



Terms of Reference

For the Battle River and Sounding Creek Watershed
Management Planning Process: Phase Two



BRWA Planning Report

May 2012

Report title: Terms of Reference for the Battle River and Sounding Creek Watershed Management Planning Process: Phase Two

Suggested Citation: Battle River Watershed Alliance (BRWA). 2012. *Terms of Reference for the Battle River and Sounding Creek Watershed Management Planning Process: Phase Two*. Watershed Planning Report, 39 pages.

ISBN printed: 978-0-9878103-2-8

ISBN online: 978-0-9878103-3-5

At Battle River Watershed Alliance we desire to live, work and play in a watershed that sustains all life by using sound knowledge, wisdom and wise actions to preserve our watershed for future generations.

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Connecting People to Place for Action



Statement of Approval

The Terms of Reference for the Battle River and Sounding Creek Watershed Management Planning Process - Phase Two outlines the objectives, process and structure that will be used in the planning process. It meets the criteria set out for water management planning, as outlined in the *Framework for Water Management Planning* (Government of Alberta, no date) under the *Water Act* and is consistent with *Water for Life, Alberta's Strategy for Sustainability* (Government of Alberta 2003).

These Terms of Reference for the Battle River and Sounding Creek Watershed Management Planning Process - Phase Two are approved by the Battle River Watershed Alliance Board of Directors, with the endorsement of the Steering Committee responsible for the Battle River Watershed Management Planning Process - Phase Two.

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1.0 INTRODUCTION

The Terms of Reference for the Battle River Watershed Management Planning Process – Phase 2 outlines the objectives, process and structure that will be used in the planning process and will guide the duration of the process. This Terms of Reference is written in accordance with the *Framework for Water Management Planning*, which is enabled by section 11 of the *Water Act*. In addition, this Terms of Reference reflects the planning process described in the *Battle River Water Management Planning Process Phase One Terms of Reference*, which were approved on May 27, 2004.

The Terms of Reference is organized into seven main sections. Section 1 sets the context for the planning process by answering foundational questions about the watershed management planning process. Section 2 provides a description of the planning area in which this watershed management planning process applies. Section 3 describes current watershed conditions and an initial description of issues in the planning area. A summary of the legislative, policy and planning context within which the planning process will unfold is described in Section 4, while Section 5 describes the four stages that will guide the planning process. Section 6 describes who will lead the planning process, including the committees and working groups required to carry out the process. In Section 7 a brief overview of the anticipated timeline for the planning process is provided.

1.1 What is the Battle River Watershed Alliance?

The Battle River Watershed Alliance (BRWA) was created in 2006 as a non-profit society. Shortly after its formation, the BRWA was selected by Alberta Environment and Water, under *Water for Life: Alberta's Strategy for Sustainability* (Government of Alberta 2003), as the designated Watershed Planning and Advisory Council for the Battle River and Sounding Creek watersheds. See Figure 4 for a map of the BRWA planning area.

Through its designation as a Watershed Planning and Advisory Council, the BRWA has agreed to a number of interconnected responsibilities, including:

1. Educating users about the watershed;
2. Reporting on the state of the watershed;
3. Leading in watershed management planning;
4. Developing best management practices; and
5. Fostering stewardship activities within the watershed.

The BRWA delivers on its responsibilities through inclusive, collaborative and consensus-based approaches that build community partnerships to guide, support and deliver actions that sustain or improve the health of the Battle River and Sounding Creek watersheds. The BRWA seeks to achieve this through knowledgeable community participation and an adaptive approach (see section 1.5) to watershed management planning.

The BRWA is a society that works with the four orders of government (municipal, provincial, federal and First Nations), watershed groups, environmental organizations, industry, academia, communities and private citizens in a collaborative initiative to plan for the sustainable management of land and water resources in the Battle River and Sounding Creek watersheds.

1.2 What is a watershed management plan?

The Government of Alberta's *Water for Life* strategy (Government of Alberta 2003) outlines that one of the key outcomes for Watershed Planning and Advisory Councils is the development of recommendations in the form of watershed management plans for each of the major river basins in Alberta. A watershed management plan is a collaborative effort that involves watershed residents, stakeholders and decision-makers in identifying issues facing the watershed and recommending solutions to those issues. The development of a watershed management plan presents a comprehensive approach to watershed management, taking into account the protection and conservation of water and aquatic ecosystems as well as issues related to the impact of land use activities on water, aquatic ecosystems, and the overall health and sustainability of the watershed.

The Battle River and Sounding Creek Watershed Management Planning Process is a two-part planning process. Phase 1 of the planning process is led by Alberta Environment and Water. This phase is scheduled for completion in 2012, with the final outcome being the development of an approved water management plan for the Battle River watershed. This plan focuses on management recommendations related to surface water quantity in the Battle River watershed, including water supply, water licencing, and instream flow needs.

Phase 2 of the process is led by the BRWA. This phase will result in a comprehensive watershed management plan for the Battle River and Sounding Creek watersheds, as set out in Battle River Watershed Management Planning Process Phase One Terms of Reference (Government of Alberta 2004).

Phase 2 will look at various components of watershed management, including but not limited to:

- Water quality, including surface and ground water quality and source water protection

- Water quantity, specifically related to drought management and the development of strategies for surface water flow restoration and groundwater quantity protection
- Biodiversity, including related topics of habitat fragmentation, status of wildlife species, native vs. invasive species, and the role of protected areas and environmentally significant areas
- Land use management, including residential, commercial, industrial, recreational and agricultural land use practices
- Wetlands and riparian areas, including protection and restoration of these areas

Through the planning process, desired outcomes, management recommendations and implementation options will be determined for each of these components, hereafter referred to as **watershed management components**.

The tentative components of a comprehensive watershed management plan for the Battle River and Sounding Creek watersheds are outlined below in Figure 1. The overarching goal of watershed sustainability, including social, economic and ecological considerations, will inform recommendations made around each of these components. This is in accordance with the three pillars of sustainability outlined in the BRWA's strategic plan (BRWA 2011a).

The watershed management components were developed based on issue areas identified in the BRWA's 2011 State of the Watershed Report (BRWA 2011b) as well as through extensive public consultation carried out in November 2011 (BRWA 2012). These components may be revised over time as new information and issue areas emerge.

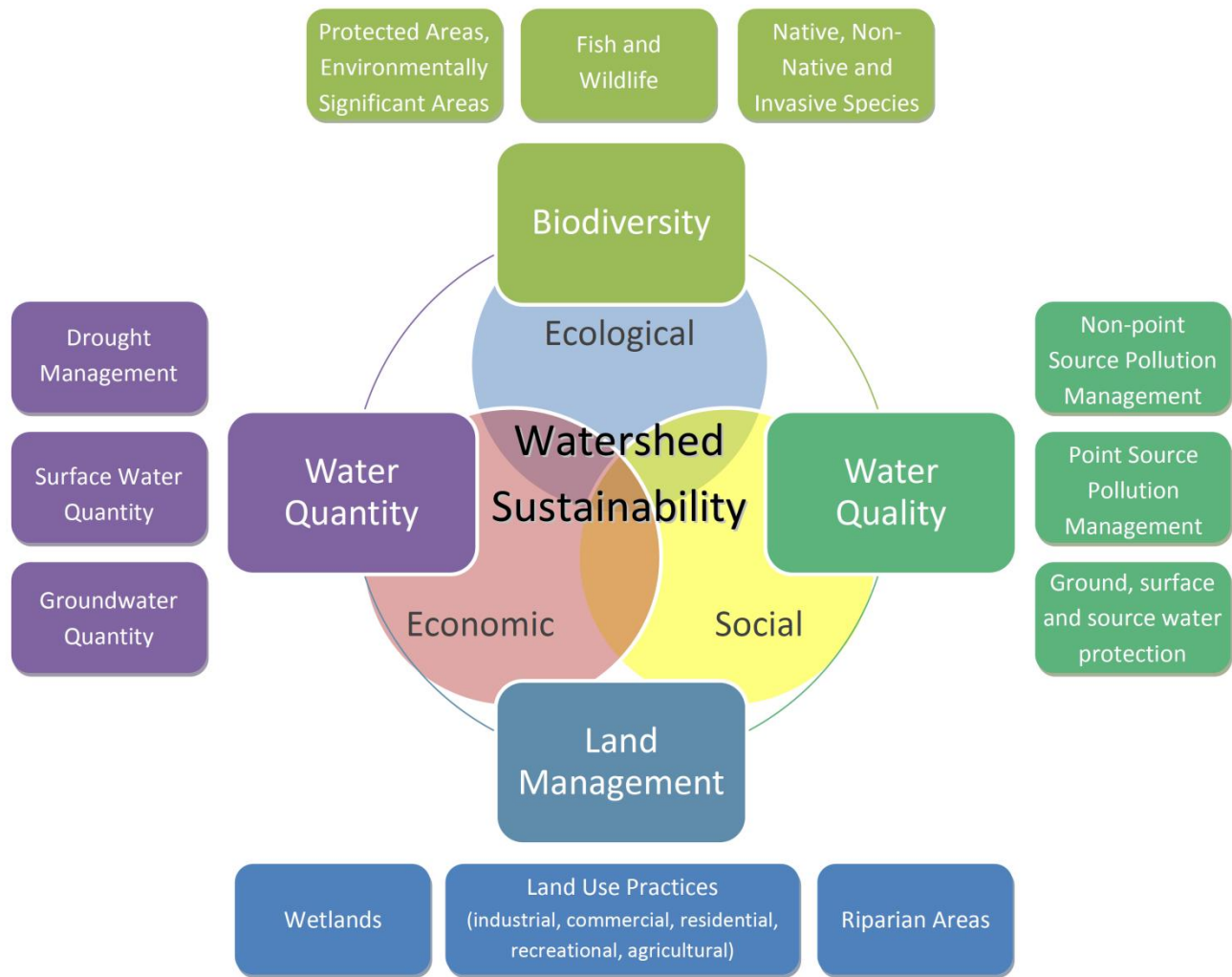


Figure 1. Tentative watershed management components of a comprehensive watershed management plan for the Battle River and Sounding Creek watersheds.

1.3 Objectives of the Planning Process:

What will this watershed management planning process do?

The goal of the watershed management planning process is to determine how best to manage the land and water resources of our watershed for the long-term sustainability of our watershed's environmental, economic and social values. Three complimentary objectives have been identified to support the achievement of this goal. First, the planning process will set out *policy recommendations* to support long-term watershed sustainability for each of the watershed management components. Second, we will work with land and water management authorities to achieve *policy alignment* that intentionally leads to the

sustainable management of our watersheds across multiple jurisdictional boundaries. Third, the planning process will identify *policy implementation* options in the form of management strategies and tools that support on-the-ground decision-making and actions that realize the objectives of policy recommendations over time.

To give an example of how the planning process will unfold, consider the development of recommendations related to riparian areas. A *policy recommendation* focusing on the restoration or protection of riparian areas in the watershed may recommend a ‘maintain or improve’ policy. *Policy alignment* seeks to ensure that riparian area policies across the multiple jurisdictions with decision-making power in the watershed align with this overarching policy direction. Possible tools for *implementing* the ‘maintain or improve’ policy may vary across subwatershed and jurisdictional boundaries, and may include the use of a riparian set back model, an arbitrary set back requirement, the limitation of access to riparian areas for livestock during critical time periods, or active restoration.

Policy recommendations will be determined for each watershed management component. Policy alignment and implementation options will then be sought at the subwatershed level in order to support on-the-ground management actions. “Policy recommendations” and “implementation guidelines” documents will be developed for each watershed management component. Figure 2 outlines this process. Public engagement and input will be essential throughout this process.

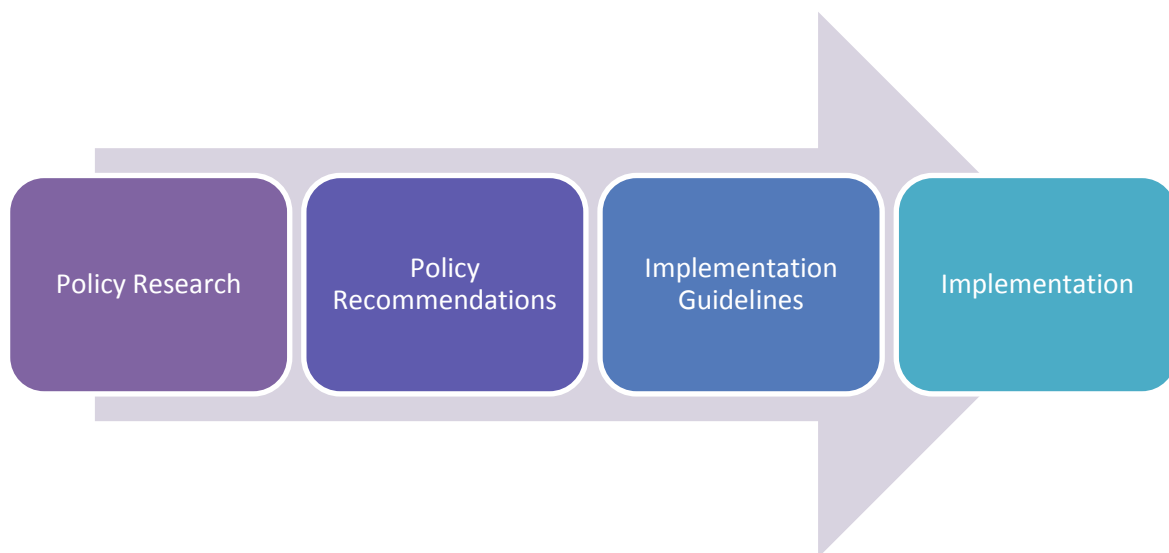


Figure 2. Process for development of policy recommendations and implementation guidelines for each watershed management component

1.4 Who is responsible for a watershed management plan?

Phase two of the watershed management planning process is voluntary in nature, meaning that implementation of the recommendations developed during the planning process is the shared responsibility of watershed residents, stakeholders and decision-makers.

While the development of policy recommendations and the alignment of policy throughout the planning area is a main goal of the watershed management planning process, the objective of the implementation stage of the planning process is to develop options for policy implementation that may be utilized by both public and private sectors. The decisions public and private land management authorities make with respect to policy implementation are at the core of the successful implementation of the watershed management planning process.

1.5 What is an adaptive management approach?

Adaptive management is an approach to natural resource policy that embodies a simple imperative: policies are experiments that, over the course of the adaptive management planning cycle, may prove inappropriate (Lee 1993). We must learn from these experiments in a manner that links science with social and economic values found within the watershed (Mitchell 1997).

By adopting an adaptive management approach for watershed management planning, the BRWA is explicitly accepting that we do not have a complete understanding of the natural and social systems functioning within the watershed. Both the natural and social systems will, in the course of time, present surprises that will test our adaptive management approach. This means that the BRWA and its partners must approach watershed management planning with the expectation that some policies and actions identified during the planning process may well be inappropriate, but that the experiences and lessons learned as a result of implementation failure allow us to collectively improve watershed management approaches over time.

When the BRWA initiated the development of a State of the Watershed Report (BRWA 2011b), which identifies and assesses issues within the Battle River and Sounding Creek watersheds, the adaptive management process was triggered. With the completion of the State of the Watershed Report, the BRWA shifts fully into its adaptive management process, a four step process requiring the BRWA to:

- Plan: Examine alternatives and make recommendations for the best course of action in a watershed management plan;

- **Implement:** Work with appropriate individuals, organizations and jurisdictions to implement watershed management plans;
- **Monitor and Report:** gather and analyze monitoring data in successive 'state of' reports; and
- **Review and Evaluate:** Determine if conditions in the watershed are improving as a result of actions identified in the plan, or if the plan needs to be revised.

Each of these tasks is linked in an adaptive management approach for watershed management planning described in *Water for Life: Alberta's Strategy for Sustainability*. This approach is illustrated in Figure 3.

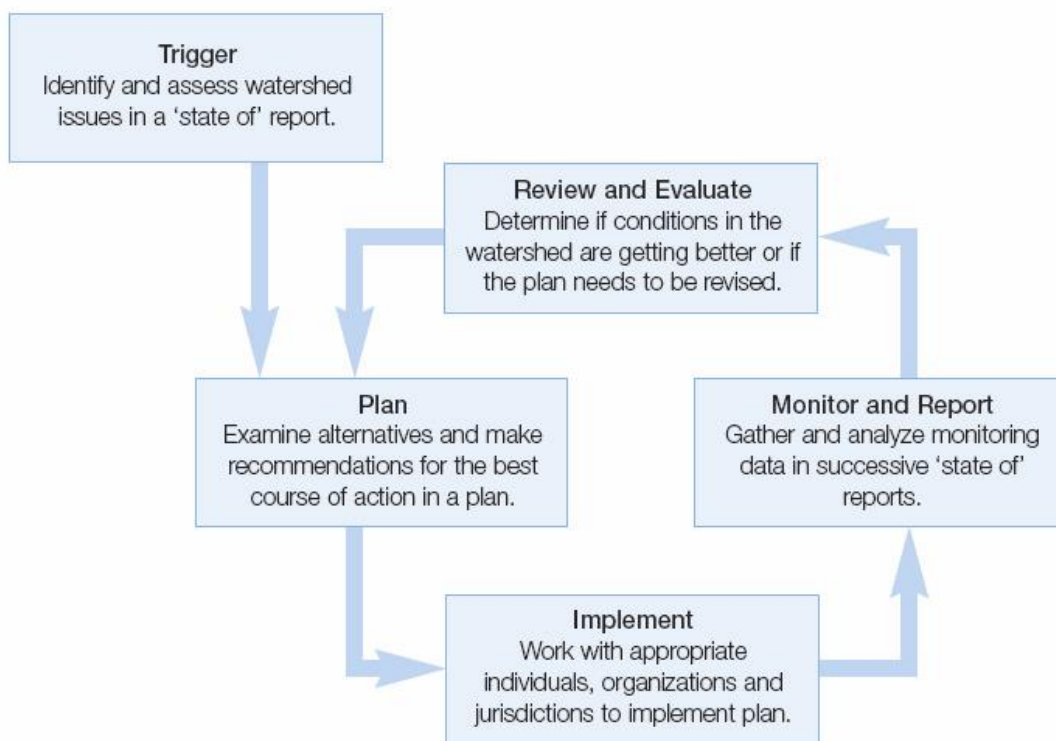


Figure 3. Adaptive management planning cycle for watershed management planning in the Battle River and Sounding Creek watersheds (Government of Alberta, no date)

The first iteration of the adaptive management planning cycle (as illustrated in Figure 3) that the BRWA is adopting for its watershed management planning process is expected to take between seven to ten years to complete. As an organization, the BRWA has already invested a period of three years completing its first State of the Watershed Report. The planning stage may take upwards of three or four years to

complete. A sufficient period (possibly two or three years) of time will be required to complete the implementation stage and allow actions to be fully implemented. Monitoring and reporting will also require sufficient (possibly two years) time to analyze data and develop an updated State of the Watershed Report, anticipated for 2021. Finally, the BRWA will review and evaluate the impacts of specific management actions and evaluate their efficacy before revisiting specific elements of the watershed management plan.

2.0 GEOGRAPHIC CONTEXT

The planning area for the watershed management planning process includes the Alberta portions of both the Battle River and Sounding Creek watersheds. In this section, the geographic context for each watershed is provided.

2.1 Battle River Watershed

2.1.1 Location

The planning area for the Battle River watershed begins just west of Highway 2 at Battle Lake, and continues east to the Alberta-Saskatchewan border (see Figure 4, page 18). The planning area boundary is defined as the portion of the Battle River watershed that lies within Alberta. Topography defines the entire watershed, as it shapes the course and speed of water moving through the area. The boundaries of the watershed are known as drainage divides (i.e. the height of land between adjoining watersheds). Within the Battle River watershed there are five subwatersheds, named Bigstone, Iron, Paintearth, Blackfoot and Ribstone.

2.1.2 Natural Landscape

The Alberta portion of the Battle River watershed is located entirely within the province's settled "White Zone", and takes in portions of the Lower Foothills, Central Mixedwood, Dry Mixedwood, Central Parkland and Northern Fescue Natural Sub-Regions.

The Battle River watershed is a subwatershed of the greater North Saskatchewan River Basin, draining approximately 40 per cent of the land base of this Basin. However, the Battle River only contributes approximately 3 per cent of the water that flows in the North Saskatchewan River. There are two primary reasons for this: (1) the headwaters of the Battle River originate in the Western Plains at Battle Lake. This means water flowing in the Battle River originates as groundwater and surface water runoff from local snow melt and rains, rather than from mountain and foothills snowpack runoff. (2) The topography of the Battle River Basin is predominantly flat (the river's average gradient is less than 0.4 m/km) with large tracts of land that are considered non-contributing, either naturally or due to human influence (e.g. ditching and draining practices). Non-contributing means that water falling as snow or rain collects in small lakes and wetlands, where the water will eventually either infiltrate into the ground or evaporate before it ever reaches the Battle River. All of this results in very low flows in the Battle River, except for

a short period of time annually in April and May and periodically in summer months during major rain storm events.

2.1.3 Cultural Landscape

In 2006, the Alberta portions of the Battle River and Sounding Creek watersheds had a population of about 123,000 people. This represents approximately 3.7% of the population of Alberta. Overall, 22% of the population lived in one of two cities (Camrose and Wetaskiwin), while 33% lived in one of the 15 towns in the basin and a similar percentage (33%) lived in one of 14 rural areas, including counties, municipal districts, and Special Areas. The balance of the population lived in one of 28 villages (6%), 10 summer villages (1%), or five Indian reserves (5%) (Watrecon 2010).

Overall, 24% of the workforce was employed in agriculture and other resource-based industries, although this increased to 42% in the Ribstone subwatershed. The “other services” industries accounted for 17% of employment in the Battle River watershed and this percentage was fairly consistent among the five subwatersheds. Health care and social services industries provided 11% of basin employment, although this ranged from a high of 13% in the Bigstone subwatershed to 8% in the Ribstone subwatershed. Another 11% of basin employment was in the retail trade industries. Construction, manufacturing, wholesale trade and finance and real estate accounted for the remainder of employment (Watrecon 2010).

2.1.4 Management Jurisdictions

The planning area lies primarily within the Central Region of Alberta Environment and Water’s administrative units. The planning area also falls within two regional planning areas, as identified under the *Land-use Framework*, including the North Saskatchewan and Red Deer Regional Planning areas. As well, fourteen counties, municipal districts and special areas find all or part of their administrative boundaries within the planning area. Three cities (Lacombe, Camrose, Wetaskiwin), 15 towns, 28 villages, 10 summer villages and 5 Indian Reserves (Pigeon Lake, Samson Cree, Montana, Ermineskin, Louis Bull) also have management jurisdiction within the planning area. Finally, Canadian Forces Base Wainwright is located in the planning area.

2.2 Sounding Creek Watershed

2.2.1 Location

The planning area for the Sounding Creek watershed begins just east of Sullivan Lake near Highway 36 and continues east to the Alberta-Saskatchewan border (see Figure 4, page 18). The planning area boundary is defined as the portion of the Sounding Creek watershed that lies within Alberta.

2.2.2 Natural Landscape

The Alberta portion of the Sounding Creek watershed is entirely within the province's settled "White Zone", and takes in portions of the Central Parkland, Northern Fescue and Dry Mixed Grass Natural Sub-Regions.

The Sounding Creek watershed is considered dead drainage. Sounding Creek begins near Hanna, Alberta and flows into Sounding Lake. The outlet from Sounding Lake is Eyehill Creek, which flows into Saskatchewan and culminates in Manito Lake. There is no outlet from Manito Lake. As outflows from Sounding Lake are believed to have only occurred one or two times in the last fifty years, the area upstream of Sounding Lake is generally considered a non-contributing area. Despite being a non-contributing watershed, it is classified as a subwatershed of the greater North Saskatchewan River Basin.

2.2.3 Cultural Landscape

In 2006, the Sounding Creek watershed had a population of about 7,300 people; this represents approximately 6% of the total population within the planning area. Slightly more than half of the residents of the Sounding Creek watershed (51.0%) lived in rural communities. The largest rural population was in Special Area No. 4, which accounted for 17.8% of the watershed population. The MD of Provost accounted for another 16.1% of the watershed population. Other rural areas that accounted for small portions of the population included: Special Area No. 3 (6.7%), the County of Paintearth (4.8%), the MD of Wainwright (3.4%) and Special Area No. 2 (2.1%).

Overall, 29.9% of watershed residents were employed in occupations related to primary industry. High percentages of employment in primary industry were found in the rural parts of the watershed, especially in the Special Areas. Consort also had relatively higher percentages of people employed in primary industry. About 18.9% of the watershed's workforce was employed in occupations in transportation, equipment operation, and the trades. However, these occupations were particularly important in Chauvin (38.2% of employment) and Youngstown (23.8%). Another 16.5% of the watershed's workforce was

employed in occupations related to sales and service, and these occupations accounted for more than 20% of employment in Consort and Veteran. Employment in business, finance and administration accounted for 12.8% of sub-basin employment, although higher percentages were reported in Provost, Special Area No. 4 and Youngstown.

2.2.4 Management Jurisdictions

The planning area lies primarily within the Central and Southern Regions of Alberta Environment and Water's administrative units. The planning area also falls within two regional planning areas, as identified under the *Land-use Framework*, including the North Saskatchewan and Red Deer Regional Planning areas. As well, the County of Paintearth, the M.D. of Provost, the M.D. of Wainwright and Special Areas 2, 3 and 4 find all or part of their administrative boundaries within the planning area. Seventeen towns also have management jurisdiction within the planning area.

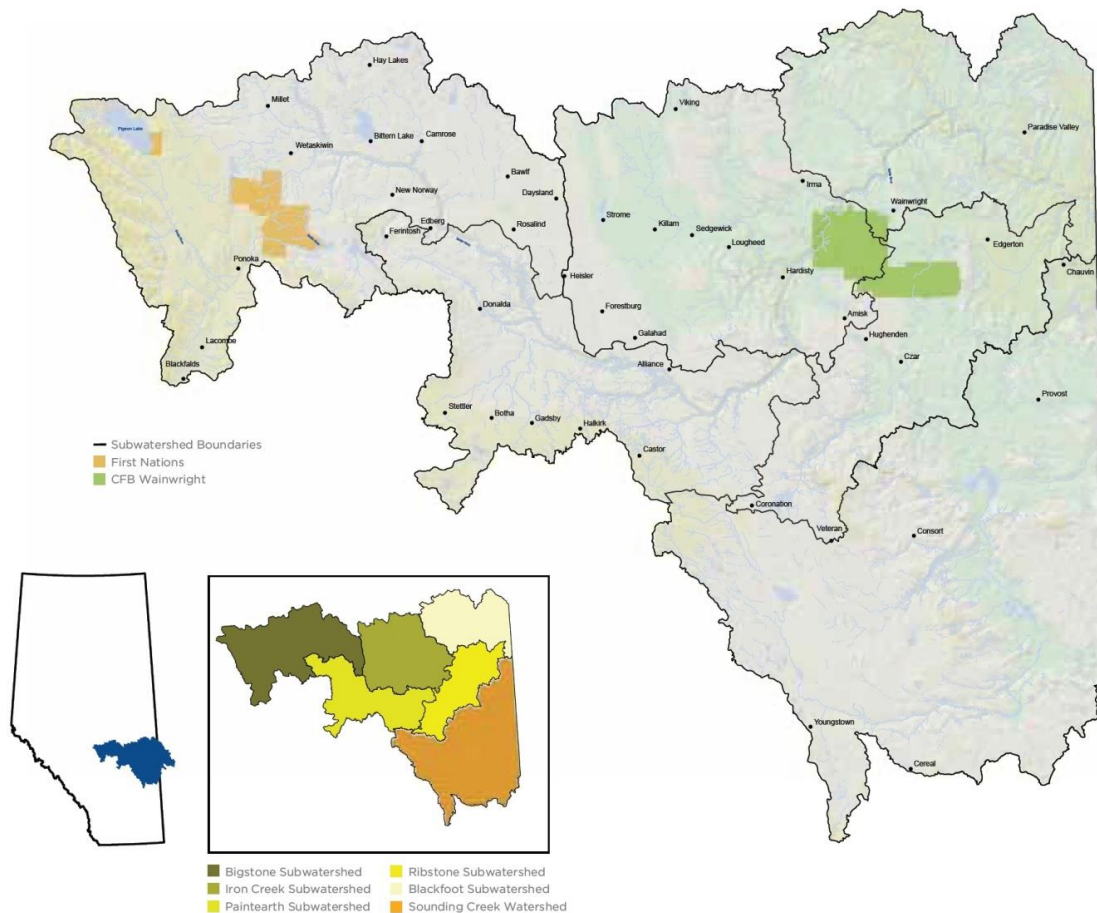


Figure 4. Battle River Watershed Alliance Planning Area

3.0 Current Watershed Conditions and Issues

A detailed overview of current watershed conditions is available in the BRWA's *State of the Battle River and Sounding Creek Watersheds Report 2011* (BRWA 2011b). In addition, following a series of community workshops hosted by the BRWA in November 2011, an initial description of locally identified issues for both the Battle River and Sounding Creek watersheds was developed based on feedback received from watershed residents, stakeholders and municipalities. A detailed overview of issue areas discussed at the workshops is available in the community workshops final report (BRWA 2012).

What follows is a summary of key issues identified based on findings of the State of the Watershed Report and feedback received through BRWA community workshops.

3.1 Water Quality

Water quality in the Battle River watershed is impacted by pollution from a variety of sources. Of particular concern at this time are the high levels of phosphorus and nitrogen present in the Battle River. Based on water quality monitoring in 2004-2005 at 11 stations along the Battle River, Canadian Water Quality Guidelines for phosphorus were exceeded 100% of the time at 7 stations and more than 50% of the time at the remaining stations.

Excess nutrient levels present a threat to the health of the aquatic ecosystem, contributing to excessive algal growth and corresponding decreases in dissolved oxygen levels. Fish and other aquatic organisms depend on dissolved oxygen to live, and decreased oxygen levels increase the stress of these organisms. In addition, algae blooms and other excessive plant growth impact recreational activities on our lakes, rivers and streams.

Other water quality issues include pH levels and fecal coliform counts that sometimes exceed Canadian Water Quality Guidelines. These exceedances demonstrate that the Battle River is facing increased demands to deal with anthropogenic wastes, with the end result being an impaired ability for the river to support a diversity of aquatic life generally associated with a healthy aquatic ecosystem.

3.2 Water Quantity

The Battle River and Sounding Creek watersheds are prairie-fed, making them much more vulnerable to times of drought and water shortage than watersheds fed by runoff from mountain snowpack. Concerns around the potential environmental, social and economic impacts of drought are common among

watershed stakeholders. The potential to mediate impacts of drought through increased water storage capacity within our watersheds was raised at the community workshops.

Other areas of concern related to water quantity focus on water license practices and water allocation concerns in the Battle River watershed. Similarly, people are concerned about the amount of water we use and are aware of the need for water conservation.

3.3 Wetlands and Riparian Areas

‘Wetland’ refers to any area of land that is saturated with water long enough to promote wetland or aquatic processes. ‘Riparian area’ refers to land adjacent to streams, rivers, lakes and wetlands where vegetation and soils are strongly influenced by the presence of water.

Wetlands and riparian areas play an important role in watershed health and function. Their loss and impairment are known to cause an increase in the export of nitrogen, phosphorous, sediment and pathogens to our lakes and rivers as well as intensifying the effects of drought and flooding. There is growing concern among watershed stakeholders about the state of our wetlands and riparian areas.

Wetland loss is significant and ongoing throughout the watershed. For example, of the wetlands present in the Iron Creek subwatershed prior to 1963, about 30% remain intact today. The riparian areas of the mainstem of the Battle River received an average rating of “fair” in 2007-2008, meaning that the health of these areas is moderately impaired. People recognize the value of wetlands and riparian areas for the various functions they perform and are concerned that these areas are being lost and degraded.

3.4 Land Management

Various land use practices have an impact on our watersheds and are of concern to watershed stakeholders, including development, disturbance and other impacts related to recreational, agricultural, residential, commercial, and industrial activities. Specific concerns related to land management include: acreage development; development in floodplains; the degradation and loss of wetlands, riparian areas, and intact, natural landscapes; water quality impacts related to agricultural land-use practices and subsequent runoff from crop and pasture land; industrial land development; urban expansion; and more.

Related to land use and development is the concern about the influence of such development on fish and wildlife in our watersheds. The biodiversity and intactness of natural ecosystems within our watersheds may be threatened by a variety of land management practices.

3.5 Governance, Economics, and Watershed Management

Many watershed stakeholders have pointed to the need for more effective policies, laws, regulations and monitoring related to water management. A related concern for small municipalities is limited federal and provincial funding for environmental management and the challenge of large expenses related to adherence to government regulations, water treatment, and environmental management in general. It was suggested that there is a need for increased and stable funding and resources to address issues related to water and watershed management. The idea of compensating landowners for ecological goods and services provided on their lands was also discussed as one management option. In general, watershed residents and stakeholders feel it is essential to consider the economic implications and factors related to watershed management.

3.6 Education and Awareness

There is a sense amongst many people in the watershed that education and awareness related to water and watershed related issues is fairly limited, as is the impetus for greater community involvement and action around community water issues. Watershed residents agreed on the importance of increased engagement and participation of individuals and communities. A key goal for many was to encourage increased understanding of ecological and watershed topics and promote a greater emphasis on individual and collective stewardship and responsibility.

4.0 LEGISLATIVE, POLICY AND PLANNING CONTEXT

The development and implementation of a Watershed Management Plan occurs within both a legislative and policy context. In this section, a brief overview of legislation and policies that influence the development of a watershed management plan for the Battle River and Sounding Creek watersheds is provided. Table 1 illustrates the legislative, policy and planning context within which a watershed management plan is developed.

Table 1. Legislative, Policy and Planning Context for Watershed Management Planning.

	<i>Legislation and Regulation</i>	<i>Policy</i>
<i>National and International</i>	Federal Provincial Legislation (i.e. Fisheries Act, SARA)	UNESCO agreements (i.e. Kyoto Protocol)
<i>Interprovincial</i>	Apportionment	
<i>Provincial</i>	Provincial Legislation (i.e. ALSA, Water Act, EPEA)	Wetland Policy
<i>Regional</i>	Land Use Framework Regional Plans	Water For Life
<i>Watershed Specific</i>	Battle River Watershed Management Plan, Phase One: Approved Water Management Plan for the Battle River (Alberta)	Battle River Watershed Management Plan, Phase Two
<i>Subwatershed / Subregional</i>		Pigeon Lake Integrated Watershed Management Plan Intermunicipal and Municipal Development Plans
<i>Local</i>	Land use Bylaws	Outline Plans, Area Structure Plans, Subdivision Plans

4.1 Legislative context

4.1.1 Alberta Land Stewardship Act

The Alberta Land Stewardship Act (ALSA) is the authorizing legislation for regional land-use planning in Alberta, as described in the Land-use Framework. ALSA establishes how regional plans are created, amended and reviewed. Regional plans developed under ALSA are "legislative instruments and, for the purposes of any other enactment, are considered to be regulations" [Alberta Land Stewardship Act, Section 13]. In essence, regional plans developed under ALSA are binding on provincial and local governments and other decision makers, and will have an impact on industrial, recreational and other land users. To this end, the BRWA Watershed Management Plan must conform to regional plans that encompass the Battle River and Sounding Creek watersheds, namely the North Saskatchewan Regional Plan and Red Deer Regional Plan.

4.1.2 Water Act

In Alberta, the ownership of water is vested in the crown, as stated in the Water Act, which is the primary statute regulating the use of the water resource in Alberta. The Water Act supports the conservation and management of water using an integrated approach that allows for flexible administration and management through sound planning, regulatory action, and market forces. The key components of the Water Act that guide watershed management planning are sections 7-15 and 35. As well, the *Framework for Water Management Planning*, which is enabled by the Water Act, provides important guidance in the development of watershed management plans as well as the development of strategies for the protection of the aquatic environment.

4.1.3 Public Lands Act

The Public Lands Act governs the management of public lands in Alberta. Specifically related to water management, the Act states that the bed and shore of all permanent and naturally occurring water bodies is vested in the crown. "Bed" is the land on which the water sits and the "shore" is the part of the bed which is exposed when water levels are below their normal fullest level. Use or disturbance of the bed and shore requires prior authorization under this legislation.

4.1.4 Environmental Protection and Enhancement Act

The Environmental Protection and Enhancement Act is provincial legislation that takes an integrated approach to the protection of Alberta's air, land and water. One of the Act's cornerstones is the guarantee of public participation in decisions affecting the environment. This public involvement includes increased

access to information, participation in the Environmental Assessment and Approval Processes and the right, when directly affected, to appeal certain decisions.

4.1.5 Fisheries Legislation

Alberta's fisheries are managed through the Alberta Fisheries Act, while fish habitat in Alberta is managed and protected through the federal Fisheries Act (Canada). Through these two pieces of legislation, the Fish Conservation Strategy guides the overall management and protection of fishery resources in Alberta. Its guiding principles include no net loss of the productive capacity of fish habitat and the maintenance of the biological diversity of fish fauna.

4.1.6 Municipal Government Act

This Act outlines the general jurisdiction of municipalities, including the requirement that every municipality have a land-use bylaw and that every municipality with a population of 3500 or more adopt a Municipal Development Plan. These bylaws and plans govern local and regional land zoning, development, and use, and as such have a great capacity to affect the overall health and sustainability of our watersheds.

Municipal land managers and private land owners administer the majority of land use practices within the Battle River and Sounding Creek watersheds. With the exception of the Special Areas, only small parcels of land are administered as Public Lands, Protected Areas or Indian Reserves.

4.1.7 Special Areas Act

The Special Areas operate as a unique type of rural municipality in southeastern Alberta. In addition, under the Special Areas Act, the Special Areas Board is responsible for the administration of public land within Alberta's Special Areas. The Special Areas Board leases these lands to local farmers and ranchers for grazing and cultivation purposes. As well, the Special Areas Board issues leases to oil and gas producers for the development and production of natural gas and oil reserves. The majority of the land base of the Sounding Creek watershed falls under the jurisdiction of Special Areas 2, 3 and 4.

4.1.8 Drainage Districts Act

Several Drainage Districts are located within the Battle River watershed. Under the Drainage Districts Act, these Drainage Districts may enact bylaws and policies for the effective management of each district. Drainage Districts have local government status, which gives them the authority to elect boards of

trustees, hire administrators, set drainage benefit rates, collect taxes and construct, maintain and operate water management works.

4.2 Policy context

4.2.1 Water For Life

Water for Life: Alberta's Strategy for Sustainability was finalized in November 2003 and promotes a watershed approach for water management, planning and decision-making. It was developed on the basis of extensive provincial consultation and outlines key directions, strategies and actions to manage Alberta's water resources into the future.

Two key principles are:

- Alberta's water resources must be managed within the capacity of individual watersheds
- Citizens, communities, industry and government must share responsibility for water management in Alberta and work together to improve conditions in their local watershed.

In addition, the *Water for Life* strategy seeks to achieve three key goals:

- Safe, secure drinking water supply
- Healthy aquatic ecosystems
- Reliable, quality water supplies for a sustainable economy

The Battle River watershed management planning process will be adaptive and flexible to ensure that it maintains congruence with the *Water for Life* strategy as it is implemented.

4.2.2 Land-use Framework

The Land-use Framework (LUF) is a comprehensive strategy to guide the management of public and private lands and natural resources in Alberta and is meant to provide a blueprint for land use management and decision-making. The Battle River Watershed Alliance considers the watershed management plan to be a sub-regional plan. As such, the watershed management plan may inform the development of the North Saskatchewan and Red Deer Regional Plans, as well as incorporate and adopt outcomes and recommendations identified through those Regional Plans, once they are completed.

4.2.3 Wetlands Policy

In Alberta, wetland management decisions are currently guided by the *Wetland Management in the Settled Area of Alberta - An Interim Policy* (AWRC 1993), as well as the *Provincial Wetland Restoration/Compensation Guide* (Alberta Environment and Alberta NAWMP Partnership 2005). The interim policy calls for the conservation of slough/marsh wetlands in a natural state, to mitigate degradation or loss of slough/marsh wetland benefits as near to the site of disturbance as possible and to enhance, restore or create slough/marsh wetlands in areas where wetlands have been depleted or degraded. Alberta's *Water Act* (1999) regulates activities that might interfere with a wetland such as draining or filling. Alberta is presently developing a new wetland policy and supporting action plan to achieve sustainable wetlands in the province. The *Water for Life Strategy* suggests that wetland objectives be set as part of the watershed planning process.

4.2.4 Aboriginal Policy Framework

The province's Aboriginal Policy Framework will be consulted as a guideline for Aboriginal consultation and involvement during this process.

4.3 Planning Context

4.3.1 Approved Water Management Plan for the Battle River Basin (Alberta)

The first phase of the watershed management planning process for the Battle River watershed is lead by Alberta Environment and Water and enabled under sections 7-15 and 35 of the *Water Act*. During phase one, Alberta Environment and Water brought together a stakeholder group that not only developed key recommendations that address the quantity of water available for human use. The Recommendations Group was formed early in the planning process to provide targeted stakeholder consultation based on identified sectors, as required under the *Water Act* for the development of a water management plan. The Group participated in a long term learning process leading to the development of three key recommendations that strike a balance between the needs of the people residing in and using the Battle River for their economic and social needs, and the needs of the aquatic environment.

4.3.2 Battle Lake Management Plan

Battle Lake is fed by springs and surface water runoff from a small and relatively undisturbed watershed. The Battle Lake watershed has been protected by a County of Wetaskiwin bylaw, and the provincial government has established the Mount Butte and South Battle Lake Natural Areas to protect approximately one third of the shoreline and riparian zones, as well as some of the upland habitat.

Stakeholders in the Battle Lake watershed area are concerned about the effects of oil and gas development on the lake and have made their concerns known in regulatory processes. In Alberta Energy and Utilities Board (EUB/Board) *Decision 2005-129: Review of Well Licence No. 0313083 and Application for Associated Battery and Pipeline Pembina Field*, the Board panel identified that “additional measures must be taken to ensure that future development continues to be conducted in an orderly, effective, and environmentally sensitive manner.” Consequently, in January 2006 the EUB worked with members of the Battle Lake Watershed Synergy Group to first define a terms of reference and then proceed with an area oil and gas development planning pilot project.

Its scope addresses oil and gas development in the Battle Lake watershed. The objectives of the project are (1) to protect the watershed from adverse and cumulative effects of oil and gas development, and (2) mitigate the potential adverse effects of oil and gas development on area residents, other land users and wildlife habitat.

4.3.3 Pigeon Lake Integrated Watershed Management Plan

The Pigeon Lake watershed is a subwatershed within the Battle River watershed, and the Pigeon Lake Watershed Association (PLWA) is a Watershed Stewardship Group (Government of Alberta 2003) within this watershed. The Pigeon Lake Integrated Watershed Management Plan (IWMP) is currently being developed by the PLWA and the BRWA. Subwatershed management plans such as this one will complement the watershed-wide policy recommendations and implementation options developed through the Battle River and Sounding Creek watershed management planning process. Watershed stewardship groups will be encouraged to develop goals and objectives to address local watershed issues.

The Pigeon Lake IWMP planning process will lead to the development of a watershed management plan that addresses all factors that directly or indirectly affect the sustainability of the Pigeon Lake watershed. It recognizes that all human activities, including water use, diversions and land use activities, can impact the quality and quantity of water resources within the Pigeon Lake watershed. The plan will be developed in partnership with watershed residents, stakeholders and decision-makers and will be based on a shared understanding of the land and water resources of the Pigeon Lake watershed and the environmental, social and economic demands on those resources.

4.3.4 Intermunicipal Development Plans

Intermunicipal Development Plans (IDP) are key planning documents that describe future growth directions beyond the current municipal boundaries. IDPs are voluntary plans entered into by two or more municipalities to coordinate the long term strategic direction of the plan area which can include all or a portion of the municipalities. An IDP can provide for future land uses with the area, how future development proposals are considered and any other matter relating to the physical, social or economic development of the area that the councils consider necessary.

4.3.5 Municipal Development Plans

Municipal Development Plans (MDP) are statutory planning documents adopted pursuant to the Municipal Government Act and are required by all municipalities with a population of 3500 or more. MDPs guide and direct future growth and development for the municipality, ensuring orderly, economical and beneficial development while balancing the environmental, social and economic needs and desires of the community. To this end MDPs are primarily a policy document that serves as a framework for the physical development of the community. It is a guide within which both public and private sector decision making and investment can occur.

A MDP must address future land use, manner of and proposals for future development, coordination of land use, policies respecting the protection of agricultural operations, future growth patterns and infrastructure with other municipalities if no IDP is in place, and discuss the provision of municipal services and facilities. In addition, the MDP may address a variety of other things including environmental matters, economic development, development constraints, and any other matter relating to the physical, social or economic development of the municipality.

All statutory plans adopted by municipalities such as area structure plans and area redevelopment plans must be consistent with the MDP and its policies. All statutory plans adopted by a municipality must also be consistent with each other. Additionally, the development and subdivision authorities must have regard to the MDP policies as one of the factors considered in making a decision.

5.0 WATERSHED MANAGEMENT PLANNING PROCESS

The watershed management planning process proposed by the Battle River Watershed Alliance is consistent with the process described in *Water For Life: Alberta's Strategy for Sustainability* and illustrated in Figure 3 (page 13). This section outlines the four stages of the planning process, providing a brief overview of the scope, approach and public participation process for each stage.

The planning process will be undertaken in phases, with each watershed management component being addressed separately. Thus, a first step in the planning process is to:

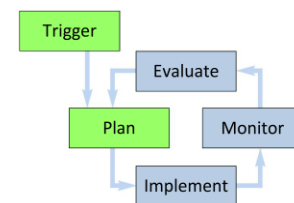
- 1) Determine the watershed management components to be included in the comprehensive watershed management plan (see tentative components in Figure 1, page 10); and
- 2) Prioritize the watershed management components according to the order in which they will be completed.

The four stages of the planning process will be undertaken for each of the watershed management components.

5.1 Stage 1: Information Requirements (Data Gaps)

5.1.1 Scope

A number of information requirements, or data gaps, have been identified in the BRWA's 2011 State of the Watershed Report (BRWA 2011b). For each of the watershed management components, data gaps may exist that must be filled before planning activities can continue. Where data gaps exist, the principle product developed during this stage of the planning process will be research reports specific to each data gap identified.



See Figure 3, page 13

5.1.2 Approach

Information shortfalls (data gaps), and any shortfalls that emerge during the planning process, will be prioritized and addressed in a systematic fashion. Research to fill data gaps should be initiated by the steering committee and tasked to the working group to develop an initial project plan. The project plan should include: (a) the value and purpose of the data; (b) appropriate methods for collecting the data, including any project teams required; (c) the costs and potential funding sources for data collection; and (d) who is responsible for filling data gaps. Once the project plan is approved work shall commence to fill the data gap within the timelines and budgets specified.

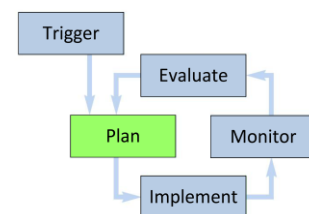
5.1.3 Public Participation

During the information requirements stage of the planning process the Battle River Watershed Alliance will utilize both inform and consult levels of public participation, as per *Battle River Watershed Management Planning Process Phase Two: Public Participation Strategy* (BRWA 2010). Our promise to the public is to provide notification when research initiatives are underway to fill specific data gaps; provide regular updates on our progress during the research phase; and consult with the public on the results of the research process with a view toward obtaining public input on research findings.

5.2 Stage 2: Plan Preparation

5.2.1 Scope

The focus of the plan preparation stage is to understand the current policy context in which we are working, identify preferred policy directions and present policy recommendations and implementation options that set the direction for future management actions related to each of the watershed management components. As such, the principal products to be generated through this stage of the planning process are documents outlining policy recommendations and implementation options for each watershed management component. As each watershed management component is completed it will constitute one component of the watershed management plan.



See Figure 3, page 13

5.2.2 Approach

(1) *Understand current policy context and identify potential management and policy options;*

For each watershed management component, it is necessary to understand the policy context influencing current management decisions and actions. As such, a watershed-wide assessment of existing policies, management practices and regulations pertinent to each watershed management component will be conducted. Next, policies, practices and regulations in other jurisdictions should be examined in order to identify and examine potential management tools and policy options to be implemented through this watershed management planning process.

(2) *Development of draft “policy recommendations” and “implementation guidelines” documents;*

The Watershed Management Plan Steering Committee and Working Group will be initiated at the beginning of the planning process to develop policy recommendations for each watershed

management component, which will form the basis of the “policy recommendations” and “implementation guidelines” documents.

The Working Group, in consultation with the subwatershed stakeholder advisory groups, will develop subwatershed-specific recommendations for policy alignment and implementation options for each watershed management component. This step provides an initial opportunity for broad public input on the draft policy recommendations and implementation options.

These recommendations will then be taken to the Steering Committee for review in the form of draft “policy recommendations” and “implementation guidelines” documents. Once the Steering Committee is satisfied with these documents, they will be submitted to the Board of Directors for approval.

(3) *Seek approval of draft “policy recommendations” and “implementation guidelines” documents;* Approval of the “policy recommendations” and “implementation guidelines” documents rests with the Board of Directors of the BRWA, and will only be provided once the Board of Directors is satisfied that sufficient consultation has occurred with those who are both directly and indirectly affected by the provisions of the plan.

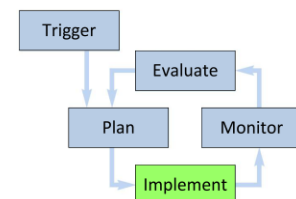
5.2.3 Public Participation

The plan preparation stage of the watershed management planning process will require a significant level of involvement from the public. During the plan preparation phase the Battle River Watershed Alliance will utilize the consult, involve and collaborate levels of public participation, as per the *Battle River Watershed Management Planning Process Phase Two: Public Participation Strategy* (BRWA 2010). The BRWA’s promise to the public is to ensure that their concerns and aspirations are directly reflected in the policy recommendations and implementation options developed, and to provide feedback on how public input influenced the content of the plan.

5.3 Stage 3: Implementation

5.3.1. Scope

The principal products to be generated through this stage of the planning process is the achievement of policy alignment and the development of a suite of implementation options and tools that lead to on-the-ground implementation of policy recommendations developed through the watershed



See Figure 3, page 13

management planning process.

5.3.2. Approach

The implementation stage will use a two-prong approach. First, work will focus on achieving policy alignment that is in accordance with policy recommendations identified in the planning process. To achieve policy alignment the Board of Directors, Steering Committee and Working Group of the BRWA will take a lead role, working directly with land management authorities in the planning area.

As policy alignment is achieved, the working group will support the implementation of subwatershed-specific implementation options, including decision support tools, best management practices and other strategies that directly support on-the-ground implementation of policy recommendations.

Implementation will require the working group to work closely with subwatershed stakeholder advisory groups, land management authorities, and a variety of other agencies and research scientists to develop viable options in a manner that allows people across the watershed to utilize those tools that best align with their preferred approach toward implementation on policy recommendations.

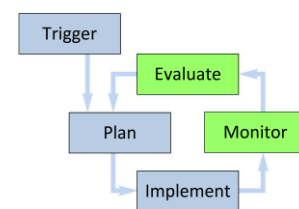
5.3.3. Public Participation

During the implementation stage of the planning process the Battle River Watershed Alliance will utilize the collaboration and empower levels of public participation, as per *Battle River Watershed Management Planning Process Phase Two: Public Participation Strategy* (BRWA 2010). The BRWA's promise to the public is to look to them for advice and innovation in formulating implementation options and work collaboratively with them to implement the preferred options that ultimately lead to the achievement of watershed sustainability.

5.4 Stage 4: Monitoring and Evaluation

5.4.1. Scope

Monitoring and evaluation are critical aspects of an adaptive management approach toward watershed management planning. The principle objectives of the monitoring and evaluation stage are: (1) to assess trends and cumulative effects of activities in the watershed; (2) determine the effectiveness of policy recommendations and implementation options utilized in achieving the overall goals of the planning process; (3) educate the public on progress toward achieving watershed sustainability.



See Figure 3, page 13

5.4.2. Approach

Because the BRWA lacks capacity to independently monitor trends over time, we initially worked with our partners to develop indicators for the State of the Watershed Report that align with the priorities of our partners, but that are also relevant to the objectives of the BRWA. The indicator selection process has, therefore, laid a strong foundation for future monitoring initiatives in the planning area. Our overall approach toward monitoring and evaluation is as follows:

(1) Assess trends and cumulative effects of activities in the watershed:

As the implementation stage of the planning process is initiated we will work with our partners to ensure monitoring efforts are initiated to give the BRWA the best opportunity possible to assess trends and cumulative effects since the last State of the Watershed Report was released. The principle product to be generated through this step of the Monitoring and Evaluation stage is inventory of all monitoring initiatives taking place in the planning area, anticipated timelines for release of data, and linkages between data and indicators of sustainability used by the BRWA.

(2) Determine the effectiveness of policy recommendations and implementation options utilized in achieving the overall goals of the planning process:

The BRWA will systematically assess the results of the policy recommendations and implementation options utilized in achieving watershed sustainability. To do this, we will first report on the achievement of policy alignment in the planning area. This will require the BRWA to review and report on what policy changes were made, if any, by those with resource and environmental management authority. The BRWA will also make an assessment of public and private sector actions taken to implement policy recommendations on-the-ground. Thus, the principle product to be generated through this step of the Monitoring and Evaluation stage is a report card that clearly identifies how effective the BRWA has been at achieving policy alignment, and how effective our partners have been at implementing policy recommendations on-the-ground.

(3) Educate the public on progress toward achieving watershed sustainability.

On the basis of the above monitoring and evaluation components, the BRWA will complete a revised State of the Watershed Report that will clearly describe our progress toward achieving watershed sustainability since the previous State of the Watershed Report (BRWA 2011b) was released. It is anticipated that a revised State of the Watershed Report will be released in 2021.

5.4.3. Public Participation

During the monitoring and evaluation stage of the planning process the Battle River Watershed Alliance will utilize the inform level of public participation, as per *Battle River Watershed Management Planning Process Phase Two: Public Participation Strategy* (BRWA 2010). Our promise to the public is to keep them informed as monitoring and evaluation efforts are carried out.

6.0 ROLES AND RESPONSIBILITIES

6.1 Steering Committee

The Watershed Management Plan (WMP) Steering Committee will be responsible for overseeing and providing direction to the planning process. The Steering Committee will also be responsible for reviewing recommendations set forth by the Working Group, ensuring that all stakeholder groups have had an opportunity to provide input into these recommendations, and advancing the draft “policy recommendations” and “implementation guidelines” documents for each watershed management component, as they are finalized, to the BRWA Board of Directors for final approval.

Committee representation will be consistent with BRWA bylaws and the WMP Steering Committee Terms of Reference. To the extent possible, membership will be representative of the diversity of stakeholder groups present in the watershed. New members will be solicited as required.

6.2 Working Group

While the Steering Committee sets the overall direction of the planning process, the Working Group shall assume responsibility for delivering the watershed management planning process, which may include:

- research and collection of data
- development of draft “policy recommendations” and “implementation guidelines” documents for each watershed management component
- public participation efforts
- development of educational products for the subwatershed stakeholder advisory groups

The Working Group, in collaboration with the Steering Committee and the subwatershed stakeholder advisory groups, will develop policy recommendations for each watershed management component, as well as the subwatershed-specific policy alignment and implementation options.

The BRWA Watershed Planning Coordinator will chair the Working Group.

The Working Group will consist of a core planning team, which may be composed of:

- BRWA Watershed Planning Coordinator
- Alberta Environment and Water Planner
- Municipal Planner
- And any other members determined by the BRWA Watershed Planning Coordinator.

In addition, technical support may be sought in the following areas:

- Agriculture: landowners, crop/livestock/forage producers, land managers
- Municipal planning and operations, including but not limited to water operations and infrastructure
- Industrial operations
- Wetlands and riparian areas management
- Fisheries management
- Aquatic ecosystem protection
- Limnologist
- Hydrologist
- Water modeling
- Watershed Stewardship Groups
- Recreational uses
- Aboriginal Relations
- Biodiversity

6.3 BRWA Board of Directors

The BRWA Board of Directors (BOD) operates according to the BRWA bylaws. The BOD will provide overarching direction to the planning process and will provide final approval for “policy recommendations” and “implementation guidelines” documents developed. Additional support from the BOD will be sought at key stages of the planning process, including approval of the Steering Committee Terms of Reference, review of draft “policy recommendations” and “implementation guidelines” documents, and additional resources required to support the work of the Steering Committee.

6.4 First Nations Involvement

First Nations will be invited to participate in the Steering Committee and are encouraged to participate on the working group and subwatershed stakeholder advisory groups. Involvement by First Nations in the planning process will not be considered consultation.

6.5 Subwatershed Stakeholder Advisory Groups

In order to engage effectively with stakeholders across the Battle River and Sounding Creek watersheds, the BRWA will form subwatershed stakeholder advisory groups (SAGs) for each of the subwatersheds of the Battle River watershed, as well as for the Sounding Creek watershed. SAG membership will consist of all relevant and interested stakeholder groups in each subwatershed.

The Steering Committee and Working Group will look to each subwatershed stakeholder advisory group for input into the development of policy recommendations and related policy alignment and implementation options.

SAGs will not act as standing committees, but rather will be created and dissolved on an ongoing basis in order to provide targeted, subwatershed-specific input into each of the watershed management components. Input will be gathered through subwatershed workshops on each watershed management component.

6.6 Project Coordinator

A project coordinator will be responsible for providing integration and coordinating activities for the planning process and be responsible to the steering committee and steering committee chairperson. The BRWA's Watershed Planning Coordinator will fulfill the coordinator role. The coordinator will be the lead author of the draft planning documents, and ensure adherence to the Terms of Reference.

7.0 PROCESS TIMELINE

The following table provides a broad overview of the timeline for the first iteration of the watershed management planning process (following the adaptive management planning cycle outlined in Figure 3, page 13). The planning cycle will be completed for each watershed management component, with the goal being to complete all components by 2021. This timeline may be adjusted as required.

Table 2. Timeline for the first iteration of the watershed management planning process.

Task	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Plan Development										
Plan Implementation										
Monitor and Report										
Review and Evaluation										

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