

Wabamun Lake Sub-Watershed Land Use Implementation Plan



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1 PURPOSE OF THE IMPLEMENTATION PLAN

Lake Wabamun and the surrounding watershed provide major benefits to residents, businesses, landowners, and visitors alike. A large portion of the watershed has been modified by human activities over the past 150 years. Wabamun Lake continues to be one of the most heavily used recreational lakes in the province.

In collaboration with provincial and municipal partners, stakeholders, and residents, Parkland County has developed the Wabamun Lake Sub-Watershed Land Use Plan and this supporting Implementation Plan. The land use plan provides a solid framework for taking a coordinated approach to addressing the key environmental challenges and opportunities facing the watershed. It establishes our collective vision for a desired future, outcomes that support achieving the vision and land use objectives that identify “what” we want to accomplish to meet these outcomes. The plan also identifies who is responsible for leading the actions and tools/procedures that we will use to achieve these objectives.

This implementation plan provides more detail on these actions, tools and procedures. This includes more details on the specific changes/enhancements to Parkland County's Municipal Land Use Plan, Land Use Bylaw, Engineering Standards and other provincial and municipal initiatives intended to improve our knowledge, decision-making processes and support our communities in protecting the health of the watershed.

An Implementation Committee will oversee the development of a priority based, detailed multi-year work plan, communications plan and funding model for this Implementation Plan. The committee will include senior provincial and municipal representatives, stakeholders, and residents with the appropriate authority and interest in the watershed.

Public reporting on plan progress will be on an annual basis with a formal plan review at five-year intervals. This is to help ensure the plan remains current, effective, achievable and responsive to changes in the watershed. Provisions in the plan that are no longer relevant will be either modified or removed and new provisions added as needed in response to community input, needs/concerns and changing environmental and other conditions.

2 STRUCTURE OF THE IMPLEMENTATION PLAN

This Implementation Plan is the third step in the overall land use planning process for the watershed, as shown in **Figure 1**.

The process started with the development of a “State of the Watershed” technical report, which compiled and summarized the best current available information on the watershed and identified the key environmental challenges and issues facing the lake in relation to land use.

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The subsequent development of the land use plan provided land use related actions that will guide and support current and future land use decisions that address the key environmental challenges identified in the State of the Watershed Report, and gathered through engagement with the watershed community.

This implementation plan provides more details on the specific changes/enhancements to Parkland County's Municipal Land Use Plan, Land Use Bylaw, Engineering Standards and other provincial and municipal initiatives intended to improve our knowledge, decision-making processes and support our communities in protecting the health of the watershed.

The final Phase (Phase 4) will be the development of a toolbox that can be used to guide the development and implementation of other watershed land use plans based on our experiences with Wabamun.

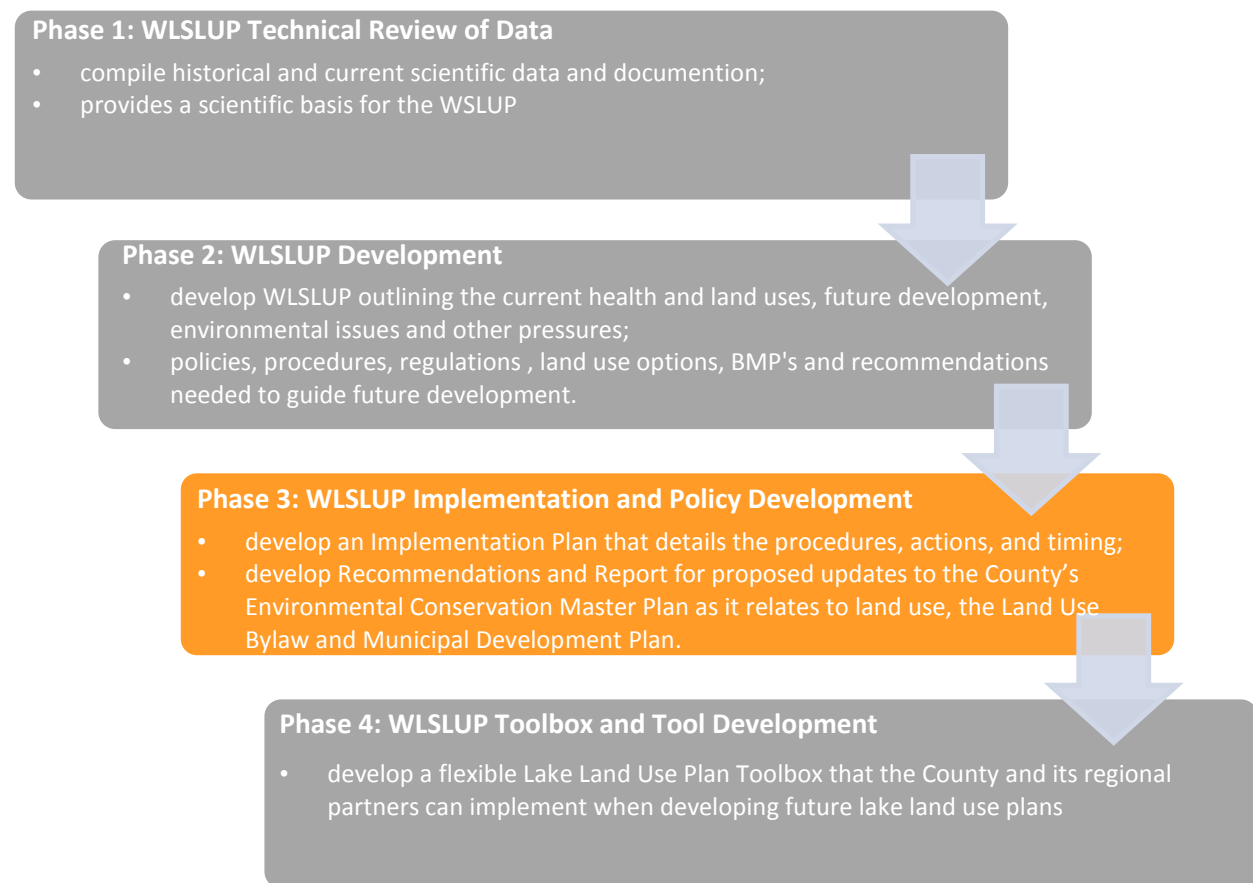


Figure 1- Wabamun Lake Sub-Watershed Land Use Plan Process

3 DECISION MAKERS IN THE WATERSHED

All three levels of government, municipal, provincial and federal, have land use jurisdiction in the watershed.

Municipalities have jurisdiction over subdivision of land, land use and development within their respective municipal boundaries and have the responsibility to ensure that buildings and supporting structures are constructed and installed in compliance with the Alberta Safety Codes Act (eg. plumbing, electrical, and sewage systems).

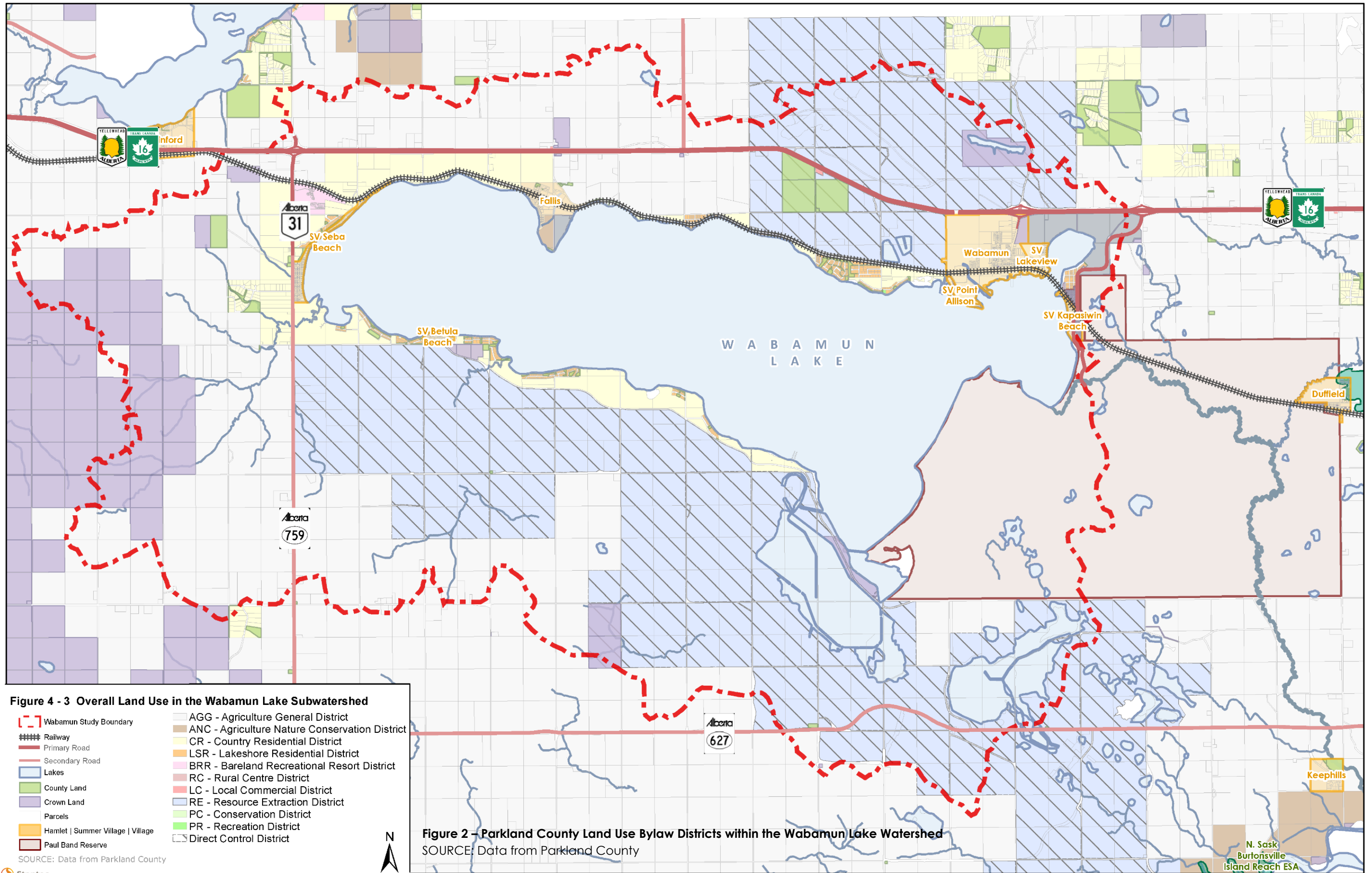
All municipalities must adopt a Land Use Bylaw, which regulates and controls the use and development of land and buildings within the municipality. The bylaw may also address development setbacks from property lines, the number of structures allowed on a property, the size and height of buildings and requirements regarding site clearing, etc. Municipalities are also responsible for bylaw enforcement within their boundaries.

Parkland County has established land use districts in the watershed through its Land Use Bylaw (**Figure 2**). The Village of Wabamun and the Summer Villages also have established land use districts in their respective Land Use Bylaws that regulate how subdivision and development must occur within their respective corporate boundaries.

The Alberta Government manages and enforces land, natural resources and environmental regulations under various Acts. It is responsible for development and activities that occur within the bed and shore of the lake and other waterbodies, protecting wildlife and endangered species, and regulating activities that affect ground water, surface water and water use, as well as air quality and contaminated sites.

The Alberta Government also has a number of agencies with authority in the watershed. The Natural Resources Conservation Board has authority to approve and regulate confined livestock feeding operations and agricultural practices related to the management of manure. Activities connected to energy resource extraction, including TransAlta's coal mining activities, are the responsibility of the Alberta Energy Regulator. TransAlta's power generation activities, fall under the authority and regulation of the Alberta Utilities Commission.

The Federal Department of Fisheries and Oceans has authority over any activities that may have an impact on fish habitat in the watershed. Transport Canada and the Canadian Transportation Agency regulate the activities and operation of the Canadian National Railway. The Department of Aboriginal Affairs and Northern Development govern activities on the Paul Band Reserve. The Federal Government also regulates uses on the lake (boat speeds, reckless boating) through the Ministry of Transportation (enforced by the RCMP) and the development of structures which may impede navigation (piers, docks, breakwaters, etc.).



SOURCE: Data from Parkland County



4 VISION, OUTCOMES, OBJECTIVES, ACTIONS

As identified in the Land Use Plan, our vision for the Wabamun Lake watershed recognizes that land use not only affects the land but also the environment and people who use or live in the watershed. We recognize that these land use challenges are complex and require that we work better together as a community to make and support land use decisions that improve the quality and sustainability of our ecosystem while meeting the economic and social needs of residents and visitors. Our vision for the watershed plan is:

"A multi-stakeholder land use plan that, as a component of an integrated watershed plan, will improve the health and resiliency of the Wabamun watershed and sustain our communities through the improved stewardship of our land and water."

This vision supports the Parkland County's vision of:

"A sustainable community that provides an enhanced quality of life by balancing conservation of its natural environment with economic prosperity and lifestyle choices"¹.

It also supports the Village of Wabamun's Community Vision:

"The Village of Wabamun is a sustainable community with a strong economy, progressive governance, healthy natural and man-made environment, and strong social and cultural support."²

To support the achievement of the vision, the following outcomes in the Land use Plan, which are consistent with Parkland County's Community Sustainability Development Plan, supporting objectives, actions, and tools/procedures provide the direction for land use decision-making in the watershed.

Outcomes are "the result" we want in the watershed. Objectives are "what we want to achieve" in order to reach our outcomes. Actions are "how we are going to achieve" the objectives and Implementation Procedures and Tools are the specific mechanisms we intend to use to implement the actions.

¹ Parkland County, Municipal Development Plan, P1.

² Village of Wabamun, Municipal Development Plan, P 13.

Realizing our vision is achieved through the cooperation and coordination between provincial and municipal decision makers, industry, residents, visitors and others with an interest in the watershed. Everyone must share the responsibility to support and participate in these efforts.

The following recommended actions will be realized through a combination of implementation tools and procedures supported by existing programs/projects and new ones where required. Where additional funding is anticipated, it has been identified.

4.1 OUTCOME 1- OUR LAND USE PRACTICES PROTECT THE ENVIRONMENT

As a community, we expect our land use practices to protect our environment and support a healthy ecosystem that provides sustainable opportunities for current and future generations to enjoy.

4.1.1 Objective 1: Our Land Use Practices Improve Surface Water Quality

Our land use practices must protect the quality of our surface water to ensure ongoing environmental health and for maximizing the quality of life and benefit to residents and other users. Land use practices impact surface water quality through run off that carries nutrients, pesticides, sediments, bacteria, litter, oil and grease and other pollutants into wetlands, streams and the lake.

Developed areas contribute disproportionately higher amounts of sediments, nutrients, and other contaminants to surface water. This is typically through increased surface water runoff over fertilized lawns, and hardened surfaces (roads, roofs, parking areas, etc.) where pollutants can accumulate and then easily washed away. Old or malfunctioning septic systems can also contribute to bacteria pollutants in surface water.

4.1.1.1 Recommended Action 1:

No new confined feeding operations will be located north of Highway 627. CFO's may only be considered south of Highway 627 as identified in the plan (**Figure 3**) and when in compliance with all applicable regulations.

Implementation Procedures and Tools (New)

- I. Within 1-3 years, Planning and Development will lead the amendment of Parkland County's Municipal Development Plan confirming that Parkland County will only consider the approval of new CFOs on lands identified in **Figure 3** within the watershed if they also meet all other regulatory requirements.

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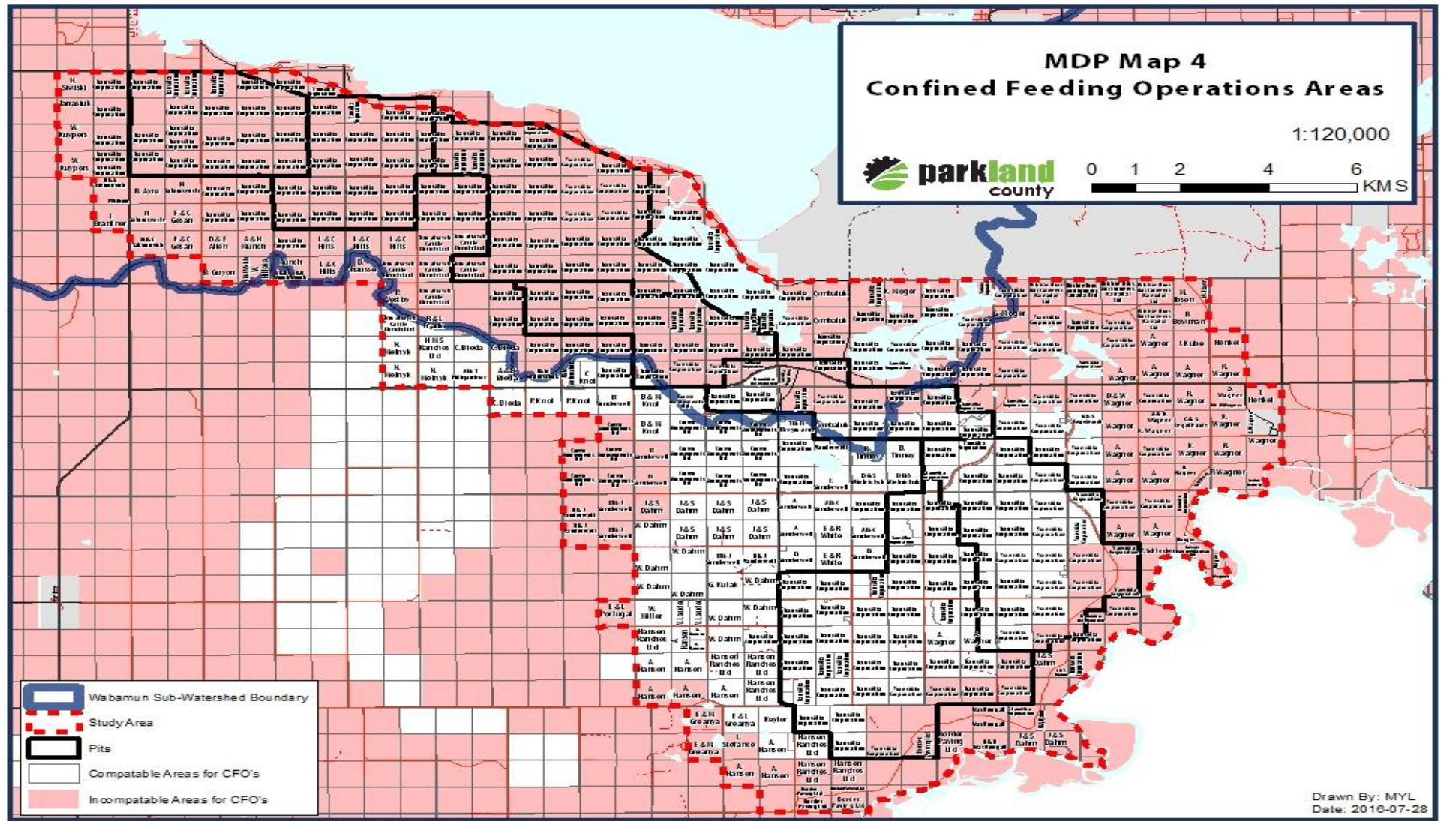


Figure 3 Compatible Areas for CFOs in the sub-watershed

SOURCE Parkland County 2016

4.1.1.2 Recommended Action 2:

Establish water quality objectives for Wabamun Lake and the watershed and manage within these limits.

Implementation Procedures and Tools (New)

- I. Within 3-5 years, Alberta Environment and Parks will lead the development and implementation of a Surface Water Quality Management Framework for the watershed and incorporate the framework into the North Saskatchewan Regional Plan's Surface Water Quality Management Framework as it is developed.

Additional Budget to be Determined.

- II. Within 3-5 years, Engineering will amend the County of Parkland Engineering Standards to include a reference to the Surface Water Quality Management Framework once approved.

4.1.1.3 Recommended Action 3:

Minimize the potential for future impacts of the Canadian National Railway mainline on the watershed.

Implementation Procedures and Tools (New)

- I. Within 3-5 years, Alberta Environment and Parks, Planning and Development and Villages/Summer Villages will provide input to Canadian National Railway in undertaking a "railway corridor risk assessment" in the watershed, and identify and implement required mitigation strategies.

4.1.1.4 Recommended Action 4:

Reduce nutrients, manure, pesticide and other chemicals in runoff from agricultural operations, acreages and lots with a particular focus in the 1:100 floodplain and phosphorous concentration areas over 400 mg/m³ as identified in **Figure 4**.

Implementation Procedures and Tools (New)

- I. Within 1-3 years, Alberta Environment and Parks, and Planning and Development will complete a 1:100 Floodplain Study to confirm the 1:100 year floodplain in the watershed.

Additional Budget to be Determined.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- II. Within 1-3 years, Environment will coordinate with Cows and Fish to develop and deliver multi-media education in the watershed that focus on:
- Encouraging livestock watering and salt/mineral sites to be located away from riparian areas and discourage livestock grazing adjacent to waterbodies/lakes/streams/wetlands;
 - Reducing pesticides, fertilizers, petroleum products and manure in runoff;
 - Reducing tillage/summer fallow and returning stubble to the soil to reduce soil erosion and increase water infiltration.

\$100,000 Anticipated Additional Budget.

Implementation Procedures and Tools (New)

- III. Within 1-3 years, Planning and Development will lead the amendment of Parkland County's Municipal Development Plan and Environmental Conservation Master Plan to encourage the use of Beneficial Management Practices in reducing the environmental impact of runoff on the watershed.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- IV. Within 1-3 years, Environment and Community Suitability will coordinate with the Wabamun Watershed Management Council and the Land Stewardship Centre to develop and delivery multi-media education programs focused on:
- Reducing the use of phosphorous-based fertilizers, pesticides and other chemicals in runoff;
 - Use natural alternatives to chemical fertilizers, insecticides and herbicides where possible;
 - Identifying, repairing/replacing faulty septic systems; and
 - Enhancing landowner hazardous waste collection, waste reduction, and composting programs.

Implementation Procedures and Tools (New)

- V. Within 5+ years, Engineering Services will complete a Storm Water Management Study for the watershed including an Area Drainage Master Plan. This will provide an integrated, comprehensive approach for all catchment areas and direct the management,

planning and operations of municipal storm drainage systems to prevent discharge of pollutants from municipal operations, and minimizes direct runoff to the lake. This includes:

- a) Functional storm water management areas;
- b) Runoff volume control targets and release rates;
- c) Identification of environmental resources;
- d) Point and non-point sources of pollution;
- e) Spill response and prevention;
- f) Control levels for storm water;
- g) Total suspended solids management;
- h) Best management practices; and
- i) Low impact development strategies and technologies.

Additional Anticipated Budget \$400,000.

Implementation Procedures and Tools (New)

- VI. Within 3-5 years, Planning and Development will lead the amendment of Parkland County's Municipal Development Plan and Land Use Bylaw to require applications for development/redevelopment to be consistent with and support the results of the Storm Water Management Study and 1:100 floodplain study when completed.

Implementation Procedures and Tools (New)

- VII. Within 1-3 years, Planning and Development and Alberta Environment and Parks will undertake a Land Use and Watershed Capacity Study, which will explore the potential residential and non-residential carrying capacity of the watershed. Findings from the study will guide appropriate infilling, cluster development, higher density and mixed-use developments adjacent to existing municipal infrastructure (e.g. water, sewer, and road), protection of natural drainage patterns, steep slopes, sensitive groundwater recharge areas, and major vegetation cover types.

Additional Budget to be Determined.

4.1.2 Objective 2: Our Land Use Practices Improve Groundwater Quality and Quantity

Many rural landowners and some urban communities rely on groundwater as a water source and are therefore at risk of groundwater contamination and reduction in groundwater levels if land use practices result in unsustainable ground water use, reducing groundwater recharge or enable groundwater contamination.

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4.1.2.1 Recommended Action Intended to Improve Ground Water Quality and Quantity

Identify and protect groundwater recharge and discharge areas from new developments and contamination from existing and new land uses, reduce groundwater use in depleted areas and rehabilitate recharge areas that are negatively impacted.

Implementation Procedures and Tools (New)

- I. Within 1-3 years, Alberta Environment and Parks, Environment and Community Suitability, and Planning and Development will undertake a Regional Groundwater Assessment Study for the watershed.

Additional Anticipated Budget \$300,000.

Implementation Procedures and Tools (New)

- II. Within 3-5 years Engineering will update Parkland County's Engineering Standards so that groundwater is given more consideration in the design and construction of new developments and storm water management systems including:
 - Requiring the development of new domestic water wells consistent with the results of the Groundwater Assessment Study when completed;
 - Requiring surface grading on new developments and redevelopments to promote recharge of groundwater;
 - Requiring new developments and redevelopments to minimize clearing of vegetation and the size of impervious surfaces to better facilitate groundwater recharge.
- III. Implementation Procedures and Tools (New) Within 3-5 years Planning and Development will lead the amendment Parkland County's Land Use Bylaw so that groundwater will be given more consideration in the design and construction of new developments and the maintenance of existing private sewage systems including:
 - Requiring owners of private wastewater septic systems to maintain them on an annual basis and provide proof of annual maintenance at the request of the County;
 - No new outhouses will be approved in the watershed;

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4.1.3 Objective 3: Our Land Use Practices Improve Upland/ Riparian Health

Healthy, well-vegetated upland and riparian areas are an important part of maintaining a healthy watershed. They help protect water quality and the ecosystem by providing fish and wildlife habitat, reducing flood risk and improving water quality and quantity through soil stabilization, water holding, pollution and nutrient removal capabilities. Past practices have seen significant conversion of these lands to residential, resource extraction, agriculture, recreational, energy generation and other uses.

A riparian health assessment, of the shoreline of Wabamun Lake in 2014 showed that just over half of the lakes shoreline riparian areas were rated healthy (57%) with natural emergent and shoreline terrestrial vegetation generally intact in these areas. The assessment also showed that riparian health is reduced for a considerable amount of shoreline with 34% highly impaired and 9% moderately impaired. Some of these areas have been hardened with concrete, armour stone, and other materials.

A large portion of the native mixed wood forest in the watershed has also been removed and fragmented by human activity. Land use practices that introduce/support Invasive species also pose a threat to native ecosystems and biodiversity and can have profound impacts on the ecosystem by outcompeting native species and altering habitat. The watershed, due to its heavy human use is particularly prone to the introduction and spread of invasive species.

Through Parkland County's 2014 Environmental Conservation Master Plan, eleven Environmentally Significant Areas were identified in the watershed. These are important to the long-term maintenance of biological diversity, soil, water, and other natural processes and to help ensure that existing healthy riparian areas are protected and impacted areas are reduced and restored where feasible. Parkland County has completed its Municipal Wetlands inventory to support a no net loss of wetlands during the process of future land development.

4.1.3.1 Recommended Action Intended to Improve Upland/Riparian Health

Reduce fragmentation of upland and riparian areas and maintain/ enhance intact habitat types and connectivity. This will be done by discouraging development/activities in sensitive areas, and managing invasive, weeds and/or non-native species that threaten ecological integrity and connectedness. Wetlands of Class III or greater within the Wabamun Lake watershed shall also be preserved in their natural state.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- I. Within 3-5 years, Planning and Development and Environment will lead the following initiatives.

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- Work with the agriculture and other industries to develop multi-media programs/practices that reduce land use impacts and maintain/protect as much riparian and upland vegetation as possible. This includes:
 - the use of rotational and lower intensity grazing systems to maintain or improve the plant community;
 - fencing and restrict grazing when riparian areas are vulnerable such as during spring runoff when banks are fragile;
- Naturalize lands adjacent to waterbodies using native plant species;
- Encourage landowners to manage off road vehicles on their sensitive lands;
- Encourage voluntary contributions for the provision of parks, open space amenities, and protection of sensitive lands.

Implementation Procedures and Tools (New)

- II. Within 3-5 years, Planning and Development and Environment will lead the following initiatives.
 - Undertake a Habitat Conductivity Study, and improve wildlife habitat and range by locating municipal reserve lands in strategic locations and connecting them to privately owned or public natural areas where habitat and features that provide for and function as movement corridors or landscapes exist;
 - Undertake a Hazards and Assessment analysis identifying hazard lands and protect these lands from development;
 - Establish a Transfer of Development Credits system to encourage private developers to increase density, minimizing parcel size and protect environmentally sensitive lands;
 - Establish municipal programs to support and monitor the effect of Conservation Easements to protect sensitive areas;
 - Seek opportunities for the sale or exchange of reserve lands not required to protect sensitive areas and use the proceeds to acquire sensitive lands including funding from the provincial Land Stewardship Fund and Alberta Land Trust Grant Program;
 - Pursue County designation as a Wetlands Restoration Agency to allow the use of developer funds to restore wetlands according to the Wetland Policy;

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- Establish and employ a Riparian Setback Matrix Model to determine a scientific and legally defensible method for determining specific setbacks for new developments, Environmental Reserve designation, etc. to protect waterbodies, etc.

Additional Budget to be Determined

Implementation Procedures and Tools (New)

- III. Within 1-3 years, Engineering will update Parkland County's Engineering Standards to require subdivisions, developments and redevelopments to preserve natural features and provide adequate setbacks from hazard lands including reference to the Riparian Setback Matrix Model, the 1:100 year Floodplain Study, and the Hazards and Assessment analysis when completed.

Implementation Procedures and Tools (New)

- IV. Within 1-3 years, Planning and Development will amend Parkland County's Municipal Development Plan and Parkland County's Land Use Bylaw to require an Environmental Impact Assessment as part of the application for subdivision, major development or redevelopment and confirm the requirements of this assessment.

Implementation Procedures and Tools (New)

- V. Within 1-3 years, Engineering will update Parkland County's Engineering Standards to require the use of low impact development strategies and technologies where possible.

Implementation Procedures and Tools (New)

- VI. Within 1-3 years Planning and Development will lead the amendment of Parkland County's Municipal Development Plan and Parkland County's Land Use Bylaw so that development/redevelopment:
 - Preserves natural features, minimizes impacts on agricultural lands, and provides adequate setbacks and protection of hazard lands, riparian areas, shorelines, wetlands, and watercourses;
 - Requires a minimum of 30 meters from the legal bank of Wabamun Lake and any other key areas of important upland and riparian areas to be dedicated as Environmental Reserve and retained in their natural state;
 - Requires an approval for tree clearing on all lands identified as hazard/sensitive as identified in the Hazards and Assessment Study;

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- Requires naturalized approaches using Beneficial Management Practices for erosion protection within 3 meters of the legal bank of Wabamun Lake.

Implementation Procedures and Tools (New)

- VII. Within 1-3 years, Planning and Development will lead the amendment of Parkland County's Land Use Bylaw requiring an approval for tree clearing on agricultural districted lands that have been identified as hazard lands, for lot clearing and grading, or stockpiling or excavating adjacent to waterbodies and watercourses, or other sensitive areas.

Implementation Procedures and Tools (New)

- VIII. Within 1-3 years, Planning and Development will lead the amendment of Parkland County's Municipal Development Plan and Land Use Bylaw, and Engineering will update Parkland County's Engineering Standards requiring developers to construct equivalent riparian areas in the watershed to replace riparian areas that are destroyed through development when avoidance/mitigation was not possible.

Implementation Procedures and Tools (New)

- IX. Within 1-3 years, Engineering will update Parkland County's Engineering Standards to require the diversion of transportation infrastructure around environmentally sensitive lands where possible.

Implementation Procedures and Tools (New)

- X. Within 1-3 years, Planning and Development will lead an evaluation of all existing Municipal Reserve designations (Municipal Reserve, Environmental Reserve, Right of Way) in the watershed to determine whether they are designated appropriately and subsequently lead the amendment of Parkland County's Municipal Development Plan and Land Use Bylaw to redistrict/rezone these lands as appropriate.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- XI. On an ongoing basis, Alberta Environment and Parks will maintain the weir on the east side of the lake.

Implementation Procedures and Tools (New)

- XII. Within 3-5 years, Parks and Recreation will designate areas and design trails for off highway vehicle use that minimizes environmental impacts and watershed health as recommended in the Parks, Recreation and Culture Master Plan.

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Additional Budget to be Determined.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- XIII. Within 1-3 years, Alberta Environment and Parks, Villages, Summer Villages, and Enforcement will develop and implement a regular watercraft inspection program at key access points to Wabamun Lake to reduce opportunities for the spread of invasive species. (e.g. Responsible Boat care, PlayClean Go)

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- XIV. Within 1-3 years, Planning and Development will lead a review of potential uses within existing development setbacks and determine how to manage allowed uses.

Implementation Procedures and Tools (New)

- XV. Within 1-3 years, Planning and Development and Environment will lead the development of management plans for the priority Environmentally Significant Areas consistent with the area-specific management considerations outlined in the ESA inventory of the Environmental Conservation Master Plan and **Figure 4** as follows:

Environmental Significant Area	Area Specific Management Considerations
Canada Geese	• Maintain the natural character of the area; • Ensure connectivity with neighbouring natural patches; • Ensure disturbances occur away from erodible areas; • Prevent groundwater contamination.
East Pit Lake	• Limit fragmentation by restricting linear feature development and maintaining large patches of native vegetation for wildlife corridors and ungulate wintering habitat.
Fallis Slopes	• If future gravel pits are approved, appropriate erosion and sediment control practices, best practices, progressive reclamation, and landscape ecology principles should be incorporated into plans and designs; • Prohibit clear cutting on slopes to minimize risk of erosion and sediment loading in Wabamun Lake.
Isle Lake Surrounding Area	• Protect and enhance wetlands and riparian areas in and around the ESA to enhance filtration of nutrient laden runoff from nearby source areas; • Use best management practices to protect creeks and rivers.

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Environmental Significant Area	Area Specific Management Considerations
Peatbog 52 ESA	• Undisturbed peatland should be maintained and the drainage of the area left unmodified; • Agricultural practices in the surrounding areas should be guided by principles which minimize impact to the natural areas they surround; • Barriers to wildlife movement should be minimized.
Seba Beach Junior Forest Wardens	• Minimize access points into the area in order to minimize land disturbance by off highway vehicle use; • Prevent potential for expansion of adjacent mobile home park west into the ESA.
Shoal Upland Habitat	• Grazing practices should be designed to maintain wildlife connectivity between the river valley and the lakes to the north; • Drainages should remain undisturbed wherever possible.
Sundance Natural Area and Surrounding Areas	• Maintain stepping-stones of habitat between the ESA and larger patches of natural habitat in the southern portion of the County to conserve overall landscape connectivity and regional biodiversity.
Wildlife Point	• Ensure wildlife movement along the northern shore is maintained. • Access from the northeast and northwest into the Fallis Slopes ESA should be maintained.

XVI. Within 1-3 years, Engineering will amend Parkland County's Engineering Design Standards to reference the area-specific management plans for each Environmentally Significant Area once completed.

XVII. Within 3-5 years, Planning and Development, Environment, Alberta Environment and Parks, Villages, Summer Villages will lead the development of a management plan for the secondary Environmentally Significant Area consistent with the area-specific management considerations outlined in the ESA inventory of the Environmental Conservation Master Plan and **Figure 4** as follows:

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Environmental Significant Area	Area Specific Management Considerations
Wabamun Lake	- Adequate development setbacks are required for the western grebe-nesting colony along the north shore of lake and Peregrine falcon nesting sites to reduce human disturbance; - The industrial lands in the contributing watershed should be reclaimed to locally common habitats as soon as they are no longer required for operations.

- XVIII. Within 3-5 years, Alberta Environment and Parks will lead the development of a management plan for the priority Environmentally Significant Area consistent with the area-specific management considerations outlined in the ESA inventory of the Environmental Conservation Master Plan and **Figure 4** as follows:

Environmental Significant Area	Area Specific Management Considerations
Jackpine Grazing Reserve	- Wildlife movement between forested areas should be ensured; - Recreational uses (off-highway vehicles) should be managed appropriately.

- XIX. Within 3-5 years, Planning and Development and Environment and Community Suitability Department will work with the Paul Band to develop a management plan for the secondary Environmentally Significant Area consistent with the area-specific management considerations outlined in the ESA inventory of the Environmental Conservation Master Plan and **Figure 4** as follows:

Environmental Significant Area	Area Specific Management Considerations
Wabamun Creek	- Agricultural activities must be managed to avoid impacts to remaining sensitive riparian areas; - Creek bed must be maintained to ensure spawning grounds remain intact. Access to riparian areas should be limited in order to minimize disturbances; - Wildlife movement corridors between Wabamun Lake and the North Saskatchewan River valley should be maintained.

Additional Budget to be Determined

4.2 OUTCOME 2 – OUR LAND USE PRACTICES PROVIDE ECONOMIC OPPORTUNITIES THAT SUPPORT THE PEOPLE AND HEALTH OF OUR WATERSHED

As a community, we expect our land use practices to support a future that provides equitable prosperity for our residents through collaboration, innovation and economic diversification that protect and enhance our environment.

4.2.1 Objective 1: Our Land Use Practices Attract Economic Opportunities that Support the People and Health of our Watershed

We need to encourage current and future economic opportunities in a responsible, coordinated manner that brings prosperity while preserving our natural environment and the health of the watershed.

4.2.1.1 Recommended Action Intended to Attract and Support Economic Development Opportunities that Support Watershed Health

High capability agricultural lands will be protected from non-agricultural development. Any new non-agricultural development must achieve a healthy synergy with adjacent agricultural lands.

Implementation Procedures and Tools (New)

- I. Within 1-3 years, Planning and Development, Environment and Agriculture will implement recommendations from the Future of Agriculture Study and incorporate as required in Parkland County's Municipal Development Plan and Land Use Bylaw.

Implementation Procedures and Tools (New)

- II. Within 1-3 years, Planning and Development will explore the concept of amending Parkland County's Land Use Bylaw to change all existing areas under the current Recreation District designation to Natural Environment-Recreational District designation (new designation).

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- III. On an ongoing basis, Alberta Environment and Parks, and the Alberta Energy Regulator will monitor the development and reclamation of lands on the Highvale Mine Site so that the following elements of the Highvale Plan End Use Area Structure Plan are achieved:
 - Create agricultural cropland to replace the historic loss of cropland to non-agricultural uses in the watershed;

- Country Residential Development will be encouraged to the hamlet of Keephills;
- Create conservation and parks areas in an open space network linked by a multi-use trail network;
- Explore opportunities for renewable energy production within the watershed.

4.3 OUTCOME 3 – REDUCE THE ENVIRONMENTAL IMPACTS OF DEVELOPMENT

As a community, we want our land use practices to employ the best techniques for the design, construction and operation of our buildings, infrastructure, services etc. that are efficient and effective in reducing environmental impacts.

4.3.1 Objective 1: Our Land Use Practices Reduce the Environmental Impacts from Development

Practices that encourage the appropriate infilling, clustering and promoting higher density residential and mixed uses adjacent to existing municipal infrastructure (e.g. water, sewer, roads), utilize storm water retention, enhance natural drainage patterns, protect steep slopes, sensitive vegetation and groundwater recharge areas, all contribute to reducing the environmental footprint of our developments.

4.3.1.1 Recommended Action to Reduce Environmental Impacts from our Developments

Our development practices will encourage the use of low impact design and construction methods and landscaping techniques that reduce impacts on the environment.

Implementation Procedures and Tools (New)

- I. Within 1-3 years, Planning and Development will lead the amendment of Parkland County's Land Use Bylaw, and Engineering will update Parkland County's Engineering Design Standards to create requirements/ incentives as appropriate for:
 - Achieving a higher density or cluster development to enhance/protect natural features and reduce fragmentation of habitat;
 - Achieving a higher percentage of indigenous vegetation and permeable surfaces in all subdivision, new and redevelopment sites;
 - Incorporating Leadership in Energy and Environmental Design or other environmentally sustainable standards;

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- Incorporating raingardens constructed and maintained using Beneficial Management Practices.

Implementation Procedures and Tools (New)

- II. Within 1-3 years, Planning and Development will lead the amendment of Parkland County's Municipal Development Plan, and Land Use Bylaw; and Engineering will update Parkland County's Engineering Design Standards to require a site plan for subdivision, major development and redevelopment at the time of application that includes the following:
- The location of the geotechnical "legal bank" of Wabamun Lake or any other watercourse if the development is adjacent to it;
 - A geotechnical report for any proposed disturbance at the top of bank that confirms that it will not negatively affect the environment;
 - The location and dimension of existing natural features (eg. Trees, shoreline vegetation) and how impact or loss will be avoided, mitigated or restored;
 - The location and dimensions of all yards, buildings, parking areas, driveways and other developments located or proposed to be located on the site;
 - Location of all proposed accesses on to public roads and locations of all municipal services to and within the site;
 - Low impact development strategies and technologies including dust control and emission reductions; and
 - How the use of existing topography and integration with the natural landscape will increase the natural visual aspect of the area and reduce grading requirements.

Implementation Procedures and Tools (New)

- III. Within 1-3 years, Planning and Development will lead amendments of Parkland County's Municipal Development Plan and Land Use Bylaw, and Engineering will update Parkland County's Engineering Design Standards to require a Storm Water Management Plan prepared by a qualified expert at the time of development application. The plan will be designed so that post development runoff does not exceed predevelopment natural flows. The plan will include:
- How storm and other runoff will be collected, retained, filtered, etc. to improve water quality, control peak discharge rates, and maintain existing drainage patterns prior to discharge into natural environmental features;

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- How construction/enhancement of catch basins and landscaping will maintain existing topography, drainage patterns, and minimize grading;
- Reducing amounts of impervious surface areas (rooftops, paved areas, buildings), and increasing the water permeability of the development (eg. maximizing green space);
- Lot level water reuse strategies (eg. rain gardens); and
- Temporary runoff storage.

Implementation Procedures and Tools (New)

IV. Within 3-5 years, Planning and Development, Engineering Services, Safety Codes Department and Public Works will explore and if feasible implement the following:

- Require a percentage of indigenous plants and permeable surfaces in all major development and redevelopment sites;
- Provide incentive programs to encourage low-impact designed construction and technologies for built form and servicing that protects the natural environment and reflects innovative sustainability practices;
- Determine a minimum lot size to achieve a required percentage of impervious to pervious surfaces;
- Create a salt and snow regulation and or plan for the watershed to minimize the negative impacts on surface water quality;
- Municipal potable water, wastewater, communal systems, engineered wetland and discharge of storm water opportunities that reduce the impact on the watershed as development is proposed and opportunities present themselves;
- Create an inventory of all septic systems detailing type, location, year of construction to determine relative pollution risk of each system based on its location, type, effectiveness and efficiency and location relative to the Alberta Geological Survey DRASTIC Intrinsic Aquifer Vulnerability Index;
- Require an Environmental Impact Statement prepared by a qualified expert as part of an application for subdivision, major development, or redevelopment within 100 metres of Wabamun Lake and other identified natural environment features, water sources, or Reserves in the watershed.

Additional Budget to be Determined.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- V. Within 1-3 years, Alberta Environment and Parks will implement dust control procedures at Wabamun Lake Provincial Park.

Implementation Procedures and Tools (New)

- VI. Within 1-3 years, Planning and Development will lead the development of a minimum building setback study from Wabamun Lake, waterbodies and watercourses. Once completed, Planning and Development will lead the appropriate amendments to Parkland County's Municipal Development Plan and Land Use Bylaw, and Engineering will update Parkland County Engineering Design Standards.

Implementation Procedures and Tools (New)

- VII. Within 3-5 years, Alberta Environment and Parks and Parkland County will reduce/eliminate undeveloped boat access points on Wabamun Lake and only approve individual and community seasonal docks, piers and associated mooring structures on the bed and shore of the lake that are consistent with local municipal plans.

4.4 OUTCOME 4 – COORDINATED GOVERNANCE

As a community, we want a future where all decision-makers provide a consistent, inclusive, participatory, transparent, and coordinated planning, decision-making and enforcement approach that effectively and efficiently responds to the needs of the watershed community.

No single government or non-governmental organization has all the resources, technical expertise, or jurisdiction to implement all of the regulatory and non-regulatory approaches needed to maintain a healthy watershed. These shared responsibilities require a shared, coordinated, unified approach.

4.4.1 Objective 1: Coordinated Policy, Planning and Enforcement

There are a number of jurisdictions, Federal, Provincial and Municipal, which have land use planning, approval, regulatory and enforcement authority in the watershed. There is a perceived inconsistency of approval and enforcement of land use, environment, and safety regulations in the watershed because of these different jurisdictions. A commitment to better coordinate the process of making land use decisions is required so that an effective, efficient, consistent, transparent and reliable approach is used in making them.

Given the potential impacts of land use decisions on the health of the watershed, three specific land use overlays are established to accomplish specific conservation objectives. These overlays build on the underlying Land Use Bylaw district and have a higher level of requirement as follows.

Environmentally Significant Areas Overlay (New)

Specific management plans will be developed for each of the Environmental Significant Areas in **Figure 4** to protect the ecological attributes of these areas within the timelines identified in Section 4.1.3. Land use decisions within each Environmentally Significant Area will be consistent with the relevant management plan and the underlying land use bylaw district regulations.

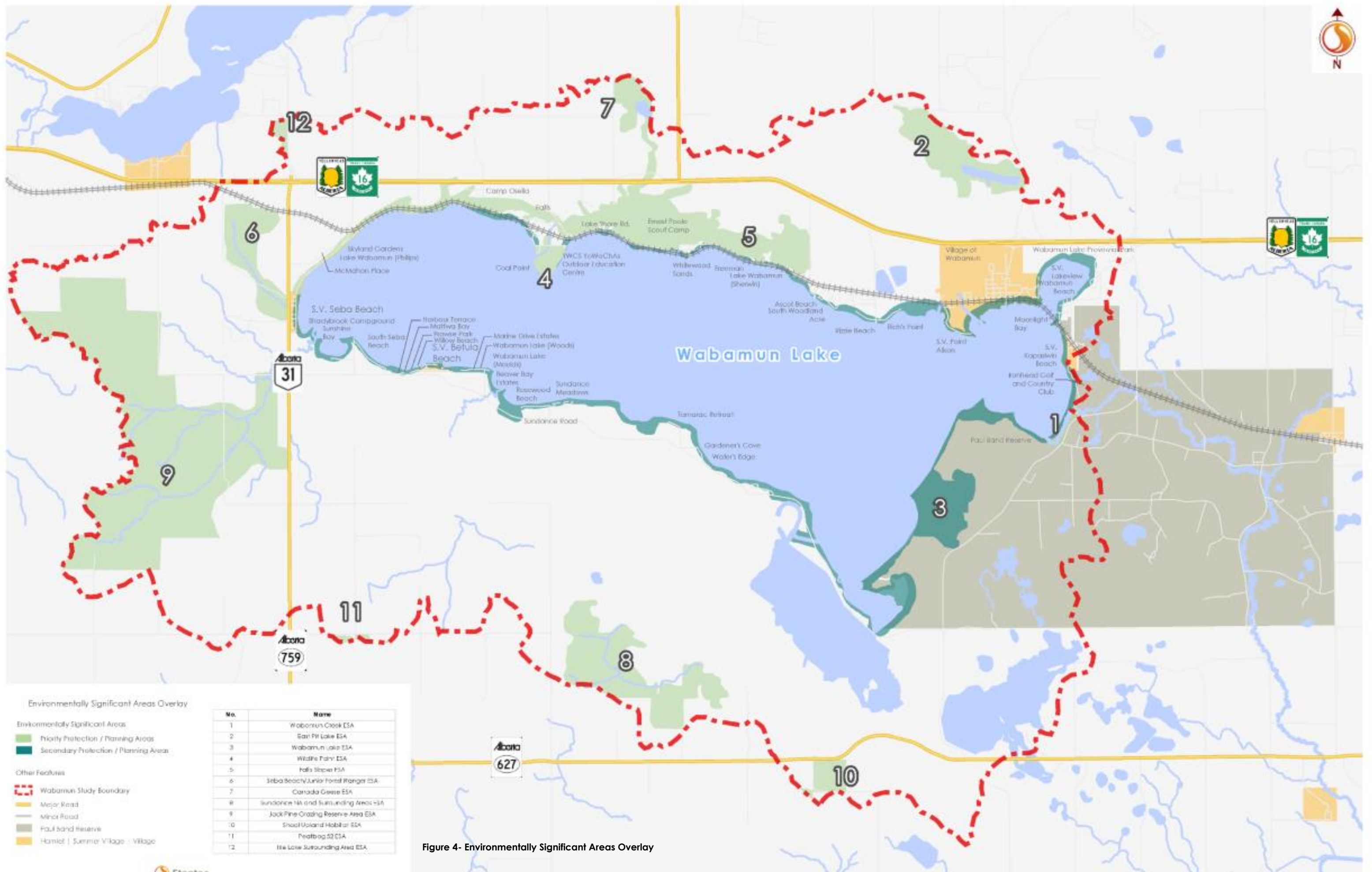
Phosphorous Concentration Reduction Overlay (New)

A phosphorous overlay will be established for the areas with phosphorous concentrations broadly identified as having greater than 400 mg/m³ as identified in **Figure 5**. The County will work with Alberta Environment and Parks, landowners and residents in these areas to more specifically identify the point and non-point sources of Phosphorous and implement strategies and practices to reduce phosphorous concentration and runoff from these areas.

Wabamun Lake Shoreline Riparian Protection/Restoration Overlay (New)

A Riparian Shoreline Health Overlay will be established to protect and remediate where feasible riparian areas along the shore of Wabamun Lake as identified in **Figure 6**.

Within this area, the remaining natural shoreline riparian areas (low impacted area), will be retained to the greatest extent possible in their natural state. They will not be altered or existing vegetation removed or damaged through construction, or the addition of hardened surface like riprap or break walls. Parkland County and its partners will work with landowners in areas identified as highly/ moderately impacted, to improve the naturalization of these shorelines.



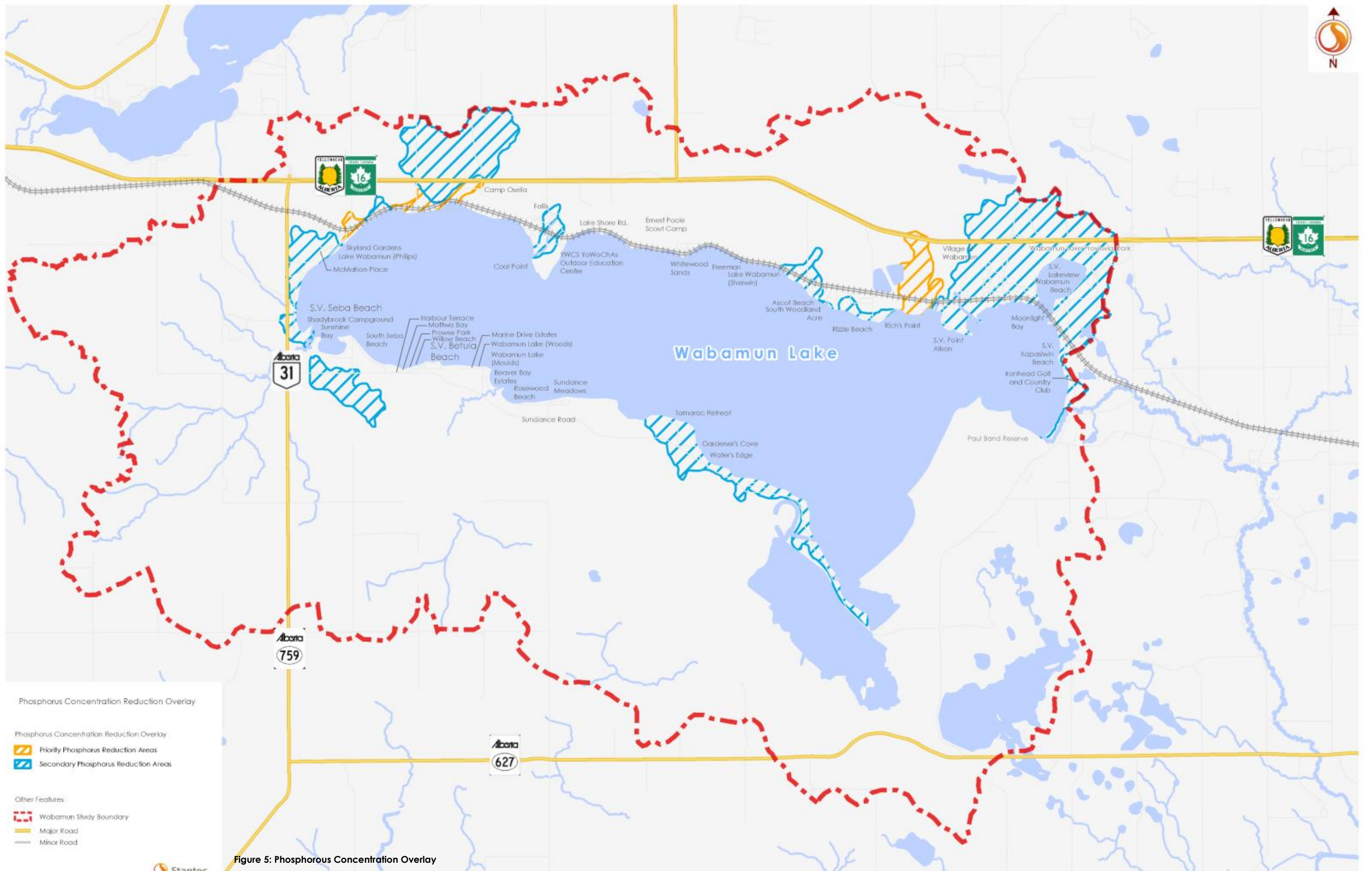


Figure 5: Phosphorous Concentration Overlay

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4.4.1.1 Recommended Action intended to Improve Coordination of Policy, Planning and Enforcement

Coordinate inter-agency planning, policy and processes to improve alignment and transparency of permitting, enforcement, and education initiatives between jurisdictions.

Implementation Procedures and Tools (New)

- I. Within 1-5 years, Planning and Development will update Parkland County's Municipal Development Plan as required to redefine the general framework for development within the municipality, and the official statement of the municipality's policies concerning the desired future pattern of development consistent with this watershed plan.

Implementation Procedures and Tools (New)

- II. Within 3-5 years, Planning and Development, Villages, Summer Villages, and Alberta Environment and Parks will assess, and where needed, amend existing plans, bylaws, policies, and create standards aligned with the watershed plan and communicate these to the public and development industry.

Implementation Procedures and Tools (New)

- III. Within 3-5 years, Planning and Development, Villages, Summer Villages, and Alberta Environment, Enforcement and Parks will update and amend regulatory documents, standards and other documents as required to support the framework for development within the watershed consistent with this plan including:
 - Developing an Inter-Municipal Area Development Plan to describe the sequences of development, population density, and the location of major transportation routes and public utilities;
 - Identifying and establishing a protocol and process to coordinate approvals, referrals and enforcement within the watershed;
 - Actively participating in the development of the North Saskatchewan Regional Plan, the Sturgeon River Watershed Plan, and a broader integrated watershed plan to ensure they support this plan. Consideration will be given to creating these plans under the *Alberta Land Stewardship Act* so they are legislatively supported both at the municipal and provincial levels to help ensure they are implemented.

4.5 OUTCOME 5 – OUR STEWARDSHIP PROGRAMS INSPIRE US TO ACTION

As a community, we want a future where we are inspired, empowered and supported to take collective and individual actions that protect and improve the health of the watershed. A sustainable community allows residents and visitors alike to enjoy its benefits while living in harmony with the natural environment.

Responsible stewardship requires the willingness and commitment of governments, residents, visitors, landowners, and user groups to understand the implications of their activities. Access to support to modify behaviours that reduce and prevent harmful impacts to the environment and the lake are also needed. Decision makers, residents and visitors need to be knowledgeable in order to make decisions that reduce their impact on the watershed.

4.5.1 Objective 1: Improve Our Knowledge

We must have a good understanding of how our collective and individual actions affect the watershed. While some organizations and individuals are already collecting information, there needs to be a coordinated approach to these efforts, and a location where this information is readily available.

4.5.1.1 Recommended Action Intended to Improve our Knowledge of the Watershed

Undertake a Stream Classification Study in the watershed to aid the understanding of stream condition and potential behavior under the influence of different changes.

Implementation Procedures and Tools (New)

- I. Within 1-3 years, Environment and Community Suitability and Alberta Environment and Parks will undertake a Stream Classification Study in the watershed that will provide a consistent frame of reference for understanding and communicating stream morphology and condition including:
 - Predicting a stream's behavior from its appearance;
 - Developing specific hydraulic and sediment relationships for a given stream type and its state; and
 - Providing a mechanism to extrapolate site-specific data to stream reaches having similar characteristics.

Additional Budget to be Determined

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Implementation Procedures and Tools (New)

- II. Within 3-5 years, Environment, Villages, Summer Villages, and Alberta Environment and Parks will undertake:
 - A study to identify and quantify point sources of nutrients such as nitrates and phosphorus and to identify and estimate non-point sources;
 - Regularly track watershed health through monitoring key indicators through a publicly accessible centralized information database, and encourage data collection opportunities by volunteers;
 - A boat wash facility feasibility study; and.
 - Incorporate the Wetlands Inventory Study into the County's Wetland Policy.

Additional Budget to be Determined.

4.5.2 Objective 2: Create/Enhance Voluntary Community Stewardship Programs

The health of the watershed depends upon the support and involvement of its citizens. Providing the tools needed for community members to voluntarily make informed decisions that improve the health of the watershed are important to our success. Involving youth in these initiatives is critical if we want these initiatives to carry into the future.

Although many residents and visitors are willing to undertake these initiatives, they are often not aware of what they can do to improve the health of the watershed, or have the financial or other means to take action on their own. Expanding and if necessary developing new programs that promote public understanding, and encourage residents, youth, business and industry to voluntarily implement best practices that protect/improve the integrity of the watershed is required.

4.5.2.1 Recommended Action intended to Create/Enhance Voluntary Community Programs

Develop/improve and implement multi-media education programs with incentives to foster an ethic of environmental stewardship.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- I. Within 1-3 years, Communications, Parkland, County Villages, Summer Villages, Alberta Environment and Parks, and the Wabamun Watershed Management Council, will develop a multi-year communications and engagement plan to promote watershed stewardship through:
 - Developing a "Living in the Watershed" education package and seasonal based watershed newsletter and factsheets to keep residents informed of current

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watershed management practices, programs, and educational opportunities including:

- responsible maintenance of septic systems;
 - reduction of personal water consumption;
 - proper disposal of waste;
 - responsible off highway vehicle use;
 - appropriate development and the impacts of improper clearing, landscaping, fertilizer and chemical use;
 - The purpose of, and activities permitted in Environmental Reserves, parks, open spaces and trails; and
 - Prevention and control of invasive species;
- Developing a Best Management Practices guide for contractors, consultants, project managers, developers;
- Highlighting and enhancing stewardship recognition as part of the existing Community Champions, and Sustainability Awards Programs.

Additional Budget to be determined

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- II. Within 1-3 years, the Wabamun Watershed Management Council and Parkland County will:
 - Provide information to local school curricula, local youth environmental education programming, and support internship, co-op, summer student, and/or volunteer opportunities related to watershed health;
 - Promote watershed stewardship community activities (e.g. Watershed cleanup days, hazardous waste collection, Yellow Fish storm sewer program, waste reduction, composting, and invasive species); Develop a seasonal based watershed newsletter and factsheets to keep residents informed of current watershed management practices, programs, and educational opportunities.

Additional budget to be determined.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- III. Within 1-3 years, Environment and Community Suitability will expand the ALUS and Green Acreages Programs to encourage and provide financial support to agricultural producers and other rural landowners to retain and improve the environmental function and quality of their properties.

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Additional budget to be determined.

Implementation Procedures and Tools (New)

- IV. Within 1-3 years, Parkland County, Villages, Summer Villages, will collectively explore the feasibility of obtaining "Lake Friendly" Aquavist Certification for the watershed. This will include evaluating the level of compliance with the program requirements (governance, wastewater, surface water, landscape, facilities and roads, and education and engagement) with respect to:
- Nutrient reduction and recycling;
 - Increased infrastructure capacity for drought and flood resilience;
 - Enhanced ecosystem health;
 - Reduced greenhouse gasses; and
 - Education, information sharing and engagement.

Implementation Procedures and Tools (New)

- V. Within 3-5 years, Parkland County, Villages and Summer Villages will establish new incentive programs for:
- Source control of storm water to maintain and enhance water quality and manage runoff;
 - Building and/or landscaping including features/ fixtures that encourage water harvesting and savings, maintain water quality, and enhance area biodiversity;
 - Collection of wastewater in community and multi-subdivision shared systems;
 - Septic System Repair Program including dye testing requirement to determine leakages and requirement for permits and cost share funding for needed repairs/replacement;
 - Enhance and encourage landowner hazardous waste collection, waste reduction, and composting programs; and
 - Encourage lot level storm water re-use (i.e. rain barrels for collection and re-use for lawn and garden irrigation).

Additional budget to be determined.

5 PLAN IMPLEMENTATION

We as residents of the watershed, stakeholders, provincial and municipal staff, and others have put considerable effort and thought into the development of this plan. We have a strong interest in protecting the health of the watershed so that it continues to be an attractive place to work, live and play. We want to see the plan direct and guide the coordinated efforts of province, municipal, other decision makers, and community members in the watershed to achieve the results, and not have this Plan sit on a shelf.

This plan provides a solid framework for a coordinated approach to maintaining a healthy watershed for all users. However, successful implementation will require ongoing commitments, (financial and otherwise) from all partners to fully realize and sustain a healthy environment.

In addition, this plan will support the development of a broader integrated watershed plan for Lake Wabamun, the North Saskatchewan Regional Plan, and meet the goals of the Province's Water for Life: Alberta's Strategy for Sustainability, the Land Use Framework, as well as the Capital Region's Growth Management Plan.

5.1.1 Objective 1: Successful Plan Implementation

Municipalities (individually and collectively), the provincial government and its agencies, stakeholders, residents and visitors to the watershed commit to the plan, and mutually support each other and will work collaboratively to meet its objectives.

A summary of the proposed actions and the lead agencies is provided in the following table.

Proposed Parkland County Recommendations

No new confined feeding operations will be located north of Highway 627. CFO's may only be considered south of Highway 627 as identified in the plan and when in compliance with all applicable regulations.
Develop a Storm Water Management report including an Area Drainage Master Plan that provides an integrated approach to prevent discharge of pollutants from municipal operations, and minimizes direct runoff to the lake.
Undertake a watershed capacity study, which explores its potential residential carrying capacity.
Wetlands of Class III or greater shall be preserved in their natural state.
Undertake a Habitat Conductivity Study and locate municipal reserve lands that connect to private/public lands in new development proposals.
Undertake a Hazards Land Assessment to identify hazard lands and protect these lands from development.
Redistrict lands as appropriate including an evaluation of existing Reserves and change designations if required.
Seek opportunities for the sale or exchange of reserve lands not required to protect sensitive lands and use the proceeds to acquire sensitive lands.
Pursue designation as a Wetlands Restoration Agency to allow the use of developer funds to restore wetlands.
Designate areas and design trails for off highway vehicle use that minimizes environmental impacts as recommended by the Parks, Recreation and Culture Master Plan.
Any new non-agricultural development must achieve a healthy synergy with adjacent farming operations or Wabamun Lake.
Implement recommendations from the Future of Agriculture Study.
Explore the concept to change the existing Recreation District designation areas to Natural Environment-Recreational District designation to better protect significant biophysical and aesthetic features while encouraging appropriate extensive recreational opportunities.
Expand the ALUS and Green Acreages Programs to encourage and provide financial support to agricultural producers and other rural landowners to retain and improve the environmental function and quality of their properties.
Proposals for Development will include: a) The location of the geotechnical "top of bank" of any adjacent waterbody. Ground disturbance at the top of bank will be prohibited unless supported by a geotechnical report confirming that it will not negatively affect the environment. b) The location and dimension of existing natural features and how impact or loss will be avoided, mitigated or restored. c) How low-impact principles will be implemented including dust control and emission reduction. d) A site specific Storm Water Management Plan so that post development runoff does not exceed predevelopment natural flows.
Minimize erosion and dust on construction sites by: a) Locating and stabilizing stockpiles away from watercourses and environmentally sensitive areas. b) Designating access points for construction vehicles with non-erodible material (gravel). c) Protect the integrity of existing catch basins and sewer inlets. d) Control on-site drainage through temporary storage facilities.
Explore and if feasible implement the following: a) Determine an appropriate percentage of required indigenous plants, site coverage of impervious and permeable surfaces in new and redeveloped sites. b) Promote and develop low impact development strategies and technologies and provide incentive programs to encourage them. c) Explore the possibility of communal potable water and wastewater, systems. d) Determine minimum building setback from waterbodies. e) Review permitted potential uses within existing development setbacks and determine how to better manage their impacts. f) Require an Environmental Impact Statement as part of an application for development within 100 meters of Wabamun Lake and other identified natural environmentally sensitive areas or features. g) Salt and snow regulation and or plan to minimize the negative impacts on surface water quality. h) Engineered wetland and discharge of storm water opportunities that reduce impacts. i) Inventory and testing of all private septic systems for leakage.

Proposed Partnership Recommendations	
Lead (s)	Recommendation
Alberta Environment and Parks	Develop and implement a Surface Water Quality Management Framework.
	Maintain the weir on the east side of the lake.
	Implement dust control procedures at Wabamun Lake Provincial Park.
	Only approve individual and community seasonal docks, piers and associated mooring structures on the bed and shore of the lake that are consistent with local municipal plans.
Alberta Environment and Parks, Parkland County and Villages	Provide input to Canadian National Railway in undertaking a railway corridor risk assessment and identify and implement required mitigation strategies.
	Lead the amendment of regulatory documents and standards so that groundwater is given more consideration in the design and construction of new developments and storm water management systems.
	Amend regulatory documents and Standards to include requirements that: a) Preserve natural features, minimize impacts on agricultural lands, and provide adequate setbacks and protection of the environmental integrity of riparian areas, steep slopes, shorelines, wetlands, and watercourses. b) A minimum of 30 meters or the use of the Riparian Setback Matrix Model (RSMM) from the legal bank of Wabamun Lake and any key areas of important upland and riparian areas be dedicated as Environmental Reserve and retained in their natural state. c) An approval for tree clearing will be required on all lands identified as hazard/sensitive in the Hazard Land Assessment Study. d) Naturalized erosion protection using Best Management Practices will only be permitted within 3 meters of the legal bank of Wabamun Lake.
	Develop and implement a regular watercraft inspection program to reduce opportunities for the spread of invasive species.
	Lead the development of management plans for ESAs consistent with the Environmental Conservation Master Plan.
	Assess, and where needed, amend existing plans, bylaws, policies, and create standards aligned with the watershed plan and communicate these to the public and development industry including: a) Environmentally Significant Areas Overlay b) Phosphorous Concentration Reduction Overlay c) Wabamun Lake Shoreline Riparian Protection/Restoration Overlay d) An Inter-Municipal Area Structure Plan to describe the sequences of development, population density, and the location of major transportation routes and public utilities. e) Identifying and establishing a protocol and process to coordinate approvals and referrals for applications for major developments. f) Actively participating in the development of the North Saskatchewan Regional Plan to ensure it supports this plan. g) Integration of the Wabamun Lake Watershed Land Use Plan into an Integrated Watershed Management Plan.
	Undertake: a) A Stream Classification Study that will provide a consistent frame of reference for understanding stream morphology and condition. b) A detailed study to identify and quantify point sources of nutrients such as nitrates and phosphorus, and identify and estimate non-point sources; c) Water and Land Use Carrying Capacity Studies, which will identify the limits of recreational and other activities and identify opportunities and limitations. d) A boat wash facility and feasibility study.
	Develop a multi-year communications and engagement plan to promote watershed stewardship through: a) Developing a “Living in the Watershed” education package, seasonal based watershed newsletter and factsheets to keep residents informed of current watershed management practices, programs, and educational opportunities. b) Developing a BMP guide for contractors, consultants, project managers, developers and residents; c) Highlighting and enhancing stewardship recognition as part of the existing Community Champions, and Sustainability Awards Programs.
	Establish a Wabamun Watershed Land Use Plan Implementation Committee that will oversee implementation of this plan.
	Integrate the Wabamun Land Use Plan into a larger more inclusive Integrated Watershed Management Plan under the Province’s Water for Life Act.

Proposed Partnership Recommendations	
Lead (s)	Recommendation
Parkland County, Cows and Fish, Wabamun Watershed Management Committee, Land Stewardship Centre	Develop and deliver education and incentive programs that reduce nutrients, manure, pesticide and other chemicals in runoff with a particular focus in 1:100 floodplain and phosphorous concentration areas over 400 mg/m3.
Alberta Environment and Parks, Parkland County	Undertake a Regional Groundwater Assessment Study.
Parkland County and Villages	Work with adjacent landowners to Environmental Reserves and the public to: a) Restrict the use of off highway vehicles. b) Restrict mowing, cutting or removal of natural vegetation, adjacent to the water’s edge. c) Restrict development or buildings within the 100-year floodplain or within the designated setbacks.
	Lead the amendment of regulatory documents and standards so that major developments (redevelopment) will enhance and protect existing natural resources and avoid fragmentation of habitat and natural features as much as possible.
	Collectively explore the feasibility of obtaining “Lake Friendly” Aquavist Certification in the watershed.
	Establish incentive programs for: a) Source control of storm water to maintain and enhance water quality and manage runoff. b) Building and/or landscaping including features, fixtures that encourage water harvesting and savings, maintain water quality, and enhance area biodiversity. c) Collection of wastewater in community and multi-subdivision shared systems. d) Septic System Repair Program including dye testing requirement to determine leakages and requirement for permits and cost share funding for needed repairs/replacement.
	Actively participate in broader planning initiatives including the Capital Region Growth Plan and the North Saskatchewan Regional Plan to promote this plan and inter-municipal planning within the watershed.
Alberta Environment and Parks, Alberta Energy Regulator	Monitor the development and reclamation of lands on the Highvale Mine Site so that the elements of the Highvale Plan End Use Area Structure Plan are achieved.
The Wabamun Watershed Management Council and Parkland County	Provide information to local school curricula, local youth environmental education programming, and support internship, co-op, summer student, and/or volunteer opportunities related to watershed health and promote watershed stewardship community activities.

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5.1.1.1 Recommended Action to help ensure the plan is successfully implemented

Assess, and where needed, amend existing plans, bylaws, policies, and create standards aligned with this plan.

Implementation Procedures and Tools (New)

- I. Within 3-5 years, Planning and Development, Villages, Summer Villages, and Alberta Environment and Parks will lead the amendment of existing Municipal Development Plans, Area Structure Plans, bylaws, policies, etc. so they are consistent with and support implementation of this plan.

Implementation Procedures and Tools (Supported by Existing Programs/Projects)

- II. On an ongoing basis, Planning and Development, Villages and Summer Villages will actively participate in broader planning initiatives including the Capital Region Growth Plan and the North Saskatchewan Regional Plan to promote this plan and inter-municipal planning within the watershed.

Implementation Procedures and Tools (New)

- III. Within 1 year, Planning and Development, Villages, Summer Villages, and Alberta Environment and Parks will establish a Wabamun Watershed Land Use Plan Implementation Committee that will oversee implementation of this plan. The committee will include senior provincial and municipal representatives, stakeholders, indigenous peoples, and residents of the watershed with the appropriate authority and interest to effectively implement the plan. This will include:
 - Developing a detailed priority based multi-year work, communications plan, and funding model;
 - Publicly report annually on the progress of plan implementation;
 - A formal plan review at five-year intervals to ensure the plan remains current, effective, achievable and responsive to change in the watershed. Provisions in the plan that are no longer relevant will be either modified or removed and new provisions added in response to stakeholder input, resident needs and changing environmental conditions.

Additional budget to be determined.

6 ACTION PLAN

An Action Plan has been developed by Parkland County to support implementation of the Wabamun Lake Sub-Watershed Land Use Plan. It provides a summary of the key “action projects” to implement recommendations from the Sub-Watershed Land Use Plan. The Action Plan uses an “integrated approach” where key projects are co-managed by County departments and other government agencies (See Appendix A for details).

7 PARTNERS IN THE PROCESS

- Parkland County
- Alberta Environment and Parks
- The Alberta Lake Management Society
- Paul, Alexis Nacota Sioux, and Enoch Cree Nations
- North Saskatchewan Watershed Alliance
- Summer Village of Betula Beach
- Summer Village of Kapasiwin
- Summer Village of Lakeview
- Summer Village of Point Alison
- Summer Village of Seba Beach
- Summer Village of Spring Lake
- Village of Wabamun
- Wabamun Watershed Management Council

8 KEY SECTIONS OF POLICY AND REGULATORY DOCUMENTS REQUIRING REVIEW/AMENDMENTS

Regulatory/Policy Instrument	Relevant Sections	Relevant Content
Parkland County Municipal Development Plan	1- Introduction	• Plan Background • Growth management and Sustainability Approach • Guiding Principles • support environmental, fiscal and social sustainability, • emphasis economic development, • respect community character, • land use certainty • Land use concept • New best practice initiatives that encourage • new approaches to residential design that reduce impact on the environment, • sustainable energy sources, • energy efficient buildings, • eco-industrial parks, • Brownfield development • recycling and reuse of water • local food production for local use) • Area Structure Plans (Highvale End land Use Area Structure Plan),
	2- Agricultural Lands	Goal – To protect and enhance valuable agricultural land resource, the agri-based economy and the rural lifestyle, while accommodating appropriate non-agricultural land uses. Objectives • Promote agricultural practices that are sustainable and environmentally responsible, • Conserve agricultural lands for agricultural and related uses.

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
		• Encourage the growth and expansion of value added agricultural or industrial agricultural uses such as food processing facilities. • Minimize land use conflicts between Confined Feeding Operations and rural residential and other forms of development. • Provide direction for the evaluation of Confined Feeding Operations. General Policies • Conserve Agricultural Lands • Sustainable Agricultural Operations • Right to Farm • Life Estate Subdivision Policies • ¼ Section basis • Number and Size of Parcels • Residential Parcels • Fragmented Parcels • Multi-parcel Residential Subdivision • Outline Plan Required • Off-site Road Levy • Value Added Agriculture • Use of Waste Streams Confined Feeding Operations • Regulatory Content • CFO Setbacks • CFO Subdivision • Minimum Distance Separation • Support for CFO`s</li><li>• Expansion of Existing CFO`s • CFO Thresholds

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	3 -Residential Development	Goal The County supports appropriately located and serviced country residential subdivisions as the residential option to meet the diverse housing and lifestyle needs of its residents. Objectives • Promote the development of a range of housing types and locations, capable of meeting the diverse needs of County residents • Mitigate conflicts with agricultural uses. • Ensure that country residential development conforms to environmental and public health guidelines and regulations. • Encourage the development of attractive residential environments; • Retain the character, amenities, and quality of life aspects of existing country residential subdivision while encouraging more diversity. General Policies • Outline Plan Required • Biophysical Assessment Required • ESA Evaluation Cost • Infrastructure Improvements Paid For • Support for Alternate Building Methods • Fire Smart • Number of Dwellings Traditional Country Residential Policies • Traditional Country Residential Criteria • Outline Plan Required • Subdivision of Existing Parcels Cluster Country Residential • Cluster Subdivision Encouraged • Piped Water and Sewer • Cluster Country Residential Criteria • Land Use Bylaw Amendment

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
		• Outline Plan Required Bare land Recreational Resort Policies • Bare land Recreational Resort Criteria • Piped Water and Sanitary Sewer Services • Outline Plan Required
	4 -Hamlets	Goal The County supports directing residential, commercial and industrial growth to those hamlets that have a full range of utilities and services. Objectives (Does not reference Keephills) Policies • Remaining Hamlets (Keephills)
	5 - Industrial and Commercial Development	Goal - The County supports new industrial and commercial development in existing and new industrial and business parks. Objectives • Direct intense industrial and commercial developments to existing serviced industrial/business parks. • Encourage new industrial and commercial subdivision and development. • Assume a proactive approach to considering the implications of aggregate resource and hydrocarbon resource extraction proposals on the environment and adjacent land uses. • Encourage eco-industrial parks and green initiatives in considering industrial development. • Promote positive aesthetics by applying a high standard of design guidelines to new industrial and commercial developments located along Highways 16. Commercial Policies • Encouraged in Hamlets • Highway Commercial • Aesthetic Standards

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
		Industrial Policies • Home Based Businesses • Highway 16 Corridor Policies • Heavy Industrial Development Resource Development Policies • Protect Resource Extraction Areas • Locational Criteria • Sour Gas
	6- Environmental Management	Goals The County supports communities that are designed to minimize air, water, and soil pollution, reduce resource consumption and waste, and protect natural systems that support life. The County supports protecting environmentally significant areas and, in particular, it supports maintaining the environmental integrity of the County's rivers, streams and lakes. Objectives • Protect environmentally significant areas as identified by the Environmental Conservation Plan from inappropriate development. • Reduce the impact of development on the natural environment to the extent possible. • Apply Environmental Reserve and other provisions to protect environmentally significant areas. • Protect water quality and quantity through effective subdivision design. • Require a Biophysical Assessment as part of the development process. • Promote public awareness regarding the impact of development on the environment. Policies • Protect Environmentally Significant Lands • Biophysical Assessment • Outline plan

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
		• Environmental Reserve Dedication • Environmental Reserve • Setback from Water Features • Setback from Slopes • Conservation Easement • Land Trust • Water Quality Protection • Hazard Lands • Flood proofing • Phase 1 Environmental Site Assessment • Education Program • Public Lands
	7 Municipal Reserve	Goal - Ensure that municipal and school reserves are used in the best interests of the community. Objective - Ensure that all County residents benefit from the dedication and distribution of municipal reserve lands or the allocation of Municipal Reserve Trust Funds. Policies • Municipal Reserve Dedication • Enhance Access • Municipal Reserve and Subdivision • Protect Environmentally Sensitive Features • Municipal Reserve Location • Management of Parks • Municipal Reserve Buffer • Cash-in-lieu of Municipal Reserve • Selling Municipal Reserve • School Reserves

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	8 -Recreation and Open Space	Goal To plan and manage recreation facilities and public open spaces for the advantage of all County residents. Objectives • Continue to support urban communities in the provision of recreational services and opportunities that enhance the quality of life of County residents. • Encourage community involvement in the development and operation of open space areas. • Provide a variety of recreational and open space opportunities while protecting the natural environment. Policies • Open Space Master Plan • Parks Guidelines • Trail System • Low Impact parks • Recreation Agreements • Partnership Agreements • Recreational Facility Development
	9 Community Services	Goal - The County will continue to ensure that protective services are provided in an efficient and coordinated manner. Objective - Continue to cooperate with the County's urban neighbours and provincial and federal agencies in providing shared services. Policy • Inter-municipal Agreements

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	10 Transportation and Utilities	Goal - The County supports maintaining safe and efficient roadway and utilities systems. Objectives • Operate transportation and utility systems safely and effectively. • Promote utility systems that maintain a healthy environment and a healthy public. • Promote the use of innovative heating and energy systems. • Promote recycling programs to reduce the amount of solid waste materials. • Manage storm water in a manner that sustains the quality and quantity of water being released into the County's water features. General Policies • Renewable Energy • Regional Waste Management • Encourage Recycling • Off-site Levy Bylaws • Cost of Improvements • Inter municipal Cooperation • Noise Buffers • Minimize Right-of-Way Impacts Transportation Policies • Paved Roads Utility Policies • Water Conservation • Private Municipal System • Wetland Enhancement

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	11 Fringe Area Development	Goal - The County supports promoting compatible land use patterns in the fringe areas by maintaining communication with its municipal neighbours. Objectives • Establish reciprocal planning referral mechanisms that respect the interests of the County and its municipal neighbours. • Create opportunities to jointly plan fringe land uses with the County's rural and urban neighbours. • Promote compatible land use patterns in fringe areas. General Policies • Joint Planning Initiatives • Fringe Area
	Maps	Map 2 - Land Use Concept Map Map 3 - Parkland County Area Structure Plans Map 4 – Confined Feeding Operation Overlay Map Map 5 – Environmentally Significant Areas
Parkland County Land Use Bylaw	PART 2	Land Use Districts
	4	Agricultural Agricultural General District Agriculture/Nature Conservation District Agricultural Restricted District
	5	Residential Country Residential District Country Residential Work/Live District Country Residential Restricted District Cluster (Conservation) Country Residential District Lakeshore Residential District

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	6	Commercial Local Commercial District Highway Commercial District
	7	Industrial Business Industrial District Medium Industrial District Rural Industrial/Commercial District Resource Extraction District Industrial Reserve District
	8	Parks and Services Conservation District Recreation District Public Services District
	9	Direct Control Highvale End Land Use Direct Control District Regulations
	10	Overlays Lake Wabamun Floodplain Overlay
	Part 3	Development Regulations
	11	General Regulations Accessory Buildings and Uses Design, Character and Appearance of Buildings and Structures Development on/or Adjacent to Hazard Lands Stripping, Filling, Excavating and Grading Tree Clearing
	13	Landscaping General Landscaping Requirements Landscape Plan Landscaping Approval

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
		Commercial Landscaping Requirements Industrial Landscaping Requirements
	14	Parking and Loading General Parking and Loading Regulations Parking Space Dimension Requirements Number of Vehicle Parking Stalls Required
	Part 4	Process
	16	Development Application Process Control of Development Development Not Requiring a Development Permit Application for a Development Permit Application for Aggregate Extraction Non-Conforming Buildings and Uses Variance Authority Development Permit Conditions
	Part 5	Administration
	18	Enforcement
	Maps	Map 2- Entwistle, Moon Lake, Seba Beach Area Map 5 – Wabamun and Duffield Area
Parkland County Engineering Design Standards	Relevant Sections	Relevant Content
	1.3.	Engineering Design
	1.4.	Geotechnical Report
	1.5	Submission of Engineering Design

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	1.6	Erosion and Sediment Control Measures
	1.11	Variances to Engineering Design Standards
	1.12	New and/or Updated Engineering Design Standards
	2	ENGINEERING PLANS AND DRAWINGS
	2.1	General
	2.2	Design Drawings
	2.3	Record Drawings
	3	WATER DISTRIBUTION SYSTEMS
	3.1	General
	3.2	Design Criteria
	3.4	Water Main Installation Criteria
	3.7	Trenching and Backfilling
	3.11	Low Density Water Distribution Systems
	3.12	Residential Sprinkler Systems
	3.13	List of Standard Detail Drawings
	4	SANITARY SEWER SYSTEMS
	4.1	General
	4.2.	Design Criteria
	4.7	Trenching and Backfill
	4.12	List of Standard Detail Drawings
	5	SERVICE CONNECTIONS

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	5.1	General
	5.2	Water Service Connections
	5.3	Sanitary Sewer Service Connections
	5.5	List of Standard Detail Drawings
	6	STORM DRAINAGE SYSTEMS
	6.1	General
	6.2	Part A: Planning Studies
	6.3	Part B: Storm water Design Standards
	6.5	List of Standard Detail Drawings Appendix A – Master Drainage Plan Appendix B – Site Implementation & Lot Grading Plans & Eng. Drawings Appendix C – Acceptable Plant Species
	7	ROADWAY SYSTEMS
	7.1	General
	7.3	Design Criteria
	7.4	Construction Standards
	7.5	Quality Control and Testing
	7.6	List of Standard Detail Drawings
	8	MISCELLANEOUS REQUIREMENTS
	8.1	General
	8.3	Property Boundary Markers
	8.6	Landscaping

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Regulatory/Policy Instrument	Relevant Sections	Relevant Content
	8.9	Environmental Reserve Signage
	8.14	Mailbox Pullouts
	8.15	Offsite Road Construction
	8.16	List of Standard Detail Drawings
	9	LANDSCAPE REQUIREMENTS
	9.1	General
	9.2	Construction
	9.3	Maintenance and Warranty
	10	STANDARD DETAIL DRAWINGS

9 GLOSSARY

Aquavist Certification – A certification process focused on reducing nutrients in waterways, improving aquatic ecosystem health, recycle and reuse nutrients, and enhance environmental, community and economic benefits from water, enhance awareness and collaboration.

Area Structure Plan - A statutory plan prepared pursuant to the *Municipal Government Act*, that applies to a ¼ section or more of land that provides a framework for more detailed subdivision and development. (Staging of development, land uses, densities and infrastructure matters).

Bed and Shore – Most lands under permanent and naturally occurring bodies of water, the boundary of which is usually the ordinary high water mark of the waterbody. The area of the bed and shore may change over time as the ordinary high water mark of the waterbody changes. The ordinary high water mark is generally determined by identifying where there is a distinct change in vegetation or the ground caused by the presence of water.

Beneficial Management Practices – A method or technique that has been generally accepted as superior to any alternatives because it produces results that are superior to those achieved by other means or because it has become a standard way of doing things.

Biophysical Assessment – A review of an area defined as an Environmentally Sensitive Area by the Environmental Conservation Plan or an area proposed for subdivision contains natural features. The review identifies and assesses the environmental significance and sensitivity of existing vegetation, wetlands and other water features, wildlife habitat and unique physical features.

Built Green - An industry driven voluntary program that promotes "green" building practices to reduce the impact that building has on the environment. It benefits the homebuyer, the community and the environment and is an opportunity for everyone to choose a "green" future. Members and homebuyers have the flexibility of choosing their level of participation, thereby offering broader appeal. Bronze represents the minimum of achievement level, Silver is the intermediate level, and Gold is the maximum level of recognition.

Canada Land Inventory (CLI) - Is a comprehensive multi-disciplinary land inventory identifying land capability for agriculture. There are seven land capability classes used to rate agricultural land capability. Class 1 lands have the highest and Class 7 lands the lowest capability to support cultivated agricultural crops.

Confined Feeding Operation (CFO) - Means an activity on land that is fenced or enclosed or within buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing, but does not include seasonal feeding and bedding sites.

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Conservation Easement - Is a voluntary legal agreement defined in the Environmental Protection and Enhancement Act between a landowner and government or conservation agency. The easement agreement is intended to protect the natural values of the land by giving up all or some of the rights to develop the land.

Cluster Country Residential – A residential subdivision comprising smaller ½-acre lots that are serviced with piped water and sewer systems and which maintain a significant portion of the site as green infrastructure.

Farmland Assessment Rating – In Alberta, farmland is assessed on the ability of land to produce agricultural products. The assessment takes factors such as soil quality, topography, stones, creeks, etc. into consideration. To ensure consistent farmland ratings across the province the Alberta Government requires that the Farmland Assessment Manual be utilized in preparing farmland assessments.

Geotechnical Report – Developed by geotechnical engineers or engineering geologists to obtain information on the physical properties of soil and rock around a site to design earthworks and foundations for proposed structures and for repair of distress to earthworks and structures due to subsurface conditions.

Green Infrastructure – A wide range of natural and constructed landscape elements including natural areas; public and private conservation lands; over ground storm water systems; recreation areas (e.g. golf courses); and trail networks. Green infrastructure in developed areas may be public open spaces dedicated as Municipal or Environmental Reserve or private conservation or recreational land.

Hamlet – An unincorporated community consisting of five or more buildings as dwellings, a majority of which are on parcels of land smaller than 1850 square metres, has a generally accepted boundary and name, and contains parcels of land that are used for non-residential purposes.

Hazard Lands – Land that consists of a swamp, gully, ravine, coulee or natural drainage course, or land that is subject to flooding or is, in the opinion of the subdivision authority, unstable.

Land Stewardship Fund and Alberta Land Trust Grant Program - Focuses on conserving ecologically important areas to prevent habitat fragmentation, maintain biodiversity and preserve native landscapes. Grants are available to eligible land trust organizations for the purchase of conservation easements and the administration and management of new conservation projects on private land.

Leadership in Energy and Environmental Design (LEED) – A Green Building Rating System for the design, construction, and operation of high performance green buildings. It promotes a whole-building approach to sustainability by recognizing performance in areas of human and

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environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

Legal Bank - Synonymous with what is commonly known as the "ordinary high water mark" or "top of bank".

Life Estate The right to occupy possess or otherwise use a property during one's lifetime.

Municipal Reserve - Land required at the time of subdivision for park and/or school purposes. When subdividing an area larger than two acres, up to a 10% reserve dedication is required. The County may accept cash-in-lieu of Municipal Reserve land.

Multi-parcel Residential Subdivision - A subdivision of land, registered by plan of survey or descriptive plan containing four or more residential lots where the residential lots are predominantly 4.0 ha (10.0 ac) in size or less, and have been created for, or are being principally used for, residential purposes.

Outline Plan – A document that details the location, dimension and boundaries of a parcel of land to be subdivided (eg. parcels dimensions, roads, points of access, contours/natural features, associated infrastructure, proposed methods of surface drainage, proposed municipal and environmental reserves).

On-site Services – The combination of the water acquisition and storage and the disposal of sewage within the limits of the property.

Natural State – Undisturbed by human development.

Piped Water and Sewer Systems – Municipally operated communal utility systems that convey treated water and raw sewage through publicly or privately owned underground networks of pipes.

Restricted Development Area – Areas where limits or restrictions to the use of the land are required.

Riparian Setback Matrix Model – A scientific and legally defensible method for establishing Environmental Reserves and development setbacks.

Smart Growth - Applying development principles that promote enhanced quality of life, efficient use of land to preserve the natural environment to the extent possible, and that result in healthy, sustainable communities that are fiscally responsible.

Stewart and Kantrud Wetland Classification System – A system that classifies wetlands based on vegetation structure and the length of time surface water is at or above surface level. Ephemeral Wetlands (Class 1) typically have free surface water for only a short period of time after snowmelt or storm events in early spring. Temporary Wetlands (Class 2) are periodically

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covered by standing or slow moving water and typically have open water for only a few weeks after snowmelt or several days after heavy storm events. Seasonal Ponds and Lakes (Class 3) are characterized by shallow marsh vegetation, which generally occurs in the deepest zone (usually dry by midsummer). Semi-permanent Ponds and Lakes (Class 4) are characterized by marsh vegetation, which dominates the central zone of the wetland, as well as coarse emergent plants or submerged aquatics, including cattails, bulrushes and pondweeds. Permanent Ponds and Lakes (Class 5) have permanent open water in central zone that is generally devoid of vegetation. Alkali Ponds and Lakes (Class 6) are wetlands where deep water is typically not permanently present. Alkali wetlands are characterized by a pH above 7 and a high concentration of salts. Fen Ponds (Class 7) are wetlands in which fen vegetation dominates the deepest portion of the wetland area.

Storm Water Management Plan - Assesses the current drainage network and identifies opportunities for improvements within the system.

Traditional Country Residential Subdivision - A residential subdivision comprising four or more lots of between 2 to 10 acres in size that are serviced on site.

Transfer of Developments Credits – A tool designed to help communities deal with the rapid conversion of their valued landscapes, while simultaneously promoting appropriate landscape development. The tool allows for the transfer of development potential from areas less suited to development (based on a community desire to see its character and function maintained), to areas more suited to increased development (based on their capacity to accept greater development activity).

Value-added Agricultural Industry – A project that can clearly demonstrate it adds value to a primary agriculture product and includes agricultural product manufacturing, food-processing activities, and non-food-processing activities.

Watershed Recreational Land Use Carrying Capacity Study - Identifies the limits of recreational and other activities that protect the health of the watershed based on anticipated population, land use, watercraft numbers, and access and road requirements. It also identifies opportunities and limitations for expanded/new swimming areas, areas for restricted (watercraft speeds), and infrastructure to protect habitat, other land uses while promoting and supporting sustainable recreational activities.

Wetlands Restoration Agency - An organization responsible for restoring drained wetlands to near natural conditions.

10 APPENDIX A

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ACTION PLAN

WABAMUN LAKE SUB-WATERSHED LAND USE PLAN

Introduction:

The Wabamun Lake Sub-Watershed Land Use Plan was started in response to increased land use pressures on Wabamun Lake. Using a Regional Collaboration Grant, the Plan was developed with the following partners:

- the villages of Spring Lake and Wabamun;
- the summer villages of Seba Beach, Lakeview, Betula Beach, Point Allison, Kapasiwin;
- the Government of Alberta (GOA);
- the Wabamun Watershed Management Council (WMMC);
- the North Saskatchewan Watershed Alliance (NSWA).

The Sub-Watershed Plan will result in recommendations to support future protection of the lake.

The project steering committee, stakeholders, and public reviewed the Sub-Watershed Plan and identified the key projects that would help support a healthy sub-watershed area. This Action Plan identifies those projects and actions.

Recommended Action Plan projects are classified by project name and purpose. These projects have further been detailed by identifying lead / secondary organizations, and potential staff and financial resources. The Action Plan is for estimate purposes only and does not commit the County to complete or fund any project. Individual projects will need to be further prioritized and refined in regards to resource requirements. Prioritized projects will be incorporated in future budgeting processes.

Success of the Sub-Watershed Plan requires an integrated approach where stakeholders work together. The Action Plan identifies the potential areas for partnerships (CO-LED projects) that, when acted on together can contribute to the health of Lake Wabamun and the sub-watershed area in the future.

Wabamun Lake Sub-Watershed Land Use Plan Recommendations

Plan recommendations are categorized into two groups:

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- **ONGOING AND SUPPORTING PROJECTS:** these are County projects that are ongoing or recently completed that support the completion of proposed actions in the Action Plan.
- **ACTION PLAN TABLE - new projects:** these are new projects identified for completion in the Action Plan.

ONGOING AND SUPPORTING PROJECTS

RECOMMENDED ACTION:	PROJECT STATUS:
Pursue Wetlands Restoration Agency designation	√ Completed Wetland and Historical loss inventory supports development of the Wetland Restoration Agency.
Establish Wabamun Watershed Committee to implement plan findings	√ A CAO Committee has been developed and is the first step in developing an Implementation Committee. CAO Committee to address issues including boat launch areas and nutrient loading in the sub-watershed. √ Alberta Environment and Parks has developed a TOR and, with the North Saskatchewan Watershed Alliance commenced an Integrated Watershed Management Plan for the sub-watershed.
Expand the education and communication program for the watershed	√ Parkland County Community Sustainability is undertaking a pilot shoreline restoration project to draw attention to restoration opportunities. √ Parkland County's Alternative Land Use Service (ALUS) and Green Acreages program is an element of the education and communication program. √ Interactive Guide to Waterfront Living program has an online workshop including videos and quizzes. Used to educate waterfront users on shorelines and waterbodies. √ An environmental education and Engagement strategy program has been developed to deliver targeted environmental education programs to residents throughout the County to identify current gaps in environmental literacy and programs. √ Love Your Lake: A program implemented by Nature Alberta to assess shoreline properties along Wabamun by water and inform residents on their shoreline health.

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	√ Living By Water: A program implemented by Nature Alberta to complete one-on-one property assessments for residents living along waterbodies and provide personalised recommendations on how to improve the health of their properties.
Enhance Phase 4 – Lake Toolkit for the Wabamun Sub-Watershed Land Use Plan	√ A draft Lake Toolkit is currently being finalized by Administration.
Re-designate old municipal and environmental reserve parcels, educate and enforce uses on these parcels.	√ Enforcement Services has developed a program for Hubbles Lake that focuses on inventorying and educating residents on appropriate uses for MR and ER. This program can be expanded for Lake Wabamun.
Develop septic program for the Watershed	√ The County's Green Acreages program has funding available to assist with septic system repair / replacement for eligible projects. √ P&D Safety Codes have undertaken some preliminary work in preparing a private septic "checklist" to assist in the development of a future septic program.
Update the County Municipal Development Plan	√ Work on a new County MDP is underway and will be completed by 2017. √ Prior work on the Environmental Conservation Master Plan (BMPs) will be incorporated into the MDP update.
Update the County Land Use Bylaw	√ The project work plan for updating the County LUB has recently been approved by Council in fall 2016.
Assist in the construction of future boat access points, launches and parking lots.	√ A Wabamun CAO Committee (ad-hoc) has been developed to discuss issues including boat launches and nutrient loading in the sub-watershed area.
Assist in providing resources for boat washing facilities	√ Alberta Environment and Parks is assisting local CAOs in identifying boat launch areas(s) for Wabamun Lake and is also advocating for boat washing facilities.

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ACTION PLAN TABLE - new projects

New projects below have been identified through a comprehensive review of the Sub-Watershed Land Use Plan. Potential projects (ACTIONS) have been identified by the "lead" organization, as well as the overall purpose of the action.

Resources, staff hours, and capital and operational costs are for estimating purposes only. This ACTION PLAN in no way commits the County to complete any of these projects, or assign staff or financial resources to projects. Individual projects, once confirmed by the County will be further detailed out and, where appropriate resources identified.

Draft Wabamun Lake Sub-Watershed Land Use Plan Action Plan *(for estimate purposes only)*

Project #	Project/Activity Name	Project/Activity Purpose and Description	Project/Action Lead	Resources needed	Start (Month-Year)	Completion (Month-Year)	Time Allocation (Hours)	Capital Cost Estimate	Operating Cost Estimate	Total Cost Estimate	Prioritization 1: Mission Critical 2: Required 3: If Time Permits	Status 1: Green 2: Amber 3: Red (If Applicable)	Next Action
NOTE: Projects listed below may be co-led by several departments at once. INTEGRATED projects that are co-led are identified as "CO-LED PROJECT" in the Project / Action Lead column.													
PLANNING AND DEVELOPMENT SERVICES													
1	Refine and finalize the Phase 4 - Lake Toolkit: Wabamun Sub-Watershed Land Use Plan	Completion of the Lake Toolkit to assist lake organizations to complete future Sub-Watershed Land Use Plan.	Lead: P&D Second: Parks and Rec	1. Planner 2. Spvr, Long Range Planning 3. Spvr, Parks and Recreation	Dec-16	Feb-17	150	0.00	11,700.00	11,700.00	2	1	
2	Re-designate old municipal and environmental reserve parcels, educate and enforce uses.	Complete a proper inventory of all County parcels and re-designate parcels into a proper designations as needed. Begin an education and enforcement program for uses on MR and ER parcels.	Lead: P&D Second: Parks and Rec GIS Community Sustainability Bylaw Services	1. Planner 2. Spvr, Long Range Planning 3. Spvr, Current Planning 4. Spvr, Parks and Recreation 5. Spvr, Community Sustainability 6. Community Peace Officer II	Jun-17	Dec-18	750	0.00	58,500.00	58,500.00	2	2	
3	Complete Hazard Land Analysis for the Sub-Watershed	Analysis would define, investigate and recommend where hazardous areas are located and recommend protection options.	Lead: P&D Second: Engineering Services	1. Planner 2. Engineering Coordinator	Sep-19	Nov-20	420	160,000.00	32,760.00	192,760.00	3	3	
4	Update the Municipal Development Plan	MDP updates would focus on potentially incorporating BMP's around lake areas, and identifying potential overlay areas.	Lead: P&D Second: Ag Services Community Economic Development	1. Planner 2. Spvr, Current Planning 4. Spvr, Ag Services (operations) 5. Economic Dev Officer – Rural 6. GIS Tech II	Jan-17	Dec-17	375	75,000.00	29,250.00	104,250.00	1	2	
5	Prepare County Land Use Bylaw Changes	LUB changes to review CFO requirements and review sediment runoff, recharge areas, and setback regulations for future site planning.	Lead: P&D Second: Community and Protective (Parks and Rec)	1. Development Planner 2. Spvr, Development Services 3. Spvr, Parks and Open Space	Jan-17	Dec-19	1050	17,000.00	81,900.00	98,900.00	2	2	
6	Explore Inter-Municipal Area Structure Plan (joint project with watershed municipalities) **dates may be expedited due to MGA review**	To and align initiatives between Parkland County and municipalities within the watershed.	Lead: P&D Other Municipalities	1. Planner 2. Spvr, Long Range Planning 3. Spvr, Current Planning	Jan-19	Oct-20	350	130,000.00	27,300.00	157,300.00	3	3	

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Project #	Project/Activity Name	Project/Activity Purpose and Description	Project/Action Lead	Resources needed	Start (Month-Year)	Completion (Month-Year)	Time Allocation (Hours)	Capital Cost Estimate	Operating Cost Estimate	Total Cost Estimate	Prioritization 1: Mission Critical 2: Required 3: If Time Permits	Status 1: Green 2: Amber 3: Red	Next Action (If Applicable)
7	Develop a septic program for the watershed	Septic program would include inspection, education and rehabilitation components to assist residents with the repair of septic systems. The program can be expanded in the future to include a monitoring and on-going enforcement component.	CO-LED PROJECT P&D Safety Codes Community Sustainability Bylaw Services Other Municipalities	1. Planner 2. Spvr, Safety Codes 3. SCO (Private - Septic) 4. Spvr, Community Sustainability 5. Community Peace Officer II 6. GIS Tech II	Dec-17	Sep-19	2475	95,000.00	193,050.00	288,050.00	2	2	
8	Transfer of Development Credit Program	Establish a TDC Pilot Project to direct CR development to most suitable locations and protect sensitive lands. Roll into TDC project identified in Future of Ag Action Plan.	CO-LED PROJECT P&D Agriculture Services Community Sustainability Communications	1. Planner 2. Spvr, Long Range 3. Spvr, Current Planning 4. Spvr, Ag Services (operations) 5. Spvr, Community Sustainability 6. Communications Coordinator	Dec-17	Nov-19	525	200,000.00	40,950.00	240,950.00	2	3	
9	Complete a residential carrying capacity study for the Sub-Watershed	The Study would evaluate the carrying capacity of the Watershed for future residential development capacity.	CO-LED PROJECT P&D Ag Services Community Sustainability Other Municipalities	1. Planner 2. Spvr, Long Range 3. Spvr, Community Sustainability	Aug-20	Dec-21	490	210,000.00	38,220.00	248,220.00	3	3	
COMMUNITY SUSTAINABILITY													
10	Pursue Wetland Restoration Agency designation	Develop a framework for accessing the Province's Wetland Restoration Fund	Lead: Community Sustainability Second: P&D	1. Spvr, Community Sustainability 2. Biologist 3. Spvr, Long-Range Planning	Oct-16	Dec-17	230	25,000.00	17,940.00	42,940.00	1	2	Implementation
11	Expand the education and communication program for the watershed	Survey resident environmental literacy and develop a targeted engagement strategy address current gaps. Will be an extension of the Environmental Education and Engagement Strategy.	Lead: Community Sustainability Second: Communications	1. Environment Engagement Advisor 2. Communications Coordinator	Dec-16	Jul-17	600	40,000.00	50,000.00	90,000.00	2	2	Implementation
12	Establish Wabamun Watershed Implementation Committee	Recruit representatives to sit on the committee. Organise meetings as necessary to ensure plan implementation.	Lead: Community Sustainability Second: P&D	1. Spvr, Community Sustainability 2. Planner	Jan-17	Dec-20	70	0.00	14,000.00	14,000.00	2	3	
13	Complete Habitat Connectivity Study	Conduct an animal/bird/invertebrate connectivity study of the Sub-Watershed area to determine inventory, habitat location and movement patterns.	Lead: Community Sustainability Second: P&D	1. Spvr, Community Sustainability 2. Biologist 3. Planner	Jan-18	Dec-19	490	150,000.00	0.00	150,000.00	3	3	Develop a management plan
14	Pursue Lake Friendly Aquavist Certification for Watershed	Implement, manage and record all initiatives within the Sub-Watershed and report this information to attain the Lake Friendly Aquavist certification.	Lead: Community Sustainability Parks and Rec P&D	1. Spvr, Community Sustainability 2. Planner 3. Community Development Officer	Jan-17	Dec-20	656	100,000.00	10,000.00	110,000.00	3	3	Increase level of certification

Project #	Project/Activity Name	Project/Activity Purpose and Description	Project/Action Lead	Resources needed	Start (Month-Year)	Completion (Month-Year)	Time Allocation (Hours)	Capital Cost Estimate	Operating Cost Estimate	Total Cost Estimate	Prioritization 1: Mission Critical 2: Required 3: If Time Permits	Status 1: Green 2: Amber 3: Red	Next Action (If Applicable)
AGRICULTURAL SERVICES													
15	Improve and communicate Plan findings and potential impacts to farming community	Create and distribute a mail out regarding the impacts of the Wabamun Plan on the farming community	Lead: Ag Services Second: Communications, I.T.	1. Manager Ag Services 2. Spvr of Operations 3. Spvr of Agronomics 4. Communications staff member 5. I.T. staff member	Jun-17	Dec-18	100	10,000.00	7,800.00	17,800.00	2	2	
ENGINEERING SERVICES													
16	Alignment of engineering documents to Sub-Watershed Plan findings	A start and end date can't be assigned as this is an ongoing activity not a defined project	Lead: Engineering Services	TBD	TBD	TBD	TBD	TBD	TBD	TBD	0	0	
17	Explore the development of Best Management Practices (BMP) for future road construction and sediment control	A start and end date can't be assigned as this is an ongoing activity not a defined project	Lead: Engineering Services	TBD	TBD	TBD	TBD	TBD	TBD	TBD	0	0	
18	Complete Stormwater Management Study for the Sub-Watershed	Develop an overall storm water management basin report. Identify existing facilities and storm drain patterns. Identify capital improvements to manage growth and development within the region	Lead: Engineering Services Second: Staff Biologist	0.25 FTE (temporary - 1 year) PLUS consultant team to complete assignment	Jan-19	Dec-19	1000	300,000.00	100,000.00	400,000.00	3	3	
19	Assist in the construction of future boat access points, launches and parking lots	A start and end date can't be assigned as this is an ongoing activity not a defined project	Lead: Engineering Services Second: Community and Protective (Parks and Rec) Other Municipalities Alberta Environment and Parks	TBD	TBD	TBD	TBD	TBD	TBD	TBD	0	0	
20	Review Engineering Standards to ensure alignment with Sub-Watershed Land Use Plan	A start and end date can't be assigned as this is an ongoing activity not a defined project	Lead: Engineering Services Second: Planning and Development	TBD	TBD	TBD	TBD	TBD	TBD	TBD	0	0	
COMMUNITY ECONOMIC DEVELOPMENT													
21	Develop incentives to promote infill, economic diversification and best management practices	TBD	Lead: Community Economic Development	1. Economic Development Officer 2. Planner	Jan-19	Jul-19	80	0.00	6,240.00	6,240.00	2	3	

WABAMUN LAKE

SUB-WATERSHED LAND USE IMPLEMENTATION PLAN

November 14, 2016

Project #	Project/Activity Name	Project/Activity Purpose and Description	Project/Action Lead	Resources needed	Start (Month-Year)	Completion (Month-Year)	Time Allocation (Hours)	Capital Cost Estimate	Operating Cost Estimate	Total Cost Estimate	Prioritization 1: Mission Critical 2: Required 3: If Time Permits	Status 1: Green 2: Amber 3: Red	Next Action (If Applicable)
	and opportunities in the Sub-Watershed												
COMMUNITY AND PROTECTIVE SERVICES													
22	Designate Parkland County Peace Officer to educate and enforce regulations within the Sub-Watershed	Designated Peace Officers will be designated specifically to the Sub-Watershed. Intention is to educate residents and visitors around the bylaws and expectations of land use in this area and enforce as required.	Lead: Community and Protective Services	1. Spvr, Enforcement Services 2. Spvr, Current Planning 3. Peace Officer II (2 Seasonal), Vehicle	May-17	Sep-18	800	15,000.00	220,000.00	235,000.00	2	2	
PARKS, RECREATION, AND CULTURE													
23	Align Recreation, Parks, and Open Space Master Plan to Sub-Watershed Plan findings	To be determined following the Parks, Recreation and Culture Master Plan and Park Improvement Plan Phase 2 plans are completed. Implementation plan needs to be developed	Lead: Parks, Recreation and Culture	TBD following the Parks, Recreation and Culture Master Plan and Park Improvement Plan Phase 2 plans are completed. Implementation plan needs to be developed.	TBD	TBD	TBD	TBD	TBD	TBD	2	2	
CORPORATE SERVICES (COMMUNICATIONS)													
24	Develop multi-stakeholder public communications program with focus on education / information sharing to provide awareness of the sub-watershed	Coordinate with stakeholders and County departments to develop a communications strategy to inform the public about the watershed and watershed projects underway. Campaign targets: 1. residents / acreage owners 2. youth and local schools 3. businesses and entrepreneurs 4. Stewardship groups	CO-LED PROJECT County departments: (Communications, P&D, Parks, Recreation and Culture, Community Sustainability, GIS, Bylaw Services) AB Environment and Parks NSWA Various lake stewardship groups	1. Communications Coordinator 2. Communications Assistant 3. Alberta Environment and Parks 4. NSWA 5. lake stewardship groups	Jan-17	On Going	140	5,000.00	10,920.00	15,920.00	2	3	
INFORMATION SERVICES													
25	GIS mapping on various projects, studies and educational material	To help internal departments to create maps for education and project studies, as well as to assist consultants with data and mapping.	CO-LED PROJECT Communications P&D Parks and Rec GIS Community Sustainability Bylaw Services	1. GIS Technician I & II 2. GIS Analyst	Jan-17	Jan-18	200	0.00	15,600.00	15,600.00	1	1	
OTHER ORGANIZATIONS													
26			Lead: AB Environment and Parks and the NSWA	AB Environment and Parks, NSWA	Jan-17	Jan-16	300	0.00	23,400.00	23,400.00	1	1	

Project #	Project/Activity Name	Project/Activity Purpose and Description	Project/Action Lead	Resources needed	Start (Month-Year)	Completion (Month-Year)	Time Allocation (Hours)	Capital Cost Estimate	Operating Cost Estimate	Total Cost Estimate	Prioritization 1: Mission Critical 2: Required 3: If Time Permits	Status 1: Green 2: Amber 3: Red	Next Action (If Applicable)
	Develop Integrated Watershed Management Plan	To imbed the land use plan into a greater watershed plan and proceed with actions as stated in the County's Action Plan	Second: P&D Community Sustainability Other Municipalities	1. Planner 2. Spvr, Community Sustainability 3. Spvr, Parks and Rec 4. Villages									
27	Assist in providing resources for boat washing facilities	Design and have 2 portable boat washing facilities located at the Wabamun lake boat launch and the Provincial Boat Launch.	Lead: AB Environment and Parks Second: P&D Parks and Recreation Other Municipalities	Lead: Alberta Environment and Parks 1. Spvr, Parks and Recreation 2. Planner 3. Engineering Coordinator 4. Villages	Jan-17	Jan-18	100	0.00	7,800.00	7,800.00	1	1	
28	Complete Regional Groundwater Assessment Study (potential joint project with AEP and watershed municipalities)	AEP working in partnership with and other municipalities do inventory and analyze the state of groundwater in the Watershed.	CO-LED PROJECT Lead: Alberta Environment and Parks Second: Community Sustainability P&D Community Sustainability Engineering Services	1. AEP Delegate 2. Planner 2. Spvr, Community Sustainability 3. Engineering Coordinator 4. Spvr, Parks and Rec	Jan-20	Jun-21	490	200,000.00	38,220.00	238,220.00	3	3	
29	Develop a Wabamun Lake Capacity Study	Conduct a study to determine the number and types of boats to be allowed on Wabamun Lake at a given time. This will incorporate the findings of the Watershed capacity study to determine the total population within the watershed land and within the lake.	Lead: Alberta Environment and Parks Second: P&D Park and Recreation Other Municipalities	Lead: Alberta Environment and Parks and the NSWA 1. Planner 2. Spvr, Community Sustainability 3. Spvr, Parks and Rec 4. Engineering Coordinator 5. Villages	Jan-18	Jan-19	350	0.00	27,300.00	27,300.00	2	2	

DISCLAIMERS:

- Capital and Operating costs are estimates only. Total costs are + / - a factor of % 50
 - Resources needed are estimates only at this time
 - Time allocation are estimates only at this time.
 - This Plan in no way commits Council or individual departments to the completion of a project. The Action Plan is only an estimate of the resources needed to support the intended project. Resource allocation (staff and financial) may be further elaborated in detailed budget initiatives.
- Indicates multi- year projects