Guide to Watershed Management Planning in Alberta

Alberta
Government

Acknowledgements

Water is essential for all life. Its wise management is critical to the health and well-being of current and future generations of Albertans.

Preface

The 2003 release of Alberta's *Water for Life* strategy provided the catalyst for communities and stakeholder groups across the province to initiate watershed management planning, each with their own approach. Recognizing that each approach shares common elements essential for success, the *Guide to Watershed Management Planning in Alberta* was prepared. The guide supports Alberta's *Water for Life* partnerships in watershed planning.

The *Guide to Watershed Management Planning in Alberta* fulfills one key action identified in the Government of Alberta's *Water for Life Action Plan* (2009). Its guide was the Alberta Water Council 2008 report, *Recommendations for a Watershed Management Planning Framework for Alberta*.

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1.0 Introduction

1.1   Purpose of the Guide

Alberta's *Water for Life* strategy[1] emphasizes that watershed management planning is a shared responsibility. Successfully achieving the goals of *Water for Life* demands that all stakeholders take action to manage their watershed and ensure the sustainability of our water resources.

The Guide to Watershed Management Planning in Alberta guides local communities and *Water for Life* partnerships through the steps of developing and implementing a watershed management plan for their respective watershed, encouraging active participation from all stakeholders along the way. The planning process includes the development of recommended actions aimed at the protection, restoration, or maintenance of watershed conditions while supporting the water needs and uses valued by the broad community. However, a plan does not bring about change unless it is successfully implemented.

This guide outlines the iterative process of adaptive management from planning through to implementation and evaluation, and back to planning. It is intended to guide the partnership through a coordinated process of continually identifying and addressing priority issues and opportunities within the watershed.

1.2   Intended Users of the Guide

The guide offers Watershed Planning and Advisory Councils (WPACs) and Watershed Stewardship Groups (WSGs) a useful reference for their planning activities. It also informs other collaborative community-led watershed management planning projects and programs about appropriate planning processes.

> > >   A partnership is a relationship in which individuals or organizations share resources and responsibility to achieve common objectives, and to communicate about the achievements along the way.

1.3   How to Use this Guide

The 16-step process described in this guide can be used to successfully develop and implement a watershed management plan. The process is based on the principles of integrated land management and cumulative effects management. Other steps and useful tools could be incorporated where local conditions or community values require an alternate approach. Not all steps will work for every situation.

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[1] Water for Life: Alberta's Strategy for Sustainability (Government of Alberta, 2003)

Cumulative Effects Management

Cumulative effects management establishes outcomes for an area by addressing environmental, economic, and social considerations and implementing appropriate plans and tools to meet these outcomes. Cumulative effects management principles are

- outcomes-based: clearly defining desired end states;
- place-based: meeting the differing needs of regions within the province;
- performance management-based: using adaptive approaches to ensure results are measured and achieved;
- collaborative: building on a culture of shared stewardship, using a shared knowledge base; and
- comprehensively implemented: using both regulatory and non-regulatory approaches.

Integrated Land Management

Integrated Land Management (ILM) is a stewardship approach for users and managers of provincial Crown land and related natural resources. Aligned with the principles of cumulative effects management, users and managers of publicly owned land will:

- be comprehensive and balanced in their assessment of the values, benefits, risks, cumulative effects (environmental and socioeconomic) and trade-offs relevant to the operational scale being considered, while focusing on footprint reduction;
- be collaborative and inclusive, proactively seeking out timely engagement, sustained relationships and partnerships among participants;
- be responsible and accountable for their decisions and actions, which are underpinned and demonstrated by a stewardship ethic with regard to the maintenance of values associated with land and resources;
- be consistent with the direction provided through guiding policies, plans and decisions, and will reflect this direction in their activities;
- be informed by knowledge and science, which contribute to better understanding of the potential consequences of options and provide the foundation for informed and prudent decisions;
- use adaptive management to continually improve tools and processes, while identifying information gaps and other needs and seeking to fill them;
- know the roles and responsibilities related to the achievement of ILM outcomes; these roles and responsibilities are transparent, clearly communicated to all land users and managers, and performed in a timely manner; and
- respect the diverse values, interests, rights, and knowledge of ILM participants.

The appendices offer further information to support the planning process and the use of this guide. Appendix A is Frequently Asked Questions, Appendix B is the Checklist for Assuring Watershed Management Plan Implementation Success, Appendix C outlines a Glossary of terms used in the guide, and Appendix D lists other resources to consult.

2.0 Watershed Management Planning

2.1 Overview

Watershed management planning brings together stakeholders who share the responsibility for the sustainable management and stewardship of their watershed and its resources.

> Watershed management planning is a comprehensive, multi-resource management planning process involving all stakeholders within the watershed. The stakeholders identify the watershed's resources, issues, and concerns and develop and implement a watershed management plan with solutions that are environmentally, socially, and economically sustainable.

Fundamentally, watershed management planning seeks to answer the following questions:

- What is the present condition?
- What are the historical trends and will they continue?
- What is the desired future condition?
- What strategies and actions will be used to get to the desired future condition?
- What monitoring and evaluation is necessary to confirm the intended outcomes?
- How will the principles and practice of adaptive management be used to improve processes and outcomes?

Watershed management planning is complex, using dynamic and iterative processes and the best available information. Replanning at intervals ensures plans are adjusted to changing conditions, are relevant, and address current conditions and issues.

> A watershed is a body of land where water from rain or snow melt drains downhill into a body of water such as a stream, wetland, river, lake, or reservoir. Therefore, dealing with land-use issues is a prerequisite to the success of a watershed management plan.
>
> Ecosystem services are the benefits derived from fully functioning natural systems. Examples include carbon sequestration and climate change mitigation by forests, the filtration and purification of water by wetlands, or the flood attenuation by healthy riparian areas adjacent to streams and creeks.

The principles of watershed management planning:

- All stakeholders have the opportunity to participate in watershed management planning and work together to maintain and improve watershed conditions.
- The process considers desired social, economic, and environmental outcomes.
- Watershed management planning is based on consensus.
- Identified outcomes are measureable.
- Actions are measurable and result in improved watershed conditions.
- The process is adaptive to address emerging challenges and new information.
- Stakeholders willingly implement actions and report on progress toward agreed-upon outcomes.

2.2   Water Management Plans versus Watershed Management Plans

A watershed management plan is non-regulatory and has no statutory authority. It provides management advice to governments and agencies that have policy and approvals decision-making authority for land and resource management. It documents the agreed-upon decisions of key stakeholders and encourages them to consider best practices and education and outreach programs in their activities that support their watershed.

Objectives of watershed management plans are consistent with relevant policies, legislation, approved plans, and agreements. The objectives align with the management intent of the larger, higher order watershed and benefit its sub-watersheds.

Water management plans are developed under the *Water Act.* The process for water management planning, which follows the Framework for Water Management Planning, applies to all water bodies in Alberta, including streams, rivers, lakes, aquifers, and wetlands. An Approved Water Management Plan is a statutory plan and must be considered by a director when making licence and approval decisions.

http://environment.alberta.ca/documents/Framework_for_water_management_planning.pdf

2.3   The Process

This guide highlights the key steps of the watershed management planning process. It begins with understanding the conditions of the watershed and concludes with stakeholder and community support and endorsement of the strategy's actions and desired outcomes. The process is described by a series of iterative steps.

> > >   Adaptive management accommodates change as new and more accurate information becomes available. A policy, plan, or initiative can be implemented with confidence knowing that changes will be made as better information becomes available, conditions change, or statutes and policies refocus priorities.

Step 16: Adapt the plan to new information.

Step 1: Invite key stakeholders to participate in developing a watershed management plan.

Step 2: Determine how participants will work together.

Step 3: Establish the structure under which participants will contribute.

Step 4: Prepare a state of watershed report to understand the current condition of the watershed.

Step 14: Monitor implementation and outcomes.

Step 15: Evaluate and report on implementation and outcomes.

Adapt Step 16

Collaborate Steps 1-3

Monitor, Evaluate and Report Steps 14-15

Understand Step 4

Implement Steps 11-13

Plan Steps 5-10

Step 11: Build the foundation for successful implementation.

Step 12: Establish an implementation committee.

Step 13: Implement the plan.

Step 5: Identify priorities and the scope and scale of planning activities.

Step 6: Prepare and confirm support for the terms of reference.

Step 7: Develop a communications and engagement strategy.

Step 8: Identify outcomes, objectives and indicators.

Step 9: Develop, evaluate, and select preferred management actions.

Step 10: Draft and confirm support for the plan.

Figure 1: Watershed Management Planning Process
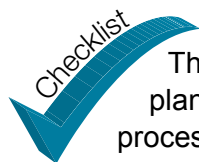
The guide is a reference for partnerships engaged in watershed management planning. Users are free to adopt other best practices for planning to enhance the process and achieve equivalent or better outcomes.

3.0 Collaborate: Working Together for Watershed Management

> > >

In the context of partnership-based watershed management planning, collaboration describes the way the partnering organizations are engaged. They communicate effectively, share responsibility for decision-making, engage in joint work as teammates, and are mutually accountable for progress and results.

Collaboration provides a number of important benefits including:

- encouraging greater responsibility of those who have an impact on the environment and empowering them to take action;
- encouraging innovation by sharing information and expertise;
- uniting public and private efforts for better results;
- integrating and respecting competing interests while reducing conflict, overlap, and redundancy; and
- better decisions.

Successful collaboration results from making efforts to build relationships and to identify common interests and shared goals. Open and ongoing communication is essential at all stages of the initiative.

The following steps provide guidance for building strong planning partnerships.

Step 1: Identify Who Should be Involved

Alberta's *Water for Life* strategy is founded on the premise that watershed management planning is a collaborative effort among agencies and groups who have a shared interest in the long-term health and viability of their watershed.

> > >

Key Elements of Engagement

1. Involve participants that are potentially affected, interested, and/or potentially interested in the decision.
2. Allow participants to design the process.
3. Provide the information and data needed.
4. Give participants transparent feedback on how their input affected the decisions.
5. Participants and decision-makers communicate their values and interests.

Participants in watershed management planning should include the following groups.

Government of Alberta is responsible for water and land-use management in the province. It brings relevant information and data and connects other relevant planning initiatives to the planning process. It also has an important role to communicate its strategic approach and priorities to the planning activity. It may be able to provide technical and financial support. Government staff coordinate cross-ministry review of watershed management plans and recommendations to assess implementation actions. Implementation can occur through government approvals and planning processes, such as *Water Act* licences and permits, resource lease agreements, water management and regional land-use plans, and potentially through changes to legislation. Other approaches such as management frameworks may be used to manage environmental conditions. Whenever watershed management plan recommendations spur government action, affected resource users and stakeholders will be engaged. First Nations will be consulted to meet policy and practice requirements.

Municipal Governments (counties, towns, cities) play a key role in the management of land and water. The *Municipal Government Act* Part 17 Planning and Development grants them authority for land-use planning within their respective boundaries. Management mechanisms include zoning, area structure plans, municipal development plans, and bylaws. Development approved within these plans has the potential to affect conditions within the watershed. The local influence and authority of the municipality, along with their management of drinking water, wastewater, and stormwater infrastructure, make them an essential partner in watershed management planning.

Government of Canada has legislation and ministries that are concerned with water and other resources within the watershed. These include the federal departments of Fisheries and Oceans, Agriculture and Agri-food Canada, and Aboriginal Affairs and Northern Development.

First Nations and Métis have a unique cultural connection to the watershed and its resources and are able to bring this perspective and their traditional knowledge to the conversation. First Nation and Métis have a role to play in land management on reserve land and in traditional land use areas and hold constitutionally protected rights that need to be respected in the planning process.

Industry is an important partner to engage in watershed management planning, as many companies may have a direct, measurable, and visible impact on land, air, water and/or other resources within the watershed. Conversely, they may be affected by natural resource and/or development decisions. This is particularly true of companies engaged in the extraction and processing of resources in the watershed, including agriculture, timber, gravel, coal, peat, or petroleum. Other companies may have an impact through their footprint and/or infrastructure requirements (e.g., roads, rail lines, power lines, dams and reservoirs, pipelines, and other facilities). They may also use water, either from surface or groundwater sources, in their operations.

Area Residents include local landowners, residents, and resource users. They have a considerable stake in the long-term health and well-being of a watershed and are able to implement stewardship practices at the local level. Their historical perspective, future outlook, and commitment to the local community bring great value to the planning effort.

Environmental Organizations and Special Interest Groups are active organizations, ranging from environmental non-government organizations to agricultural associations and recreation groups that have an interest in the future of, and access to, resources within the watershed. These groups represent a variety of perspectives relevant to the region and contribute valuable experience and expertise to the planning process.

Scientific and Academic Organizations and Institutions such as universities and colleges contribute research-based knowledge. Members of these organizations may have relevant technical skills and knowledge and may provide general oversight in the development of watershed management plans, thus augmenting the efforts of the partnership.

Beyond identifying potential sectors or stakeholders able to contribute to the planning process, partnerships need to consider how to connect with, engage, and inform all stakeholders. Social Network Analysis may help in this process.

> > > Social Network Analysis is a technique used to identify, map, and measure social networks. The process typically involves the use of questionnaires and/or interviews to gather information about the relationships between a defined group or network of people. The responses provide insight on the relationship network and establish a baseline helpful in determining the most effective means to improve community connections and knowledge flow throughout the network. Source: Government of Alberta, 2013.
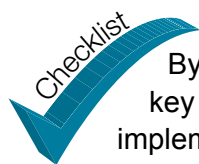
Checklist By this stage, the partnership should have a clear understanding of the key stakeholders to be included in the watershed management planning and implementation process.

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Step 2: Determine how Participants Will Work Together

The following principles and practices facilitate working together in a *Water for Life* partnership.

- **Mutual respect**: All perspectives and interests around the planning table are shared and given proper consideration.

- **Open and transparent communication**: Information about the planning process, the objectives, the outputs, and the desired outcomes must be made available to all members of the partnership in a timely manner. Effective communication contributes to support for the planning initiative.

- **Sector-based representation**: Stakeholders should collectively represent a broad range of interests from within the watershed. Sectors should select individuals who can represent them and effectively communicate the sector's interests and perspectives.

- **Participation in good faith**: For the partnership to be effective, all stakeholders – as individuals and on behalf of organizations – must be willing to share freely of their expertise, information, and resources and make trade-off decisions to benefit the achievement of the mandate.

- **Willing acceptance of responsibility for implementation**: Where recommendations identify actions to be undertaken by specific stakeholders, these stakeholders should demonstrate leadership by championing the implementation of those actions and reporting implementation progress to the partnership.

Consensus-building among diverse sector interests is essential to successful watershed management planning. Reaching consensus can be time-consuming and difficult, often requiring negotiation, accommodation, and flexibility from all stakeholders, but leads to more effective results than decisions made by majority votes. Stakeholders must agree on what consensus means to them, how they will know when they have it, and how they will resolve disputes should they arise. It is generally understood that consensus on a decision has been reached when all stakeholders are in agreement and can live with the outcome, even if it may not be ideal from their perspective.

> > >
The Consensus Decision Making Toolkit (2010), the product of a collaborative effort between the Clean Air Strategic Alliance and the Alberta Water Council, provides valuable information on the consensus decision-making process and how it can lead to innovative and sustainable solutions
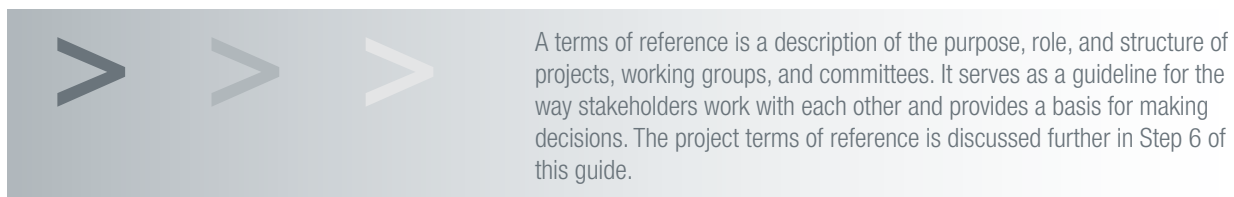Source: Clean Air Strategic Alliance, Alberta Water Council, 2010.
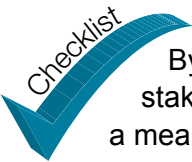
Checklist By this stage, the partnership should have support in principle from key stakeholders to proceed with the development of a watershed management plan as a means to address issues within the watershed.

Step 3: Establish the Structure under which Participants will Contribute

The responsibility for plan development generally lies with two complementary and supportive teams: a steering committee and a technical committee. A third committee, the implementation committee, is typically established later in the process and plays a key role in the steps immediately following the development of the watershed management plan.

In some cases, individuals may be unable to commit to the entire process or may want to be engaged in only a particular phase of the process. In these cases, opportunities should exist for individuals to enter and exit at specific milestones and have new individuals from a group to enter the process. Each committee's operating principles should clearly outline the roles and responsibilities of the stakeholders including the process for accepting new stakeholders to a specific committee and bringing them up to date on the project.

> > >
A terms of reference is a description of the purpose, role, and structure of projects, working groups, and committees. It serves as a guideline for the way stakeholders work with each other and provides a basis for making decisions. The project terms of reference is discussed further in Step 6 of this guide.

Steering Committee

The partnership will typically assemble a steering committee at the onset of the project to provide general oversight to the planning process. Composed of members and staff (if any) of the partnership, the steering committee should represent a range of interests and serve as champions (or promoters) of the entire project. Steering committee members should understand the history, economy, and issues of the watershed from the perspective of various land users and the public. Ideally, the steering committee should include at least one member of the partnership's board of directors. Smaller community-driven watershed stewardship groups may not be able to establish a steering committee, in which case the partnership itself may wish to fill this role.

The steering committee will meet regularly. Typical responsibilities include overseeing the development of the watershed management plan, reporting to the board of directors and advising the board on matters pertaining to contracts with consultants, overseeing communications, coordinating and leading community engagement activities, directing the activities of the project manager/coordinator (if such a position exists), and reporting to the partnership on the progress of plan development. The steering committee will also establish and provide direction to the technical committee, whose function is described below.

Technical Committee

A technical committee – operating under the guidance of the steering committee – should be established to develop the technical content of the watershed management plan. Typically, the technical committee's main responsibilities include providing input into the terms of reference, gathering and assessing information, recommending outcomes and objectives, incorporating feedback collected from the consultation process into the plan, and recommending management actions based on the desired outcomes and objectives. Although the technical committee would

typically take direction from and report directly to the steering committee, a close collaborative relationship between the two committees is critical to the success of the planning initiative.

Members of the technical committee should represent a broad range of skills, experience, and knowledge relevant to the planning process, including:

- expertise in the collection, evaluation, and interpretation of technical biophysical, spatial, and hydrological information relevant to management of the watershed; and
- the ability to generate a range of realistic, reasonable and achievable management actions to help meet the plan's outcomes.

The technical committee benefits immensely when participating agencies contribute qualified staff with relevant expertise to participate. However, in some cases, it may be necessary to support the work of the technical committee with paid external consultants.

Implementation Committee

The implementation committee, which typically reports directly to the partnership's board of directors, develops the implementation workplan and oversees and monitors the plan's implementation. Ideally, the implementation committee should include members from the project's steering committee, technical committee, the partnership's board of directors, stakeholders tasked with implementing the actions recommended in the plan, as well as any other stakeholders interested in the implementation of the plan.

Other Committees or Work Groups

The partnership should at no time feel limited to these three committees and may strike other committees to perform particular functions or to address specific issues as they arise. In many cases, a partnership may already have standing committees able to focus on some tasks, including:

- communication and outreach;
- sponsorship and funding; and
- topic-specific focus groups (or similar) to probe particular issues and complex management recommendations.

Operating principles should be drafted for all established committees. Operating principles define, for each committee, its role, the specific tasks it is responsible for, its decision-making powers, and its reporting requirements. The operating principles should be developed by the respective committee during the initial few meetings and be approved by the next higher level of authority (e.g., the technical committee's operating principles would be approved by the steering committee).
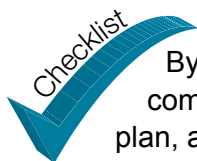
Checklist   By this stage, the partnership should have identified and populated the various committees that will play a role in the development of the watershed management plan, and defined the operating principles of each committee.

4.0 Understand: Understanding Current Conditions in the Watershed

The watershed assessment is an important first step in planning. It describes the state of the watershed and human pressures. Subsequent watershed assessments will identify and report changing trends and conditions in the watershed.

> > >   A watershed assessment is a descriptive survey or inventory of the existing natural and cultural resources within a watershed. The findings of the watershed assessment are documented and interpreted in a comprehensive state of the watershed report.
> Source: Government of Alberta, 2008.

Step 4: Prepare a State of the Watershed Report

The Handbook for State of the Watershed Reporting: A Guide for Developing State of the Watershed Reports in Alberta, and the *Guide to Reporting on Common Indicators Used in State of the Watershed Reports* outline how watersheds can be assessed and the conditions interpreted.

The watershed report is a record of conditions and characteristics of a watershed. It identifies potential threats and assesses the overall health of the watershed.
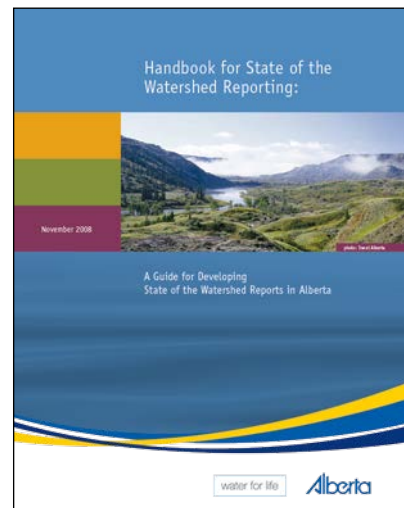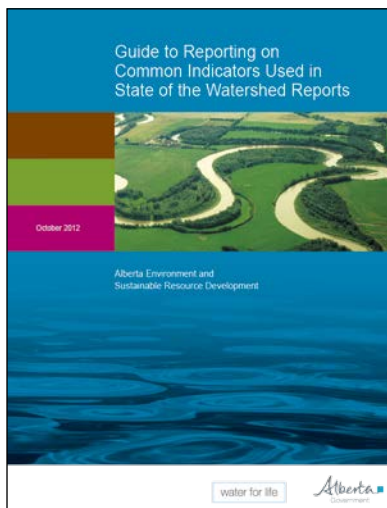
As part of the cycle of planning, a watershed assessment should be repeated periodically and revised as new information is available and as conditions change. The reports serve as benchmarks by which environmental change can be measured.

> > >   A social profile is a valuable tool describing characteristics of a community in a defined area. This collection of data profiles human life in the community by describing land use and ownership, economic vitality, community capacity, governmental and political structures, and public attitudes.
> Source: McDermaid, Karyn K. and Barnstable, Daniel C., 2001.
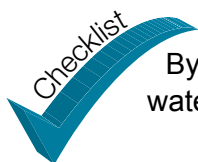
Checklist By this stage, the partnership will understand the current condition of the watershed with knowledge gained from creating the state of the watershed report.

5.0 Plan: Developing a Watershed Management Plan

Successful watershed management planning requires a long-term commitment of time and resources from participating stakeholders. All jurisdictions are responsible for coordinating the integration of resource and land management plans. Financial, technical, and other human resource needs should be defined at the onset of the planning exercise, along with the expectations of participating stakeholders.

Step 5: Identify Priorities and the Scope and Scale of Planning Activities

A vision for the watershed will provide direction as the watershed management plan is created. A vision will help with the tasks of identifying priorities and defining project scope and scale. A trained facilitator could lead the development of the vision.

Identifying the Priorities

The preliminary state of the watershed report, described earlier, should identify a range of issues and/or areas of concern or importance. The partnership can then work to identify priorities and next steps.

When identifying priorities, the partnership should engage all affected and potentially affected stakeholders. A common practice is to host a workshop or a series of workshops to examine the issues that matter most, exploring risks and identifying priorities according to the level of risk. A formal process to review the complexity of issues will ensure that fair and equitable decisions are made regarding the management priority or priorities. Several tools are available to help with this process, as explained in the following chart.

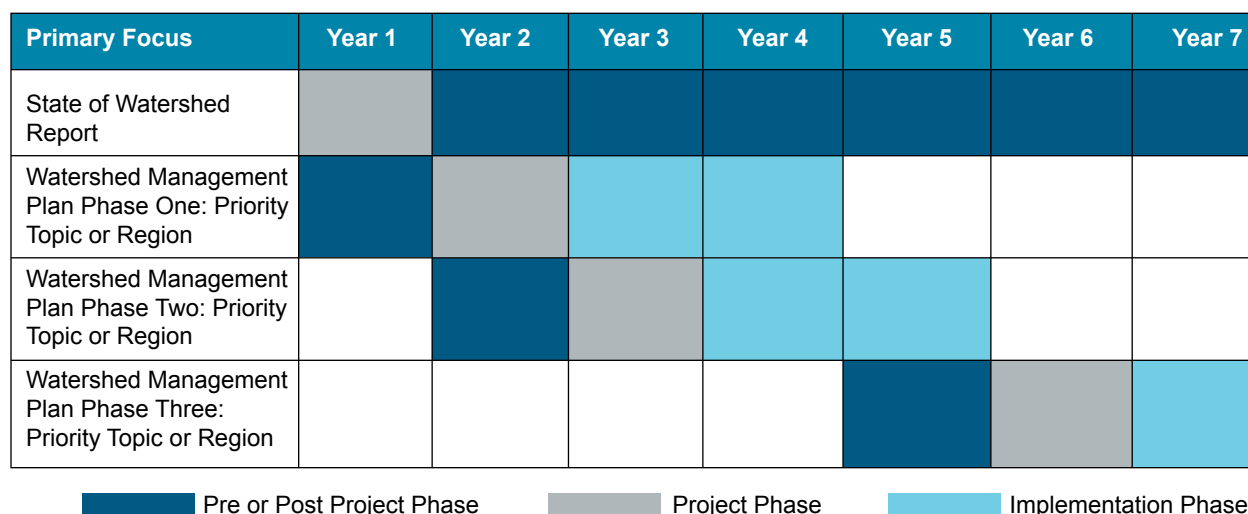| Suggested Tools	Summary
Risk Analysis	• In risk analysis, each of the issues and associated risks are discussed and evaluated based on the severity of an event occurring and the likelihood and consequence of each identified risk. • For each major risk identified, the partnership may consider conducting a more detailed risk assessment using tools such as the Bow Tie Method[2].
Decision Support Tools	• A decision support matrix involves identifying potential planning priorities and asking participants to comment on a set of weighted questions. Each question is ranked on a scale from "strongly agree" to "strongly disagree." Analysis then allows for the ranking of planning priorities. • The Delphi technique[3] is an example of a group consensus method that helps identify common goals and areas of agreement or disagreement. It is used to reveal group values and establish priority on the basis of pooled judgement.
Landscape Analysis	• A watershed sensitivity analysis uses a geographic information system (GIS) to delineate areas within a watershed that have varying degrees of sensitivity for certain media (e.g., abiotic, biotic, cultural) and then to combine these layers into a single layer that identifies areas with low, medium, and high sensitivity. • A regional strategic assessment is a systematic analysis of environmental conditions, issues, trends, and human development pressures within a defined region. It is used to assess the anticipated cumulative effects of alternative development scenarios and to evaluate strategies and management prescriptions that could achieve identified environmental, social, and economic outcomes.

[2] Canadian Standards Association, 2010.
[3] Oldman Watershed Council, 2010.

In most cases, watershed management planning is done in phases. Particularly for larger basins, which must consider the unique characteristics and pressures within each sub-watershed, the phased approach may be best. A phased approach also affords the opportunity to regularly reconfirm priorities prior to launching the next phase.

Defining the scope and scale of planning activities

As there will typically be a number of watershed issues, activities, stakeholders, and interests in a watershed at any one time, partnerships may find it more manageable to focus on a smaller management unit within the larger watershed. This management unit may be based on geographical boundaries (e.g., reach or sub-watershed), political or other management boundaries (e.g., municipality or forest management area), land use (e.g., oilsands mining), or a pre-defined critical/sensitive/at-risk area (e.g., the headwaters).

Another approach is to tackle a specific issue of concern throughout the watershed (e.g., in-stream water quality). Because planning is a continual cycle where preliminary work for the subsequent phase begins during the preceding phase, preparing for each phase in advance will help ensure smooth transitions and help minimize large gaps in time between phases.

Primary Focus	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
State of Watershed Report	Project Phase	Pre/Post	Pre/Post	Pre/Post	Pre/Post	Pre/Post	Pre/Post
Watershed Management Plan Phase One: Priority Topic or Region	Pre/Post	Project Phase	Implementation	Implementation			
Watershed Management Plan Phase Two: Priority Topic or Region		Pre/Post	Project Phase	Implementation	Implementation		
Watershed Management Plan Phase Three: Priority Topic or Region					Pre/Post	Project Phase	Implementation

Legend: ■ Pre or Post Project Phase ■ Project Phase ■ Implementation Phase

Note: Although the diagram above is presented in a year-by-year layout, partnerships need to accommodate flexibility into the scheduling, assuming that some phases may take longer than originally anticipated. While completing the plan in a timely manner is important, the quality of the final product should take precedence over a pre-determined timeline. For some partnerships, a standing implementation committee may be beneficial given the long-term nature of implementation. The diagram does not include a substantial pre-project phase for state of watershed reports.

Figure 2: Diagram of a Phased Approach to Watershed Management Planning

The scope and scale of the proposed plan will depend on many factors including the desired outcomes for the watershed, the resources available, and the priorities to be addressed by the watershed management plan. Systems mapping, by improving the overall understanding of a situation or problem, may assist with identifying scope and scale.

> > >
Systems mapping is a method that can be used to visualize the relationships between social, economic, and environmental elements in watershed management. System maps are typically used to improve the understanding of a situation or problem, communicate a complex situation or challenge to others, and formulate alternative ways of looking at a challenge.
Source: Government of Alberta, 2010.

The available budget is also an important factor in defining the scope and scale of the planning activities. Although some support may come as in-kind contributions from experienced and professional stakeholders within the watershed, every planning process will incur expenses. For example, there may be a need for technical studies, professional consultant services, public information materials, hosting workshops and meetings, and drafting plans. All participating stakeholders should be encouraged to contribute to the financial costs of the watershed management plan.

> > >
Alberta Environment and Sustainable Resource Development provides support for Watershed Planning and Advisory Councils and indirectly to Watershed Stewardship Groups through the Alberta Stewardship Network Watershed Stewardship Grant Program. In addition, Alberta Culture may provide direct financial assistance to community groups and can assist partnerships with community and voluntary services and with identifying and applying for grants.

Checklist By this stage, the partnership should have a clear understanding of the issues to be addressed in the watershed management plan, the geographic area to be encompassed by the plan, and a collective vision of the desired future.

> > >
As a key stakeholder, the Government of Alberta must be involved throughout the planning process; Watershed Planning and Advisory Councils should solicit formal support for the terms of reference, the draft plan, and the final watershed management plan.

Although a formalized review and endorsement process does not currently exist for sub-watershed management planning products (for smaller watersheds located within a Watershed Planning and Advisory Council's larger watershed) developed by community-led Watershed Stewardship Groups, these groups are encouraged to work with and seek endorsement from government staff in their respective region. The Watershed Stewardship Groups should also ensure alignment with Watershed Planning and Advisory Council planning products and other higher level planning products such as Regional Plans.

The partnership should solicit information on the processes in place for all participants in the watershed management plan and implement these processes early in the project.

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Step 6: Prepare and Confirm Support for the Terms of Reference

Preparing the Terms of Reference

With the priorities, scope, and scale defined, the steering committee should now develop the terms of reference. The terms of reference state what needs to be achieved, by whom, how and when. Terms of reference should also include success factors, risks, and constraints.

Terms of reference vary widely depending on the deliverables of the project, but typically contain a number of common elements. The table on the next page outlines basic sections that may be found in the terms of reference for a typical watershed management plan. Other sections may be added depending on the needs of the partnership.

When developing the terms of reference for a watershed management plan, it is highly advisable to take a conservative approach in laying out the details of the watershed management plan. It is quite normal to see the terms of reference revised several times before being considered complete, as this guiding document is fundamental to the rest of the planning process.

Confirming Support for the Terms of Reference

The terms of reference should ideally be supported by three groups: the partnership's board of directors, potential implementers, and key stakeholders. The process of confirming support for a watershed management plan requires that expectations — for example, from whom endorsement is being sought and at what stage — be clearly identified at the beginning of the planning process and described in the terms of reference. Clear definition of expectations illustrates the transparency of the process and helps to build confidence in the process and trust among stakeholders.

The partnership needs to impress upon its stakeholders that they must develop their own processes to communicate the plan's progress to their membership and to garner their sector's endorsement of the plan.

As the work proceeds, it is important to periodically revisit the terms of reference to ensure that the processes and objectives described are being followed and achieved.

Checklist By this stage, the partnership should have a clear and supported terms of reference that describes the intent and overall process for developing the watershed management plan.

Table 1: Potential Outline of Terms of Reference for Watershed Management Plan

Section	Description
Introduction	Provides a brief description of the organization, its history, and the general intent of the proposed watershed management plan.
Biophysical and Socio-economic Context	Provides a brief overview of current biophysical, social, and economic conditions in the watershed, and its physical boundaries. It defines the geographic scope and characteristics of the region to which the proposed watershed plan applies. If a state of the watershed report has already been completed, that document will contain much of the information required for this section.
The Policy and Legislative Context	Briefly summarizes the current legislation and policies that guide the management of resources in the watershed relevant to the chosen priority or priorities. This section should also outline the potential linkages to other planning initiatives (completed, underway, or planned) for the area encompassing the watershed.
Outstanding Watershed Issues	Describes any high-profile issues that stakeholders have identified that may affect long-term decision-making and sustainable development in the watershed. These should be addressed through the watershed management plan process.
Scope and Content of the Watershed Plan	Describes the outline and structure of the anticipated plan, what topics and issues will be addressed within the plan, and what jurisdictional limits the prospective plan will operate within. This section will also set out the level of detail that will be required in developing actions and anticipated mechanisms for implementation. This is the most important section in the terms of reference and usually the lengthiest.
Roles and Responsibilities	Describes who will develop the various parts of the plan, what committees will be formed, and the roles of various contributors to the planning process, including the board of the partnership, committees, stakeholders, the Government of Alberta, and/or any other entities. The respective roles of the steering committee and technical committee should be also defined.
The Public Participation Process	Outlines how and at what stage(s) in the planning process the views and input of stakeholders, First Nations and Métis will be sought and addressed, how the process will be facilitated, and what deliverables will be consulted on.
Plan Development Sequence	Sets out the sequence of steps, milestones, or phases of work as well as a schedule that will culminate in a completed watershed plan. These steps will contribute to a detailed work plan that will guide the organization after the terms of reference is accepted and work commences.
Evaluation and Approval	Describes how the effectiveness of the planning process and the quality of the plan itself will be evaluated and, if possible, what indicators will be considered to determine when the plan is complete. This section may also outline what approvals and/or level of endorsement will be required from the various partner agencies, including the Government of Alberta and of what products.
Estimated Budget	Identifies both the human and financial resources required. The budget should approximate the total cost of the entire project including the professional resources anticipated to complete the work and indicate if this work will be provided by paid staff, consultants, volunteers or a combination thereof.
Appendices	This section contains any additional important background information that might augment or support the terms of reference, including supporting documents.

Step 7: Develop a Communications and Engagement Strategy

Ongoing communications and opportunities for engagement are fundamental to achieving support for a watershed management plan. A communications and engagement strategy outlines how stakeholders will be kept informed and involved at key stages throughout the process. The communications and engagement strategy should be developed as one of the first steps in the overall planning process and may appear as a stand-alone product or be described in the public participation process section of the project's terms of reference (see Table 1).

Typical questions to be answered by the communications and engagement strategy:

- What is the partnership trying to achieve?
- What are the drivers?
- What is the intended purpose of the communication or engagement?
- What are the key messages?
- Who is the target audience?
- What methods will be used to engage the target audience?
- Who is responsible for what and when?
- How will the strategy be funded?
- How will the partnership evaluate the results?

The strategy should be appropriate for the desired level of engagement and be clearly linked to a specific goal or purpose. The strategy should also propose a variety of methods for sharing information and obtaining input and feedback, as outlined in Table 2.

The use of social networking tools such as Facebook, LinkedIn, and Twitter is becoming more common as these tools provide an avenue to engage stakeholders that may otherwise not be involved. Once engaged, these individuals can be encouraged to participate in a broader range of partnership activities.

Checklist

By this stage, the partnership should have a detailed course of action for sharing information and engaging others that supports the vision and the watershed management planning process outlined in the terms of reference.

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Table 2: Potential Communication and Engagement Methods

Method	Level of Engagement	Objective
Publications, News Releases, Website	Inform	Build awareness and share information on the status of the watershed management planning initiative.
Open Houses, Forums and Meetings	Inform and Consult	Educate stakeholders about key issues within the watershed management plan, provide information about the watershed management planning process, and allow the opportunity to discuss issues and concerns with the planning team representatives.
Targeted Sector Workshops	Inform, Consult, and Involve	Provide representatives from various sectors with the opportunity to review and provide input into the watershed management plan and the subsequent implementation workplan at key points in the process. Sectors may include provincial government departments, municipal governments, environmental groups, and industry. For some sectors (e.g., industry), one-on-one meetings may be necessary to address specific and unique situations.
Local Decision-Maker Workshops	Inform, Consult, and Involve	Provide local decision-makers with the opportunity to review and provide input into the watershed management plan or subsequent implementation workplan at key points in the process.
Expert Review Conference Calls or Workshops	Inform, Consult, Involve, Collaborate	Provide an opportunity for local experts to contribute to the planning process when they may not be willing to commit to regularly scheduled meetings such as would typically occur if participating on the technical or steering committee.
Sub-Watershed Advisory Groups	Inform, Consult, and Involve	Provide these advisory groups an opportunity to review and provide input into the watershed management plan or subsequent implementation workplan at key points in the process.
Surveys and Workbooks	Inform, Consult, and Involve	Used to solicit input on the watershed management plan at key points in the process. Workbooks are particularly effective where input is being sought for a large amount of information. Note: due to the level of detail typically found in a workbook, if using this method of soliciting input, it is important that sufficient time be provided for completion.
Watershed Projects	Inform and Involve	Projects such as riparian restorations, river cleanups, etc. are a great way to bring stakeholders together. Once assembled, these projects provide an opportunity for partnerships to share information on key initiatives and encourage participants to become involved.

Source: iap2 International association for public participation

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Step 8: Identify Outcomes, Objectives, and Indicators

Identifying Outcomes

With the priority issues established and scope and scale defined, the next task is to define the outcomes to be derived from the plan. Outcomes describe the ideal condition or future that the plan is striving to achieve. These outcomes help guide the development and implementation of the watershed management plan's objectives and recommendations. Outcomes should be fully discussed and debated so that they reflect current ecological, economic, social, and cultural values. Once the outcomes are agreed to by all stakeholders and implementers, they will set out the desired end points upon which the indicators and actions can then be developed.

Another social media opportunity that may be useful at this stage is an online engagement technique known as crowdsourcing.

> > > Crowdsourcing is a technique whereby online participants (also known as the crowd) contribute to help refine concepts or solve problems. For example, a partnership could place a draft list of outcomes online and ask the crowd to discuss and refine the outcomes. Successive online participants would build on the work of previous participants and contribute to the development of more refined outcomes.

Since clear, measurable outcomes add to the success of a plan, outcomes should be articulated in simple, concise language, free of technical jargon. As outcomes guide the development and implementation of subsequent management actions, having complementary outcomes at different geographic scales allows the partnership to envision how each successive action will build upon the latter and contribute to the achievement of the desired end state.

> > > Determining how to define success is best done early in the process with key stakeholders. Success can be defined as changes on the landscape or shifts in societal behaviours. Measures of success can be long-term or short-term and may include endorsement of the plan, actions implemented, progress on state of watershed reporting, and outcomes achieved. It is important to communicate and celebrate success.
>
> Crowdsourcing is a technique whereby online participants (also known as the crowd) contribute to help refine concepts or solve problems. For example, a partnership could place a draft list of outcomes online and ask the crowd to discuss and refine the outcomes. Successive online participants would build on the work of previous participants and contribute to the development of more refined outcomes.

Defining Objectives

To better understand what actions are needed, outcomes should be refined into specific objectives. These objectives, expressed from a more operational perspective, describe specific results or steps to be undertaken to reach the outcome for a specific part of the environment (e.g., water quality). Objectives may also be established around management approaches and tools.

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Examples of objectives:

- a reduction in the amount of sediment being transported to the waterbodies for a specific reach;
- management of groundwater quality and supply through management frameworks; and
- a reduction in the amount of riparian land classified as unhealthy for a specific reach.

Land Use Framework outcomes

Healthy economy supported by our land and natural resources

Healthy ecosystems and environment

People friendly communities with ample recreational and cultural opportunties

↓

***Water for Life* goals**

Safe, secure drinking water

Healthy aquatic ecosystems

Reliable, quality water supplies for a sustainable economy

↓

Regional plan outcomes

Diversified economy

Air and water support human and ecosystem needs

Residents' quality of life enhanced through increased
opportunities for recreation and active living

↓

Watershed plan outcomes

Improvement in surface water quality

Intact, restored, healthy, and valued riparian and wetlands systems

Year-round appropriate instream flow to enhance a functioning ecosystem
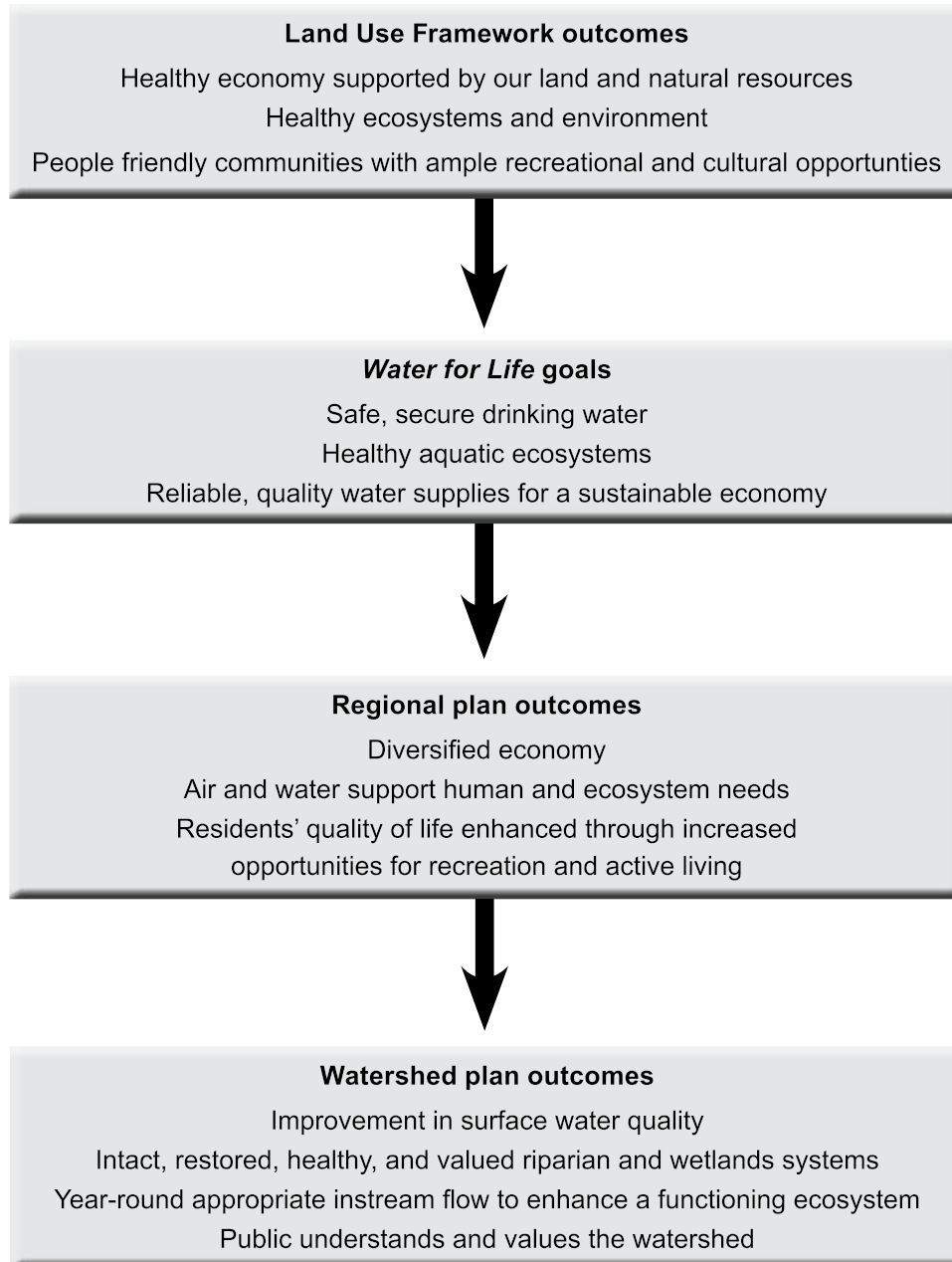
Public understands and values the watershed

Figure 4: Example of Complementary Outcomes

Selecting Indicators

Indicators are specific physical, chemical, biological, sociological and economic attributes of the watershed and the environment that reflect conditions and dynamics of the broader ecosystem. Indicators can represent human activities on the landscape and the environmental response to those activities. The partnership can assess progress towards achieving the plan's objectives by monitoring these indicators.

As noted in Step 4, indicators would have been identified earlier in the planning process when developing the state of the watershed report. However, because those indicators were selected to provide an indication of the overall health of the watershed, it may be necessary to now re-evaluate them to determine if they may also serve to measure progress toward the achievement of the outcomes and objectives. If not, it may be necessary to identify new or additional indicators. It may also be necessary to refine these indicators once the preferred management actions have been selected. For more information on potential and suggested indicators, refer to the Government of Alberta's Handbook for State of the Watershed Reporting (2008), the Guide to Reporting on Common Indicators Used in State of Watershed Reports (2012), and Indicators for Assessing Environmental Performance of Watershed in Southern Alberta (2008).

The Government of Alberta's *Handbook for State of the Watershed Reporting* (2008) describes three types of indicators:

- **Condition indicators** — address the state of the environment, the quality and quantity of natural resources, and the state of human and ecological health. These indicators are chosen by considering biological, chemical, and physical variables and ecological functions (e.g., riparian health, water quality, fish community structure).

- **Pressure indicators** (also often referred to as stress indicators) — describe natural processes and human activities that impact, stress, or pose a threat to environmental quality (e.g., human populations, livestock operations, water allocation, industrial activity, soil erosion).

- **Response indicators** — illustrate individual and collective actions or management programs implemented to halt, mitigate, adapt to, or prevent damage to the environment (e.g., municipal bylaws, livestock operations regulations, education or incentive programs, watershed management planning initiatives, and stewardship activities).

> > >   Indicators should be selected using SMART criteria:
>
> - **Specific** – Is it clear and definable?
> - **Measurable** – Can it be measured qualitatively or quantitatively?
> - **Achievable** – Does the partnership (or its partners) have the resources to measure it now?
> - **Relevant** – Is it a good measure of the desired outcome?
> - **Time-specific** – Can it be measured now? Can it be repeated in future?

Other possible criteria to consider when choosing indicators include purpose (why the particular indicator is being considered and what specific information it will reveal), ease of monitoring, availability of data to provide a credible assessment, responsiveness and effectiveness of the indicator in measuring progress toward outcomes, and potential of the indicator to be influenced by both regulatory and non-regulatory action.

Indicator selection can be challenging at times because management actions can affect change in more than one indicator, indicators can be interconnected and influence each other (positively or negatively), and a single indicator may be used to assess progress on more than one outcome. The strengths and limitations of each indicator should be clearly understood.

Typically, each indicator will have one or more associated thresholds but not always. Many of the social or economic indicators (i.e. response Indicators) will not have a target or threshold identified. Thresholds may be in the form of a target, limit, or trigger value. If quantitative information is limited, more qualitative means of monitoring progress may be required. This could include local knowledge, literature values, or comparisons to similar areas.

As part of the Government of Alberta's Land-use Framework and regional planning, air quality, surface water quality and quantity, groundwater and biodiversity management frameworks have been developed or are in the process of being developed. These management frameworks are designed to proactively manage cumulative effects by confirming objectives and establishing environmental triggers and limits that will prompt management actions. The frameworks are policy documents that will be implemented and given legal authority as specified in the regional plan and through the mandates and legislation of the appropriate government departments.

> > > Developing a logic model at the beginning of the planning process helps establish outcome(s), objectives, strategies and actions. It also provides a group with the tools to help with the logical thinking through a planning process. Later, when indicators are considered, this earlier work adds efficiency to the selection process where condition, pressure and response indicators emerge.

Frequently, partnerships use targets as quantitative values to reflect whether outcomes and objectives are being achieved for a given indicator. In other cases, partnerships may take this approach one step further and provide more detailed advice on suggested limits and triggers.
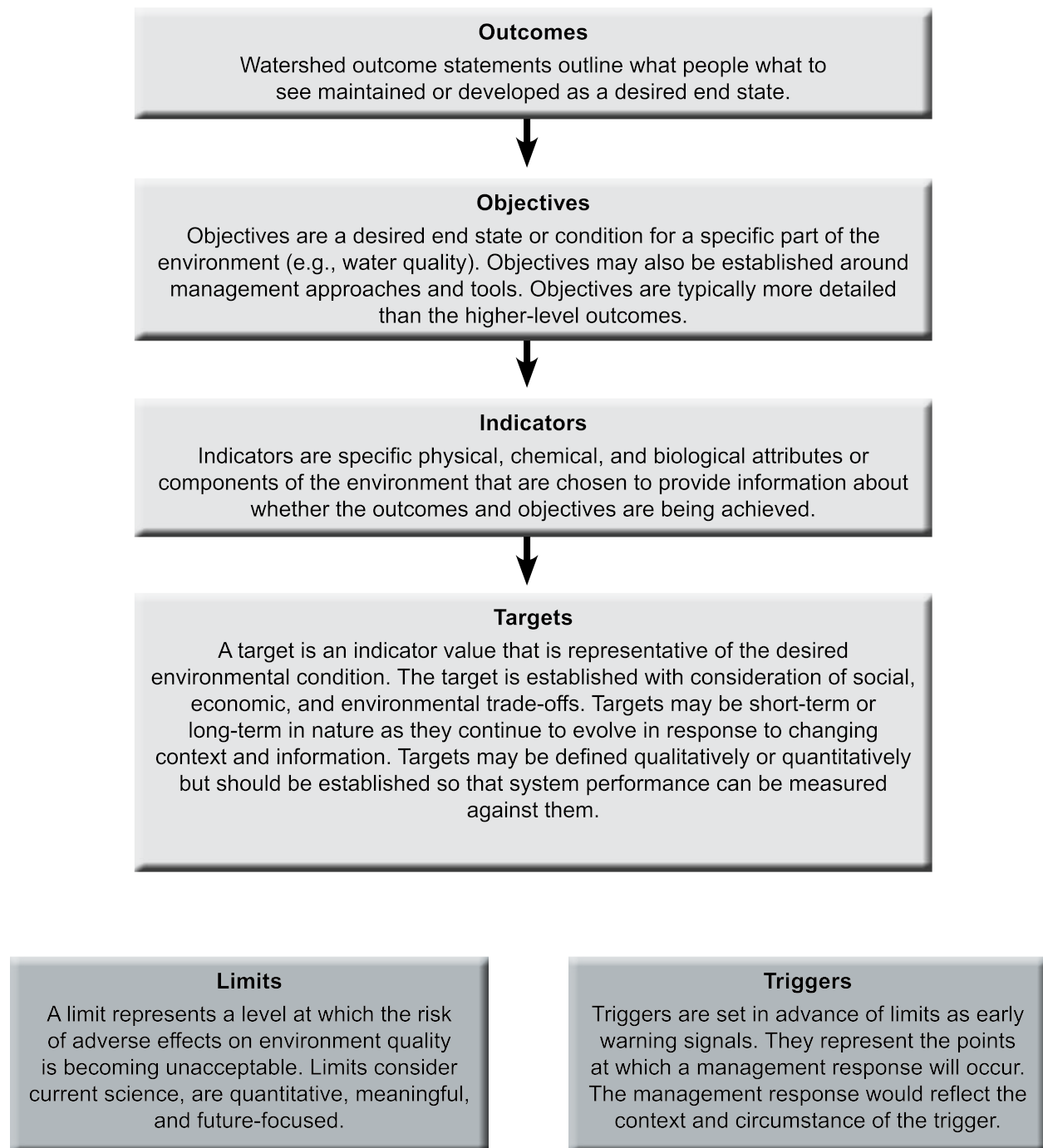
Outcomes

Watershed outcome statements outline what people what to see maintained or developed as a desired end state.

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Objectives

Objectives are a desired end state or condition for a specific part of the environment (e.g., water quality). Objectives may also be established around management approaches and tools. Objectives are typically more detailed than the higher-level outcomes.

↓

Indicators

Indicators are specific physical, chemical, and biological attributes or components of the environment that are chosen to provide information about whether the outcomes and objectives are being achieved.

↓

Targets

A target is an indicator value that is representative of the desired environmental condition. The target is established with consideration of social, economic, and environmental trade-offs. Targets may be short-term or long-term in nature as they continue to evolve in response to changing context and information. Targets may be defined qualitatively or quantitatively but should be established so that system performance can be measured against them.

Limits

A limit represents a level at which the risk of adverse effects on environment quality is becoming unacceptable. Limits consider current science, are quantitative, meaningful, and future-focused.

Triggers

Triggers are set in advance of limits as early warning signals. They represent the points at which a management response will occur. The management response would reflect the context and circumstance of the trigger.

Figure 5: Hierarchy of Planning Elements

Checklist By this stage, the partnership should have a clearly defined set of desired outcomes and objectives that will serve to guide the development of management actions. The partnership should also have identified a suite of indicators to be monitored over time to assess the success of management actions in contributing to the desired outcomes.

Step 9: Develop, Evaluate, and Select Preferred Management Actions

Management actions must be deliberate and clearly support the desired outcomes and objectives set by the partnership (Step 8). The actions should also reflect the indicators chosen to measure the achievement of specific objectives.

> > >

Strategies and Actions

- Strategies provide a link between policy and actions. Strategies are more tactical than actions.
- Actions are an organized activity to accomplish an objective. They are more detailed than strategies and more operational in nature.

Drafting management actions usually begins with an inventory of management actions already being implemented in the area, a literature review of actions taken in similar areas or under similar circumstances or to achieve similar outcomes, and brainstorming of new management actions. The partnership can then begin to evaluate appropriate management actions and alternatives. As emphasized earlier, prioritization is important; the scope and reality of what can and should be done must always be kept in mind.

> > >

Using Models and Scenario Analysis

Models are simplified representations of reality that describe system processes or behaviours. Models are used to

- support plan outcomes and the development of actions by providing robust science and data, and
- assess future trends and develop scenarios to inform planning.

Scenario analysis is a process of analyzing possible future events by considering alternative outcomes (e.g., a combination of an optimistic, a pessimistic, and a most likely scenario).

Although potentially useful, modelling and scenario analysis are resource intensive, requiring a lot of time, experience, and possibly advanced computer skills on the part of the modeller, depending on the complexity of the model.

Watershed management actions typically fall into the following categories:

- policy and regulatory;
- best management practices;
- planning;
- knowledge;
- education; and
- research.

There is no limit to the number and type of management actions which may be considered. Open dialogue is critical to selecting actions that stakeholders will be willing to support and implement. New ideas and collaborative solutions should be encouraged; ideas that may seem unrealistic when first proposed may ultimately suggest a new or improved approach.

The partnership should also consider socio-economics when evaluating potential actions. Stakeholders should be encouraged to offer insights about the costs and social acceptability of proposed actions. The partnership should record all management actions suggested (including those already underway) and document the process used to examine and evaluate the actions, as well as the rationale for all decisions on recommended actions. The process of selecting actions must be transparent, collaborative, supported by sound background information, and adhere to clearly articulated and agreed-upon criteria.

Creating a list of criteria or evaluation questions can be useful. Some examples of evaluation questions are:

- Is the action reasonable?
- How effective is the action in achieving the objective?
- What are the combined effects of actions?
- Who should be responsible for implementation? If there are multiple agencies, who should be the lead agency?
- Is the action acceptable to the public and stakeholders?
- What social values are involved?
- What are the local economic implications of proceeding?
- What is the compatibility with other local planning initiatives?
- How long will the action take to implement?
- Are there physical or legal constraints?
- What are the risks associated with this action?
- What is the cost of taking action? What is the cost of not taking action?
- Will ecosystem services be lost if action is not taken? What would be the cost to try to replicate these ecosystem services?

Short-, medium-, and long-term actions should be identified. Because it may take years or even generations to realize some desired outcomes on the landscape, it will be important to differentiate those actions that can be implemented relatively quickly from those that may require considerably more time or require advance work to be done before they can be implemented. Actions deemed less urgent may be recorded and slated for implementation later when time and resources permit. The partnership should also consider actions where work may already be in progress or nearing completion, actions that are relatively easy to implement, and actions where the commitment to act is already strong. Completing such actions can build success early in the watershed management process.

Because the success of the plan will ultimately hinge upon implementers, management actions need to identify who is best able to implement the action. It is essential to engage all likely implementers in the process of identifying actions and fully considering the proposed actions. This approach will not only ensure that the implementers are on-board with the plan, but provides an opportunity for implementers to bring up possible constraints or opportunities related to implementation.

The partnership should fully discuss the cost of the actions that are being considered. Stakeholders may identify opportunities for collaboration with existing programs and projects in the watershed. The value of ecosystem services and ways to accurately value future benefits and costs need to be understood. A cost-benefit analysis is one tool that could be used. In many cases, inactivity may cost more in the long run.

> > >   Investment Framework for Environmental Resources (INFFER) is a decision-making tool consisting of manuals and templates for assessing and prioritizing actions that focuses on achieving the greatest value for environmental and natural resource outcomes given the available resources. The process allows all options to be examined simultaneously and realistically assesses those most likely to enact change on the ground.
Source: Strang et al., 2010.

Partnerships should set realistic targets and timelines that have been fully discussed and agreed to by all stakeholders. Unrealistic targets and timelines may result in implementers becoming discouraged and less likely to proceed with the proposed actions. However, if ready and willing, implementers should be encouraged to implement actions at any time in the process.

Table 3: Examples of Recommended Management Action

Issue Area	Recommended Management Action	Proposed Implementers (Lead Agency Bolded)	Priority and Timeline
Gravel Extraction	Recommend and support implementation of the new aggregate policies.	**Government of Alberta**	High priority, short-term action to be in place within 1 year
Formation of a Watershed Management Plan Implementation Committee	Formation of an implementation committee to provide assistance and advice to all proposed implementers. This will include: • presenting to stakeholders and implementers (as requested); • encouraging and tracking implementation progress; • identifying opportunities for shared responsibility and coordination of efforts.	**Partnership**	High priority, short-term action to be initiated within 1 year
Wetland Education	Develop an education strategy to specifically target the loss of wetlands in agricultural areas.	**Wetland Conservation Agency**, Watershed Planning and Advisory Council, Government of Alberta, Municipal Districts	Moderate priority, medium-term action to be completed within 3 years
Compilation of Riparian Health Inventory Results for Watershed	Prepare a summary document that compiles all known and available riparian health data for the watershed.	**Watershed Planning and Advisory Council**, Riparian Conservation Agency, Government of Alberta, Municipal Districts	High priority, short-term action to be competed within 1 year

Management actions may be developed using a combination of bottom-up or top-down approaches. In the bottom-up approach, the committee tasked with developing the actions identifies where actions need to occur and identifies the likely implementer(s). It is then up to the implementer(s) to review the proposed action and either accept the action or come back with an alternative. In the top-down approach, implementers take it upon themselves to develop proposed actions targeted at their own organization and bring these proposals to the committee for consideration.
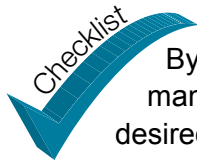
Checklist By this stage, the partnership should have an agreed-upon suite of preferred management actions that the partnership believes will contribute to achieving desired outcomes.

Step 10: Draft and Confirm Support for the Plan

Once the outcomes, objectives, indicators, and actions have been agreed to by the steering committee, the technical committee, and the identified implementers, the information should be compiled into a draft watershed management plan that will serve to direct action and future planning within the watershed.

The final section of the watershed management plan should include an overview of the next steps in the overall planning and implementation process. The section should include:

- how the partnership intends to help implement the plan, including the role that implementers can play in helping to implement the plan;
- how and when the plan will be reviewed and what might trigger a review;
- how and when the partnership will evaluate the progress and success of the plan; and
- how this information will be reported to stakeholders and the public.

Table 4: Sample Table of Contents for a Watershed Management Plan

Section	Suggested Content
Background	• Explanation of why a watershed management plan was developed
Vision	• Description of a desired future state
Planning Linkages	• Legislated plans governing the area • Existing water, land, resource, wildlife, settlement, or other relevant plans
Watershed and the Water Resource	• Description of the watershed or reference to a state of the watershed report • Explanation of how the water is used in the watershed
Planning Process	• Approach taken to organizing a watershed plan • Scope of issues, risks, and challenges
Engagement and Communications	• Who are the participants • When and how input was gathered from implementers, stakeholders and the public.
Outcomes and Actions	• Agreed-upon outcomes and objectives to get there • Performance measures (e.g., additional indicators) • Recommended management actions and rationale
Implementation, Monitoring, and Renewal	• Timelines, roles, and responsibility for implementation • Performance monitoring • Communication to stakeholders and implementers • Strategy for renewal and reporting on progress
References and	• Previously endorsed terms of reference
Appendices	• Glossary, sources, citations, etc.

The completed draft plan should be forwarded to the partnership's board of directors for approval to release it to all key stakeholders and implementers for review. The partnership must allow adequate time for the stakeholders and implementers to review the materials and provide comment. Members of the partnership need to use their own processes to communicate with their organization in order to receive comments and garner support for the plan.

Once the comments from the stakeholders and implementers have been received, the steering committee and technical committee make the necessary changes to the draft and prepare a final plan. The final watershed management plan is forwarded to the partnership's board of directors for approval and, once approved, released to all key stakeholders and implementers with a request for formal support.

As noted previously, endorsement beyond the partnership's board of directors brings credibility to the watershed management plan. Acquiring endorsement should be done via a formal and well-documented process that may include a written response from all key stakeholders and implementers. Any participating stakeholder or community who supports or endorses a watershed management plan should be willing to move forward on some or all of the recommended actions in order to work towards the desired outcomes.

Checklist By this stage, the partnership should have a finalized and supported watershed management plan that specifies a series of targeted actions and next steps aimed at achieving the desired outcomes and objectives as well as a process for evaluating the success of the plan.

6.0 Implement: Implementing the Watershed Management Plan

While many watershed management planning guidance documents end with the development of the plan as the last task, the work involved in realizing the outcomes and objectives set out in the plan is just beginning. The watershed management plan will have very little impact if the actions contained within the plan are not successfully implemented. This section aims to provide users with knowledge and tools to assist in ensuring successful implementation of the watershed management plan.

Step 11: Build the Foundation for Successful Implementation

The checklist below can be used as a review of the activities throughout the planning process. The findings from this review should be documented in a closure report. The closure report should identify lessons learned and suggestions for improvement for subsequent planning phases. The more practices in the checklist that are incorporated into developing the plan, the greater the likelihood of success during the implementation phase.

Table 5: Checklist for Successful Implementation of a Watershed Management Plan

✔ Was there sufficient support and resources (both human and financial) to develop the plan? Was there a clear leader or agency to lead plan development throughout the project? Were project management principles used?
✔ Were all key implementers represented and actively involved on the planning committees (steering, technical and implementation)? Was there a balance of power among representatives? Was the size of the committees manageable?
✔ Did the committees have a clear understanding of consensus and what to do if consensus was not achieved? Was there a conflict management and resolution process? Was there mutual trust and respect between team members?
✔ Were there any historical issues that could interfere with the planning process and were they dealt with before proceeding? Was there sufficient, validated information to support the process?
✔ Was there a systematic approach for developing management actions? Were inventories of existing actions compiled in advance of these discussions? Were evaluation criteria used and were trade-offs discussed? Were proposed actions tested for social acceptability? Were the actions run through a cost-benefit analysis? Were the contributions of ecosystem services accounted for?
✔ Was sufficient time taken at the start of the process to establish a clear vision, a nested series of outcomes and objectives? Is the plan realistic in scope and scale?
✔ Was there a clear governance framework with roles and responsibilities defined at various levels (terms of reference, committee operating principles, etc.)? Did all stakeholders sign off on these products?
✔ Have the support and resources required for implementation been secured? Are commitments, accountability, priorities, and timelines for actions clear?
✔ Have indicators been chosen to measure short-, medium-, and long-term progress towards outcomes? Were the indicators selected using SMART criteria?
✔ Were research needs identified? Is there a timeframe for updating the plan?
✔ Was the participants' time used wisely? Did the organization celebrate milestones and successes?

** Please refer to Appendix B for a more comprehensive Checklist for Assuring Successful Implementation of a Watershed Management Plan.
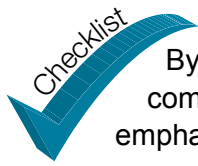
By this stage, the partnership should have a high level of comfort with the completed watershed management plan and should now be prepared to shift emphasis to implementation.
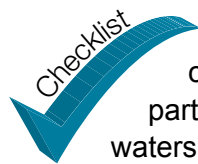
Step 12: Establish an Implementation Committee

As the focus of the partnership shifts to implementation, partnerships may dissolve the steering committee and establish an implementation committee. Given their detailed knowledge of the plan and their involvement in its development, original steering and/or technical committee members should be asked to participate on the implementation committee. Some committee members may choose to leave, and new members may want to become involved in this more hands-on stage. Other opportunities for participation exist, as often working groups may be needed to help move an action forward, particularly for actions where multiple agencies and/or jurisdictions are involved.

> > > The key to successful watershed management planning is the systematic consideration of implementation at every stage of the planning process.

When seeking new members for the implementation committee, the partnership should find individuals with the skills, energy, enthusiasm, and connections to move implementation forward. Expertise and skills such as project management, communications, public engagement, data analysis, and scientific expertise may be beneficial. The partnership should involve representatives from most, if not all, of the proposed implementers. Along with helping to ensure that actions are being implemented within their respective agency or jurisdiction, these individuals may also be requested to bring forward monitoring information, identify opportunities for funding, and share challenges and interim progress results. To keep the implementation committee energized, the partnership may consider site visits and field trips to view implementation activities in action, in addition to any regularly scheduled committee meetings.

By this stage, the partnership should have established an implementation committee composed of members able to envision how best to mobilize the partnership, stakeholders, and implementers to realize commitments outlined in the watershed management plan.

Step 13: Implement the Plan

An implementation workplan will be instrumental to managing and coordinating activities. The implementation workplan outlines the sequence of tasks to be done, who will do them and by when; identifies possible funding and technical support; and sets up a process to measure implementation progress. In essence, the implementation workplan is a guide for turning recommended management actions from paper to reality and for determining how best to measure implementation progress toward meeting the plan's desired outcomes.

As a first step, the implementation committee should carefully review the watershed management plan's closure report (Step 11) prior to beginning the implementation workplan. The closure report will highlight what worked well during the development of the plan and where things could be improved. These lessons learned will help ensure that successes can be repeated and problems avoided during implementation and subsequent planning phases.

Implementation is an ongoing activity that can occur throughout the entire planning process; there is no need to wait for the completion of the plan to begin taking action. In many cases, the implementation of particular recommended actions may even be well underway prior to the plan's completion.

> > >

In watershed management planning, it has been suggested that there are three kinds of implementers:

- Early Adopters – leaders within the watershed who are already doing what has been proposed in the watershed management plans by the time it is suggested;
- Willing Implementers – generally the largest group, these stakeholders are willing to take action but need some assistance in determining how best to proceed and will benefit from the watershed management plan; and
- Hesitant or Unwilling Adopters – stakeholders who may be hesitant or unwilling to move forward with actions proposed in the watershed management plan unless the proposed actions are moved into the regulatory realm by various levels of government.

A well-developed implementation workplan can be an important tool for soliciting funds for implementation. Implementation is the part of the planning process where actual change on the ground occurs, which may be particularly attractive to potential funders.

It is important to recognize that implementation can occur at many levels and through different processes. For example, for federal, provincial, and municipal governments, implementation may involve the development of new regulations, policies, guidelines, or bylaws that can then be applied to future land management decisions; whereas, for watershed stewardship groups, implementation may involve working with local landowners to establish best management practices for a particular portion of a river or creek.

Community-Based Social Marketing is an approach found to be quite successful for the implementation of watershed management plans at the community level. The delivery is aimed at changing the behaviour within a community through direct contact with people. The approach uses a variety of tools and techniques to identify the barriers to adopting stewardship practices, then determines the best tools to overcome those barriers and change the behaviour and practices of community members. Tools may include personal commitments, prompts, and incentives.
Source: McKenzie-Mohr D., 2010.

Although it will be up to the implementers to move the majority of the actions forward, the partnership can provide additional information or support to implementers, track the overall progress of implementation, and coordinate and lead the implementation process. A more comprehensive list of how a partnership can assist with implementation is shown in Table 6.

Checklist   By this stage, the partnership should have a clearly defined workplan that sets out the steps and tasks for implementation of the actions outlined in the watershed management plan.

Table 6: Examples of How the Partnership can Lead or Assist with Implementation

Implementation Roles	Details
Coordinate and track progress.	The partnership should provide overall coordination for the implementation committee and assist in facilitating coordination among implementers. The partnership should also track progress for each of the identified actions.
Present information to planners, senior management and councils.	The partnership could coordinate a series of presentations to municipal councils, planners and senior management of all identified implementers within the watershed. Such a presentation could: 1) provide an overview of the watershed management plan; 2) highlight key areas where the implementers may be able to move forward on specific actions; and, 3) emphasize how the stakeholders will benefit from implementing the proposed actions.
Host individual or small group meetings with implementers.	The partnership could set up small group or one-on-one meetings with key staff and resource persons from implementation agencies and jurisdictions to discuss strategies and actions. Although time-consuming, the benefits of small-scale meetings are beneficial in moving actions forward, sharing information, and establishing long-term, mutually beneficial relationships.
Facilitate workshops where multiple parties are involved.	The partnership could play a significant role as a catalyst for action where multiple parties are involved. For example, working closely with key stakeholders, the partnership could facilitate workshops to assist stakeholders in moving actions forward.
Provide an online warehouse of policies, guidelines, and other guidance documents.	The partnership could provide an online warehouse of sample guidelines, bylaws, policies, and maps related to the improvement of watershed health. These would be particularly valuable for stakeholders with limited resources or capacity.
Facilitate the establishment of long-term partnerships.	The partnership could play a role in bringing implementers together on a more permanent basis. For example, rather than working one-on-one with a multitude of implementers within a given portion of the watershed, the partnership may serve as a catalyst for the establishment of a multi-jurisdictional group within that portion of the watershed. The establishment of such a group would enhance communications and cooperation between the partnership (and other stakeholders) and key implementers and decision-makers in that area.
Identify opportunities for collaboration or leveraging.	The partnership could play a role (either directly or indirectly) in identifying opportunities for collaboration with existing programs and projects in the watershed. In many cases, having various groups work jointly to achieve a common outcome would result in significant cost savings.
Identify or provide expertise.	The partnership could play a role in providing expertise (where available) and suggesting other resources to implementers upon request.

7.0 Monitor, Evaluate and Report: Monitoring Progress and Reporting on Success

Given the commitment and effort put into developing a watershed management plan and the number of stakeholders who invested time and money into the implementation of the plan, it is important to determine whether the effort is achieving the intended outcomes. A periodic review of the progress toward implementing the recommended actions and of the change derived from these actions is part of the watershed management planning process.

Step 14: Monitor Implementation and Outcomes

The partnership will facilitate and monitor the implementation of the plan's recommended actions and assess progress toward achieving the desired outcomes.

Two complementary methodologies are used to assess the success of a watershed management plan:

- Implementation monitoring (otherwise known as performance monitoring) – the process of tracking and reviewing progress made towards the implementation of actions outlined in the plan. This kind of monitoring is typically carried out on a regular basis (e.g., bi-annually or annually) as part of the ongoing implementation process.
- Effectiveness monitoring (otherwise known as outcome or results monitoring) – the process of collecting and evaluating scientific monitoring data and information to determine whether desired outcomes are being achieved as a result of the actions being taken. Effectiveness monitoring entails systematic long-term data collection and analysis to measure the progress towards achieving the desired end state of the watershed management plan.

Implementation Monitoring

The implementation committee should develop an implementation monitoring system to serve several purposes:

- to document and record progress towards implementation of actions outlined in the watershed management plan;
- to serve as a tracking system whereby implementation can be evaluated according to the timelines and schedule set out in the implementation plan; and
- to provide valuable feedback to implementers and assist them with the implementation of the recommended actions.

As noted earlier, watershed management plans should be drafted in a manner that clearly identifies implementers for each recommended action (including lead agencies wherever possible). The partnership may be able to assist implementers with their respective monitoring efforts by preparing and distributing a standard reporting template to be completed by each implementer. This will make it easier for implementers to provide updates on their progress and ensures that the feedback from all partners is consistent.

There are a number of potential ways to report on progress; the following examples show two approaches.

Example #1:

For reporting *Water for Life* progress, the Government of Alberta uses a series of icons to represent the degree of progress towards meeting the key recommendations. These icons are combined with supporting text and are presented as part of a progress report.

5.2	Integrate watershed management with the Government of Alberta's Land-use Framework regional planning and cumulative effects management system	>	Develop a watershed management planning framework and a guidebook for implementation	ⓘ	http://environment.gov.ab.ca/info/library/6367.pdf
		>	Review and update legislation as required	⇄	http://www.albertawatercouncil.ca/Portals/0/ pdfs/SharedGov%20-%20Watershed%20 Management%20Plan%20FINAL.pdf
		>	Develop core indicators and reporting tools for watershed and regional planning	👥	

⇄ Planning stage	➡ Moving toward final approval	✗ Not yet initiated due to dependency on short/medium term deliverable	Short term actions by 2012
👥 Stakeholder engagement stage	ⓘ Ongoing development or implementation through various Government of Alberta programs	✓ Completed	Medium-term Actions by 2015
			Long-term Actions by 2019

Source: Government of Alberta *Water for Life* Progress Report, December 1, 2008 – March 31, 2011.

Example #2

For tracking *Water for Life* progress, the Alberta Water Council uses a series of progress indicators. These indicators are combined with supporting text and are presented as part of a progress report.
Source: Alberta Water Council, 2012.

> Actions with limited progress
> Actions completed
> Actions currently being re-evaluated
> Actions with some progress
> Actions progressing on track

Effectiveness Monitoring

Watershed management planning is complex. Ecosystems are dynamic and continually influenced by interconnected natural processes and human actions. The end result of management actions of one implementer could be affected by the actions or inactions of others. For example, government may successfully implement legislation to control and manage point-source pollution from entering a river; however, if complementary management measures are not also implemented to reduce non-point source pollution, the action may not achieve the desired outcomes. Furthermore, changes in the environmental health of a watershed are typically not the result of one action, but are caused by multiple factors and stressors. These relationships highlight the need for not only integrated and collaborative management, but also integrated and collaborative monitoring to assess any progress of management actions in achieving the desired outcomes.

No single organization has the resources or capacity to gather comprehensive monitoring data and information on every possible indicator of watershed health. It is recommended that as part of the planning process, a clear monitoring strategy, agreed upon by all stakeholders, be established and incorporated as part of the overall watershed management plan.

The monitoring strategy should:

- define the purpose and the scope of monitoring;
- identify relevant indicators to be monitored;
- stipulate sources and methods of data collection;
- set out a plan for future monitoring throughout the watershed; and
- clarify roles and responsibilities for key stakeholders.

Collaborative monitoring provides an opportunity to be more effective and to share information while allowing each partner to carry out their own monitoring program as a component of the broader monitoring strategy.

To assess the effectiveness of management actions being implemented, data and other information collected from a coordinated monitoring program will need to be periodically compared to baseline conditions.

Figure 6: A Coordinated Approach to Collaborative Monitoring

By this stage, the partnership should be able to identify actions taken toward implementation of the watershed management plan. The partnership should also be able to begin assessing whether the actions taken have contributed or are contributing to the achievement of the desired outcomes.

Step 15: Report on Implementation and Outcomes

Reporting is an essential component of any watershed management planning and implementation process. Information on implementation progress (implementation reporting) and the changes arising from the implementation (effectiveness reporting) need to be shared with stakeholders on a regular basis.

Implementation Reporting

The ongoing sharing of information about the implementation will:

- help build credibility and support for the implementation process;
- quantify progress on the recommended actions;
- encourage the ongoing efforts of implementers by keeping them actively engaged;
- provide an opportunity for implementers to highlight their successes;
- provide an opportunity to learn from others, to share information on implementation challenges and solicit ideas from other stakeholders on how to overcome these challenges;
- emphasize the transparency of the process, leading to greater trust in the process and confidence in the outcomes;
- encourage participation, collaboration, and involvement by more stakeholders and other potential implementers; and
- demonstrate consistency in implementation by showcasing what has already been done and how it was done.

Implementation progress reports can be developed in a number of different formats such as monthly email updates, newsletters, semi-annual or annual progress reports, or websites where progress is updated on a continual basis. Progress reports can not only report on implementation of the watershed management plan, but can also help build awareness of issues in the watershed by allowing implementers to compare their progress in relation to others, make new connections, and discover opportunities for collaboration with other implementers. Perhaps most importantly, progress reports can highlight successes so that the time and effort put into developing the watershed management plan will be seen as time well spent and will encourage other potential implementers to move forward in a meaningful way.

Effectiveness Reporting

Effectiveness reporting involves reporting on the status of the watershed health indicators selected as part of either the state of the watershed report or the watershed management plan. Similar to implementation reporting, effectiveness progress reports can be developed in a number of different formats, which may include direct email updates, newsletters, watershed report cards, successive state of the watershed reports, or websites where conditions throughout the watershed are updated regularly. Regardless of the format chosen, progress reports should provide evidence that the time, effort, and resources spent developing and implementing the watershed management plan are worthwhile and that progress is being made in achieving the desired outcomes. It is important to evaluate if the actions taken are achieving the desired results. Reports must adequately communicate progress on the selected indicators while still providing enough technical information.
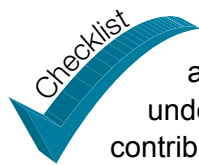
Checklist   By this stage, the partnership and its members should have a greater awareness of current conditions within their watershed and should have a clear understanding of how implementation of the watershed management plan has contributed to these conditions and toward achievement of the desired outcomes.
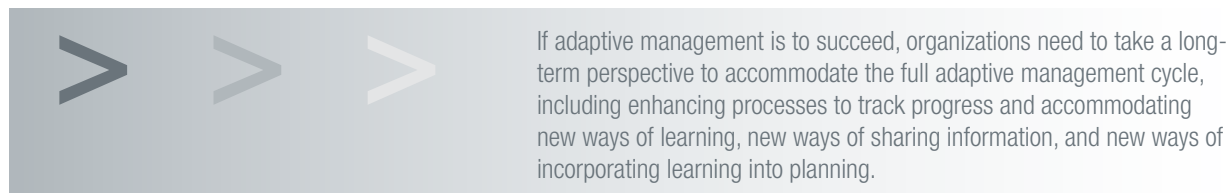
8.0 Adapt: Ever-Greening the Watershed Management Plan

A watershed management plan is not intended to be a static report full of conclusions and recommendations based on one point in time, but a living document to guide actions to achieve desired outcomes. The findings from monitoring plan implementation provide valuable feedback to assess the overall effectiveness of the watershed management plan and its associated actions, and the continual process of watershed management planning produces updated management plans. This is the premise behind adaptive watershed management planning.

Step 16: Adapt the Plan to New Information

By this stage, monitoring of performance measures and indicators may have revealed that some actions and strategies were not successfully implemented or did not achieve the desired outcomes. Watershed conditions may also have changed as new information comes to light or as new issues arise.

The partnership will need to periodically review the watershed management plan. The plan may need to be revised to address new challenges, reaffirm commitments from implementers, and celebrate success. A schedule and process for periodic review and updating of the plan should be built into the plan itself. For phased plans, partnerships may choose to update the previous version of the plan with each new phase. For example, the first phase could be reviewed and updated as part of the second phase plan development and so on as new phases are developed. This method ensures that all previous versions of the plan have been updated and the new plan contains the key information from previous phases.

> > > If adaptive management is to succeed, organizations need to take a long-term perspective to accommodate the full adaptive management cycle, including enhancing processes to track progress and accommodating new ways of learning, new ways of sharing information, and new ways of incorporating learning into planning.

Checklist By this stage, the partnership should be in the process of evaluating and updating its watershed management plan. Typically this would involve re-initiating the overall planning process so as to incorporate lessons learned into a renewed planning cycle and to account for any changes to issues, conditions, or priorities within the watershed.

9.0 Final Thoughts

Under *Water for Life*, the Government of Alberta has created an opportunity for communities and stakeholders to influence the future of the area in which they work, live, and play. The watershed management plan provides the opportunity for local stakeholders to not only define the outcomes but to be actively involved in achieving them.

For a plan to be successful, stakeholders and implementers must be willing to commit to the process and carry the plan from paper to reality, from concepts and aspirations to on-the-ground progress. This should culminate in real, observable changes to the environment and to the way things are done, at the level of the single landowner making constructive changes on his or her property, or at the senior government level with the implementation of new policies, regulations, and legislation. To make such change happen, all stakeholders need to take on a share of responsibility for the plan and do their part.

Appendix A

Frequently Asked Questions

1) How long does it take to complete a watershed management plan?

   The answer to this question depends primarily on the scope of the project and the level of resourcing. Assuming a phased approach (where priority areas or topics are tackled first), you can probably expect to spend one to two years working on a specific phase of the plan. Once the plan is developed, a high intensity implementation phase would follow and take a similar amount of time followed by a lower intensity implementation effort over subsequent years. The establishment of a standing implementation committee to deal with implementation over the longer term is encouraged.

2) What is the benefit of having both a steering committee and a technical committee?

   The steering committee typically focuses on the larger picture with the goal of helping to move the overall project forward. The technical committee typically focuses on the development of the actual plan including the development of the management actions. The technical committee reports to the steering committee, so all work developed by the technical committee is reviewed by the steering committee. The steering committee reports directly to the partnership's board of directors.

3) What happens if individuals leave the planning process while it is in progress?

   Changing membership of committees is a natural part of any planning process and is to be expected, particularly if a given phase is longer than a year. Fortunately, there is usually advance notice, so efforts should be taken to help secure similar representation during this period. It is also beneficial to have a policy on the committees that encourages interested individuals to join at any point in the planning process (provided that the committees do not become too large to be manageable). Process and progress must be well documented so that new members can catch up on committee work.

4) What can you do to address polarized interests within a partnership?

   One of the best ways to minimize the effects of polarized interests is to ensure that all key sectors are represented and actively engaged early in the planning process. Early involvement includes being involved during the development of the terms of reference for the watershed management plan and being involved during the development of the operating principles for the planning committees (steering, technical and implementation committees). These same sectors should be actively engaged in the development and review of the desired outcomes. The agreed-upon outcomes serve as the foundation for the plan, and if disagreement should arise, the outcomes can be used to clarify the intended direction for a particular area of interest.

5) What does it mean to track implementation progress?

One of the roles of the implementation committee is to track the progress of the management actions contained in the watershed management plan. Tracking would include a comprehensive review of all management actions and, in consultation with the implementers, development of a tracking report (for example, a table) showing the progress being made in implementing the actions. This table would need to be updated as progress is made.

6) What does it mean to monitor indicators?

In the development of most state of watershed reports, indicators are often selected to help describe the overall condition of the watershed (e.g., riparian health, nutrient levels). Additional indicators may also be selected during the development of the watershed management plan. Working closely with agencies tracking these indicators, the partnership should update their state of watershed reports on a regularly scheduled basis and update web-based state of watershed reports as new information becomes available. Updates can also be provided through regular newsletters and other methods.

7) What if the partnership cannot achieve consensus?

Early in the planning process, the partnership should define what consensus means to them and articulate this definition in the project terms of reference and in the operating principles for the planning committees (steering, technical and implementation). The section on consensus should clearly outline the steps that will occur if consensus is not achieved. In all cases, considerable effort should be spent trying to obtain consensus as the preferred option. However, if consensus cannot be achieved, one option is to record all dissenting opinions and a corresponding response from the partnership explaining why the proposed changes were not included as part of the final plan.

8) What if the key stakeholders do not wish to participate in the process?

It is extremely important to have representation from all key stakeholders, First Nations and Métis, particularly where the community is anticipated to be involved with implementation for a given phase. Although there is no guarantee that all key sectors will be represented, the partnership should make a concerted effort to involve all key sectors using a variety of approaches (e.g., involvement on committees, involvement in workshops, review of draft materials, involvement via conference calls). One-on-one meetings with key stakeholders may be beneficial to discuss potential concerns or opportunities for participating in ways other than as a full committee member.

9) Have watershed management plans made a difference?

Although the development of partnership-led watershed management plans is a relatively new approach in Alberta, there have been a number of notable successes. For example, in southern Alberta, water quality objectives developed by a Watershed Planning and Advisory Council served as the catalyst for the initiation of a phosphorus management planning process in an effort to find solutions to high phosphorus levels in certain parts of the watershed. These same water quality objectives were also used in the development of the Surface Water Quality Management Framework, which is an integral part of the South Saskatchewan Regional Plan. It is anticipated that there will be additional success stories to report as more plans move to the implementation phase over the next few years.

10) Is the WPAC responsible for First Nations consultation?

The WPAC is not responsible on behalf of the Crown for First Nations consultation. Alberta Environment and Sustainable Resource Development encourages First Nations to participate as active partners in the watershed planning processes, so First Nations can ensure their interests are represented in the watershed management plan from the outset, rather than after the recommendations in the plan have been developed. In the context of inclusivity and transparency with First Nations as with all interested communities and stakeholders, the role of the WPACs includes determining which First Nations to engage and engaging those First Nations early in the process, determining how First Nations representatives could participate in the WPAC's governance structure and committees, and documenting the First Nations' concerns and input as the process continues. The role of Alberta Environment and Sustainable Resource Development in the planning process is to consider the potential need for Crown-led First Nation consultation, both in light of Alberta's First Nation Consultation Policy and associated legal principle. For example, such an assessment would occur when Alberta Environment is considering a WPAC's recommendations to Alberta Environment and Sustainable Resource Development.

Checklist for Assuring Watershed Management Plan Implementation Success

Key Questions	Yes	No
Governance: To understand the possible constraints on planning		
• Is there a nested system of outcomes and objectives (e.g., provincial, regional, watershed, sub-watershed) to support the plan?		
• Do administrative boundaries match hydrological boundaries? If no, is there a governance structure that assures cooperation?		
• Is there a process for ensuring that watershed actions are integrated with land-use planning at the local level?		
Planning Preparation		
• Is there a clear leader or agency that can lead plan development and implementation on an ongoing basis?		
• Is there long-term support from key stakeholders?		
• Is the scope clear and "doable" in a reasonable timeframe?		
• Are there sufficient human and monetary resources to develop and implement the plan?		
• Is there sufficient information to support the planning process?		
• Are there historical issues that could interfere with the planning process? If yes, is there a process in place to handle them?		
Community Representation and Management		
• Is a systematic process being used to get the "right" people at the planning table?		
• Is there a "balance of power" among representatives?		
• Is the size of the committee (or committees) manageable?		
• Do certain groups need support in order to participate?		
• Is there an atmosphere of trust and transparency?		
• Do the stakeholders have a say in how the planning process was set up and run?		
• Are stakeholders signing off on a terms of reference that clearly outlines the issue to be addressed, scope, process, timelines and principles of engagement?		
• Is there a conflict management/resolution process?		
• Is there a communications plan/strategy for the planning process?		
• Is there an education program for new stakeholders joining the process?		
• Has the partnership taken steps in involve First Nations and Métis in the process?		
Outcomes and Objectives		
• Are the outcomes and objectives clear?		
• Were they reached through consensus?		

Key Questions	Yes	No
Developing and Evaluating Options		
• Are inventories of existing actions being compiled?		
• Is there a systematic approach for developing management options?		
• Is the planning team developing evaluation criteria (environmental, socio-economic) to choose among management options?		
• Are necessary trade-offs being discussed?		
• Is information from local/indigenous peoples being used in developing actions?		
• Are models available to explore alternative scenarios?		
• Are proposed actions being tested for social acceptability?		
• Are proposed actions being run through a cost-benefit analysis?		
• Are the contributions of ecosystem services accounted for?		
Implementation Planning		
• Are strong links being made to existing initiatives and programs?		
• Is accountability for actions clear?		
• Are there clear timelines for actions?		
• Are all the stakeholders signing off on the plan at both political and administrative levels?		
• Is an implementation communication plan in place?		
• Is each implementer preparing an implementation workplan for their organization?		
• Are social networks being utilized to help adoption of actions?		
• Do some parties require more support than others to implement the plan? If yes, how will the needs be met?		
• If behaviour change by stakeholders is involved, is there a plan for how this will be accomplished?		
• Are incentives/disincentives being put in place for regulated and non-regulated parties?		
Monitoring, Evaluation, Reporting		
• Are indicators designed to measure short, medium and long-term progress toward outcomes?		
• Are the indicators being measured?		
• Is implementation and effectiveness monitoring being set up?		
• Is implementation and effectiveness reporting being set up?		
Adaptive Management		
• Have research needs been identified?		
• Is ongoing education available for new stakeholders/agency staff members?		
• Is there a timeframe for updating the plan?		

(Source: Adapted from Sinton, 2012b)

Appendix C

Glossary of Terms Used

Cumulative Effects Management
The identification and implementation of measures to control, minimize, or prevent the adverse consequences of cumulative effects.

Implementers
A subset of the stakeholders anticipated to have a potential role in implementation of the watershed management plan.

Integrated Land Management
The strategic planned approach to managing and reducing the human-caused footprint on public land.

Partnership
The community-led watershed organization that undertakes state of watershed reporting and prepares watershed management plans. This term reflects the language used in the *Water for Life* strategy, which collectively refers to such collaborating organizations as "*Water for Life* partnerships." For the purposes of this document, the partnership encompasses the organization's Board of Directors, staff, and membership.

Stakeholders
Members of the partnership, either affiliated with a larger organization or not, and members of the public.

Appendix D

Resources

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