.



**Figure 4.7: Estimated Construction Timeline for Town Pivots**

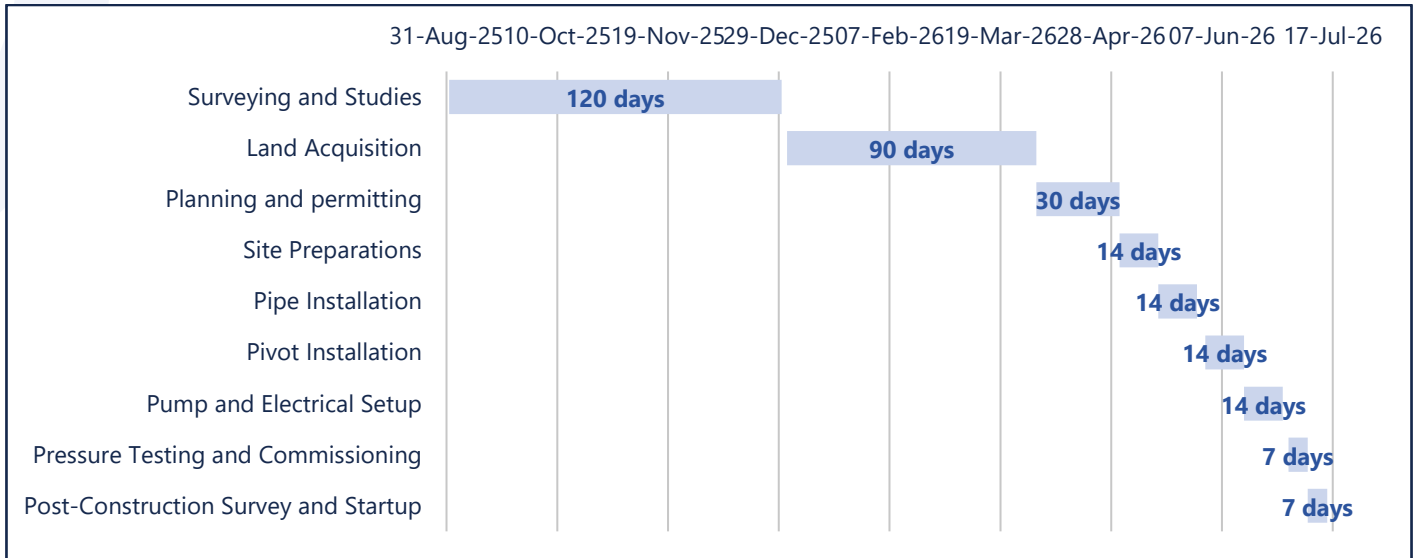


**Figure 4.8: Estimated Construction Timeline for Expanded Storage Cell**

If Phase 1 for the irrigation expansion is chosen, the Town will need to proceed quickly, as delays in design, equipment procurement, tendering, and construction may exceed the Town’s available storage capacity.

**PHASE 2**

The construction of the proposed wastewater irrigation pivots on private land encompasses land acquisition, comprehensive planning, permitting with Rocky View County, and resourcing, site preparation with grading and earthworks for the pivot and forcemain, installation of the lift station, pressurized irrigation piping, and pivot system, setup of essential mechanical and electrical infrastructure including the pump and VFD, pressure testing and commissioning, and post-construction surveying and system startup. A Gantt chart, illustrated in **Figure 4.9**, is presented as an anticipated timeline for the construction of the private land pivots.



**Figure 4.9: Estimated Construction Timeline for Private Land Pivots**

Upgrades to the power source for the higher horsepower pump are expected to require eight to twelve months, while delivery of the pump and VFD could take 12–14 weeks from order. MAGNA recommends assessing power capacity early and scheduling orders for the pump and VFD in advance of pivot construction.

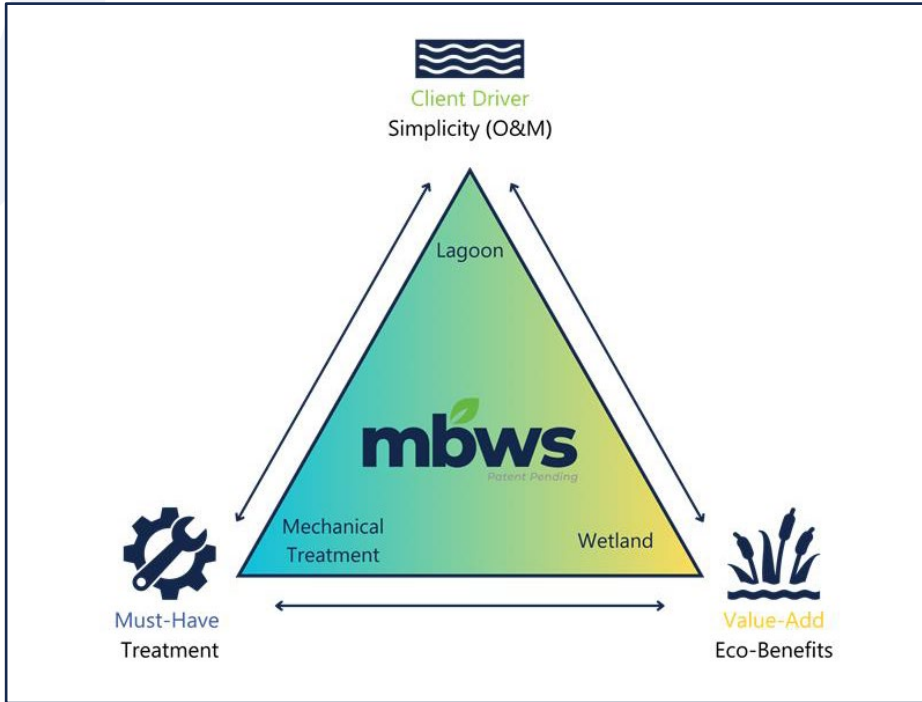
## 4.2 TREATMENT WETLAND

This section outlines a treated wastewater polishing option to support authorization for temporary discharge, addressing both effluent storage capacity constraints and reducing acute loading to Nose Creek during discharges. MAGNA evaluated the feasibility of an LA-MBWS as a cost-effective treatment wetland to polish effluent to the target limits defined in the STIA while ensuring regulatory compliance. The proposed design is presented with estimated wastewater disposal volumes, a high-level cost estimate, including total project costs and cost per additional resident served. Additionally, a preliminary construction timeline will be summarized to support planning and implementation efforts.

### 4.2.1 LA-MBWS

The MBWS™ was designed with rural and Indigenous communities as the audience. These communities are often offered traditional solutions that include costly, complex mechanical treatment plants, which require extensive O&M. In addition to high upfront capital costs, these can also require costly resources for O&M. The MBWS™ is a simple passive treatment system that does not require chemicals and can be operated by a Class I or II operator.

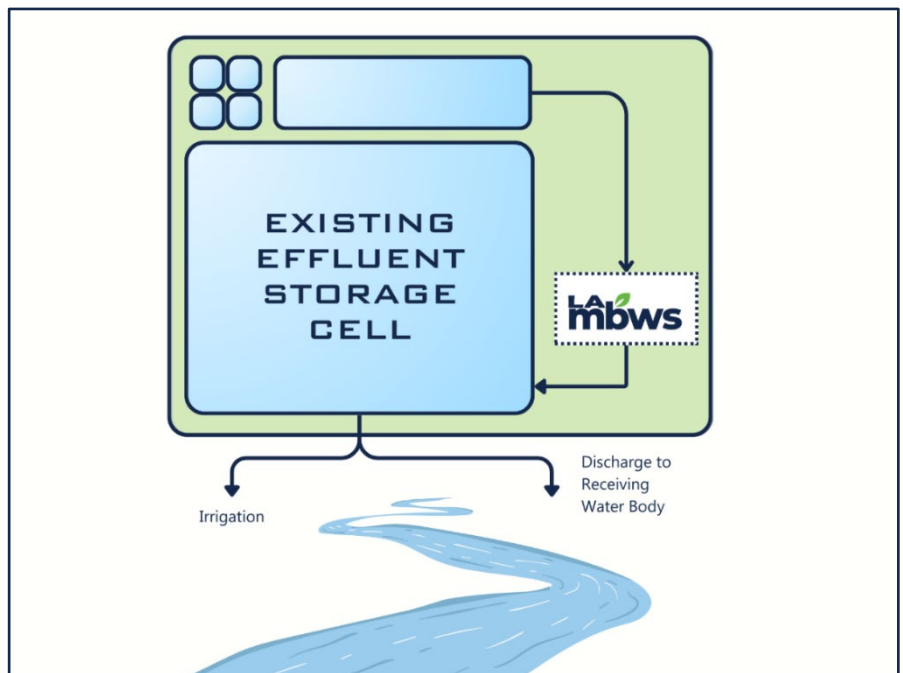
As shown in **Figure 4.10**, the MBWS™ was designed with the intent of improving on the drawbacks of existing wastewater treatment technologies, like lagoons, wetlands, and mechanical treatment plants. It strikes a balance between treatment performance, simplicity (O&M), and eco-benefits.



**Figure 4.10: Benefits provided by the MBWS™**

The LA-MBWS is a refined and small-scale application of the MBWS™, a modular engineered subsurface wetland system. It uses a similar modular system integrated into a wastewater lagoon as an additional polishing step. Following treatment, the polished effluent can be discharged into the receiving stream or used for irrigation purposes. The general layout for an LA-MBWS is shown in **Figure 4.11**.

Although lagoons alone are a widely used wastewater option across Alberta, their treatment efficacy is hindered in cold temperatures. Similar to the full-size MBWS™, the LA-MBWS is designed to perform well in cold climates using subsurface flow to prevent freezing. Subsurface wetland systems (also known as subsurface flow wetlands) do not resemble the more common natural surface flow wetlands because they have no standing water. They contain a bed of media (such as crushed rock, small stones, gravel, sand, or soil) and vegetation planted on the surface. When properly designed and operated, wastewater stays below the surface of the media, flows in contact with the biofilm that grows on the media and plant roots, and becomes subject to biophysiochemical treatment processes as a result.



**Figure 4.11: General LA-MBWS Layout**

## DESIGN APPROACH

The LA-MBWS combines pre-treatment from existing lagoons, engineered wetlands, and amended media technologies to provide communities with a modular wastewater treatment solution. This system was developed in response to the needs of small communities within Canada seeking a nature-based wastewater solution that would not burden them with demanding O&M efforts and associated costs.

The LA-MBWS treats wastewater in the following three stages,

- 1. Pre-treatment:** Separation of liquids and solids through settling occurs in the anaerobic cells. Liquids are fed into the LA-MBWS without the need for additional screening, while solids are disposed of or creatively recycled. The settling minimizes the risk of operational complications and enables the wetland to function effectively as a polishing treatment unit.
- 2. Treatment Wetlands:** A modular engineered wetland used to convert liquid waste to treated effluent, the Horizontal Subsurface Flow Treatment Wetland (HSSF). Despite historical applications in other regions, this is a technique not often used in Canada.
- 3. Discharge/Reuse Opportunities:** Treated effluent is either discharged, recirculated, or captured for reuse. The LA-MBWS can assist in LOA for temporary discharge authorization.

Since the wastewater undergoes aerobic treatment in the aerated cell, the treatment unit chosen for the Town is the HSSF. This saturated, low-oxygen environment promotes the growth of functionally distinct microorganisms compared to those in aerobic. This environment is designed to promote denitrification, where nitrate gets converted to nitrogen gas and is allowed to escape to the atmosphere. Additional removal of organics, ammonia-nitrates, phosphorus, pathogens, and other effluent constituents was observed in previous applications as well. MAGNA recommends sampling nitrogen species and phosphorus throughout the existing WWTF to inform the expected removal of these nutrients with the HSSF.

## SETBACKS

**Figure 4.12** depicts the delineated setback distances and protected green spaces, indicating the designated area available for LA-MBWS development without disturbance or modification of green spaces.

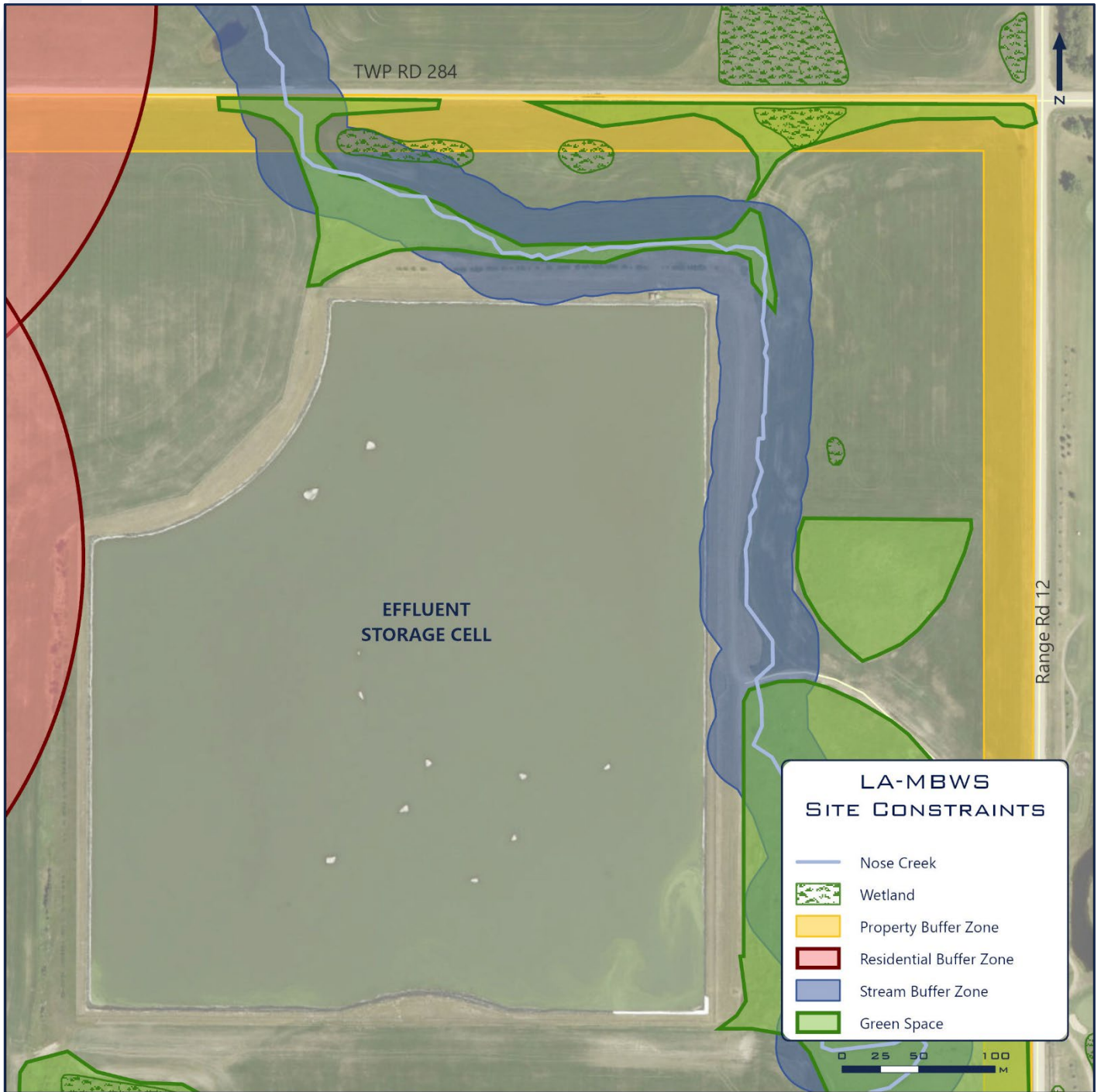


Figure 4.12: Site Constraints for LA-MBWS Placement

**PROPOSED DESIGN**

The proposed LA-MBWS will be located northeast of the effluent storage cell, positioned between the aerated cell and the effluent storage cell. The system has been sized to accommodate the projected ADWF for the year 2040, based on an expected average influent concentration of 25 mg/L for both BOD and TSS.

To optimize capital investment and reduce implementation risk, the system will be constructed in two phases, shown in **Figure 4.13** on page 45:

- **Phase 1** includes the installation of three wetlands, which are expected to meet capacity requirements until approximately 2032.
- **Phase 2** will add the remaining two wetlands, extending system capacity to 2040, when the Town is projected to reach its winter flow limits.

This phased approach allows for a more cost-effective rollout and supports piloting of the discharge regime before full-scale implementation.

The LA-MBWS will consist of five HSSFWS operating in parallel on Town-owned land northeast of the effluent storage cell. The wetland design incorporates N+1 redundancy, providing an additional parallel wetland beyond those expected for the projected average flows. This contingency unit allows the system to manage peak loading events, accommodate maintenance downtime, and enhance operational flexibility.

Two underground vaults at the system’s inlet and outlet will support wetland operation, water quality, and flow monitoring. The existing forcemain will connect through these vaults, with the inlet lift station housing dosing pumps and controls for sequential wetland dosing. The outlet lift station will return treated effluent to the storage cell while preventing backflow. Native vegetation will be established on the HSSFWS to enhance treatment performance through multiple mechanisms, including nutrient uptake via plant roots, creation of a rhizosphere that supports microbial activity, and improvements in substrate porosity and hydraulic conductivity. The specifications for the HSSFWS are outlined in below **Table 4.5**.

**Table 4.5: HSSFWS Specifications**

PARAMETER	SIZE
Number of trains	5
Spacing Between Trains [m]	5
Length [m]	105
Width [m]	40
Depth [m]	2
Surface Area [m <sup>2</sup> ]	4,800
Volume [m <sup>3</sup> ]	7,759

A summary of the increased volume capacity resulting from seasonal discharge is provided in **Table 4.6**.

**Table 4.6: Volume Summary from LA-MBWS Seasonal Discharge**

PARAMETER	PHASE 1	PHASE 2 <sup>1</sup>
Capacity Year	2032	2040
Season Discharge [m <sup>3</sup> ]	261,400	376,000
Total Annual Discharge [m <sup>3</sup> /year]	502,200	742,300
Additional Discharge Volume [m <sup>3</sup> /year]	117,200	240,000
Additional Equivalent Persons Supported	1,420	2,920
Additional Residential Population Supported	1,050	2,290
Additional Dwellings Supported [unit]	390	980

1. Phase 2 capacity increase is in addition to the Phase 1 capacity increase.

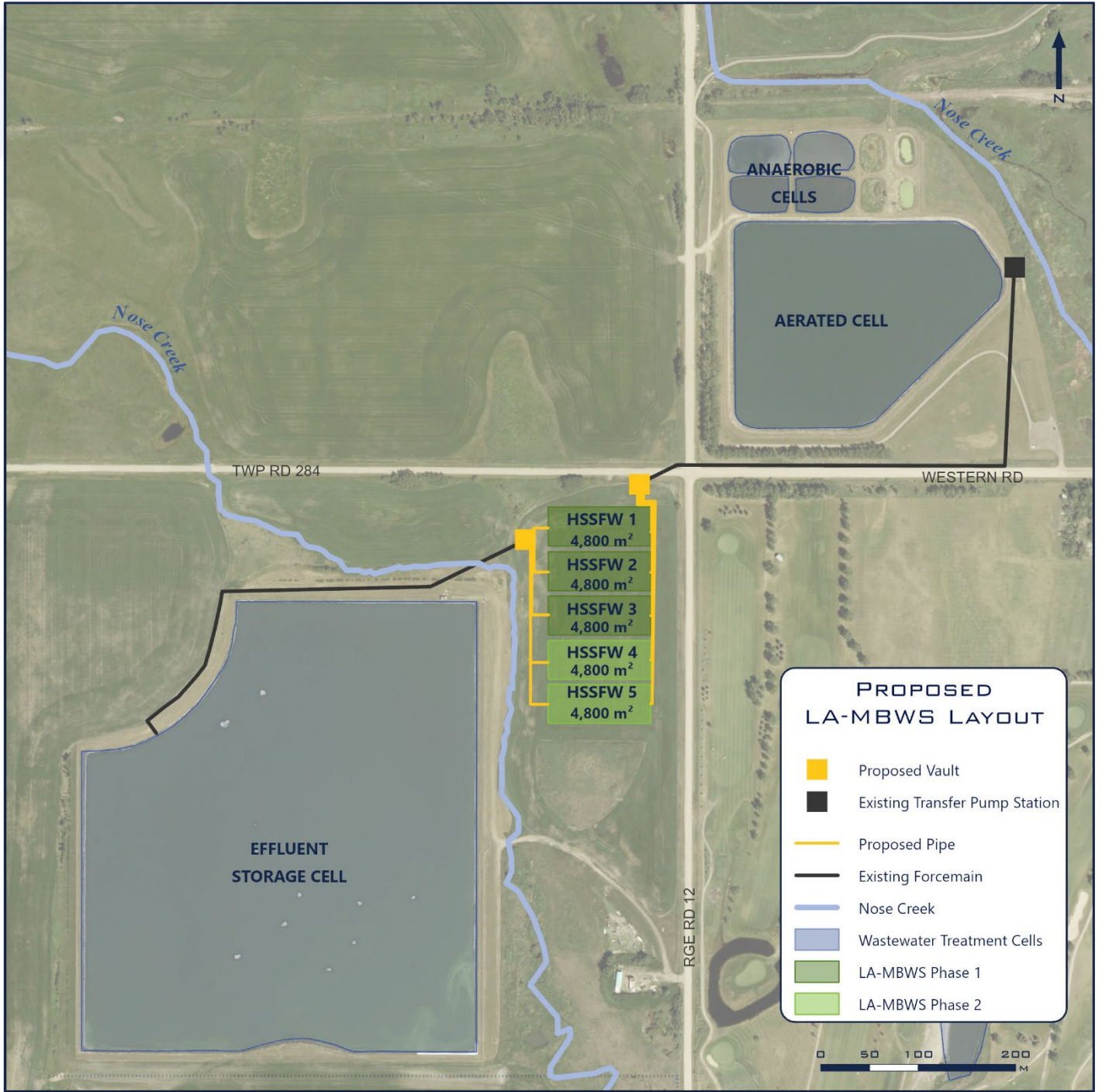


Figure 4.13: Proposed Phased LA-MBWS Layout

## 4.2.2 COST ESTIMATE

This section details the costs of installing an LA-MBWS as a pilot treatment wetland to upgrade the Town’s WWTF. The capital cost estimate covers all major construction components. It also presents operational requirements and annual O&M expenses. A 25-year lifecycle cost analysis of the LA-MBWS, with an assumed inflation rate of 5% per year, is included. Capital and O&M costs are combined and adjusted to reflect the net present cost of the system. Based on this analysis, the cost per cubic meter of effluent wastewater disposed of was calculated, resulting in volumetric costs, as well as costs per additional equivalent person and additional dwelling. These values are shown in **Table 4.7**. It is important to note that irrigation expansion was not included in the capacity increase; therefore, the 2040 capacity limit was used for this assessment.

**Table 4.7: Class "D" Total Lifecycle Cost Estimate for Proposed LA-MBWS**

CATEGORY	PHASE 1	PHASE 2	TOTAL
Capital Cost	\$3,898,000	\$2,210,000	\$6,185,000
Operations and Maintenance Annual Cost	\$1,200	\$1,200	\$2,400
Operations and Maintenance 15-year Cost	\$22,140	\$37,760	\$59,900
Life Cycle Cost	\$3,920,000	\$2,341,000	\$6,261,000
Potential Increase in Capacity [m <sup>3</sup> ]	117,200	275,500	392,700
Volumetric Lifecycle Cost [\$/m <sup>3</sup> ]	\$33	\$8	\$16
Cost per Additional Equivalent Person [\$/equivalent person]	\$2,750	\$800	\$1,450
Cost per Additional Resident [\$/equivalent person]	\$3,750	\$1,050	\$1,900
Cost per Additional Dwelling [\$/unit]	\$10,000	\$2,750	\$5,050

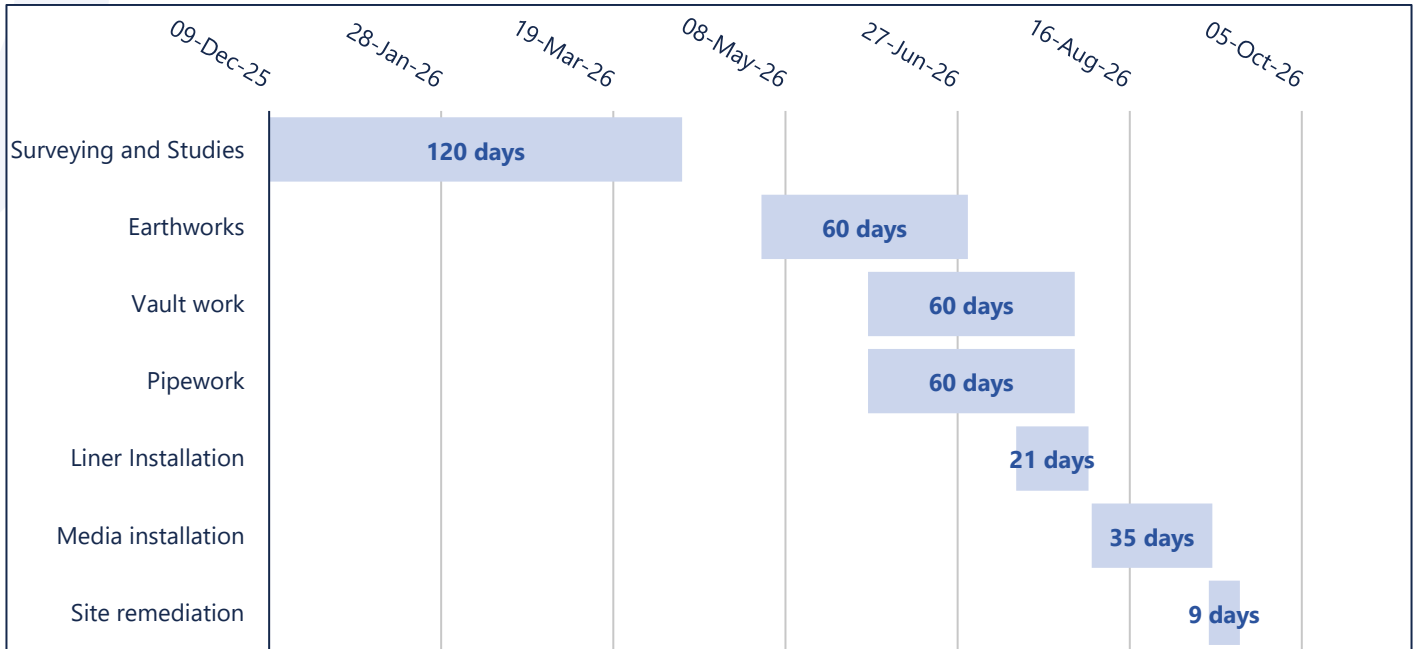
A detailed breakdown of the capital and O&M costs is shown in **Appendix B**.

## 4.2.3 CONSTRUCTION SCHEDULE

This section outlines the proposed construction schedule for the LA-MBWS, detailing the sequence of major activities required to complete the system within a single construction season. The schedule encompasses key phases, including:

- Earthworks
- Vault installation
- Pipework
- Liner installation and testing
- Media placement
- Site reclamation

Leveraging MAGNA’s experience in constructing treatment wetlands, the proposed schedule is designed to allow multiple activities to proceed in parallel where feasible. This approach minimizes construction time, reduces risks and costs associated with delays, and ensures the LA-MBWS is operational within one year. Critical path activities have been carefully identified, and seasonal considerations, such as weather windows and site access, have been incorporated to optimize efficiency. A Gantt chart, illustrated in **Figure 4.14**, is presented as an anticipated timeline for the construction of the LA-MBWS.



**Figure 4.14: Estimated Construction Timeline for LA-MBWS Construction**

As shown in the Gantt chart (), vault installation and pipework can proceed concurrently during earthworks. Pipe tie-ins must precede liner installation to ensure proper sealing. Media placement and instrumentation can be deferred to winter if needed without impacting the timeline. LA-MBWS construction is expected to take four to six months. MAGNA also recommends a geotechnical investigation at the site to monitor groundwater, assess subsurface conditions, support accurate cost estimates, and mitigate construction risks. The proposed groundwater monitoring well locations are shown in **Figure 4.15** below.



**Figure 4.15: Proposed Groundwater Monitoring Well Locations**

## 5.0 PHASED TREATMENT STRATEGY

This section examines the upgrade options to mitigate the Town’s effluent wastewater storage and discharge capacity deficit. It outlines potential funding mechanisms to support capital and construction costs for proposed treatment and disposal upgrades. A comparative assessment of the irrigation system expansion and polishing wetland is provided, highlighting operational, regulatory, and cost considerations to inform phasing and decision-making. Finally, long-term wastewater management strategies are discussed for disposal beyond 2040 and infrastructure options to meet the Town’s future growth.

### 5.1 FUNDING OPPORTUNITIES

#### **CANADA HOUSING INFRASTRUCTURE FUND**

The Canada Housing Infrastructure Fund (CHIF) is a significant initiative aimed at supporting the construction and improvement of housing-related infrastructure, including wastewater treatment and disposal, across Canada. MAGNA had already applied for the CHIF grant on behalf of the Town earlier this year, requesting \$3,535,815 for the upgrade of the existing WWTF, which would cover a minimum of 50% of project costs. An additional \$1,000,000 was requested for discharge contingency for an outfall upgrade, if required.

#### **ALBERTA MUNICIPAL WATER/WASTEWATER PARTNERSHIP**

The Alberta Municipal Water/Wastewater Partnership (AMWWP) provides cost-shared funding to eligible municipalities to help build municipal facilities for water supply and treatment, and wastewater treatment and disposal. The Town is eligible to apply for funding for both the irrigation expansion and the treatment wetland. Based on the base 2025 population of 4,511, the Town may be eligible for a grant covering 47% of eligible project costs. Eligible project costs include construction, land acquisition, utility relocation, engineering and survey fees, legal and advertising costs, other project-related expenses, and interim financing until the grant is paid. Applications must be submitted by November 30 to receive funding in the following year.

#### **WATER FOR LIFE PROGRAM**

This fund is available to municipalities for funding new regional water supply and treatment facilities, and wastewater treatment facilities. Funding is available to all regional commissions or groups of 2 or more municipalities that are eligible for funding under the ASMWWP. Both the irrigation expansion and treatment wetland projects are eligible to be funded under Water for Life. The Town received funding last year for MPE’s *Wastewater Treatment and Disposal Study* (MPE, 2024).

### 5.2 INTERIM OPTION COMPARISON

The original intent of this Master Plan was to recommend a phased implementation of both an irrigation expansion and an LA-MBWS; however, as both options are constrained by the available winter storage capacity of effluent, the phased implementation provides no benefit, without the construction of significant additional storage capacity. Therefore, a comparative analysis of the two options has been conducted instead to identify the most suitable interim effluent disposal strategy. The irrigation expansion and the LA-MBWS have been evaluated based on capital cost, life cycle cost, capacity increase, cost per equivalent person, and the associated risks and opportunities of each upgrade option. This side-by-side comparative analysis informs the recommended strategy to address the Town’s capacity deficit. **Table 5.1** presents the cost analysis for the technology options, and **Table 5.2** outlines the risks and opportunities of each option.

**Table 5.1: Comparative Analysis of Interim Upgrade Options**

CATEGORY	IRRIGATION EXPANSION		OPTIMIZED IRRIGATION EXPANSION		LA-MBWS	
	PHASE 1	PHASE 2	PHASE 1	PHASE 2	PHASE 1	PHASE 2
Capital Cost	\$5,474,000		\$10,623,000		\$6,185,000	
	\$4,244,000	\$1,230,000	\$9,393,000	\$1,230,000	\$3,898,000	\$2,210,000
Land Acquisition	\$3,600,000	-	\$3,600,000	-	-	-
Storage Cell	-	-	\$5,185,000	-	-	-
Grant Coverage	47%		47%		47%	
	\$2,572,780		\$4,992,810		\$2,906,950	
Life Cycle Cost	\$4,893,100		\$10,128,900		\$6,261,000	
Potential Increase in Capacity [m <sup>3</sup> ]	127,400		436,900		392,700	
	50,400	77,000	195,000	241,900	117,200	275,500
Projected Capacity Year	2029	2032	2030	2039	2032	2040
Volumetric Lifecycle Cost [\$/m <sup>3</sup> ]	\$38		\$23		\$16	
Cost per Additional Equivalent Person [\$/equivalent person]	\$3,147		\$2,330		\$1,450	

**Table 5.2: Risks and Opportunities for each option**

CATEGORY	IRRIGATION EXPANSION	LA-MBWS
Opportunities	<p><b>Potential For Phased Infrastructure Upgrades</b> The Town can expand irrigation incrementally, parcel by parcel, reducing upfront capital demands and allowing for more deliberate planning of future upgrades until the effluent storage cell reaches winter capacity.</p> <p><b>Decreased Water Discharge into Nose Creek</b> Applying treated wastewater to land decreases hydraulic and nutrient loading on Nose Creek compared to seasonal discharges, supporting improved watershed health.</p> <p><b>Normal Regulatory Oversight</b> Expanding the irrigation system requires normal provincial oversight through existing approval and monitoring pathways.</p>	<p><b>Potential for Phased Expansion</b> The LA-MBWS can be implemented in phases, with each unit designed to handle one-fourth of the projected 2040 ADWF. This approach reduces upfront capital demands and allows the Town to expand capacity as needed, minimizing financial and operational risk.</p> <p><b>Minimal O&amp;M and Passive System Design</b> The LA-MBWS operates passively with pumps as the only mechanical components. Operational demands are low, requiring only routine monitoring and sampling by staff.</p> <p><b>Reduced Operational Risk Over Time</b> The LA-MBWS has been sized for and operates reliably in all weather conditions. The LA-MBWS will consistently polish the wastewater to meet seasonal discharge criteria.</p> <p><b>Improved Water Quality for Irrigation</b> Improved effluent quality minimizes the risk of solids accumulation within irrigation infrastructure, thereby reducing long-term O&amp;M costs and mitigating the potential for system blockages and performance degradation.</p>

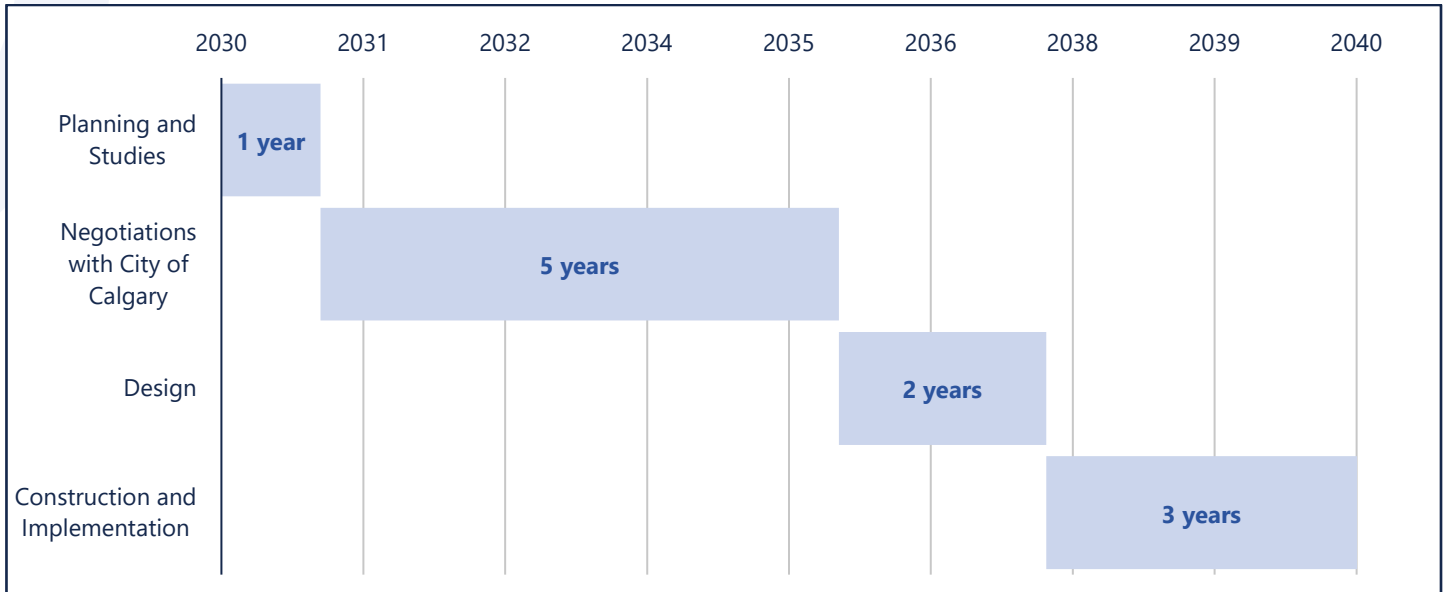
CATEGORY	IRRIGATION EXPANSION	LA-MBWS
<p style="text-align: center;"><b>Risks</b></p>	<p><b>Weather Dependency, Especially in Spring</b> Irrigation is highly sensitive to precipitation and wind. Heavy rainfall increases hydraulic loading on the effluent storage cell, while prohibiting irrigation, creating a significant risk when storage capacity is already constrained.</p> <p><b>Effluent Water Quality</b> The current treated wastewater has moderate levels of EC and SAR, along with elevated pH. Without additional treatment, there is a risk that these parameters could increase and accumulate in the soil over time, potentially degrading long-term soil health and limiting future land application suitability.</p> <p><b>Regulatory Storage Capacity</b> While the irrigation expansion extends capacity to 2038, the effluent storage cell is projected to reach its seven-month threshold by 2032. However, because the Town utilizes a dual disposal strategy, including discharge to Nose Creek, there is a strong opportunity to engage AEPA for approval to defer costly storage upgrades, thereby maximizing the use of existing infrastructure.</p>	<p><b>Regulatory Engagement and Authorization</b> Temporary discharge under STIA will require provincial and municipal coordination, with the Town piloting the approach. Securing an LOA is necessary to proceed. Ongoing engagement with the regulator is required to ensure the Town meets the objectives of the pilot.</p> <p><b>Increased Monitoring Requirements</b> As part of piloting STIA and discharging wastewater effluent more frequently into Nose Creek, the Town can expect increased monitoring obligations to ensure the proposed discharge regime is not having a worsening impact on the creek.</p>

MAGNA recommends moving forward with the phased implementation of the LA-MBWS. The LA-MBWS offers greater long-term capacity (to 2040), a lower capital and lifecycle cost, improved effluent quality, and lower operational risk. Its passive design reduces O&M demands, and its year-round climate resilience addresses key limitations associated with weather-dependent irrigation.

The LA-MBWS system can be implemented in two phases, allowing the Town to scale capacity as required while managing capital costs. While regulatory engagement under STIA is required, improving the current effluent wastewater quality and improving the relationship with downstream municipalities strengthens the case for temporary discharge approval. The regulatory risk involved in the LA-MBWS is expected to be resolved prior to detailed design and construction through pilot approval by AEPA, while the operational risk for the irrigation expansion is ongoing and dependant on external factors. Overall, LA-MBWS provides a more resilient, flexible, and environmentally protective solution for addressing current and future capacity needs.

### 5.3 LONG TERM

Regardless of the selected upgrade options, the Town’s effluent storage cell is projected to reach capacity by 2040 due to winter discharge restrictions. Because Nose Creek has little to no flow in winter, effluent cannot be discharged during this period, regardless of treatment quality. To address this, the Town must consider alternative receiving streams with year-round flow. Two options include constructing a pipeline east to the Rosebud River, the nearest stream with more capacity to assimilate wastewater flows, or establishing a regional connection to the City of Calgary via the City of Airdrie’s trunk sewers. Rosebud River has the potential for sufficient dilution capacity for a discharge, while the Calgary regional system would route effluent to the Bonnybrook Wastewater Treatment Facility before release into the Bow River. A high-level timeline for pursuing the Calgary regional option is presented in **Figure 5.1** to support long-term planning.



**Figure 5.1: High-Level Timeline for Establishing a Regional Connection**

## 6.0 CONCLUSION AND RECOMMENDATIONS

The Town’s WWTF is at a key turning point. With the effluent storage cell projected to reach capacity by 2027, an interim strategy is essential to accommodate ongoing growth while planning for a long-term solution. The *Wastewater Treatment Master Plan* prepared by MAGNA Engineering Services Inc. for the Town of Crossfield addresses the immediate capacity deficit of the WWTF by reviewing disposal and treatment options to authorize seasonal discharges. The Master Plan includes an environmental evaluation to establish transitional water quality objectives, which informs the design basis for wastewater polishing. Projected population growth, corresponding increases in wastewater flows, applicable regulations, influent wastewater quality, and required effluent quality targets are also reviewed to ensure alignment with interim management strategies.

This assessment evaluates two key options: expanding the Town’s irrigation system and implementing a polishing wetland (LA-MBWS) to enable seasonal discharges under Alberta’s emerging STIA framework. Both options present opportunities to reduce hydraulic and nutrient loading on Nose Creek and defer major capital investments. Irrigation expansion (optimized), for a lifecycle cost of \$10,128,900, provides a low-regulatory pathway to increase disposal capacity in the short term but remains highly weather dependent and does not address effluent water quality. The LA-MBWS, with a lifecycle cost of \$6,261,000, offers a passive, low-O&M alternative to polish effluent for controlled seasonal discharges, with the added benefit of potential phased implementation to manage capital costs and operational risks.

MAGNA recommends that the Town move forward with implementation of the LA-MBWS, enabling a second annual discharge. To advance this option, MAGNA recommends the Town engage with AEPA and neighboring municipalities to advance temporary discharge approvals under the STIA framework. This will relieve near-term capacity pressures, improve watershed outcomes, and provide the Town with the flexibility to pursue an alternative receiving stream or regional solution for long-term wastewater management beyond 2040.

To advance the management of the Town’s effluent wastewater capacity deficit with the recommended treatment wetland option, MAGNA recommends the following:

1. **Engage Interested Parties:** Initiate discussions with AEPA, NCWP, Rocky View County, City of Airdrie, and City of Calgary to confirm alignment with regulatory requirements and finalize transitional discharge objectives under the STIA framework.
2. **Conduct Environmental Assessments:** Conduct focused environmental impact assessments for the proposed site, including riparian conditions, stream morphology, and baseline monitoring as required under the STIA. These assessments can take place to support securing the LOA and ensure that appropriate mitigation strategies are in place for sensitive areas, such as adjacent wetlands and Nose Creek.
3. **Geotechnical Assessments:** Conduct geotechnical investigations at the proposed LA-MBWS site to identify potential subsurface conditions that may affect construction, including soil characterization and groundwater monitoring. Groundwater monitoring should be performed on a monthly basis for a full year to capture seasonal variations in water levels.

The estimated costs for the above assessments are summarized in **Table 6.1** below:

**Table 6.1: Estimated Costs for Recommended Assessments**

ASSESSMENT	ESTIMATED COST	TIMING
Riparian and Stream Morphology	\$25,000	Spring
Geotechnical Assessment	\$40,000 to \$60,000	All year <sup>1</sup>

1. *Geotechnical assessments can be conducted throughout the year; however, it is advisable to avoid the period from mid-December to early March, as work during this timeframe is typically more costly.*

4. **Investigate Power Supply Capacity:** Determine if the existing power supply can support the proposed infrastructure. Since the approvals process with the power utility can take up to a year, this should be done soon to avoid delays in the next year. Once a disposal option is chosen, the required power will be determined in the concept design.

## 7.0 NEXT STEPS

The next steps for the Wastewater Treatment Master Plan involve initiating discussions with neighbouring municipalities and NCWP to advance the piloting of the STIA and secure temporary discharge authorizations. Concurrently, the LA-MBWS concept is recommended to be developed to address capacity deficits and ensure compliance with STIA water quality guidelines. This development will provide essential data on water quality and discharge regimes, supporting interested party discussions. Progressing these efforts in parallel will streamline mitigation and facilitate discharge authorization approvals. The recommended timeframes for these next steps are outlined in **Table 7.1**.

**Table 7.1: Next Steps for Wastewater Treatment Master Plan**

MILESTONE	TIMELINE (WEEK OF)
Geotechnical Assessment and Groundwater Monitoring	ASAP
Presentation to Town Council	September 16, 2025
Presentation to Nose Creek Watershed Partnership	TBD
Engagement with Neighboring Municipalities	TBD
Pilot Discharge Application with AEPa	Fall 2025
Proceed with RFP for Concept Design of Chosen Treatment Option	Fall 2025

## 8.0 CLOSURE

This report, titled *Wastewater Treatment Master Plan*, was prepared by MAGNA Engineering Services Inc. It is intended for the use of Town of Crossfield, for which it has been prepared.

The contents of the report represent the best judgment of MAGNA Engineering Services Inc. based on information available at the time of preparation. Any use a third party makes of the report, including reliance on, or decisions made based on it, are the responsibilities of such third parties. MAGNA Engineering Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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If you have any questions about the information provided within this report, or should you wish to review this report with us, please do not hesitate to contact the undersigned.

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## 9.0 REFERENCES

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# APPENDICES



## APPENDIX A: ACRONYMS

<b>ADWF</b>	<b>AVERAGE DRY WEATHER FLOW</b>
<b>AE</b>	<b>ALBERTA ENVIRONMENT</b>
<b>AEPA</b>	<b>ALBERTA ENVIRONMENT AND PROTECTED AREAS</b>
<b>AESRD</b>	<b>ALBERTA ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPMENT</b>
<b>AMWWP</b>	<b>ALBERTA MUNICIPAL WATER/WASTEWATER PARTNERSHIP</b>
<b>BOD</b>	<b>BIOCHEMICAL OXYGEN DEMAND</b>
<b>C&amp;I</b>	<b>COMMERCIAL AND INDUSTRIAL</b>
<b>cBOD</b>	<b>CARBONACEOUS BIOCHEMICAL OXYGEN DEMAND</b>
<b>CHIF</b>	<b>CANADA HOUSING INFRASTRUCTURE FUND</b>
<b>COD</b>	<b>CHEMICAL OXYGEN DEMAND</b>
<b>DO</b>	<b>DISSOLVED OXYGEN</b>
<b>EC</b>	<b>ELECTRICAL CONDUCTIVITY</b>
<b>EPEA</b>	<b>ENVIRONMENT PROTECTION AND ENHANCEMENT ACT</b>
<b>HSSFW</b>	<b>HORIZONTAL SUBSURFACE FLOW TREATMENT WETLAND</b>
<b>LA-MBWS</b>	<b>LAGOON AUGMENTATION MAGNA BIOFILTER WETLAND SYSTEM</b>
<b>LOA</b>	<b>LETTER OF AUTHORIZATION</b>
<b>MBWS™</b>	<b>MAGNA BIOFILTER WETLAND SYSTEM</b>
<b>NCWP</b>	<b>NOSE CREEK WATERSHED PARTNERSHIP</b>
<b>O&amp;M</b>	<b>OPERATIONS AND MAINTENANCE</b>
<b>RWQA</b>	<b>RECEIVING WATER QUALITY ASSESSMENT</b>
<b>SAR</b>	<b>SODIUM ADSORPTION RATIO</b>
<b>STIA</b>	<b>SMALL TRIBUTARY IMPACT ASSESSMENT</b>
<b>TCR</b>	<b>TOTAL CHLORINE RESIDUAL</b>
<b>TSS</b>	<b>TOTAL SUSPENDED SOLIDS</b>
<b>UA</b>	<b>UN-IONIZED AMMONIA</b>



<b>VFD</b>	<b>VARIABLE-FREQUENCY DRIVE</b>
<b>WQBEL</b>	<b>WATER QUALITY BASED EFFLUENT LIMITS</b>
<b>WSER</b>	<b>WASTEWATER SYSTEMS EFFLUENT REGULATIONS</b>
<b>WSL</b>	<b>WEST LIFT STATION</b>
<b>WWTF</b>	<b>WASTEWATER TREATMENT FACILITY</b>



## APPENDIX B: CLASS “D” COST BREAKDOWNS

### STORAGE CELL EXPANSION

**Table B.1: Class “D” Capital Cost Estimate for Proposed Storage Cell Expansion**

ITEM	COST
Mobilization and Demobilization	\$334,000
Erosion and Sediment Control, and Construction Surveying	\$167,000
Earthworks, Including Stripping and Compacted Embankments	\$1,827,000
Liner with Installation	\$766,000
Pipework and Installation	\$231,000
Groundwater Wells	\$75,000
Mechanical with Installation	\$40,000
Surface Works	\$211,000
Fencing	\$103,000
Site Reclamation	\$100,000
<b>SUBTOTAL</b>	<b>\$3,854,000</b>
ENGINEERING DESIGN AND CONSTRUCTION MANAGEMENT (15%)	\$577,000
CONTINGENCY (20%)	\$768,800
<b>TOTAL</b>	<b>\$5,189,800</b>

### TOWN LAND PIVOTS

**Table B.2: Class “D” Capital Cost Estimate for Proposed Pivots on Town-Owned Land**

ITEM	COST
Mobilization and Demobilization	\$34,200
Erosion and Sediment Control, and Construction Surveying	\$19,600
Pipework with Installation	\$70,600
Pivot with Installation and Testing	\$230,000
Electrical and Mechanical	\$45,600
Pressurized Maintenance Hole	\$15,000
Environmental Protection and Restoration	\$100,000
<b>SUBTOTAL</b>	<b>\$476,800</b>
ENGINEERING DESIGN AND CONSTRUCTION MANAGEMENT (15%)	\$71,520
CONTINGENCY (20%)	\$95,360
<b>TOTAL</b>	<b>\$644,000</b>

**Table B.3: Class “D” O&M Cost Estimate for Proposed Pivots on Town-Owned Land**

ITEM	ANNUAL COST
Pump Electricity	\$1,900
Pivot Electricity	\$100
Pump Maintenance	\$250
Pivot Maintenance	\$2,000
Irrigation Sampling	\$300
Freshwater Flushing	\$350
<b>TOTAL EXPENSES</b>	<b>\$4,900</b>
Farmland Leasing	\$7,900
<b>TOTAL REVENUE</b>	<b>\$7,900</b>
<b>TOTAL ANNUAL O&amp;M BALANCE</b>	<b>\$3,000</b>



Note: An electricity Rate of 12 cents per kilowatt-hour was used per Alberta Utilities Commission's (AUC) Electricity Rates (AUC, 2025)

## PRIVATE LAND PIVOTS

**Table B.4: Class "D" Capital Cost Estimate of Proposed Pivots on Privately Owned Land**

ITEM	COST
Land Purchase <sup>1</sup>	\$3,600,000
Mobilization and Demobilization	\$66,300
Erosion and Sediment Control, and Construction Surveying	\$33,600
Pipework with Installation	\$149,800
Pivot with Installation and Testing	\$404,800
Electrical and Mechanical	\$135,800
Pressurized Maintenance Hole	\$15,000
Environmental Protection and Restoration	\$50,000
<b>SUBTOTAL</b>	<b>\$4,510,400</b>
ENGINEERING DESIGN AND CONSTRUCTION MANAGEMENT (15%)	\$136,560
CONTINGENCY (20%)	\$182,080
<b>TOTAL</b>	<b>\$4,830,000</b>

1. Listing price for the purchase of the property (Coaldale, 2025)

**Table B.5: Class "D" O&M Cost Estimate for Proposed Pivots on Privately Owned Land**

ITEM	ANNUAL COST
Pump Electricity	\$12,000
Pivot Electricity	\$600
Pump Maintenance	\$500
Pivot Maintenance	\$2,000
Irrigation Sampling	\$300
Freshwater Flushing	\$850
<b>TOTAL EXPENSES</b>	<b>\$15,300</b>
Farmland Leasing	\$37,500
<b>TOTAL REVENUE</b>	<b>\$37,500</b>
<b>TOTAL ANNUAL O&amp;M BALANCE</b>	<b>\$22,300</b>

Note: An Electricity Rate of 12 cents per kilowatt-hour was used per Alberta Utilities Commission's (AUC) Electricity Rates (AUC, 2025)



## LA-MBWS

**Table B.6: Class "D" Capital Cost Estimate of Proposed LA-MBWS**

ITEM	COST
Mobilization and Demobilization	\$407,000
Erosion and Sediment Control, and Construction Surveying	\$204,000
Earthworks, Including Stripping and Compacted Embankments	\$624,000
Liner with Installation	\$817,000
Pipework and Installation	\$240,000
Vaults	\$152,000
Mechanical with Installation	\$56,000
Electrical and Instrumentation	\$23,000
Surface Works	\$483,000
Wetland Media and Plantings	\$1,520,000
Site Reclamation	\$150,000
<b>SUBTOTAL</b>	<b>\$4,732,000</b>
ENGINEERING DESIGN AND CONSTRUCTION MANAGEMENT (15%)	\$710,000
CONTINGENCY (20%)	\$946,000
<b>TOTAL</b>	<b>\$6,388,000</b>

**Table B.7: Class "D" O&M Cost Estimate for Proposed LA-MBWS**

ITEM	ANNUAL COST
Pump Electricity	\$1,600
Pump Maintenance	\$800
<b>TOTAL O&amp;M COST</b>	<b>\$2,400</b>



**From:** Jenna Forbe

**Sent:** Tuesday, May 27, 2025, 10:54 a.m.

**To:** Mayor Kim Harris; Councillor Luke Brennan; Councillor Fox; Councillor Gustafson; Councillor Knight; Councillor Joanne Lambert; Councillor Shawn Vang

**Cc:** Katherine Hurtig

**Subject:** Request for Proclamation: National Depression Screening Day – October 9, 2025

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Dear Mayor Harris and Members of Crossfield Council,

I'm reaching out on behalf of [Counselling Alberta](#) to invite your municipality to proclaim **October 9, 2025, as National Depression Screening Day.**

Since 2005, Counselling Alberta and Calgary Counselling Centre have hosted National Depression Screening Day as a free, public service to raise awareness about depression and the importance of checking in on our mental health. Each year for one week in October, Albertans are encouraged to visit [areyoufeelingok.com](http://areyoufeelingok.com) to take a free, anonymous online screening for symptoms of depression. The screening doesn't provide a diagnosis, but it helps identify signs of depression and encourages people to seek support if needed.

***Last year, nearly 2,500 Albertans used the online screening tool—and many more accessed counselling services through Counselling Alberta, including individuals from your own community. A local proclamation would help normalize conversations about mental health, reduce stigma, and encourage even more people to take that first step toward feeling better.***

#### **About Counselling Alberta**

Counselling Alberta is a division of Calgary Counselling Centre, offering professional, affordable online counselling to individuals across the province, as well as in-person services in Edmonton, Fort McMurray, Grande Prairie, Lethbridge, Medicine Hat, and Red Deer. We offer a sliding fee scale, no waitlist, and services in multiple languages to ensure support is accessible to all Albertans.

**We've included a sample proclamation below for your consideration.** We hope you'll join us in this province-wide effort to support mental health and make it easier for your residents to access help.

Thank you for your leadership and commitment to community well-being.

Thank you again for your consideration, and if you have any questions, please don't hesitate to reach out.

Best,  
Jenna



Calgary Counselling Centre

SUITE 1000, 105 - 12 Ave SE, Calgary, AB T2G 1A1

[www.calgarycounselling.com](http://www.calgarycounselling.com)



**Jenna Forbes**

Communications & Marketing Associate

**D: 403.691.5949**



## PROCLAMATION

National Depression Screening Day – October 9

Counselling Alberta is committed to providing affordable and professional counselling services that help build better lives for Albertans. Since 2005, National Depression Screening Day (NDSD) has raised community awareness by offering a free and anonymous online screening tool for depression.

**Whereas:** Depression is the most treatable mental health issue, early treatment promotes faster recovery and prevents long-term effects on individuals and their families;

**Whereas:** In 2024, of the 2,498 Albertans who participated in the NDSD online screening test, 63 percent were recommended to seek further evaluation;

**Whereas:** During the week of October 6-12, Albertans are encouraged to check in on their mental health and take the free online screening test at [areyoufeelingok.com](http://areyoufeelingok.com)

On behalf of the Town of Crossfield, I hereby proclaim October 9, 2025, as National Depression Screening Day in the Town of Crossfield.

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Mayor Harris

## Outstanding Action List

#	Meeting Date	Motion #	Topic / Direction	Assigned To	Due Date	Status	Status Details
072							
071							
070							
069							
061	May 6, 2025	111-2025	<b>Bike Skills Park and Pump Track</b>	Kimber Olsen Russ Nash	Q2-2026	IN PROGRESS	RFP has closed and proposals are currently being reviewed.
041	Dec 3, 2024	<i>No Motion</i>	<b>Limit Ave Speed Change</b> – change speed limit from 50 km/h to 30 km/h.	Lindsey Nash	Q3 2025	IN PROGRESS	Administration has followed up with Alberta Transportation and are looking to meet with the minister at AB Munis convention or a separate meeting – just waiting for confirmation from the Ministers office.
034	July 2, 2024	134-2024	<b>Offer to Purchase</b> – Additional information required with respect to the Offer to Purchase	Steven Altena Lindsey Nash	Q2 2025	IN PROGRESS	Administration to follow with Environmental company to interpret all environmental reports recorded on file to have a clear understanding of data. A report will be brought forward to a future council meeting in Q4 during the Land inventory discussion.
026	Feb 20, 2024	028-2024	<b>Snow Removal &amp; Ice Control Program</b> – program review	Steve Altena/ Murray Pollock	Q3 2025	IN PROGRESS	Administration is completing a program review and working on proposed recommendations.
004	April 4, 2023	No Motion	<b>Town-Owned Lands – Discussion on future use</b> - Administration to prepare a list of town lands and provide options for what those lands could be used for. The intent being to review town owned lands that are not currently active properties and come up with a plan.	Lindsey Nash	Q3 2025	IN PROGRESS	A detailed list of town owned land/properties has been completed and presented to Council. Administration will bring forward an updated Land Inventory outlining appraised costs on Town lands for Council's consideration on future plans for the properties. Phase 2 quotes are in progress.
002	April 19, 2022	129-2022	<b>Town Office Development</b> – Exploration of potential options for a Town Administrative Building	Kinza Barney/ Sub-committee	Q3 2026	IN PROGRESS	A sub-committee has been formed appointing the CAO, Russ Nash. Exploration of further options and required funding strategies to be identified in 2024.

# Board Updates



## August 23, 2025 Marigold Library Board Meeting Highlights

### Welcome

Marigold Library Board welcomed the following recently appointed representatives:

- Ali Buckingham—Town of Banff
- Robert Schindler—City of Chestermere
- Dawn Mosondz—Town of Irricana
- Dave Rodney—Kananaskis Improvement District

### 2024 Value of Your Investment Reports

Marigold Communications & Engagement Manager Jessie Bach presented the Value of Your Investment (VOYI) Reports. These reports showcase the value of Marigold Library System services. They demonstrate what it would cost to recreate Marigold services at the local library level, and show the value of Marigold's bulk purchasing power and centralized operations in getting more for each dollar. The VOYI Reports were sent to member municipalities and library boards in July.

### TRACpac+ New Library Catalogue!

Marigold Director of Service Delivery Kristine den Boon provided a virtual tour of [TRACpac+](#), the new online library catalogue and discovery layer. TRACpac+ is where library patrons can discover collections, place holds, manage their accounts, view their reading history, find read-a-likes, and much more! TRACpac+ will officially launch on September 17, 2025.

### Canadian Library Month

Canadian Library Month takes place each October and provides an opportunity to raise awareness of the valuable role that libraries play in the lives of Canadians. To help libraries promote the event, digital resources, posters, and social media posts are available for library staff through the Marigold Content Bank, or online at [accessola.com](https://accessola.com)

### Indigenous Report

Marigold Indigenous Outreach Specialist Rose Reid presented a report on library service to Stoney Nakoda Nations. Rose will be retiring after nine years with Marigold. Thank you, Rose!



### Upcoming Board Meetings:

**Saturday, November 22, 2025 9:30 AM**  
Virtual TEAMS Meeting

**Saturday, January 24, 2026 9:30 AM**  
Virtual TEAMS Meeting

### Questions?

Contact CEO Lynne Price  
[lynne@marigold.ab.ca](mailto:lynne@marigold.ab.ca)

### Marigold Library System

B 1000 Pine Street  
Strathmore Alberta, T1P 1C1 | 1-855-934-5334  
[marigold.ab.ca](https://marigold.ab.ca)

# Board Updates—August 23, 2025

## Financial Statements

Unaudited financial statements to July 31, 2025 were accepted as presented.

## Budget Estimates for 2026

Marigold CEO Lynne Price presented the 2026 budget estimates. These estimates are provided to member municipal councils every September, as required by the Marigold Agreement.

## Policy Approval & Decision

### Policies reviewed & approved:

- Finance Policy
- Contingency Plan for Finance Policy
- Library Service Points—Workplace Harassment and Violence Prevention Policy
- Library Service Points—Workplace Harassment Prevention Policy (removed)
- Library Service Points—Workplace Violence Prevention Policy (removed)

## Alberta Municipalities—Proposed Resolution for Library Funding

Information was shared from The Town of Stettler and The City of Calgary, who have partnered on an Alberta Municipalities resolution to draw attention to the funding of public libraries in Alberta. This resolution is being brought forward in part to address funding gaps due to exponential population growth and rising inflation.

## Information & Updates

**Marigold COO Laura Taylor** shared updates and information about the challenges in funding and sustaining eBook and eResource collections, which are in high demand.

**Marigold CEO Lynne Price** reported on The Regional Automation Consortium (TRAC) annual Advisory Council, which includes representatives from member libraries in Marigold. TRAC is a society that was established in the late 1990s to cost-share and support library-specific software.

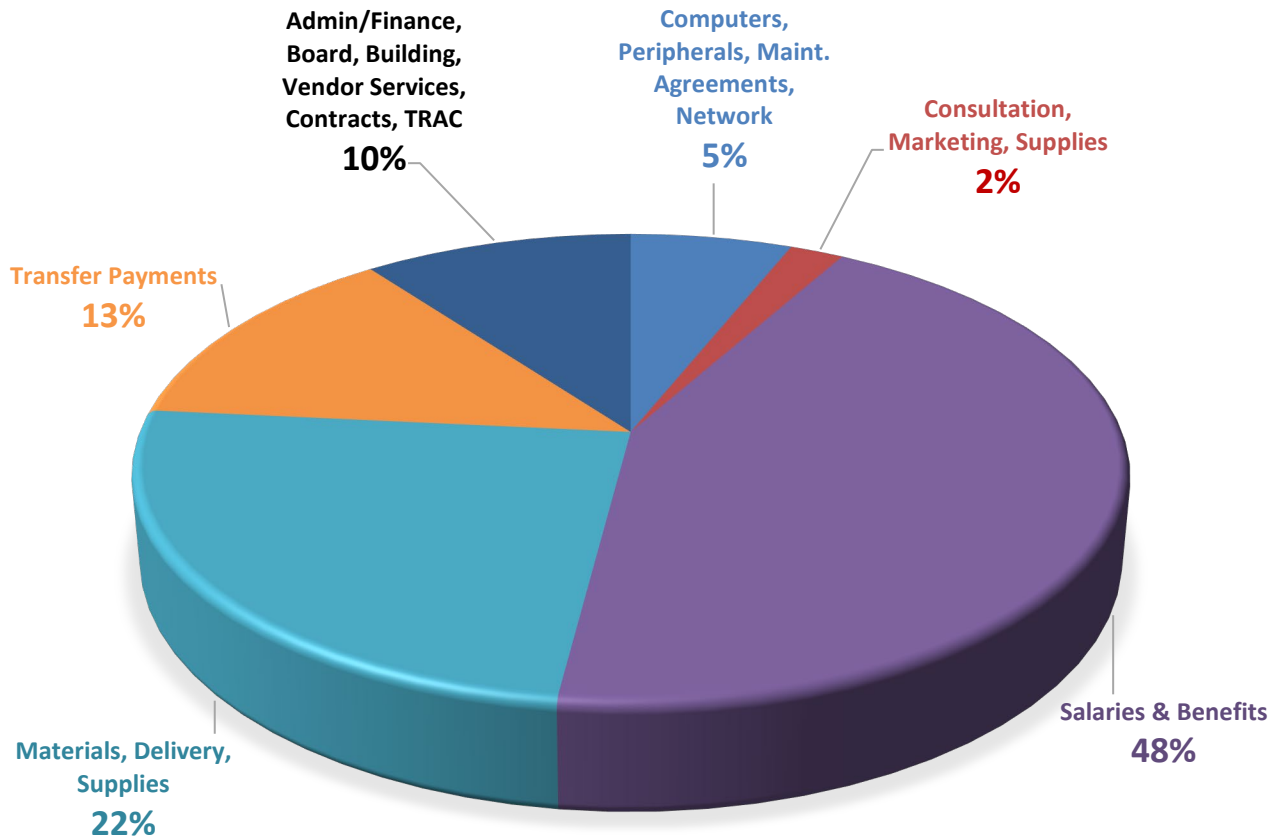
Marigold Staff are working on Marigold's 2026-2030 Plan of Service, which will include a visual rebrand. This fall, the Marigold Board Executive and Governance Committees will begin discussions on the proposed Schedule C - Requisition for Marigold Library System for 2027.



**SUMMARY**  
**Marigold Library System Budget Estimates, 2026**

	<u>2026 Budget</u>
<b>REVENUE</b>	
Municipal & Board Levies	\$3,989,554
Provincial Grants	\$2,083,347
Other (Interest, Donations & Contract Sales)	\$113,800
<b>TOTAL REVENUE</b>	<b>\$ 6,186,701</b>
<b>EXPENDITURES</b>	
Salaries & Benefits	\$2,979,500
Materials, Delivery, Supplies	\$1,373,993
Transfer Payments	\$781,790
Admin/finance, Board, Building, Vendor Services, Contracts	\$677,080
Computers, Peripherals, Maint. Agreements, Network Costs	\$270,000
Consultation, Marketing, Programs	\$78,500
<b>TOTAL OPERATING EXPENDITURES</b>	<b>\$6,160,863</b>
Capital Reserve	\$25,838
<b>TOTAL OPERATING EXPENDITURES &amp; PROJECTS</b>	<b>\$6,186,701</b>

**\*\*Note: The 2026 budget is passed by the Marigold Library Board in November\*\***



**MARIGOLD OPERATING EXPENDITURES ESTIMATE - 2026**

