ALIGNING LAND USE & DEVELOPMENT POLICY WITH WATERSHED MANAGEMENT RECOMMENDATIONS

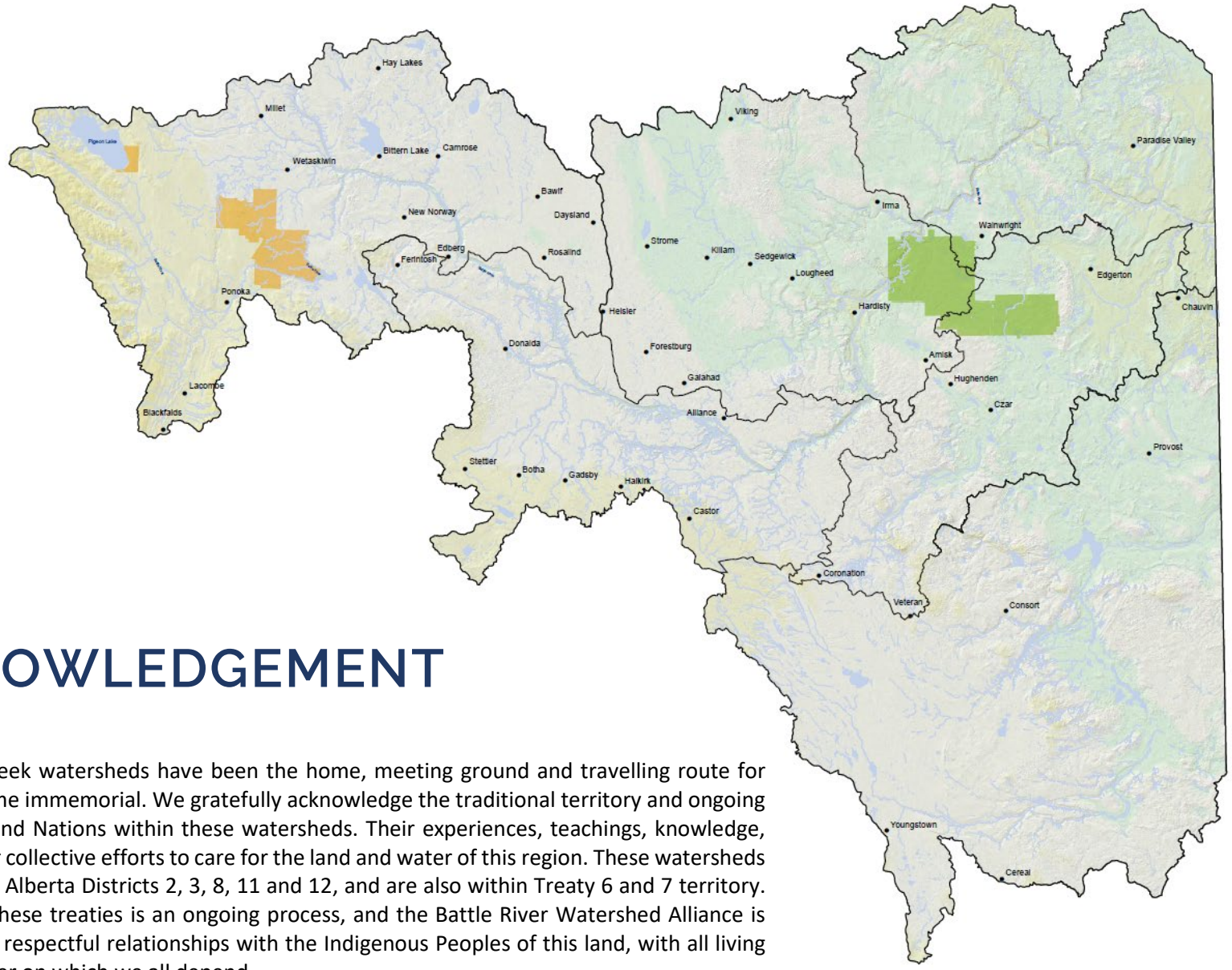
Discussion Guide for Battle River and Sounding Creek Watershed Communities

Prepared By: Municipal Planning Services
Prepared For: Battle River Watershed Alliance
Date: 23 January 2025

BATTLE RIVER WATERSHED ALLIANCE

MUNICIPAL PLANNING SERVICES

This page intentionally left blank



LAND ACKNOWLEDGEMENT

The Battle River and Sounding Creek watersheds have been the home, meeting ground and travelling route for many Indigenous Peoples since time immemorial. We gratefully acknowledge the traditional territory and ongoing presence of Indigenous Peoples and Nations within these watersheds. Their experiences, teachings, knowledge, and wisdom inform and enrich our collective efforts to care for the land and water of this region. These watersheds are located in the Métis Nation of Alberta Districts 2, 3, 8, 11 and 12, and are also within Treaty 6 and 7 territory. Fulfilling the spirit and intent of these treaties is an ongoing process, and the Battle River Watershed Alliance is committed to building strong and respectful relationships with the Indigenous Peoples of this land, with all living beings, and with the land and water on which we all depend.

This page intentionally left blank

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

Land & Water Committee

The following members of the Battle River Watershed Alliance Land & Water Committee graciously provided their time and insight to guide the project team in the preparation of the Discussion Guide:

NAME	ORGANIZATION
DALE PEDERSON	Beaver County
ANJAH HOWARD	Camrose County
DOUG LYSENG	Camrose County
TERRY VOCKEROTH	County of Paintearth / BRWA Board
CATHIE ERICHSEN ARYCHUK	County of Vermilion River
ALAN CORBETT	Drainage Council / BRWA Board
BART MUUSSE	Ducks Unlimited Canada
HOWARD SHIELD	Flagstaff County
MELVIN THOMPSON	Flagstaff County
JAMIE BRUHA	Alberta Environment and Protected Areas
ARIN MACFARLANE-DYER	Alberta Environment and Protected Areas
MELISSA ORR-LANGNER	Alberta Agriculture and Irrigation
DWAYNE WEST	Lacombe County
AMANDA KOOT	Pigeon Lake Watershed Association
DIANE HANSON	Resident (Beaver County) / BRWA Board
GLINIS BUFFALO	Samson Cree Nation
WILL CHALLENGER	Town of Wainwright
SCOTT FLETT	Town of Wainwright
ADRIAN LAM	University of Alberta, Augustana Campus
AARON LECKIE	City of Camrose
RICK MELIA	Pigeon Lake Watershed Association
GREG SMITH	BRWA Board

Municipal and Indigenous Engagement

This project would not be possible without the participation and support of the diverse communities within the Battle River and Sounding Creek watersheds. The project team extends their sincere appreciation to the Councils and Administrations of municipal governments, First Nations and the Métis Nation of Alberta for their time and contributions to the project.

Communities have been engaged throughout the project and ongoing consultation will continue through the next phases to best serve the needs of municipalities, First Nations, and the Métis Nation of Alberta.

Municipalities

Battle River Watershed Alliance (BRWA) staff have met with municipal councils across the watersheds to communicate the intent of the project and encourage participation at planned engagement sessions.

A representative sample of municipal policy documents were selected for focused review to inform the preparation of this Discussion Guide. Municipal Development Plans, publicly available through the municipalities, were reviewed independently by the project team. Municipal decision-makers attended workshops hosted by BRWA on April 12 & 17, 2024, to provide input on the Draft discussion guide. In addition, Camrose County provided a letter and feedback on the guide. All feedback was summarized in the What We Heard Report and will be carefully considered in the preparation of the Implementation Guide.

Indigenous Governments

The BRWA is working to build meaningful relationships with the Ermineskin Cree Nation, Louis Bull Tribe, Montana First Nation, Samson Cree Nation, and

Maskwacis Cree Tribal Council and the Otipemisiwak Métis Government. BRWA staff have met these Indigenous governments to discuss shared priorities and opportunities to collaborate for the protection of the land and water through land use policies and programs.

Project Funding

This project is funded through an Alberta Community Partnerships Grant, partnering with Camrose County (managing partner), Flagstaff County, Lacombe County and additional funding from the Battler River Community Foundation.

PROJECT INTRODUCTION

Project Purpose

The Battle River Watershed Alliance Society (BRWA) is a non-profit organization and one of 11 Watershed Planning Advisory Councils under Water for Life: Alberta's Strategy for Sustainability. BRWA engaged Municipal Planning Services (MPS) to prepare discussion and implementation guides for municipalities, First Nations and the Métis Nation of Alberta within the Battle River and Sounding Creek Watersheds (the Battle River and Sounding Creek jurisdictions). The Guides are intended to improve awareness about how communities are currently implementing watershed management recommendations and environmental land management practices into land use planning documents and to identify opportunities for communities to take further action to achieve watershed resilience and sustainability.

The purpose of this project is to:

1. Improve consistency and support the implementation of environmental land management goals and recommendations identified in the BRWAs Watershed Management Planning Process to improve Water Quality, Water Quantity, Biodiversity and Land Management Practices within the Battle River and Sounding Creek Watersheds.
2. Recognize and share information about local successes and celebrate how communities within the watersheds have effectively established policies in existing land use plans to achieve watershed resilience and sustainability.
3. Collaborate with communities throughout the Battle River and Sounding Creek watersheds to develop individualized guides including specific policy recommendations that can be incorporated into the Municipal Development Plans and land management policies or plans of Indigenous communities. These recommendations and policies are intended to support future development in a manner that more comprehensively integrates land management processes with practices and design mitigations to support the BRWA's Watershed Management Planning Management priorities:
    - Water Quantity
    - Water Quality
    - Biodiversity, and
    - Land Management

Through the BRWA's work with communities across the watershed, local jurisdictions identified the need for "tools" to assist in:

1. Implementing watershed recommendations and environmental land management beneficial practices into development policies in their planning documents; and
2. Establishing more consistent land management policy approaches across the Battle River and Sounding Creek watersheds.

This project provides the Battle River and Sounding Creek communities with policy recommendations and tools to incorporate into municipal development plans and the management policies or plans of Indigenous communities. Adoption of the recommendations in the guides will improve consistency in land management practices throughout the watersheds and support the long-term health, protection and ecological restoration of the Battle River and Sounding Creek watersheds.

Project Methodology & Process

An overview of the methodology and process undertaken and the project deliverables for each phase of the project are included below:

PHASE 1 — RESEARCH & POLICY REVIEW

- Develop a survey review framework to assess if Watershed Management Planning recommendations are included in Municipal Development Plans in the watershed.
- Select sample MDPs to include in the survey that represent a range of municipalities within the watershed. Note: 31 municipalities were selected from 66 municipalities within the watershed[1].
- Collect and analyze survey data. Note: Data was aggregated and de-identified.

PHASE 2A — DISCUSSION GUIDE FOR ALIGNING LAND USE POLICY AND WATERSHED MANAGEMENT GOALS

- Prepare Discussion Guide; a high-level report for the Battle River and Sounding Creek watersheds intended to identify priorities and opportunities to implement BRWA recommendations in the following areas: Water Quantity, Water Quality, Biodiversity, and Land Management.
- Identify areas of alignment (and nonalignment) between BRWA recommendations and the goals, objectives, and policies in the 31 adopted Municipal Development Plans included in the survey.
- Identify recommendations to highlight: 1. Highest priority areas for better alignment. 2. The largest gaps in alignment. 3. The greatest alignment successes.
- Where successes were identified, and with the permission of the participating municipality, share successes in the discussion guide.

PHASE 2B — ENGAGEMENT WITH MUNICIPAL & INDIGENOUS LEADERS & ADMINISTRATORS

- Host informal workshops for the leaders and administrators within the Battle River and Sounding Creek Watersheds
- The purpose of the workshops is to:
    - Share information on Watershed Management Recommendations.
    - Provide a discussion Guide to share findings from the policy review and discussion guide.
    - Learn more about the unique policy priorities, needs, successes, and challenges of the communities, and gather input regarding the survey findings and recommendations.

[1] The select sample group (31 MDPs) was identified to ensure representation from a cross section of communities within the watersheds including: Rural Municipalities, Special Areas, Villages, and Cities. The survey did not include planning or program documents from local indigenous communities. At the time, BRWA was meeting with Indigenous Governments to gain insight on shared priorities.

	○ Identify challenges to implementation of watershed management recommendations and strategies to overcome the challenges.
PHASE 3	**IMPLEMENTATION GUIDES FOR WATERSHED MANAGEMENT POLICIES**
	• Prepare a general implementation guide with sample policy language that can be used by all jurisdictions in the watersheds as a tool for consideration to update land use policy and programs. Individualized reports for select communities will also be provided. The individualized guides will identify specific areas where policies are already successfully implemented and areas where new policies could be considered. Jurisdictions should contact BRWA if they are interested in having an individualized report.

Project Timeline

The following graphic identifies the timeline to undertake this project.

Next Steps

Following the conclusion of the engagement program identified in Phase 2B, this Discussion Guide will be revised to reflect input from community leaders. The next step will be to prepare the Implementation Guides for Watershed Management Policies which will be in the form of individualized reports for select communities that identify areas where policies are already successfully implemented and areas where new policies could be considered.

ABOUT THE WATERSHEDS

Battle River Watershed

The Battle River Watershed covers approximately 30,000 square kilometers (17,667 square miles) within Alberta and Saskatchewan. Beginning in the west at Battle Lake, the Watershed extends eastward to Battleford, SK where it meets the North Saskatchewan River. Within Alberta, the Battle River Watershed has five subwatersheds: Bigstone, Iron Creek, Paintearth, Ribstone and Blackfoot.[2]

The natural lands, abundant wetlands and riparian areas in the Battle River Watershed make it an extremely rich and diverse landscape. These areas provide critical habitat for wildlife and contribute to the quality of life of local residents and visitors. Unlike many river basins in Alberta, the Battle River Watershed is prairie-fed rather than glacier-fed.

The Battle River and its tributaries support a diverse ecosystem and rich biodiversity. It provides drinking water for communities and their residents. The river supports irrigation and stock watering. It supports industrial use for power generation and oilfield injection. And the river supports recreational uses such as fishing, canoeing, and boating for residents and visitors alike.

Estimates put the various ecosystem services provided by the Battle River at approximately $3.5 million per year, with its floodplains and wetlands providing an additional $80 million per year.

Sounding Creek Watershed

The Sounding Creek Watershed covers approximately 10,300 square kilometers (3,977 square miles). Sounding Creek Watershed is a closed basin, meaning it does not usually flow into a larger watercourse or water body. The waters of Sounding Creek flow approximately 340 km to Sounding Lake. On rare occasions, the waters from Sounding Lake spill over into Eyehill Creek, flowing toward Manitou Lake in Saskatchewan.[3]

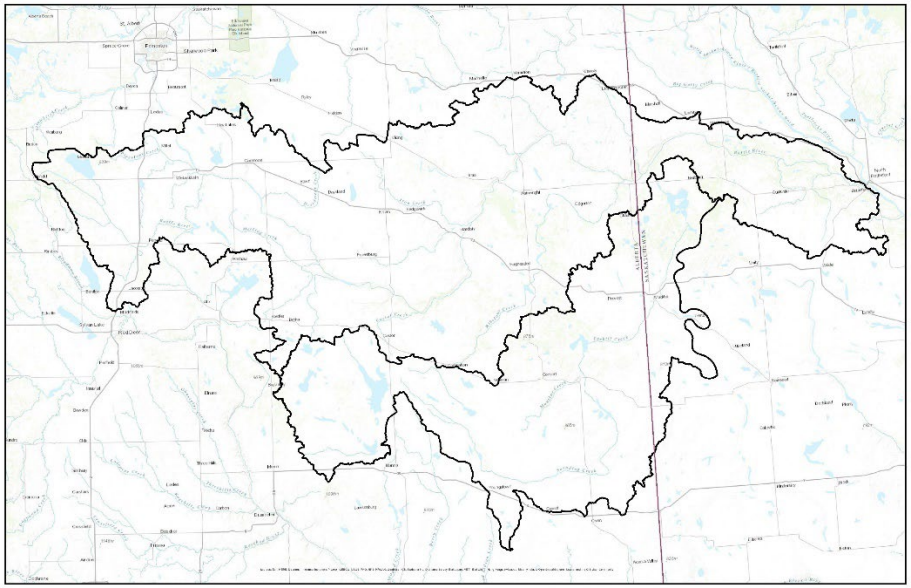


Figure 1 - Map of the Battle River and Sounding Creek Watersheds (image to be updated

[2] Heather J. Marshall, *Traversing Terrain & Experience: Atlas of the Battle River and Sounding Creek Watersheds* (Battle River Watershed Alliance, 2017), 22.

[3] Marshall, *Traversing Terrain & Experience*, 22.

LOCAL GOVERNMENT LAND USE PLANNING TOOLS

Local Governments Within the Watersheds

Within the Battle River and Sounding Creek Watersheds, land use and development are managed by municipal governments, First Nations, the Government of Alberta, and the Government of Alberta. For the purposes of this project, the focus is on land use policies established by municipal and local governments.

Significance of Municipal Policies and Regulations

Land use planning and development is a complex process because of the many different statutory plans, bylaws, provincial and federal regulations and Indigenous jurisdictions within the Battle River and Sounding Creek Watersheds.

Development on private lands within the Battle River and Sounding Creek Watersheds is regulated by the land use bylaws and statutory plans of the 61 respective municipalities. These municipalities include: rural municipalities (counties, municipal districts, special areas), cities, small urban municipalities (towns and villages), and summer villages.

Municipalities have a significant role in stewarding land within the watersheds through their authority to regulate land use on private land. Among their obligations under the *MGA* and the *Provincial Land Use Policies*, municipalities must contribute to "the maintenance and enhancement of a healthy natural environment"[4].

Municipalities have a vested interest in minimizing incompatible land uses. The purpose of land use planning is in large part an attempt to avoid instances where incompatible land uses negatively affect one another. This principle extends to impacts from land use and development on significant natural features including those features which impact, Water Quantity, Water Quality and Biodiversity.

Through municipal policy documents and land use bylaws, municipalities can implement watershed management recommendations and environmental land management practices to:

- maintain and enhance a healthy natural environment;
- support the local agricultural community through the implementation of land and water management practices that conserve and restore ground and surface water quality and quantity; and
- reduce risks and costs associated with increased occurrences of extreme climate events including: flooding, drought, and wildfires.

In Alberta, all municipalities must adopt two documents to guide and regulate land use decisions: a Municipal Development Plan (MDP) and a Land Use Bylaw (LUB). Municipal decision makers utilize these planning documents to inform decisions about land management and development and to plan for infrastructure improvements and investments. Additionally, provincial regulations have regard for the policy direction in Municipal Development Plans when assessing applications for some types of development within their jurisdiction.

First Nations Policy and Programs

First Nation land management and governance involves both First Nation government and Federal land regulation and management.

For the purposes of this document, the project team has undertaken initial conversations to learn about the land use policies of Ermineskin Cree Nation,

[4] Municipal Government Act, RSA 2000, c M-26., Part 1 s. 3(a.1)

Louis Bull Tribe, Montana First Nation, and Samson Cree Nations. There are ongoing efforts to identify shared priorities and leadership. Future work in partnership with the First Nations may be undertaken as appropriate and when desired by the Nations.

Métis Nation of Alberta Policy and Programs

Within Alberta, there are eight self-governing Métis Settlements. Land use decisions within these communities are made by their respective governments and the Métis Settlements General Council. Many Métis Nation of Alberta (MNA) citizens, in districts 2, 3, 8, 11, and 12, call the Battle River or Sounding Creek Watersheds home. There are no Métis Settlements within the Battle River or Sounding Creek Watersheds.

The MNA does not manage land use on lands within the Watersheds. However, the MNA participates in bilateral and multilateral processes to develop policy with different orders of government to protect and enhance recognized Métis rights. The MNA has policy programs related to land use and environmental stewardship in alignment with Métis rights. These include environmental and climate change programs.

For the purposes of this project, the policy programs of the MNA have been reviewed but are not discussed in this document. There are ongoing efforts to identify shared priorities and leadership.

Limitations & Applicability

The project team recognizes that the applicability of this discussion guide may be limited in other jurisdictions, such as First Nations and Métis Settlements. The project team recognizes that the comparison of municipal development plans and processes under the MGA to Indigenous land management processes is not directly comparable or appropriate.

The review of documents for this Discussion Guide was limited in scope to select municipal development plans within the Watershed. There was limited review of First Nations or Métis land governance documents. The project team recognizes that such documents operate in unique political contexts and would require out-of-scope consultation and collaboration with Indigenous land managers to adequately understand the complexity and uniqueness of those communities.

However, the BRWA and the project team invites and encourages Indigenous governments and land managers to participate in collaboration and co-creation process for the remaining phases of the project.

The focus of the policy review for the Discussion Guide is 31 currently approved municipal development plans. The project team relied on consolidated versions of these documents available publicly on each municipality's website at the time of the review. As municipalities update their documents this assessment will become outdated.

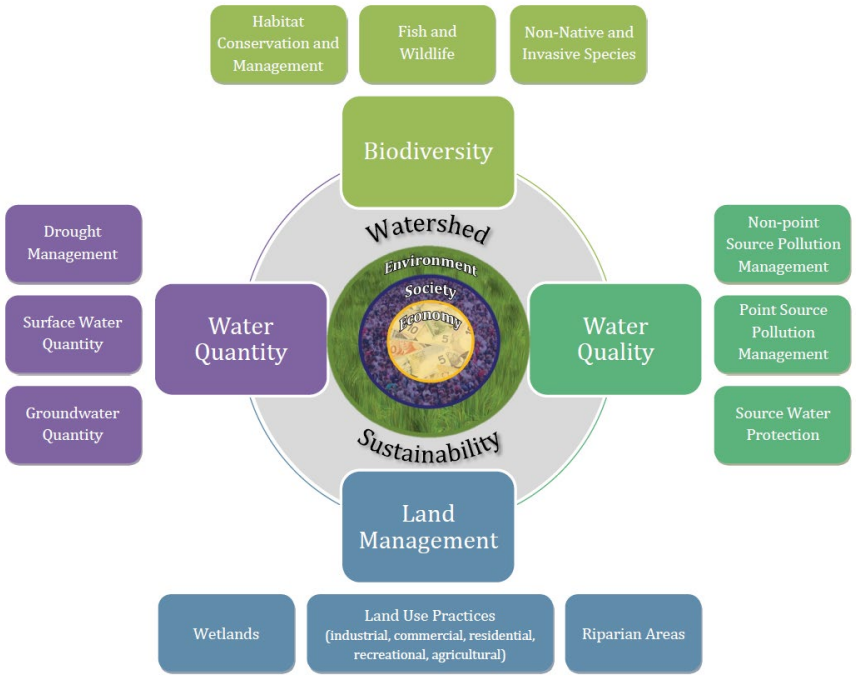
There was limited and focused review of other municipal bylaws, policies, or strategies. No comprehensive review of these other regulatory documents was undertaken across the Watersheds.

A process of data validation will be included in the project to ensure the project team's assessment of current land use policies is accurate.

POLICY REVIEW FRAMEWORK

Planning Priorities & Components

The BRWA's Watershed Management Planning Process integrates four watershed management priorities as a framework for supporting the health and sustainability of the Watershed. These components are: land management, water quality, water quantity, and biodiversity. They are further refined with more specific priorities (see diagram below) referred to as plan components.

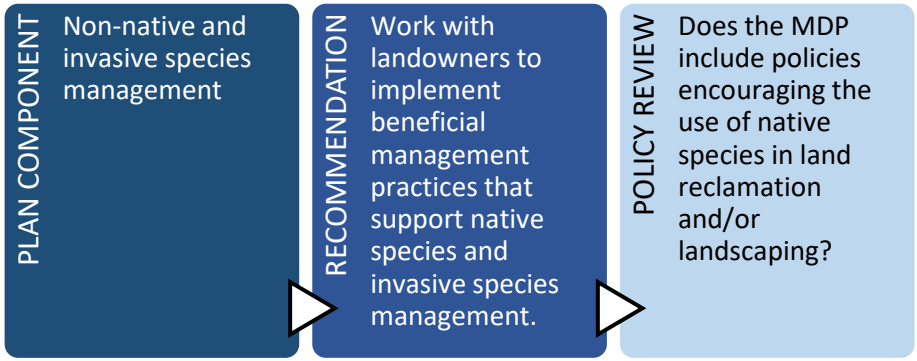


For each plan component, the BRWA is working to prepare specific recommendations through a consultative and research-based process. This process results in the publication of specific Research Reports, Policy Advice documents and Implementation Guidelines. At the time of publication of this document, the BRWA has completed or is currently undertaking work to complete eight of the twelve components.

From the work done to-date, the project team reviewed both published and draft recommendations as well as regional and related management plans to inform our survey of land use and development policies. Not all the Watershed Management Recommendations are applicable to land use and development policy. However, many recommendations can be supported through land use and development policy at the local government level.

For the purposes of this Discussion Guide, the plan components and specific recommendations informed the policy review questions used to assess how land use policies currently align with BRWA watershed management priorities, as expressed in the plan components.

The figure below illustrates this process for reviewing planning policy:



A complete list of the watershed management recommendations used to inform our land use planning policy review is included in **Appendix C**.

WATER QUANTITY & QUALITY

Water Quantity and **Quality** are key components of maintaining watershed health and sustainability. Activities on the land can impact water quantity and quality of both surface and groundwater resources. Management of land, particularly in riparian areas, which is largely the responsibility of local governments, has direct effects on our water resources.

Local governments are responsible for ensuring the effective and efficient delivery of services. Developments that directly, or indirectly cause harm to water quality or water quantity can negatively impact the function of ecological services that provide tangible benefits within the municipality by enhancing water quality and reducing flood risk[5].

The Battle River Watershed planning framework identifies three planning components to support **water quantity**: drought management, surface water quantity and groundwater quantity. These components are closely related and have been grouped together in the Discussion Guide under the "Water Quantity" subsection to reduce repetition.

The Battle River Watershed planning framework identifies three planning components to support **water quality**: non-point source pollution management, point source pollution management, and source water protection. Non-point and Point Source Pollution Management have been grouped together to reduce duplication.

Policy Review Results – Water Quantity

Water, in a sufficient supply and of a sufficient quality, is critical to food production and is also used for cleaning, sanitation, and manufacturing activities in the food system (Kirby et al., 2003). While the demand for water in many of our communities is increasing due to growing populations, industry, and agricultural needs; climate change has reduced the natural availability of water in some areas. It is anticipated that climate events will continue to cause fluctuations in water quantity throughout the watersheds[6]. When water quantity decreases it can result in greater erosion and compaction of soil so that rainfall events lead to increased runoff and associated point and/or non-point sources of pollution which impact water quality. Decreases in water quantity can also result in reduced agricultural outputs and/or negative impacts on producers and consumers through lower yields and higher costs. To prepare for the anticipated variation in annual precipitation rates and changes to when precipitation events occur local governments can prioritize the conservation of important water recharge areas and protect riparian areas to reduce erosion, run off and associated point and/or non-point sources of pollution through land management goals, objectives, and policies.

[5] *Legal Foundations for Municipal Riparian Management*. Prepared for the North Saskatchewan Watershed Alliance. (March 2023) Environmental Law Centre., pp.3-4.

[6] Takaro, T., Enright, P., Waters, S., Galway, L., Brubacher, J., Galanis, E., McIntyre, L., Cook, C., Dunn, G., Fleury, M. D., Smith, B., & Kosatsky, T. (2022). Water Quality, Quantity, and Security. In P. Berry & R. Schnitter (Eds.), Health of Canadians in a Changing Climate: Advancing our Knowledge for Action. Ottawa, ON: Government of Canada. *Chapter7 - Water Quality, Quantity, and Security* (Pg. 493-503).

The table below represents the findings of our review related to the Water Quantity component.

PLAN COMPONENT	MANAGEMENT RECOMMENDATIONS	MDP POLICIES	YES	NO	PARTIAL
Water Quantity	Identify ecosystem needs as a priority in planning decisions.	Does the MDP identify environmental considerations or ecosystem needs (e.g. Natural assets, riparian areas, green spaces, other ecosystem elements) as a priority value, goal, or objective?	28	1	2
	Limit removal of treed areas / shelterbelts.	Does the MDP include policies restricting or limiting the removal of treed areas and/or shelterbelts?	13	15	3
	Ensure 10% of municipal lands are designated as protected areas.	Does the MDP identify a minimum target for protected or designated areas (protected through legal mechanism, i.e. ER, ERE, CR, CRE)?	7	23	1

WATER QUANTITY

BRWA RECOMMENDATION 1

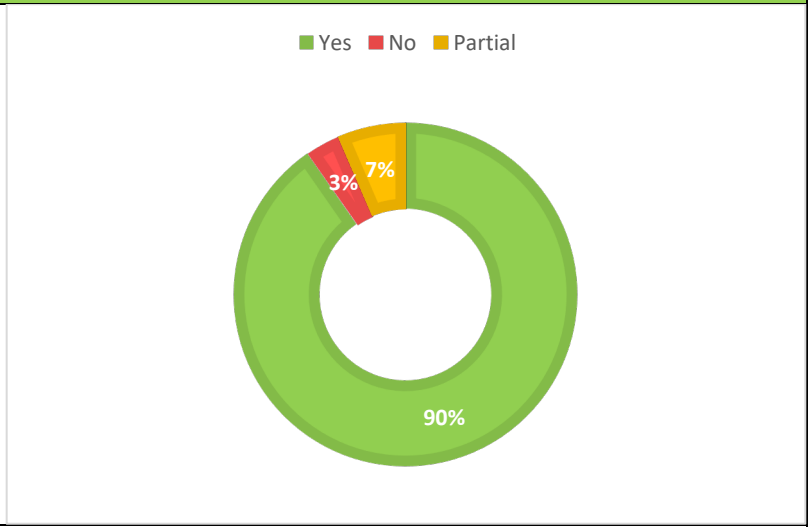
Identify ecosystem needs as a priority in planning decisions

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 90% of MDPs include language that identifies environmental or ecosystem considerations as a priority value, goal, or objective

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Inconsistency between policies surrounding triggers that are used to determine when ecosystem features (wetlands, riparian areas, important habitat areas, peat lands, high groundwater table areas, tree cover) should be identified as part of an Area Structure Plan (ASP) application, Land Use Bylaw (LUB) amendment or subdivision or development application.
- Policies do not provide clear direction regarding required development design mitigations when these features are present.
- Absence of definitions or inconsistency between definitions relating ecosystem terminology and required technical studies could make it difficult to communicate expectations during the planning or application stages of projects and could lead to delays and the perception of increased "red tape".



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to municipalities to help identify priority ecosystems services and/or establish a value for ecosystem services within their boundaries. Access to this data would help municipal decision makers identify conservation and restoration priorities relating to water quantity.

OPPORTUNITIES FOR BETTER ALIGNMENT	• Opportunity to increase alignment regarding:
	  ○ Definitions for ecosystem service terms and application requirements relating to drought adaptation and management.
	  ○ When additional information may be requested to demonstrate how new proposals for development have been designed to maximize drought resiliency.
	• Opportunity for regional collaboration on drought adaptation strategies and data collection related to drought management within the Battle River Watershed to:
	  ○ improve drought resiliency;
	  ○ manage landowner and municipal costs associated with irrigation for agricultural production over the long term; and
	  ○ minimize drought related emergency response (fire protection/ flood hazard) costs to the municipality.

WATER QUANTITY

BRWA RECOMMENDATION 2

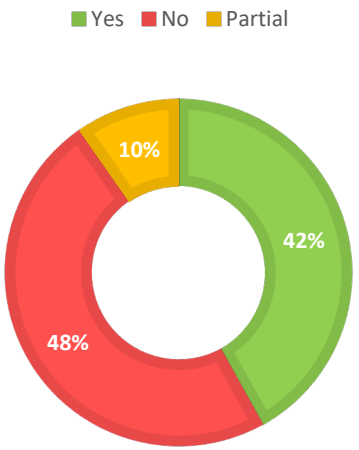
Limit Removal of Treed Areas/ Shelterbelts

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• Opportunity for alignment identified by including policy direction to limit the clearing of healthy tree stands and protect shelter belts

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Many MDPs did not include policy direction to limit the clearing of vegetation or protect shelterbelts.
- Many MDP policies did not identify where tree retention, or tree replacement through landscaping requirements at time of development would be encouraged or required.
  Note: *This level of detail (where, what is required) may be identified in a different planning document such as, a Land Use Bylaw or a Planning & Development Policy.*
- Very few MDPs included policies to support the retention of existing shelter belts.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Perceived negative impacts on agriculture.
	• Perceived inconsistency between tree retention policies and FireSmart Best Practices.
	• Lack of data at the municipal level to help identify where large areas of tree cover currently existing within the municipalities.
	• Incomplete awareness in the community about the relationship between retention of treed areas/shelter belts and:
	  ○ improved drought resiliency;
	  ○ decreased costs associated with agricultural production over the long term;
	  ○ decreased costs for drought related emergency response (fire protection/ flood hazard) to the municipality.

OPPORTUNITIES FOR BETTER ALIGNMENT	• Opportunity to include policies in MDPs to: ○ Maintain tree cover on undeveloped government road allowances and in development setback areas adjacent to roads, water bodies and watercourses.

		○ Increase groundwater retention and infiltration in important water recharge areas by limiting the amount of non-permeable surfaces in these locations and discouraging the removal of trees. ○ Minimize the removal of trees on residential lots adjacent to water bodies, wetlands, and watercourses.

WATER QUANTITY

BRWA RECOMMENDATION 3

Ensure 10% of municipal lands are designated as protected areas[7].

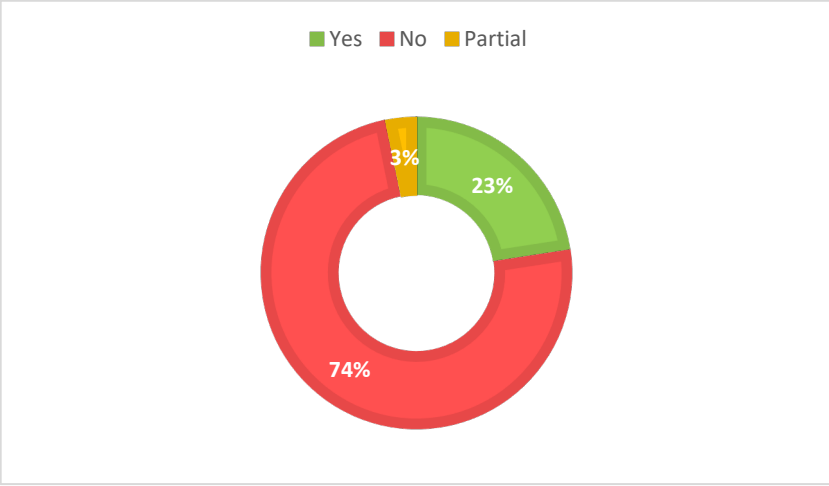
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT:

- Zero (0) MDPs identify a minimum target for protected or designated areas (protected through legal mechanism, i.e. ER, ERE, CR, CRE)
- However, almost all rural MDPs include goals, objectives or policies that support the creation of areas to protect features associated with water quality, water quantity drought adaptation and management

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- None of the municipalities surveyed identify target numbers for protecting areas with ecological features that support groundwater quality, groundwater quality or drought adaptation and management.
- Less than 25% of the MDPs included in the survey contain policies which identify a minimum target for environmentally protected or designated areas (protected through legal mechanism, i.e. Environmental reserve (ER), Environmental Reserve Easement (ERE), Conservation Reserve (CR), or Conservation Reserve Easement (CRE)).
- Some of the MDPs surveyed included policy direction regarding the provision of Municipal Reserves (MR). However, the majority did not identify when or how large an area would be required to protect environmentally significant lands including: water recharge areas, riparian areas and tree stands would be applied.



[7] ***Notes:*** *Survey results reflect whether municipalities have identified target numbers for the establishment or management of "protected areas". MR was not included in this result because MR lands can be cleared and hard surfaced which would impact their conservation value. Many municipalities include goals, objectives and policies which enable the creation of protected areas such as environmental reserves, environmental reserve easement areas and conservation easement agreements however, none of the municipalities set hard numeric targets for areas of land to be "protected areas".*

	• Drought adaptation and management is not identified as a goal and targets for improving drought adaptation and management are not identified clearly in the MDPs.	
	CHALLENGES OR BARRIERS TO IMPLEMENTATION	• The term "protected area" is unclear and difficult to consistently interpret. Additional information required to identify which features should be protected to improve drought resiliency, ground, and surface water quality. • Target number is difficult to determine without more baseline data about the area within a municipality of treed areas, wetlands, riparian lands, important peat lands, big water table areas. Without the baseline data it is difficult to both set targets and monitor success. • Organizational capacity – few municipalities have the in-house expertise to monitor compliance with targets.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Identify improving drought adaptation and management as an MDP goal. • Identify objectives and policies that support the conservation of environmentally significant features associated with groundwater quality and quantity and drought adaptation and management. • Include policies to restrict or limit the conversion of lands with these features to higher density or intensity land uses. • Where available, include targets for riparian area intactness within the municipality utilizing available data from local watershed organizations.

Recognizing Leadership:

The MD of Wainwright has identified in Section 5.1 of the MDP "trigger" features which support the recreation of municipality protected areas. The features identified are associated with water quality, water quantity and support drought adaptation and management.

Policy Review Results -Source Water Management

Access to a safe water supply in quantities sufficient to sustain industry, agricultural producers and communities within the watersheds is dependent on effective strategies for managing source water. Implementing source water protection strategies will encourage continued access to safe drinking water and the availability of sufficient volumes of water to support agriculture and industry.

PLAN COMPONENT	MANAGEMENT RECOMMENDATIONS	MDP SURVEY QUESTION	YES	NO	PARTIAL
Source water Management	Maintain and restore riparian vegetation within the 1:100 flood zone around all watercourses, water bodies and wetlands.	Does the MDP include data or policies relating to development with the 1:100 flood area of any watercourses, water bodies or wetlands?	15	16	0
		Does the MDP identify restoration priorities within flood zones?	0	31	0
	Manage development within floodplains to maintain floodplain structure and function.	Does the MDP include policies restricting development within flood-susceptible lands?	16	10	5
	Maintain and restore riparian and wetland areas on private and municipal property.	Does the MDP include policies related to wetland restoration on either private or public lands?	5	24	2
	Incorporate surface source water protection planning principles in development policies.	Does the MDP identify or include policies related to surface water source protection planning?	9	20	2
	Incorporate groundwater protection planning principles in development policies.	Does the MDP identify or include policies related to groundwater protection?	10	18	3

SOURCE WATER MANAGEMENT

BRWA RECOMMENDATION 4

Maintain and restore riparian vegetation within the 1:100 flood hazard area around all watercourses, water bodies and wetlands.

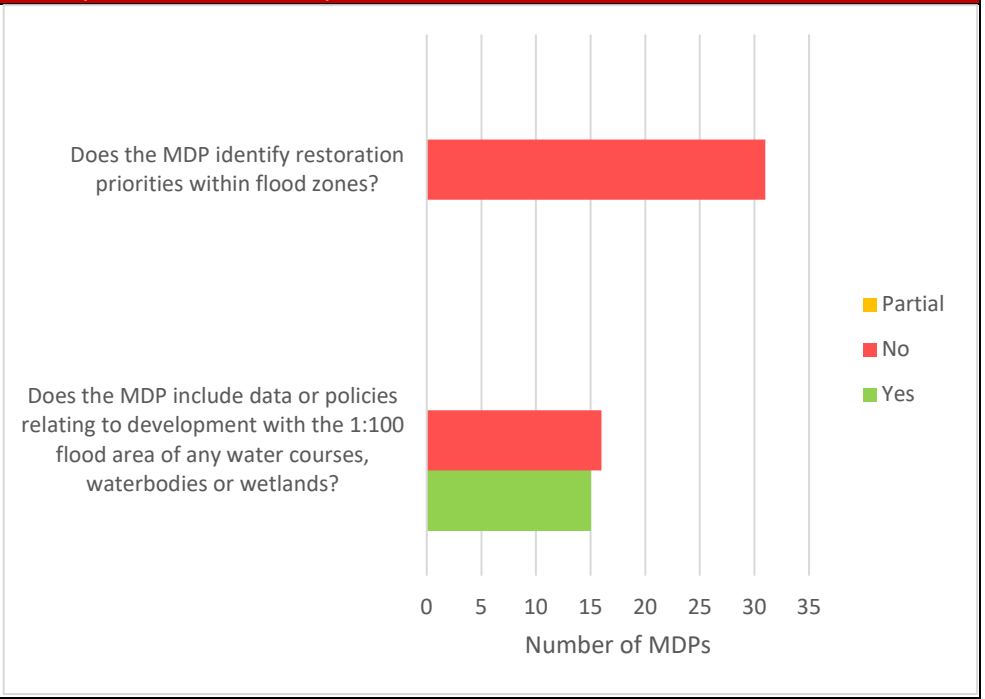
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- 48% of MDPs include data or policies relating to development with the 1:100 flood hazard area of watercourses, water bodies or wetlands
- Zero (0) MDPs identify restoration requirements within flood zones

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Inconsistency between features and triggers used by municipalities to determine when buffering should be incorporated into the site design and what the minimum buffer widths should be.
- Some policies do not provide clear direction regarding required development design mitigations to minimize non-point source pollution[8].
- Absence of definitions or inconsistency between definitions relating non-point source pollution terminology and required technical studies which could make it difficult to communicate expectations during the planning or application stages of projects and could lead to delays and the perception of increased ”red tape”.
- Absence of policies requiring which would facilitate requiring “restoration” as a condition of subdivision or development approval.
- Policies do not identify municipal conservation priority areas to assist with future restoration projects.



[8] ***Note***: *More specific details regarding required buffering measures may be identified in alternate planning documents developed and implemented by the municipalities surveyed including but not limited to: Land Uses Bylaws, municipal design standards and planning policies. Survey observations should not be interpreted as a statement regarding whether the municipality is or is not implementing specific policies or regulations, rather, the survey is intended to identify whether the municipalities included have incorporated goals, objectives, or policies into their MDP relating to the BRWA Plan Priority areas and recommendations.*

	CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to municipalities to identify appropriate setback or buffer distances. • Incomplete provincial flood hazard mapping makes it difficult to determine the 1:100 flood hazard area. • Costs to applicants to provide 1:100 flood hazard area data, especially adjacent to watercourses, can be prohibitive and result in an unreasonable obstacle that prevents development from occurring and be interpreted as additional "red tape".
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Opportunity to increase alignment regarding: o definitions for flood hazard terminology that aligns with provincial definitions of these terms and provides greater certainly to landowners/developers regarding what types of studies or information may be required when development is proposed in areas with these features. o application requirements relating to mitigating flood risk and identifying flood hazard areas at time of ASP development, LUB amendments, subdivisions, and development permit applications. o what features or triggers must be present to determine that an application should be supported by additional information to demonstrate that there is a safe building site on a parcel and that a reasonable buffer for future development can be identified and established.

SOURCE WATER MANAGEMENT

BRWA RECOMMENDATION 5

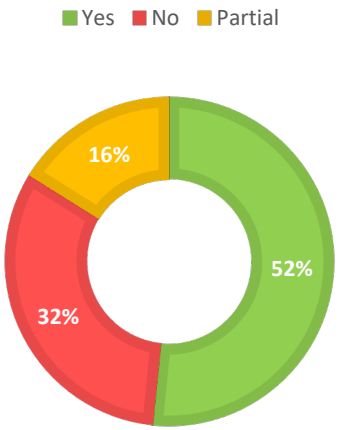
Manage development within floodplains to maintain floodplain structure and function.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 68% of MDPs surveyed include policies restricting development within flood-susceptible areas

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Inconsistency between features and triggers used by municipalities to determine development setbacks from floodway and flood fringe areas.
- Absence of definitions or inconsistencies between definitions relating flood terminology and required technical studies which could make it difficult to communicate expectations during the planning or application stages of projects and could lead to delays and the perception of increased "red tape".



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to municipalities to identify floodway, flood fringe and flood construction levels. • Incomplete provincial flood hazard mapping makes it difficult to determine the 1:100 flood hazard area. • Costs to applicants to provide 1:100 flood hazard area data, especially adjacent to watercourses, can be prohibitive and result in an unreasonable obstacle that prevents development from occurring and be interpreted as additional "red tape".
OPPORTUNITIES FOR BETTER ALIGNMENT	• Opportunity to increase alignment regarding: o definitions for flood hazard terminology that aligns with provincial definitions of these terms and provides greater certainly to landowners/developers regarding what types of studies or information may be required when development is proposed in areas with these features. o application requirements relating mitigating flood risk and identifying flood hazard areas at time of ASP development, LUB amendments, subdivisions, and development permit applications.

		○ what features or triggers must be present to determine that an application should be supported by additional information to demonstrate that there is a safe building site on a parcel and that a reasonable buffer for future development can be identified and established.

SOURCE WATER MANAGEMENT

BRWA RECOMMENDATION 6

Maintain and restore riparian and wetland areas on private and municipal property.

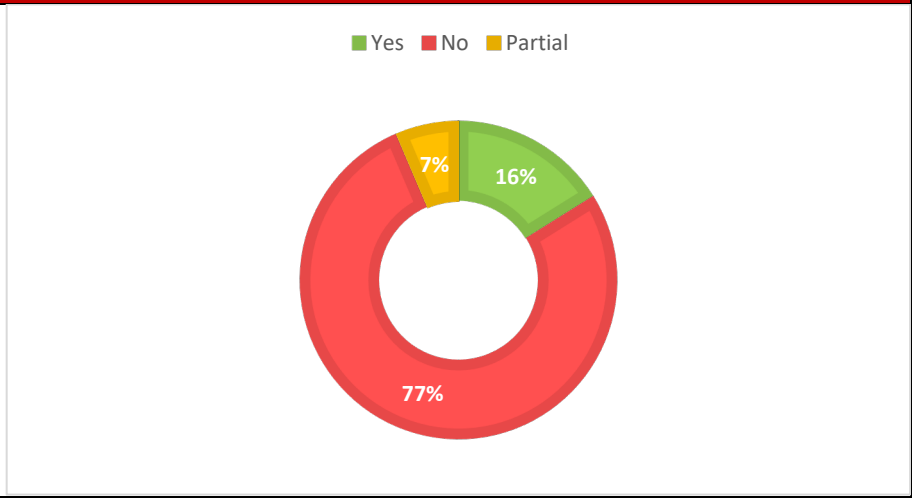
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- 23% of MDPs surveyed include policies that support wetland restoration on either private or public lands

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Conservation and restoration priorities could be more clearly or consistently identified relating to both public and private land.
- Many MDPs do not include an inventory wetlands within the municipality for use in directing development and to identify high value wetlands.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to municipalities to identify historic wetland areas and identify areas to prioritize for restoration. • Unrefined (and sometimes inaccurate) provincial wetland mapping makes it difficult to identify triggers for requesting wetland data with planning and development applications. • Costs associated with undertaking wetland assessments on a site by site basis increase the costs of development. • Costs associated with undertaking wetland inventories at the municipal scale can be prohibitive for municipalities.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Include MDP goals and objectives that prioritize wetland avoidance and restoration practices. • Include MDP policies that indicate when identifying and delimiting wetlands may be required. • Identify what types of wetlands, or in what areas within the municipality, wetlands must be avoided and/or restored.

		• Include an objective to inventory (built to Provincial Standards) wetlands within the municipality for use in directing development and to identify high valuete wetlands. • Include references to additional resources for wetland and grassland conservation. Example: *Municipal Development Plan Review: Wetlands & Grasslands - Act Sheet, Ducks Unlimited Canada* *Making Wetlands Works in Your Municipality guide by the Alberta North American Waterfowl Management Plan.*

SOURCE WATER MANAGEMENT

BRWA RECOMMENDATION 7

Incorporate surface source water protection planning principles in development policies.

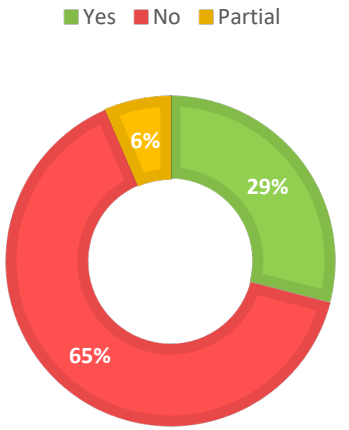
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- 35% of MDPs surveyed include policies related to surface water source protection planning
- 77% of rural municipalities included policies to protect drinking water or policies to protect the water supply

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Where drinking water comes primarily from municipal piped water systems, source water protection has for the most part, not been prioritized in MDP goals, objectives, or policies.
- MDP policies do not require development to be sited and designed to minimize negative impacts on surface source water.
- Policy direction does not indicate how or if developers will be required to mitigate negative impacts from development on surface source water if a provincial water act approval is not required for the proposed development.



CHALLENGES OR BARRIERS TO IMPLEMENTATION

- Absence of resources and data available to municipalities to identify site features that may be impacted by development.
- Unrefined (and sometimes inaccurate) provincial wetland mapping makes it difficult to identify triggers for requesting wetland data with planning and development applications.

		• Costs associated with undertaking environmental studies or engineering studied on a site-by-site basis increase the costs of development.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Require information about source water and proposed design mitigations as part of the ASP development, Outline line plan development or LUB amendment process. • Require development that could negatively impact surface source water, such as CFOs, industrial or resource extraction developments to provide information with the application to demonstrate how negative impacts will be mitigated and/or prevented.

SOURCE WATER MANAGEMENT

BRWA RECOMMENDATION 8

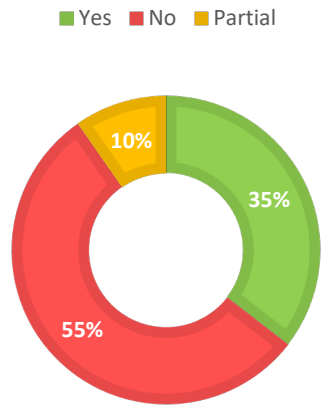
Incorporate groundwater protection planning principles in development policies

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 45% of MDPs surveyed include policies related to surface water source protection planning
	• 92% of rural municipalities included policies to minimize or mitigate negative impacts on groundwater from development

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Where drinking water comes primarily from municipal piped water systems, groundwater protection has for the most part, not been prioritized in MDP goals, objective, or policies.
- MDP policies do not require development to be sited and designed to minimize negative impacts on groundwater water.
- It is unclear how or if developers will be required to mitigate negative impacts from development on groundwater if a provincial Water Act approval is not required for the proposed development.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Lack of resources and data available to municipalities to identify where within the municipality groundwater conditions are present that may increase the risk of contamination resulting from development.

		• Lack of access to groundwater table data or mapping makes it difficult to identify locations and site-specific triggers for requesting groundwater table data with planning and development applications. • Costs associated with undertaking environmental studies or engineering studied on a site-by-site basis increase the costs of development. • Capacity challenges within municipalities to evaluate data and groundwater studies when they are provided.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Require information about groundwater and proposed design mitigations as part of the ASP development, Outline line plan development or LUB amendment process. • Require development that could negatively impact groundwater, such as CFOs, industrial or resource extraction developments to provide information with the application to demonstration how negative impacts will be mitigated and/or prevented.

Policy Review Results – Point and Non-Point Source Pollution Management

There is a pressing need to identify adaptive actions to reduce or eliminate negative impacts from point and non-point source pollution on water quality within the watershed. Point source pollution refers to pollution that comes for a single source. Non-Point Source Pollution refers to pollution that comes from many places all at once. Non-point source pollution can be harder to identify and harder to address. To mange non-point source pollution, it is necessary to implement management strategies that apply to a large area (such as a municipality or watershed). Implementing strategies to reduce the opportunity for pollutants and sediment to be introduced into surface and groundwater supplies throughout a large area increases the chance for successfully protecting ground and surface water within the watersheds.

PLAN PRIORITY	MANAGEMENT RECOMMENDATIONS	MDP POLICY REVIEW	YES	NO	PARTIAL
Non-point source pollution management	Limit the development of new Confined Feeding Operations (CFOs) within the effective drainage area of Battle River and Sounding Creek watersheds.	Does the MDP include policies restricting CFOs in proximity to environmentally sensitive areas, watercourses, wetlands, or water bodies?	11	18	2
	Prohibit manure application in riparian areas and floodplains.	Does the MDP include policies restricting manure application in proximity to watercourses or within floodplain areas?	1	29	1
	Adhere to manure application setbacks for lands sloping towards surface water bodies as outlined in the AOPA.	Does the MDP address manure application setbacks?	0	30	1
	Integrate Low Impact Development (LID) techniques for stormwater management in new development, including permeable pavement, bioswales, rain gardens, natural drainage ways, stormwater retention ponds, rainwater harvesting.	Does the MDP include policies requiring or encouraging LID in new developments?	12	18	1
		If "Yes" then what types of developments are included (Agricultural, Residential, Commercial, Industrial, etc.)?	Not Specified	Not Specified	Not Specified

POINT & NON-POINT SOURCE POLLUTION

BRWA RECOMMENDATION 9

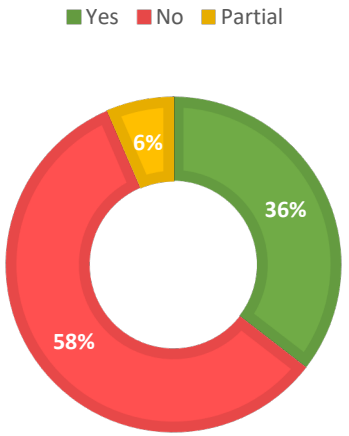
Limit the development of new Confined Feeding Operations (CFOs) within the effective drainage area of Battle River and Sounding Creek watersheds[9].

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 42% of MDPs surveyed include policies restricting the development of CFOs in proximity to environmentally sensitive areas, watercourses, wetlands, or water bodies

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Inconsistency between different MDPs regarding which environmentally significant features within the watersheds should be buffered from future CFO developments.
- Lack of clarity regarding which areas/features are most sensitive or vulnerable to negative impacts from CFO developments.
- Lack of consistent mapping of policy direction identifying which areas where future CFO developments could be prioritized.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Lack of resources and data available to municipalities to identify areas most vulnerable to point and non-point source pollution from CFOs. • Lack of access to accessible and mappable data which clearly identifies tributaries to major water bodies and watercourse within the watersheds. • Costs associated with undertaking environmental studies or engineering studied on a site-by-site basis increase the costs of development. • Capacity challenges within municipalities to evaluate data and studies when they are provided.

[9] Under the *Agricultural Operation Practices Act* Part 2 Matters Regulations and Standardized Regulatory Framework for permitting and compliance of CFOS & Manure Management, the Natural Resource Conservation Board has jurisdiction to approve confined feeding operations. The role of the Municipal Development Plan is a key aspect of the NRCB approval process. If a CFO is not consistent with the MDP the NRCB must deny the application. If the application is consistent with the MDP the approval officer will than consider the effects on the environment, the economy and the community and the appropriate use of land, AOPA 20(1)(b)(ix)

	OPPORTUNITIES FOR BETTER ALIGNMENT	• Require information about point and non-point source pollution as part of the development permitting. • Establish a clear set of goals and objectives to protect ecological features. • Identify environmentally sensitive areas. • Identify the ecoregion(s) within the jurisdiction (this helps establish precipitation rates that can impact the transfer of pollutants in surface water). • Identify the hydrological features of the major watershed and sub watershed basins in the policy. This includes recognizing watershed boundaries within land use plans, identifying the significance to surface water quality and quantity, identifying flood zones, and providing enhanced lidar to demonstration basins and season tributaries. • Identify, and state the priority, to protect primary drinking water sources, protected habitat (including spawning grounds in tributaries and waterways), water quality in tributaries and recreational waterbodies. This could include setting clear goals around protections for human health including reducing pollutants from manure management that can contribute to harmful algal bloom in waterbodies including in recreation lakes. • Identify CFO exclusion zones where evidence indicates a need and/ or Identify Industrial zones for CFOs where land and water contamination can be minimized. • Reference recognized watershed management plans and regional plans. • Identify shared objectives related to CFOs that exist in recognized watershed management plans. • If an IDP is not in place, include policy direction to require the consideration of hydrological impact with neighboring jurisdictions and consult to define statements of limitation for CFOs to protect shared ecological features.

POINT & NON-POINT SOURCE POLLUTION

BRWA RECOMMENDATION 10

Prohibit manure application in riparian areas and floodplains and adhere to manure application setbacks for lands sloping towards surface water bodies as outlined in the AOPA.

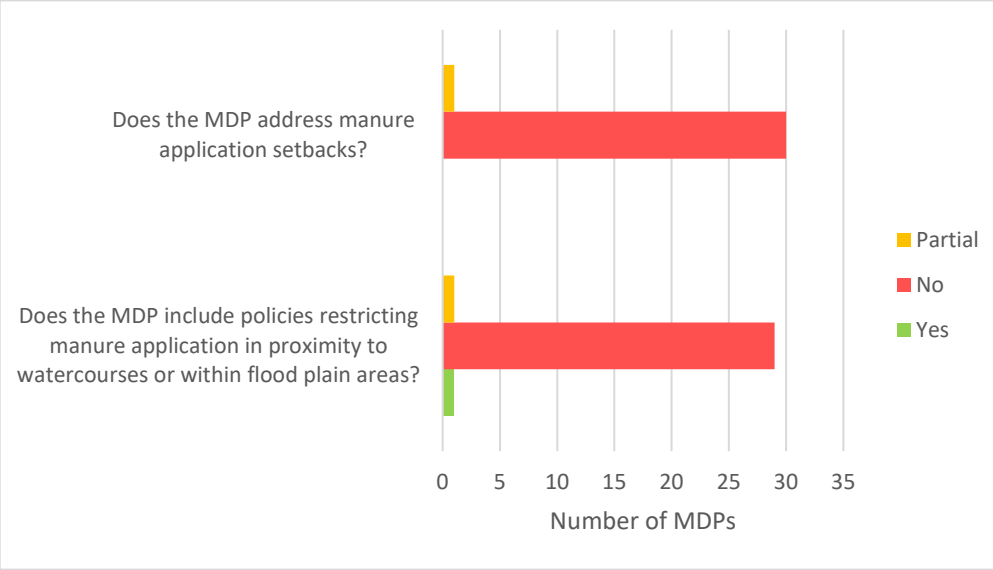
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- Zero (0) MDPs include policies addressing manure application setbacks, except as they would apply to the consideration and approval by the NRCB of CFO developments

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- MDP policies, where present address CFO location but do not specifically address manure application.
- MDP goals and objectives relating to protecting water quality, especially in agricultural areas are not supported by policies to buffer to restrict manure application in areas where the risk to contamination is greatest.



CHALLENGES OR BARRIERS TO IMPLEMENTATION

- Lack of resources and data available to municipalities to identify floodplains of water bodies and watercourses.
- Lack of access to data which clearly identifies tributaries to major water bodies and watercourse with the watersheds that is accessible to municipalities.
- Costs associated with undertaking environmental studies or engineering studied on a site-by-site basis increase the costs of development.

		• Capacity challenges within municipalities to evaluate data and studies when they are provided. • Challenges with municipal enforcement capacity.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Restrict manure application within riparian areas and flood hazard areas. • Restrict manure application within the watershed of highly developed lakes and within 1 mile of less developed lakes. • Restrict manure application within a prescribed distance of urban areas serviced by GUDI municipal water treatment systems. • Include policy direction to encourage the government of Alberta to update the provincial flood hazard mapping to identify the flood way, flood fringe and flood construction levels adjacent to major waterways throughout the watersheds.

POINT & NON-POINT SOURCE POLLUTION

BRWA RECOMMENDATION 11

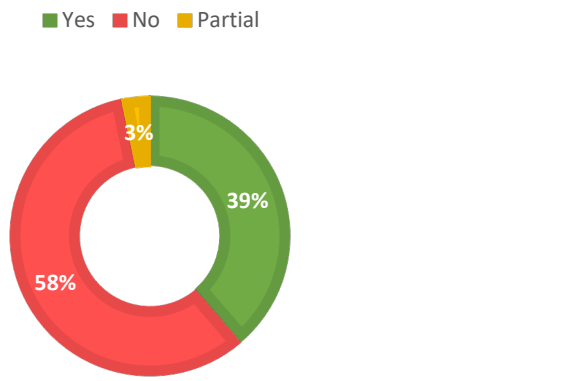
Integrate Low Impact Development (LID) techniques for stormwater management in new development, including permeable pavement, bioswales, rain gardens, natural drainage ways, stormwater retention ponds, rainwater harvesting.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 42% of MDP included in the survey include policies requiring or encouraging LID in new developments

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Absence in most MDPs surveyed of policy to encourage or require LID techniques at the site scale to improve or enhance site specific storm water management in areas where subdivision has already occurred.
- Policies do not identify LID targets or % requirements.
- Policies do not specifically require onsite retention or treatments for all or a portion of the surface water displaced by development.



	CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Lack of resources and data available to some municipalities to identify predevelopment site drainage patterns and/or preferred post construction lot grading and/or drainage requirements in older developed areas. • Costs associated with undertaking landscaping plans and/or stormwater management plans on a site-by-site basis increase the costs of development. • Capacity challenges within municipalities to evaluate data and studies when they are provided. • Challenges with municipal enforcement capacity.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Require LID techniques to be incorporated into the stormwater management plans where required. • Develop municipal LID standards or design requirements to ensure proposed techniques are compatible with municipal stormwater management infrastructure. • Identify specific triggers for they land use activities that would trigger LID techniques to be incorporated into the development.

BIODIVERSITY

Habitat Conservation & Management and **Non-Native & Invasive Species Management** are key components to supporting biodiversity within the Watersheds.

The Battle River Watershed planning framework identifies three planning components to support Biodiversity: Habitat Conservation & Management, Non-Native & Invasive Species Management and Fish &Wildlife. The Habitat Conservation & Management and Fish & Wildlife components are closely related and have been grouped together in the Discussion Guide under the "Habitat Conservation and Management" subsection to reduce repetition.

Policy Review Results – Habitat Conservation & Management

Intact habitat is crucial to maintaining biodiversity within the Watersheds. Habitat management is the management of human activity, including: land development, infrastructure development, resource development and transportation corridors, to ensure that habitat remains or is restored to allow animals to survive and thrive on the landscape. Successful habitat management strategies further conservation and habitat management goals while supporting the local economy and economic development initiatives.

The table below represents the findings of the survey relating to Habitat Conservation & Management.

PLAN PRIORITY	MANAGEMENT RECOMMENDATIONS	MDP POLICIES	YES	NO	PARTIAL
Habitat conservation and management	Maintain natural habitat corridors.	Does the MDP identify natural habitat corridors within the municipality?	0	31	0
		Does the MDP include policies requiring the protection of natural habitat corridors in development processes?	7	21	3
	Incorporate ESAs in municipal policies related to environmental protection. Integrate local ESAs into development project criteria.	Does the MDP identify provincial ESAs or other locally determined environmentally significant areas?	11	20	0
		Does the MDP incorporate provincial or local ESAs in municipal development processes?	4	27	0

	Introduce policy to create, protect, restore natural assets (identified as natural resources and ecosystems that yield a flow of benefits to people, including forests and healthy tree stands, watercourses, water bodies, wetlands, fields, soil).	Does the MDP include policies to protect environmental assets?	24	4	3
		Does the MDP include policies to restore environmental assets?	3	26	2

HABITAT CONSERVATION & MANAGEMENT

BRWA RECOMMENDATION 12

Maintain natural habitat corridors.

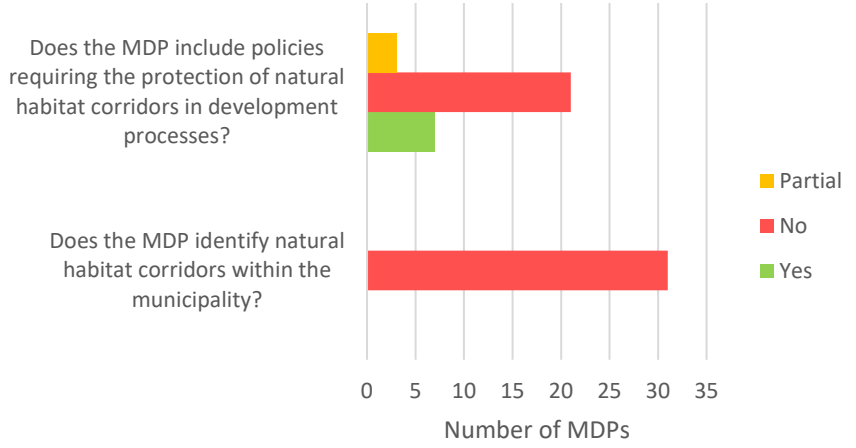
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- 32% of MDPs surveyed include policies requiring the protection of natural habitat corridors in development processes
- 77% of rural MDPs surveyed include policies requiring the identification and protection of natural habitat corridors in development processes

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Zero (0) MDPs surveyed identify natural habitat corridors within the municipality.
- Some policies are challenging to interpret because the terms used are not defined. Including definitions for terms in the policies would increase transparency and enable more consistent interpretation and application of the policies.
- Identifying habitat corridors on MDP information maps would enable the municipalities to clearly disclose information that may trigger additional application requirements and help applicants/ developers determine costing and timing for their projects.



CHALLENGES OR BARRIERS TO IMPLEMENTATION

- Absence of resources and data available to some municipalities to identify and incorporate habitat corridors into mapping.

		• Costs associated with undertaking biophysical assessments and corridor mapping on a site-by-site basis increase the costs of development. • Capacity challenges within municipalities to evaluate data and studies when they are provided. • Challenges with municipal enforcement capacity.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Incorporate Corridor mapping into MDP information maps (where available). • Include definitions for terms used relating to habitat corridors and "significant wildlife areas". • Identify clear triggers for when biophysical studies, including corridor identification will be required. • Identify requirements for design mitigations at time of subdivision or development to protect important habitat corridors.

Recognizing Leadership:

Section 9.0 of Camrose County's MDP includes objectives to support:

- Protecting biodiversity,
- Conserving environmentally significant features including important habitat areas, and
- Protecting the County's water quality

HABITAT CONSERVATION & MANAGEMENT

BRWA RECOMMENDATION 13

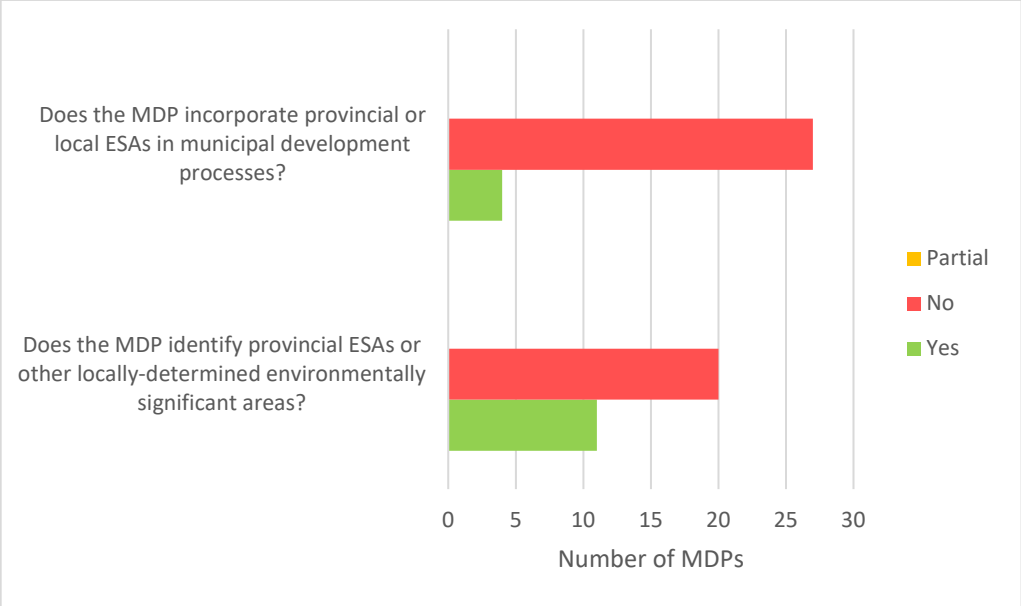
Incorporate Environmentally Significant Areas (ESAs) in municipal policies related to environmental protection and incorporate ESAs into development project evaluation critera.

POLICY REVIEW RESULTS

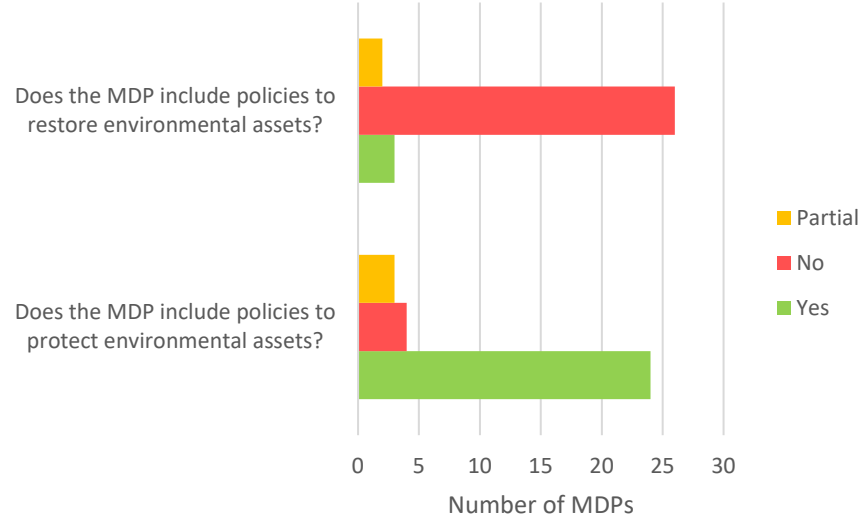
AREA(S) OF ALIGNMENT	• 35% of MDPs surveyed identify provincial ESAs or other locally determined environmentally sensitive areas

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- 13% of MDPs surveyed incorporate provincial or local ESAs in municipal development processes.
- Some policies are challenging to interpret because the terms used are not defined. Including definitions for terms in the policies would increase transparent and enable more consistent interpretation and application of the of the policies.
- Identifying ESAs on MDP information maps would enable the municipalities to clearly disclose information that may trigger additional application requirements and help applicants/ developers determine costing and timing for their projects.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to some municipalities to identify and incorporate ESAs into mapping. • Costs associated with undertaking biophysical assessments and corridor mapping on a site-by-site basis increase the costs of development. • Capacity challenges within municipalities to evaluate data and studies when they are provided. • Challenges with municipal enforcement capacity.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Incorporate ESA mapping into MDP information maps (where available). • Include definitions for terms used relating to ESAs. • Identify clear triggers for when biophysical studies will be required.

		• Identify requirements for design mitigations at time of subdivision or development to protect ESAs.
HABITAT CONSERVATION & MANAGEMENT	**BRWA RECOMMENDATION 14**	
	Introduce policy to create, protect, restore natural assets.	
	POLICY REVIEW RESULTS	
	AREA(S) OF ALIGNMENT	• 87% of MDPs surveyed include policies to conserve environmental assets • Only 16% of MDPs surveyed include policies to restore environmental assets
	AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW… • Some policies are challenging to interpret because the terms used are not defined. Including definitions for terms in the policies would increase transparent and enable more consistent interpretation and application of the of the policies. • Identifying Natural Assets on MDP information maps would enable the municipalities to clearly disclose information that may trigger additional application requirements and help applicants/ developers determine costing and timing for their projects.	
	CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data to identify and incorporate natural asset mapping into MDPs. • Costs associated with undertaking biophysical assessments and corridor mapping on a site-by-site basis increase the costs of development. • Capacity challenges within municipalities to evaluate data and studies when they are provided. • Challenges with municipal enforcement capacity.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Incorporate Natural Asset mapping into MDP information maps (where available). • Include definitions for terms used relating to Natural Assets. • Identify clear triggers for when biophysical studies, will be required. • Identify requirements for design mitigations at time of subdivision or development to protect Natural Assets.

Policy Review Results – Non-Native & Invasive Species Management

Incorporating goals, objectives, and policies into MDPs for non-native & invasive species management enables municipalities to discourage the introduction of non-native or invasive species that may cause harm to the environment, community, and local economy. Establishing a framework for the management of non-native and invasive species supports ecosystem health, minimize municipal costs associated with stormwater management infrastructure and improves flood and drought resiliency.

The table below represents the findings of the survey relating to Non-Native & Invasive Species Management.

PLAN PRIORITY	MANAGEMENT RECOMMENDATIONS	MDP POLICIES		YES	NO	PARTIAL
Non-native and invasive species management	Work with agricultural producers and other landowners to implement beneficial management practices that support native species and invasive species management.	Does the MDP include policies encouraging the implementation of beneficial management practices related to the planting, maintenance, or retention of non-native and invasive species?		0	31	0
		Does the MDP include policies encouraging the use of native species in land reclamation and/or landscaping?		2	27	2
		Does the MDP include policies related to the retention of natural vegetation at the time of development?		15	15	1

NON-NATIVE & INVASIVE SPECIES MANAGEMENT

BRWA RECOMMENDATION 15

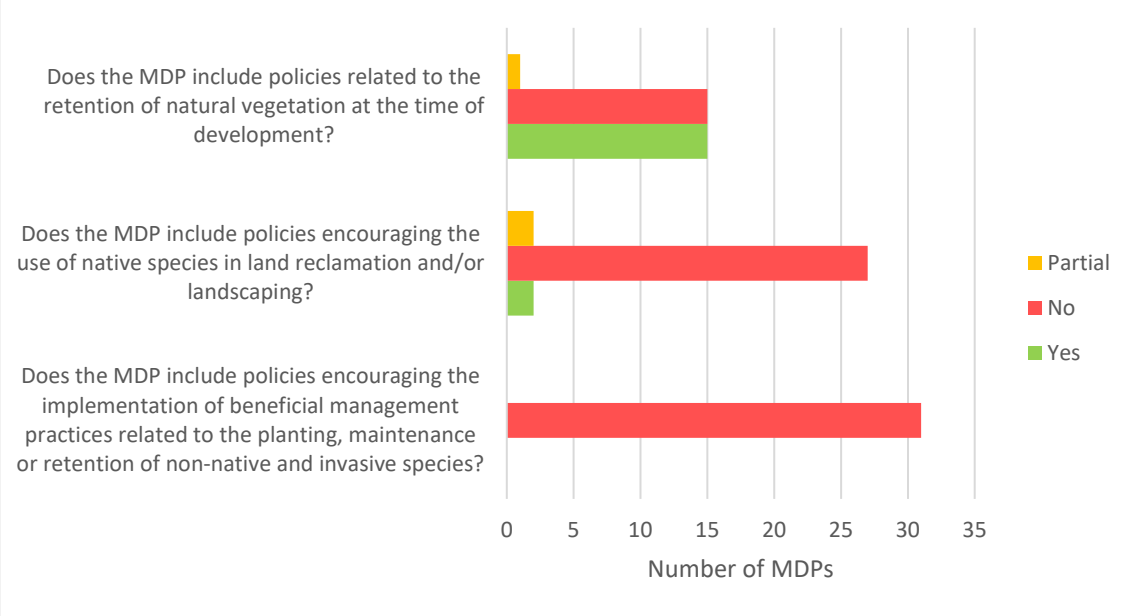
Work with agricultural producers and other landowners to implement beneficial management practices that support native species and invasive species management.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	
	• 52% of the MDPs surveyed include policies related to the retention of natural vegetation at the time of development
	• Zero (0) of MDPs surveyed include policies to encouraging the implementation of beneficial management practices related to the planting, maintenance, or retention of non-native and invasive species • Only 13% of the MDPs surveyed include policies encouraging the use of native species in land reclamation and/or landscaping

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- 13% of the MDPs surveyed include policies encouraging the use of native species in land reclamation and/or landscaping.
- Limited support or inclusion of policies to require the retention of native species in land reclamation and/or landscaping. This may be because the benefits of these practices are not well known.



	CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Lack of awareness surrounding the benefits of these practices including: (greater drought tolerance, lower maintenance costs when incorporated into public utility lots, SWMF and, other municipal infrastructure, reduction in infrastructure costs by increasing groundwater infiltration). • Absence of resources and data available to some municipalities to identify BMPs policies into MDPs. • Costs associated with undertaking landscaping plans increase the costs of development. • Capacity challenges within municipalities to evaluate landscaping plans when they are provided. • Challenges with municipal enforcement capacity.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Include definitions for terms used relating to BMPs that support native species and invasive species management. • Identify clear triggers for when landscaping plans, will be required. • Enable through policy, the inclusion of specific landscaping design mitigations, to be implemented through the subdivision or development process to conserve or restore existing vegetation on residential, commercial, and industrial lots or within areas designated for watershed protection.

LAND MANAGEMENT

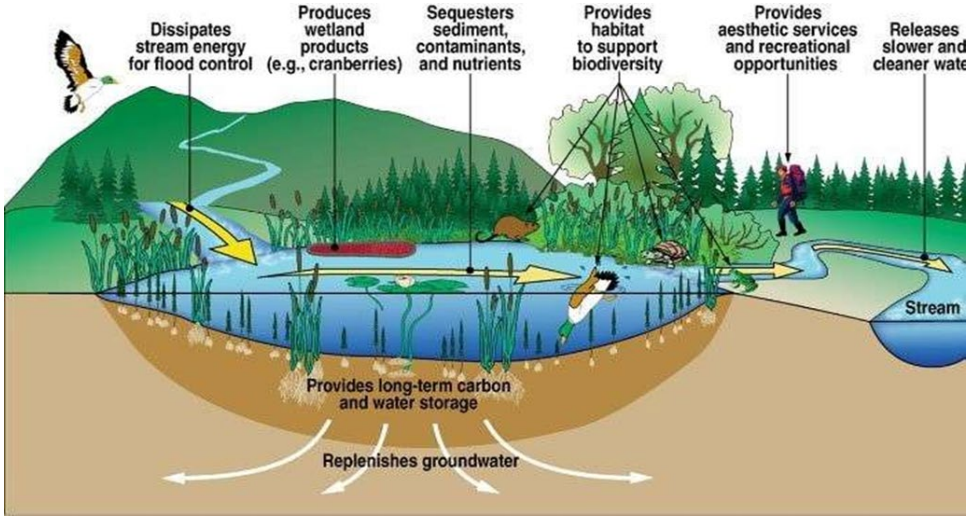
Land Management is a vital component to supporting watershed health and sustainability. Land use practices within the watersheds have greatly modified the natural landscape. Population growth and increased development, result in increased pressures on land and water resources. It is anticipated that development pressures will continue and/or increase within the watersheds. In response to these pressures, it is important to implement land management strategies that support growth within the watershed while also identifying design mitigations and conservation priority areas that are responsive to more frequent climate events, support ecosystem services and protect natural assets that sustain families and businesses within our communities. Additional benefits to implementing a land management strategy that prioritizes ecosystem services such as wetlands and riparian areas include: reduce risks associated with new development, improved drought, flood and wildfire resiliency, and reductions to municipal infrastructure costs.

The Battle River Watershed planning framework identifies three planning components related to Land Management: wetland management, riparian area Management and Land Use Practices. Recommendations relating to land use practices are interwoven throughout all the plan priorities and BRWA management recommendations identified in this Discussion Guide. This section of the guide is focused on Wetland Management and Riparian Areas Management to avoid duplication.

Policy Review Results – Wetland Management

Wetlands are among the most productive ecosystems in our communities. They play an integral role in the ecology of the watershed by supporting water quality and quantity. They provide natural protection from flooding and reduce erosion in riparian areas. Wetlands also support ecosystem diversity by providing habitat for fish, wildlife, and waterfowl. Stewardship of wetlands on public and private land is an important component of effective watershed management.

MDP goals, objectives and policies for the conservation and restoration of wetlands support ecosystem health, minimizes private and public costs associated with stormwater management infrastructure, reduce flood risk, and improve drought resiliency within the watersheds.



The table below represents the findings of the survey relating to Wetland Management.

PLAN PRIORITY	MANAGEMENT RECOMMENDATIONS	MDP POLICIES	YES	NO	PARTIAL
Wetlands management	Protect existing wetlands to prevent further wetland loss.	Does the MDP include policies supporting the protection of wetlands?	15	10	6
	Include wetland setback provisions to preserve ecological and hydrological function.	Does the MDP include policies related to setbacks or buffers from wetlands?	6	18	7
	Incorporate wetland and riparian management for new developments.	Does the MDP map or otherwise identify significant wetland or riparian areas?	8	20	3
		Does the MDP require the identification and protection of wetlands and/or riparian areas in development and planning processes?	10	19	2
		Does the MDP require other mitigation actions to preserve, protect or restore wetlands and/or riparian areas at the time of subdivision or development?	0	31	0
	Integrate existing tools (e.g. Stepping Back from the Water, Field Manual on Buffer Design for the Canadian Prairies, and riparian setback models) to determine optimal buffer for development near wetlands.	Does the MDP identify any external documents or tools for determining setbacks or buffers adjacent to wetlands?	3	27	1
	Identify ecologically, hydrologically, economically, and culturally significant wetlands within municipal boundaries.	Does the MDP identify significant wetlands or peat lands within the municipality?	5	22	4

WETLAND MANAGEMENT

BRWA RECOMMENDATION 16

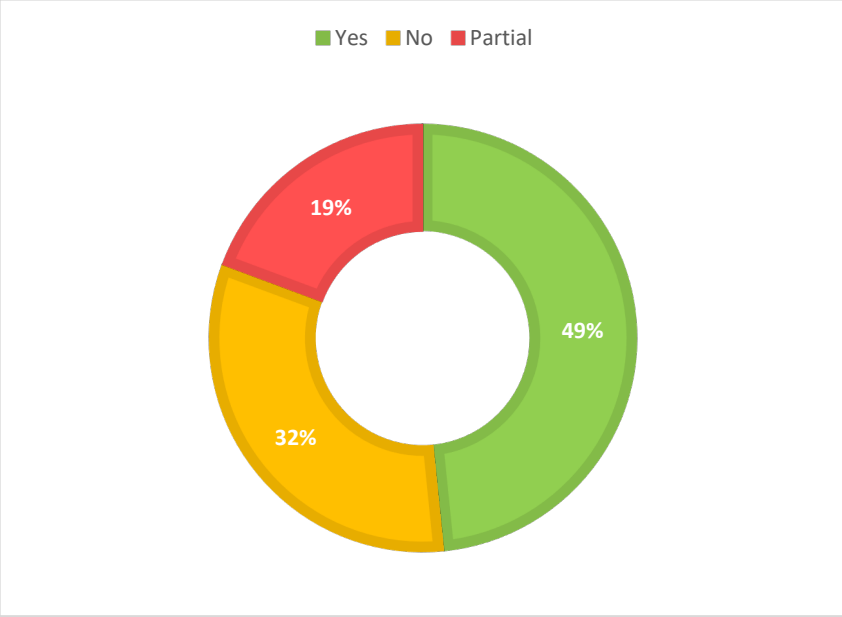
Protect existing wetlands to prevent further wetland loss.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 68% of MDPs surveyed include policies supporting the protection of wetlands

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Some policies are challenging to interpret consistently because the terms used are not defined. Including definitions for terms in the policies would increase transparency and enable more consistent interpretation and application of the of the policies.
- Identifying wetlands on MDP information maps would enable the municipalities to clearly disclose information that may trigger additional application requirements and help applicants/ developers determine costing and timing for their projects.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to some municipalities to identify and incorporate wetland mapping into MDPs. • Costs associated with undertaking individual wetland assessments increase the costs of development.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Incorporate Wetland mapping into MDP information maps (where available). • Include definitions for terms used relating to wetlands. • Identify clear triggers for when wetland assessments, will be required. • Identify requirements for design mitigations at time of subdivision or development to protect Wetlands.

WETLAND MANAGEMENT

BRWA RECOMMENDATION 17

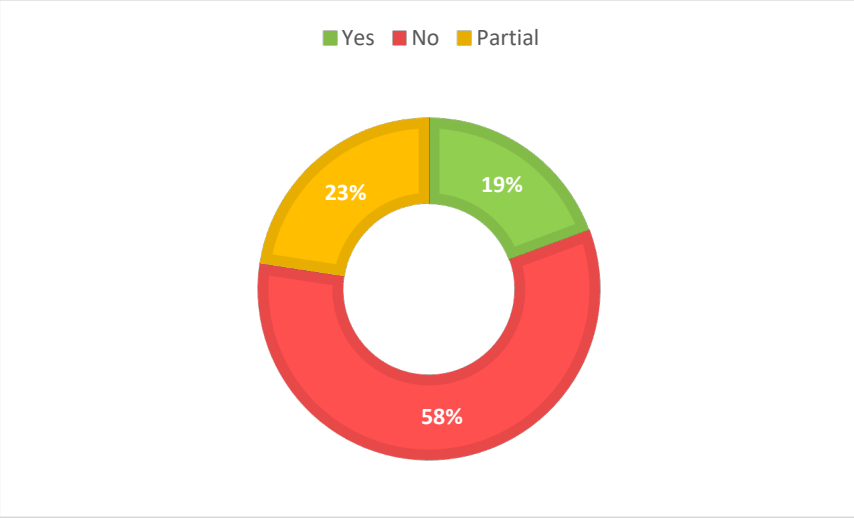
Include wetland setback provisions to preserve ecological and hydrological function.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 48% of MDPs surveyed include policies related to setbacks or buffers from wetlands

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Setback distances are established from "water bodies" rather that "wetlands". Separating "wetlands" from "water bodies" could provide greater clarification for landowners/developers.
- Identifying wetlands on MDP information maps would enable the municipalities to clearly disclose information that may trigger additional application requirements and help applicants/ developers determine costing and timing for their projects.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Absence of resources and data available to some municipalities to identify and incorporate wetland mapping into MDPs. • Costs associated with undertaking individual wetland assessments increase the costs of development.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Incorporate Wetland mapping into MDP information maps (where available). • Include definitions for terms used relating to wetlands. • Identify clear triggers for when wetland assessments, will be required. • Identify setback or Environmental Reserve requirements to be applied at time of subdivision or development to protect Wetlands.

WETLAND MANAGEMENT

BRWA RECOMMENDATION 18

Incorporate wetland and riparian management into the design of new developments.

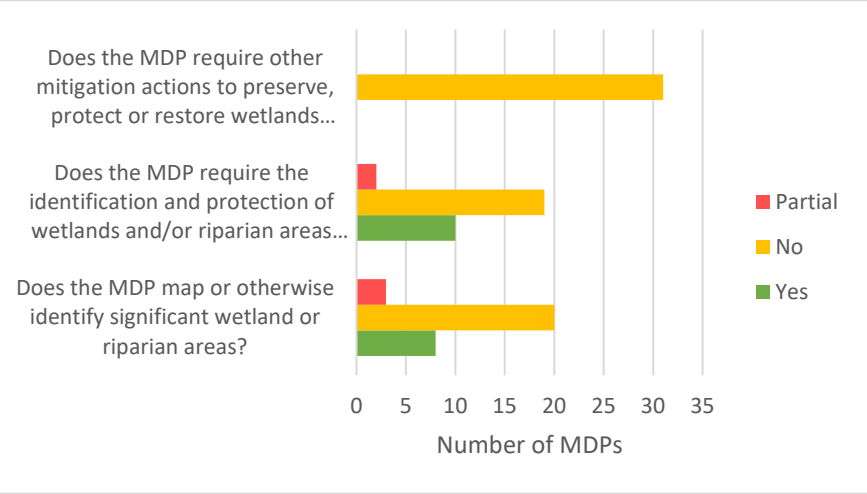
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- 35% of MDPs surveyed identify significant wetland or riparian areas
- 42% of MDPs surveyed include policies related to setbacks or buffers from wetlands
- 0% of MDPs surveyed include other mitigation actions to preserve, protect or restore wetlands and/or riparian areas at time of subdivision or development

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Wetland mapping is only included in approximately 1/3 of the MDPs included in the survey, this makes it difficult for landowners/developers to determine if their proposed development may impact a wetland or riparian area.
- Mitigation actions identified in MDPs area predominantly limited to avoidance and establishing development setbacks from wetlands.



CHALLENGES OR BARRIERS TO IMPLEMENTATION

- Incomplete or inaccurate provincial wetland mapping.
- Absence of resources and data available to some municipalities to identify and incorporate wetland mapping into MDPs.
- Costs associated with undertaking individual wetland assessments increase the costs of development.

OPPORTUNITIES FOR BETTER ALIGNMENT

- Incorporate Wetland mapping into MDP information maps (where available).
- Include definitions for terms used relating to wetlands.
- Identify clear triggers for when wetland assessments, will be required.
- Incorporate additional mitigation actions to conserve or restore wetlands and riparian areas at time of subdivision or development.

		• Identify setback or Environmental Reserve requirements to be applied at time of subdivision or development to protect Wetlands.

WETLAND MANAGEMENT

BRWA RECOMMENDATION 19

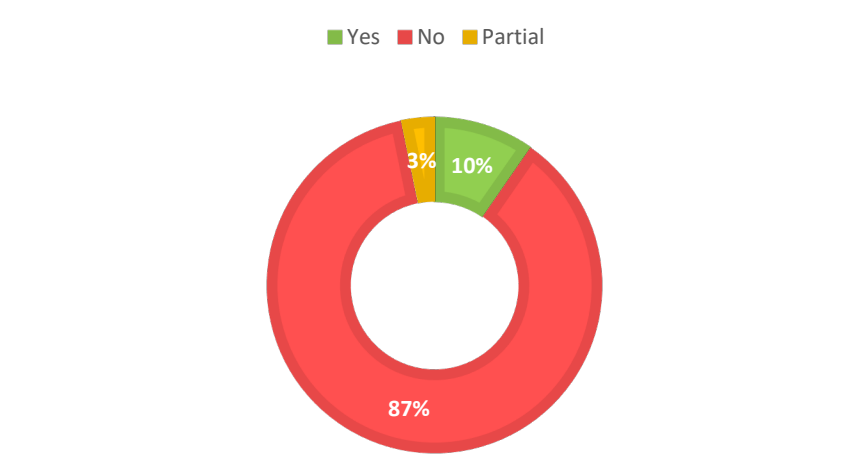
Integrate existing tools (eg. Stepping Back from the Water, Field Manual on Buffer Design for the Canadian Prairies, and riparian setback models) to determine optimal buffer areas for development near wetlands.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 35% of MDPs surveyed identify external documents or tools for determining setbacks or buffers adjacent to wetlands

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Providing external documents or tools for determine setback or buffer distances adjacent to wetlands assists landowner/ developers determine the municipalities expectations regarding buffering requirements.



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Shortage of resources and/or internal capacity to evaluate and incorporate wetland buffering tools into MDPs. • Costs associated with undertaking individual wetland assessments increase the costs of development.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Identify and incorporate existing wetland and riparian and setback tools and resource materials into MDP policies to provide greater consistency in the buffer areas around wetlands. • Include definitions for terms used relating to wetlands.

		• Identify clear triggers for when wetland assessments and setbacks, will be required.

WETLAND MANAGEMENT

BRWA RECOMMENDATION 20

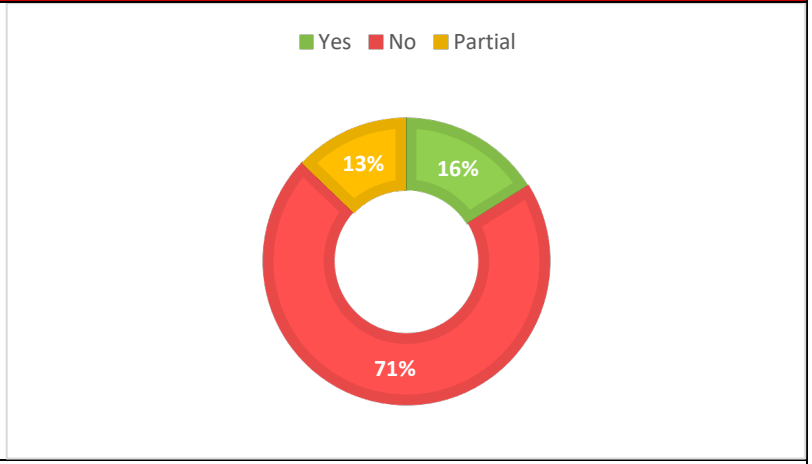
Identify ecologically, hydrologically, economically, and culturally significant wetlands within municipal boundaries.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 29% of MDPs surveyed identify significant wetlands or peat lands within the municipality

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Mapping data is incomplete and make is challenging to implement policies relations to this recommendation
- Policies do not specifically identify peatlands



CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Shortage of resources and/or internal capacity to evaluate and incorporate wetland buffering tools into MDPs. • Costs associated with undertaking individual wetland assessments increase the costs of development. • Requires access to data about the location of significant wetlands and/or peat areas. • Requires agreement regarding what makes a wetland or peat are significant. • Difficult to determine the cultural significance of wetlands in the absence of oral history or traditional knowledge.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Where the data is available, identify and incorporate existing wetland and peat areas into MDP mapping. • Include definitions for terms used relating to wetlands. • Identify clear triggers for when wetland assessments and setbacks, will be required.

Policy Review Results – Riparian Areas Management

Riparian Lands are the transitional areas between upland and aquatic ecosystems. These areas can have variable width and extent both above and below ground. These lands are influenced by and/or exert an influence on associated water bodies, which includes alluvial aquifers and floodplains, when present. Riparian lands usually have soil, biological, and other physical characteristics that reflect the influence of water and/or hydrological processes[10]. Riparian areas provide valuable ecosystem services that can reduce municipal costs, support water quality, and maintain biodiversity. The loss of intact riparian areas significantly impacts water quality, harms fish and wildlife populations and negatively impacts water quantity within a watershed. When a riparian area exhibits high disturbance levels its ecosystem functions decline, and it can become highly vulnerable to impacts of local land management decision[11]. Apopting municipal land management policies and practices that support riparian area management are key components of protecting ecosystem services within the watershed, and striking a balance between a healthy aquatic ecosystem, vibrant economy, and sustainable communities.

The table below provides a summary of the survey findings related to riparian area management.

PLAN PRIORITY	MANAGEMENT RECOMMENDATIONS	MDP POLICIES	YES	NO	PARTIAL
Riparian areas management	Restrict development in riparian areas.	Does the MDP provide policies specifically related to riparian areas?	6	18	7
		Does the MDP restrict development within or in proximity to riparian areas?	3	24	4
	Include provisions for setbacks and buffer zones for riparian areas.	Does the MDP include policies related to setbacks or buffers from riparian areas?	5	18	8
	Establish protection and conservation areas around riparian ESAs.	Does the MDP identify Environmentally Significant Areas (ESAs) within the municipality?	12	15	4
		Does the MDP include policies related to protecting ESAs?	5	18	8
		Does the MDP establish a minimum setback from watercourses?	10	18	3

[10] Alberta Water Council, 2013.

[11] "Approved Water Management Plan for the Battle River". July 2014. Alberta Environment and Sustainable Resource Development

	Establish minimum 30-metre-wide naturally vegetated areas adjacent to each side of watercourses to protect riparian areas.	Does the MDP require the retention of natural vegetation within watercourse setbacks?	4	23	4
	Require increased riparian protection areas where habitat functionality requires greater setbacks.	Does the MDP include policies or triggers for increased or additional riparian setbacks to protect or enhance habitat function?	2	29	0
	Ensure a minimum of 75% of riparian areas are naturally vegetated.	Does the MDP identify minimum targets for the retention of natural vegetation in riparian areas or riparian intactness?	0	31	0
	Manage riparian impacts related to aggregate extraction development.	Does the MDP include policies that would limit aggregate (sand and gravel) extraction or require mitigations/restoration where this type of development is proposed in a riparian area?	1	29	1
		Does the MDP include policies specifically related to minimizing impacts to riparian areas resulting from aggregate extraction developments?	0	31	0

RIPARIAN AREAS MANAGEMENT

BRWA RECOMMENDATION 21

Restrict development in riparian areas.

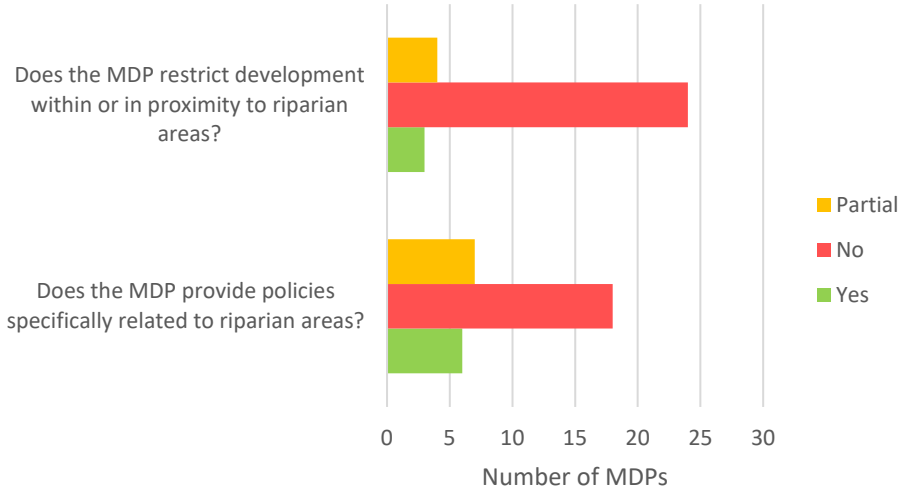
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT

- 42% of MDPs surveyed include policies specifically related to riparian areas
- 23% of MDPs surveyed restrict development within or in proximity to riparian areas

AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…

- Absence of definitions to clarify policy terms and provide consistency in interpretation of terms and triggers.
- Absence of clear development restrictions for some use classes or types of development in riparian areas.
- Where policies exist to restrict development in riparian areas, they tend to be specific to riparian areas around water bodies and do not include riparian areas around watercourses.



CHALLENGES OR BARRIERS TO IMPLEMENTATION

- Shortage of resources and/or internal capacity to evaluate and incorporate riparian areas into MDPs.
- Costs associated with undertaking individual biophysical assessments increase the costs of development.
- Potential for perceived conflicts between traditional grazing practices and establishment of development restrictions in riparian areas.

OPPORTUNITIES FOR BETTER ALIGNMENT

- Where the data is available, identify and incorporate existing riparian area intactness survey information into the MDP to enable the setting and monitoring of riparian area intactness targets.
- Include definitions for terms used relating to riparian area.
- Include policy direction that supports partnerships with organizations including Cows and Fish to share information about Beneficial Management Practices for grazing near riparian areas.
- Identify clear triggers for when the identification and delineation of riparian areas will be required as part of the ASP development process or part of subdivision or development applications.

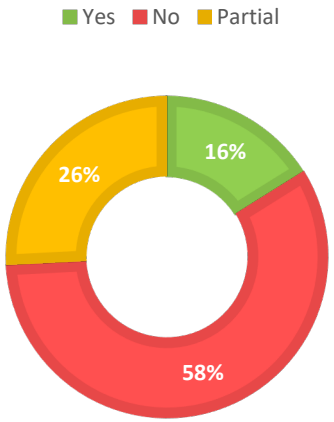
RIPARIAN AREAS MANAGEMENT

BRWA RECOMMENDATION 22

Include provisions for setbacks and buffer zones within riparian areas.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 42% of MDPs surveyed include policies related to setbacks or buffers from riparian areas
AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…	• Absence of definitions to clarify policy terms and provide consistency in interpretation of terms and triggers. • Absence of clear development restrictions for some use classes or types of development in riparian areas. • Where policies exist to require buffers or setbacks for development in riparian areas, they tend to be specific to riparian features and do not use the term "riparian area". This may result in some riparian features being unintentionally excluded from buffing requirements.
CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Shortage of resources and/or internal capacity to evaluate and incorporate riparian area buffering tools into MDPs. • Costs associated with undertaking individual biophysical assessments increase the costs of development. • Potential for perceived conflicts between traditional grazing practices and establishment of buffer areas around riparian lands.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Where the data is available, identify and incorporate existing riparian area intactness survey information into the MDP to enable the setting and monitoring of riparian area intactness targets. • Include definitions for terms used relating to riparian area. • Include policy direction that supports partnerships with organizations including Cows and Fish to share information about Beneficial Management Practices for grazing near riparian areas. • Identify clear triggers for when the identification and delineation of riparian areas and setbacks setback areas, will be required as part of the ASP development process or part of subdivision or development applications.



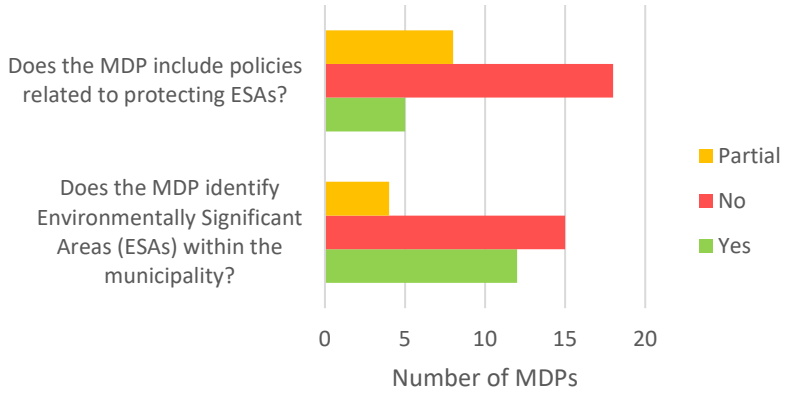
RIPARIAN AREAS MANAGEMENT

BRWA RECOMMENDATION 23

Establish protection and conservation areas around riparian ESAs.

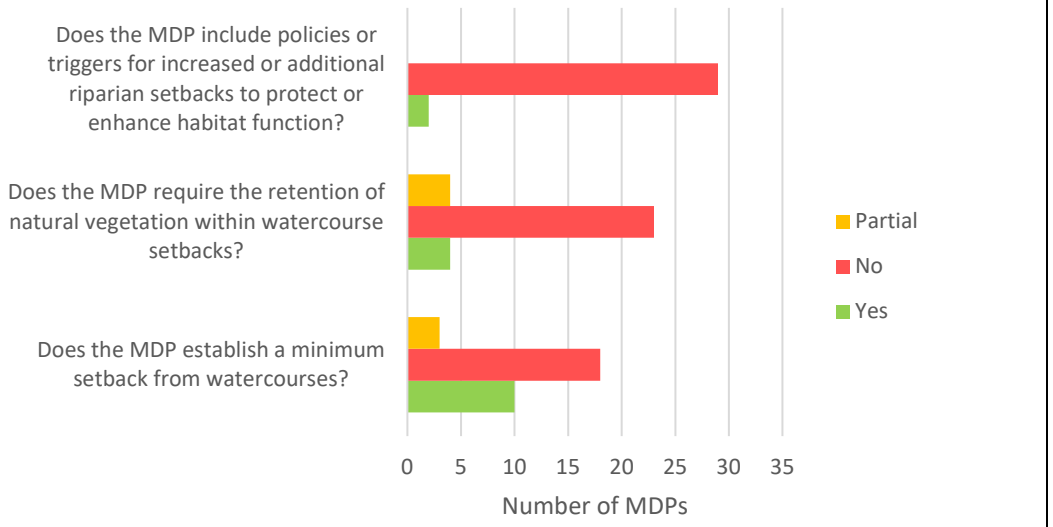
POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 52% of MDPs surveyed identify Environmentally Significant Areas (ESAs) within the municipality • 42% of MDPs surveyed include policies related to protecting ESAs
AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…	• Absence of definitions to clarify policy terms and provide consistency in interpretation of terms, triggers, and policy requirements in some MDPs. • Not all MDPs include information maps with data identifying the location of ESAs within the municipality.
CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Shortage of resources and/or internal capacity to evaluate and incorporate ESAs into MDPs. • Not all municipalities included in the survey have municipal GIS systems. • Costs associated with undertaking individual biophysical assessments increase the costs of subdivision and development. • Potential for perceived conflicts between agricultural development and development mitigations in ESA areas. • Some MDPs include goal statements indicating support for protect Environmentally Significant Areas within the municipality but do not include corresponding objectives of policies to support the goal.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Where the data is available, identify and incorporate existing ESA data into MDPs to identify where ESAs are present. • Include definitions for terms used relating to ESAs. • Identify policy triggers indicating when the identification and delineation of ESA features are required as part of the ASP development process or part of subdivision or development applications. • Establish policies that support conservation and restoration efforts within ESA areas.



		• Where GIS is not available, include policies that reference publicly available ESC data through provincial web mapping portholes such as GeoDiscover.

RIPARIAN AREAS MANAGEMENT	BRWA RECOMMENDATION 24	
	Establish minimum 30-metre-wide naturally vegetated areas adjacent to each side of watercourses to protect riparian area and require increased or additonal riparin setbacks to protec or enhance habitat function.	
	POLICY REVIEW RESULTS	
	AREA(S) OF ALIGNMENT	• 42% of MDPs surveyed identify a minimum setback distance from watercourses
		• 26% of MDPs surveyed require the retention of natural vegetation within watercourse setbacks • 6% of MDPs surveyed include policies or triggers for increased or additional riparian setbacks to protect or enhance habitat function

	AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW… • Watercourse buffer area policies could be further refined to enable a range of setback distances from different classifications of watercourses. • Vegetated buffers are "encouraged" rather than "required" in some policies which may result in inconsistent application or adoption of the policy and negatively impact riparian area intactness. • MDP policies do not identify triggers to indicate when an increase to buffers may be required to protect or enhance their habitat function. • Low emphasis on "habitat" as a trigger for requiring riparian areas buffers.	
	CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Access to watercourse classification and habitat data. • Costs associated with undertaking, riparian setback matrix assessments, undertaking the calculations identified in "Stepping Back from the Water" and/or engaging a professional biologist to undertake a biophysical assessment to provide increase the costs of subdivision and development. • Potential for perceived conflicts between agricultural development and requiring naturally vegetated buffer areas adjacent to watercourses. • Lack or awareness or understanding about what constitutes a watercourse.
	OPPORTUNITIES FOR BETTER ALIGNMENT	• Collaborate with AB Environment and Parks to access data and setback recommendations as part of the subdivision and development referral process. • Include definitions for watercourse classification terms. • Identify clear triggers for when the identification and delineation of watercourse features and buffer areas will be required as part of the ASP development process or part of subdivision or development applications. • Include "important habitat areas" as a trigger for requiring riparian area buffers.

RIPARIAN AREAS MANAGEMENT

BRWA RECOMMENDATION 25

Ensure a minimum of 75% of riparian areas are naturally vegetated.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• Zero (0) of MDPs surveyed identify minimum targets for the retention of natural vegetation in riparian areas or riparian intactness
AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW… • Absence of riparian intactness targets in the MDPS • Vegetated buffers are "encouraged" rather than "required" in some policies which may result in inconsistent application or adoption of the policy and negatively impact riparian area intactness.	
CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Access to riparian area intactness data (current and historical). • Potential for perceived conflicts between agricultural development and requiring naturally vegetated buffer areas adjacent to watercourses.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Include policies that support collaboration with the BRWA and AB Environment and Parks to access data and monitor riparian intactness. • Establish minimum targets for riparian intactness in the MDP. • Include Policy direction to support the development of Reserves or public lands Bylaws which include identify minimum targets for the retention of natural vegetation in riparian areas or riparian intactness.

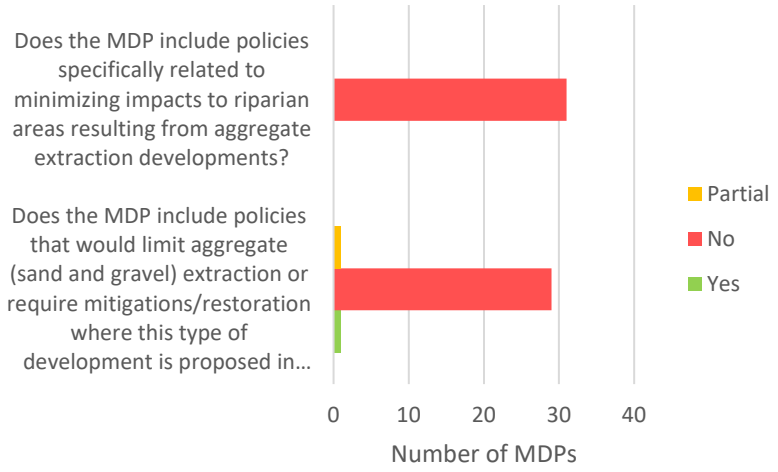
RIPARIAN AREAS MANAGEMENT

BRWA RECOMMENDATION 26

Manage riparian impacts related to aggregate extraction development.

POLICY REVIEW RESULTS

AREA(S) OF ALIGNMENT	• 6% of MDPs surveyed include policies that would limit aggregate (sand and gravel) extraction or require mitigations/restoration where this type of development is proposed in a riparian area • Zero (0) of MDPs surveyed include policies specifically related to minimizing impacts to riparian areas resulting from aggregate extraction developments
AREAS FOR ENHANCEMENT: GAPS IN POLICY SHOW…	• Absence of policies specifically related to minimizing impacts to riparian areas resulting from aggregate extraction developments in the MDPs
CHALLENGES OR BARRIERS TO IMPLEMENTATION	• Aggregate is often located I riparian areas. Difficult to extract aggregate without impacting the riparian area.
OPPORTUNITIES FOR BETTER ALIGNMENT	• Include policies that require remediation of riparian areas impacted by aggregate extraction. • Include policies that require aggregate developments to minimize damage to riparian areas where possible including: (requiring compliance with an erosion and sediment control plan, restricting staging and storage areas from locating in riparian areas, minimizing onsite dewatering, requiring silt fences and LID practices to be implemented on site to limit sediment and pollutants from entering watercourse and water bodies on the development site.



SUMMARY

The Discussion Guide for Battle River and Sounding Creek Watershed Communities identifies opportunities to better align municipal policy documents with BRWA watershed recommendations across the Battle River and Sounding Creek Watersheds. The accompanying implementation Guides for Watershed Management Policies will provide comprehensive recommendations for consideration by local governments. The adoption of the recommendations will enable coordinated action and collaboration across local government jurisdictions for the protection and improvement of water quantity, water quality, biodiversity, and land management practices effecting wetlands and riparian areas.

APPENDIX A: LIST OF MUNICIPAL DEVELOPMENT PLANS

The following is a list of Municipal Development Plans (as amended to January 1, 2024) reviewed for the purposes of this report:

Camrose County MDP Bylaw 1372

County of Wetaskiwin MDP Bylaw 2023/05

Ponoka County MDP Bylaw 6-08-MDP

Leduc County MDP Bylaw 08-19

Flagstaff County MDP Bylaw 10/18

Lacombe County MDP Bylaw 1238/17

Beaver County MDP Bylaw 98-800

MD of Wainwright MDP Bylaw 1694

County of Paintearth MDP Bylaw 701-21

County of Stettler MDP Bylaw 1414-09

County of Vermilion River MDP Bylaw 19-03

Special Areas MDP MSD:037/21

City of Camrose MDP Bylaw 2684/11

City of Wetaskiwin MDP Bylaw 1782-11

Town of Ponoka MDP Bylaw 323-13

Town of Killam MDP Bylaw 790

Town of Hardisty MDP Bylaw 1138/09

Town of Wainwright MDP Bylaw 2021-14

Town of Coronation MDP Bylaw 2009-558

Town of Castor MDP Bylaw 1007

Town of Stettler MDP Bylaw 2041-13

Town of Provost MDP Bylaw 06/2010

Village of Hay Lakes MDP Bylaw 01-2020

Village of Forestburg MDP Bylaw 3/2009

Village of Paradise Valley MDP Bylaw 307-2020

Village of Hughenden MDP Bylaw 513-20

Village of Alliance MDP Bylaw 2019-02

Village of Halkirk MDP Bylaw 2021-02

Village of Consort MDP Bylaw A-797

Village of Chauvin MDP Bylaw 2019-11

Village of Heisler MDP Bylaw 516-18

APPENDIX B: LIST OF TERMINOLOGY

The following definitions represent terms used or referenced in this report.

Development	means development as defined in the Municipal Government Act: a. An excavation or stockpile and the creation of either of them, b. A building or an addition to or replacement or repair of a building and the construction or placing of any of them on, in, over or under land, c. A change of use of land or a building or an act done in relation to land or a building that results in or is likely to result in a change in the use of the land or building, or d. A change in the intensity of use of land or a building or an act done in relation to land or a building that results in or is likely to result in a change in the intensity of use of the land or building.
Conservation Easement	means a legal tool that allows landowners to conserve natural attributes of their land.
Conservation Easement Agreement	means a voluntary legal agreement between landowners and a conservation agency or government that limits opportunities of use to protect the features of the land.
Ecosystem elements	means biotic and abiotic factors that interact directly or indirectly within the natural environment.
Environmental Reserve	means Lands designated as "Environmental Reserve" are lands designated at time of subdivision that are left in a natural state or may be used as a public park. Lands may be designated as "Environmental Reserve" if they consist of the following: a. a swamp, gully, ravine, coulee, or natural drainage course, b. land that is subject to flooding or is, in the opinion of the subdivision authority, unstable, or c. a strip of land, not less than 6 metres in width, adjacent to the bed and shore of any body of water. Environmental Reserves are primarily used to establish development setbacks from water bodies and watercourses to prevent development from occurring too close to the shoreline.
Environmentally Significant Area	means areas that are important to the long-term maintenance of biological diversity, physical landscape features and/or other natural processes, both locally and within a larger spatial context. ESAs are determined by the Government of Alberta as per the criteria and evaluation matrix outlined in *Environmentally Significant Areas in Alberta: 2014 Update*.
Environmentally Significant Features	means natural attributes that function as a part of the system or landscape.
Invasive Species	means non-native species that causes harm to the environment, economy, or human, animal, or plant health

Natural assets	means natural resources and ecosystems that yield a flow of benefits to people, including forests and healthy tree stands, watercourses, water bodies, wetlands, fields, soil
Non- Native Species	means plants and animals living in areas where they don't naturally exist.
Riparian Area	means transitional areas between upland and aquatic ecosystems. They have variable width and extent above and below ground and perform various functions. These lands are influenced by and exert an influence on associated water bodies, including alluvial aquifers and floodplains. Riparian lands usually have soil, biological, and other physical characteristics that reflect the influence of water and hydrological processes.
Setback	Means an established minimum distance that must be maintained between a land use or development from a property boundary, including boundaries with water bodies defined features.
Subdivision	Means the division of a parcel of land approved by a municipal subdivision authority pursuant to the *Municipal Government Act.*
Watershed	means a drainage basin where all flowing water converges to a single point, such as a lake, river, or ocean.
Water body	means any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent, or occurs only during a flood. This includes, but is not limited to, wetlands and aquifers.
Watercourse	means the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh or other natural body of water, or a canal, ditch, reservoir, or other artificial surface feature made by humans, whether it contains or conveys water continuously or intermittently.
Wetland	Means land that has the water table at, near, or above the land surface, or which is saturated for a long enough period to promote wetland or aquatic processes as indicated by hydric soils, hydrophytic vegetation, and various kinds of biological activity that are adapted to the wet environment.

APPENDIX C: BRWA WATERSHED MANAGEMENT RECOMMENDATIONS[12]

Plan Priority	Management Recommendations
Defined language	• Use language that clearly identifies terms of significance to watershed management goals
Habitat conservation and management	• Maintain natural habitat corridors • Incorporate ESAs in municipal policies related to environmental protection • Integrate local ESAs into development project criteria • Introduce policy to create, protect, restore natural assets (identified as natural resources and ecosystems that yield a flow of benefits to people, including forests and healthy tree stands, watercourses, water bodies, wetlands, fields, soil)
Non-point source pollution management	• Limit the development of new Confined Feeding Operations (CFOs) within the effective drainage area of Battle River and Sounding Creek watersheds • Prohibit manure application in riparian areas and floodplains • Adhere to manure application setbacks for lands sloping towards surface water bodies as outlined in the AOPA • Integrate Low Impact Development (LID) techniques for stormwater management in new development, including permeable pavement, bioswales, rain gardens, natural drainage ways, stormwater retention ponds, rainwater harvesting
Non-native invasive species management	• Work with agricultural producers and other landowners to implement beneficial management practices that support native species and invasive species management
Riparian Areas Management	• Restrict development in riparian areas • Include provisions for setbacks and buffer zones for riparian areas • Establish protection and conservation areas around riparian ESAs • Establish minimum 30-metre-wide naturally vegetated areas adjacent to each side of watercourses to protect riparian areas. • Ensure a minimum of 75% of riparian areas are naturally vegetated • Manage riparian impacts related to aggregate extraction development
Source water protection	• Maintain and restore riparian vegetation within the 1:100 flood zone around all watercourses, water bodies and wetlands • Manage development within floodplains to maintain floodplain structure and function

[12] BRWA Watershed Recommendations include recommendations developed by the BRWA, where gaps were identified, other regional planning documents were considered in the recommendations.

	• Maintain and restore riparian and wetland areas on private and municipal property • Incorporate surface source water protection planning principles in development policies • Incorporate groundwater protection planning principles in development policies
Water quantity	• Identify ecosystem needs as a priority in planning decisions • Limit removal of treed areas / shelterbelts • Ensure 10% of municipal lands are designated as protected areas
Wetlands management	• Protect existing wetlands to prevent further wetland loss • Include wetland setback provisions to preserve ecological and hydrological function • Incorporate wetland and riparian management for new developments • Integrate existing tools (e.g. Stepping Back from the Water, Field Manual on Buffer Design for the Canadian Prairies, and riparian setback models) to determine optimal buffer for development near wetlands • Identify ecologically, hydrologically, economically, and culturally significant wetlands within municipal boundaries

APPENDIX D: ADDITIONAL RESOURCES:

- *Health of Canadians in a Changing Climate: Advancing our Knowledge for Action.*
  - *https://changingclimate.ca/health-in-a-changing-climate*
- *Legal Foundations for Municipal Riparian Management.*
  - https://www.nswa.ab.ca/resource/legal-foundations-for-municipal-riparian-management
- *Making Wetlands Work in Your Municipality*
  - https://adoa.net/wp-content/uploads/2017/03/NAWMP_MunicipalWetlandGuide_Final.pdf
- *Municipal Development Plan Review: Wetlands & Grasslands Act Sheet*
  - https://www.yoursayleduccounty.com/40227/widgets/172709/documents/122558
- *Municipal Government Act, RSA 2000, c M-26., Part 1 s. 3(a.1)*
  - https://www.canlii.org/en/ab/laws/stat/rsa-2000-c-m-26/latest/rsa-2000-c-m-26.html
- *North Saskatchewan Region: Surface Water Quality Management Framework for the North Saskatchewan and Battler Rivers*
  - https://open.alberta.ca/dataset/a5049f19-d46c-4b43-8782-c10c076afe29/resource/382503d1-7c73-475c-856f-438e62571ab1/download/epa-north-saskatchewan-region-surface-water-quality-management-framework-2022.pdf
- *Recommendations Document from the North Saskatchewan Regional Advisory Council*
  - https://landuse.alberta.ca/LandUse%20Documents/NS%20RAC%20Recommendations%20Report_Final.pdf
- *Subsidiarity in Action: Effective Biodiversity Conservation and Municipal Innovation*
  - https://www.albertalandinstitute.ca/public/download/files/103303
- *Traversing Terrain & Experience: Atlas of the Battle River and Sounding Creek Watersheds*