

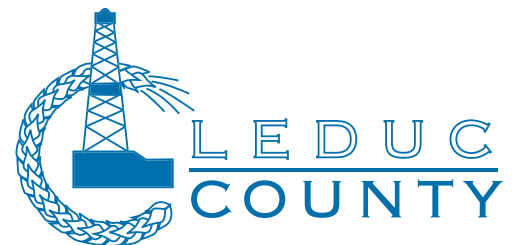
Wizard Lake

Area Structure Plan



Winner of the 2009 Wizard Lake Photo Contest

Submitted by Paul Douglas from the south east corner of Wizard Lake from the shore of Curilane Beach.



BYLAW NO. 17-10

LEDUC COUNTY

A BYLAW OF LEDUC COUNTY, IN THE PROVINCE OF ALBERTA, FOR THE PURPOSE OF ADOPTING THE WIZARD LAKE AREA STRUCTURE PLAN AND TO REPEAL BYLAW NO. 1491-81.

WHEREAS

Pursuant to the Municipal Government Act, being Chapter M-26, Revised Statutes of Alberta 2000 and amendments thereto, the Council of Leduc County deems it to be in the public interest to adopt the Wizard Lake Area Structure Plan and repeal Bylaw No. 1491-81;

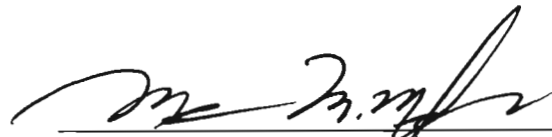
NOW THEREFORE

Be it resolved that the Council of Leduc County, duly assembled, enacts as follows:


1. This Bylaw may be cited as the "Wizard Lake Area Structure Plan Bylaw".
2. The document attached as Schedule 'A' to this Bylaw is hereby adopted as the Wizard Lake Area Structure Plan.
3. Bylaw No. 1491-81 and all amendments thereto is hereby repealed.
4. This Bylaw shall take effect on the date of the third reading and signing.

Read a first time this 6th day of July, AD, 2010.

Read a second time this 6th day of July, AD, 2010.

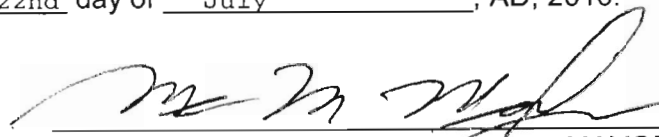


MAYOR




COUNTY MANAGER

Read a third time and finally passed this 22nd day of July, AD, 2010.



MAYOR



COUNTY MANAGER

Acknowledgements

The Leduc County Wizard Lake Area Structure Plan is the result of the many efforts of Leduc County Staff and Council who have supported the ASP and made themselves available throughout the process. This plan would also not be possible without the members of the community who have been key stakeholders throughout the process, providing invaluable information and a demonstrated passion for Wizard Lake and the watershed area. Key community members include residents and property owners, farmers, representatives from the region and the County of Wetaskiwin. Of particular note are the organized community groups, such as the Friends of the Wizard Lake Watershed Association who provided an incredible amount of insightful information as well as the Sierra Group who provided the opportunity for a firsthand experience of the many unique natural assets within the watershed.

We would like emphasize the participation of the following groups in the focus group process which helped to shape the actual document. These groups are:

- The Enchantment Valley Tax Payers Association
- North Wizard Lake Land Owners Association
- Wizard Lake Estates Homeowners
- Wizard Lake Watershed and Land Stewardship Association
- The Representatives of the Agricultural community

Finally, we'd like to acknowledge the consultant consortium who has collaborated in the development of this document. Their expertise on lake management best practices has been invaluable in this final product. The consultants involved were:

- Office for Urbanism (main consultant)
- MMM Group Ltd.
- Fiera Biological Consulting Ltd.
- Thurber Engineering Ltd.

The continued contribution and expression of ideas throughout the process have resulted in an exciting and inspiring vision for the Wizard Lake Watershed area as well as policies and an implementation plan to guide the future of the area over the next 20 to 25 years.

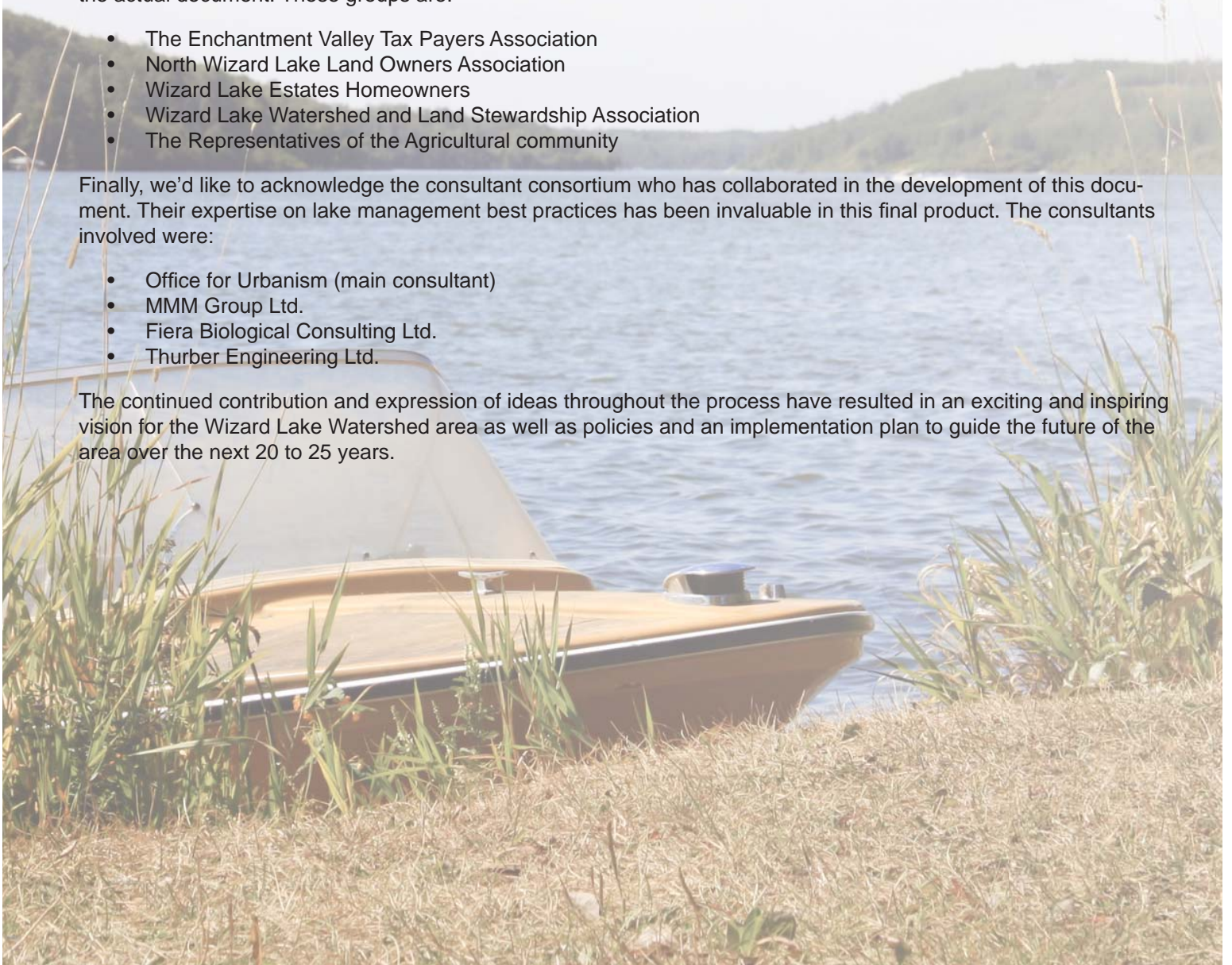


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Part A: Background



1. Introduction

1.1 The Plan Intent

The purpose of the Wizard Lake Area Structure Plan (ASP) is to identify a vision and a policy framework, which will effectively guide the future development over the next 20 to 25 years.

This long-range plan provides a policy framework to manage growth and land uses around the lake. Best practices are identified to assist landowners and the County to make long-term land use decisions.

The intent of the Plan is also to identify suitable land uses that will create a vibrant community and protect the natural environment. The ASP addresses connectivity of the natural spaces, recreational access, passive recreation opportunities, integrated water and waste water management and the management of open spaces. In addition, the ASP recommends current and long-term land uses, servicing standards appropriate for the use intended, and the prioritization and protection of park, open space and environmentally sensitive areas. The integrated land use policies in this ASP will govern the location, use, density and intensity of development on and near the lake and within the area of the Wizard Lake watershed.

The Vision set out in the Wizard Lake Area Structure Plan (ASP) supports the following key items:

- Land use planning
- Protection of parks and open spaces and environmentally sensitive areas
- Protection of agricultural lands
- Connectivity of the natural spaces and trails
- Recreational access and linkages
- Passive and active recreation opportunities
- Integrated water and waste water management, and the management of open spaces and land uses
- Servicing standards appropriate for the uses intended
- Transportation systems and possible improvements

Submitted by Gina Fowler

Winner of the "Working Landscape" category of the 2009 Wizard Lake Photo Contest

1.2 Study Area and Area of Influence

1.2.1 Location (see section 4.0, Analysis Map)

Wizard Lake Watershed study area is located approximately 22 km southwest of the City of Leduc along the south border of Leduc County and the northern border of the County of Wetaskiwin in central Alberta (Figure 1). The Wizard Lake Area Structure Plan covers portions of sections 1 to 12, of Twp. 18 - Rge. 48 - W.4 M and sections 13, 14, 23 of Twp. 24 - Rge. 48 - W.4 M, located on and near the north shore of Wizard Lake (Figure 2). Major transportation corridors nearby include Highway 795 to the east, Highway 616 to the south, Highway 778 to the west, and Highway 39 to the north. Land uses include agricultural cultivation, low-density residential developments, Jubilee Park and campgrounds.

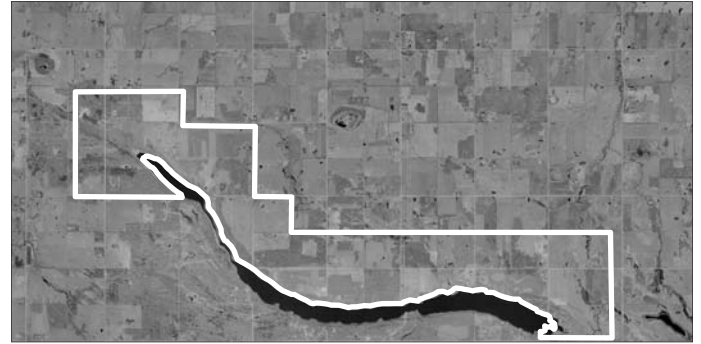


Figure 2: Wizard Lake Study Area

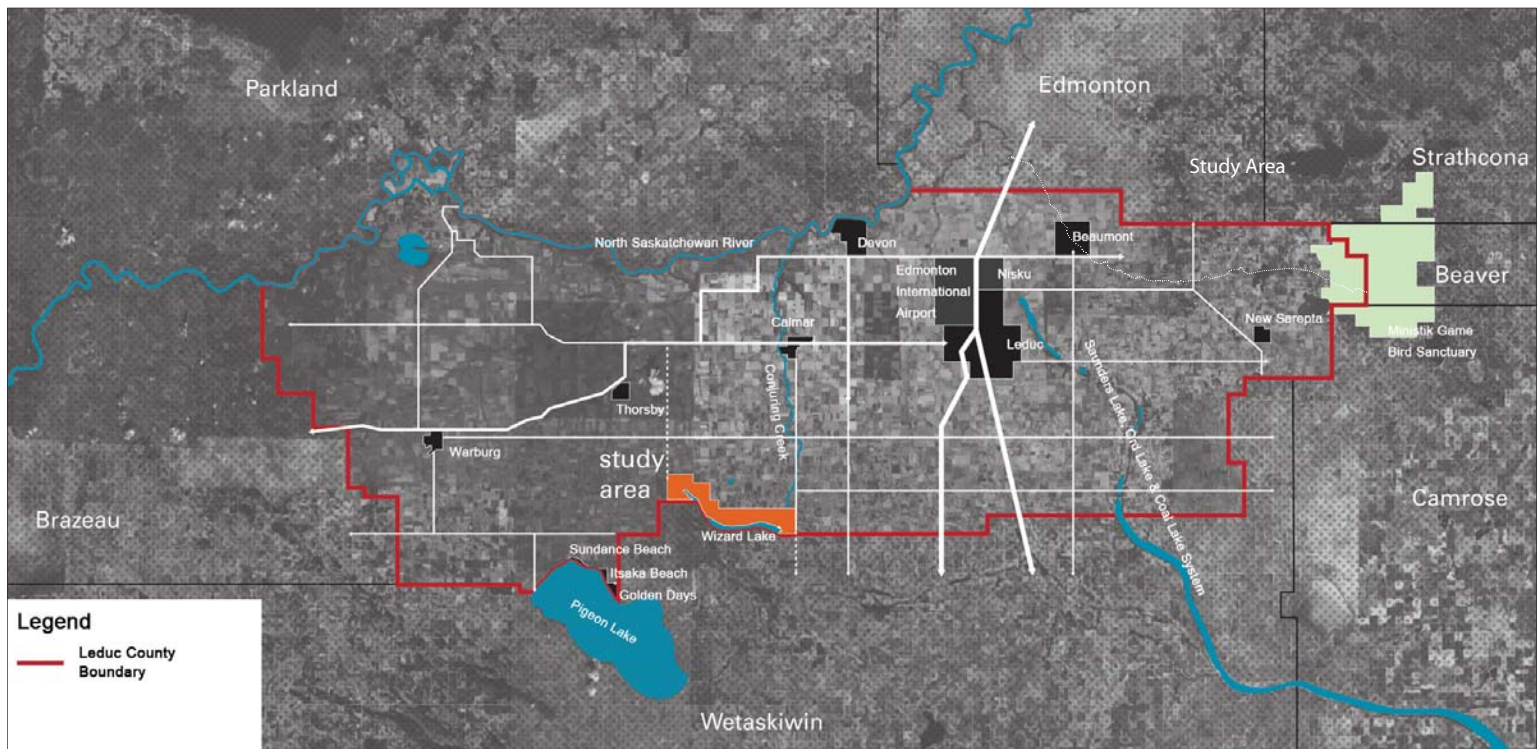


Figure 1: Wizard Lake Study Area and Context

1.2.2 Areas of Influence

The Area Structure Plan makes recommendations for the north half of the watershed area which is comprised of all of the lands adjacent to Wizard Lake, as shown in Figure 3. The study carefully considers an “area of influence” which is crucial to the role, function, and success of the Plan, which extends beyond the study area.

Wizard Lake presents an environmental management challenge as it borders on two distinct municipalities, Leduc County and the County of Wetaskiwin. The municipalities have maintained a cooperative and open dialogue throughout this process. As the lake has been recognized as having significant environmental value, efforts to coordinate land use planning have been employed. Continued cooperative management of this regional environmentally sensitive area is essential.

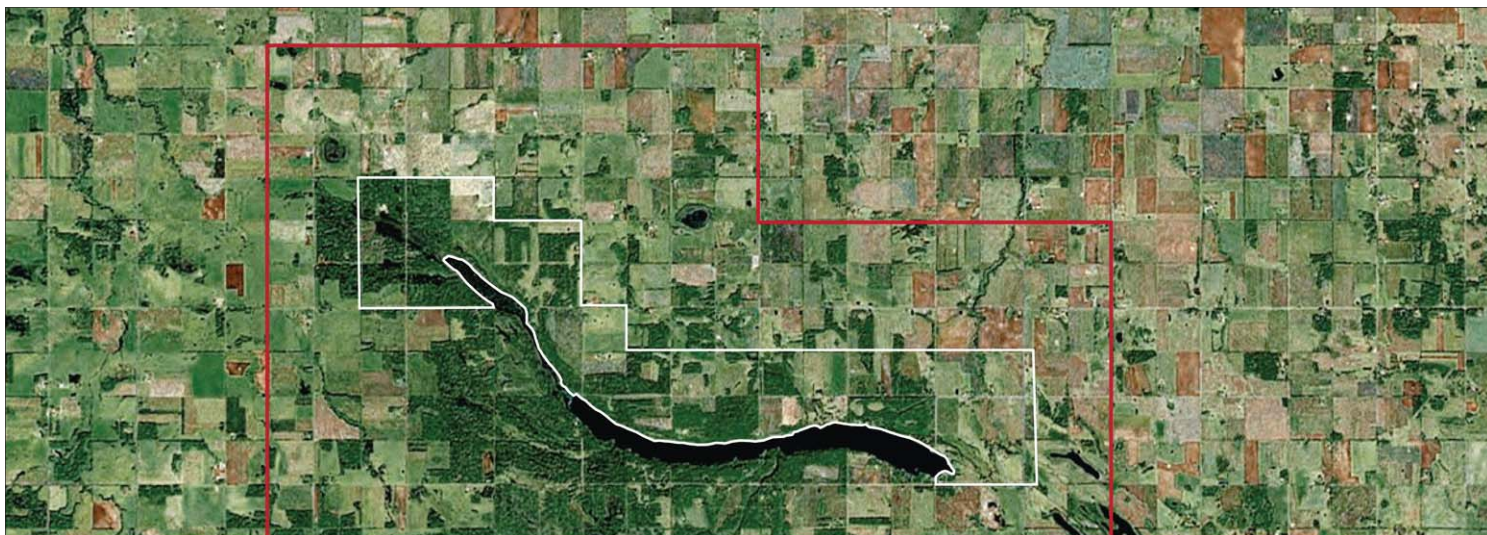


Figure 3: Area of Influence

1.2.3 Public Engagement

Various events and forums were hosted to engage the public throughout the process of developing the Wizard Lake Area Structure Plan (ASP). From the outset of the project, residents, landowners, business owners and other interested community members were encouraged to join in and participate at as many workshops and open houses as possible. All materials on upcoming events, and outcomes from the events, were made available on the project website. The website was also a source and method of keeping the public informed and connected throughout the process, as it was updated on a regular basis.

1.3 The Planning Process

The planning process unfolded over a 18-month period and included seven phases from project start up to the final phase of development. The process, as summarized in the Process Diagram - Figure 4 (below), illustrates key milestones. This included a “kick-off” meeting introducing the study in addition to three large public forums (including open houses and workshops) where the public, stakeholders, community members and County staff played significant roles in shaping and directing the ideas generated by offering their specific knowledge and expertise of the area. This collaboration informed the process, united disparate interests and generated enthusiasm and commitment to the ASP.

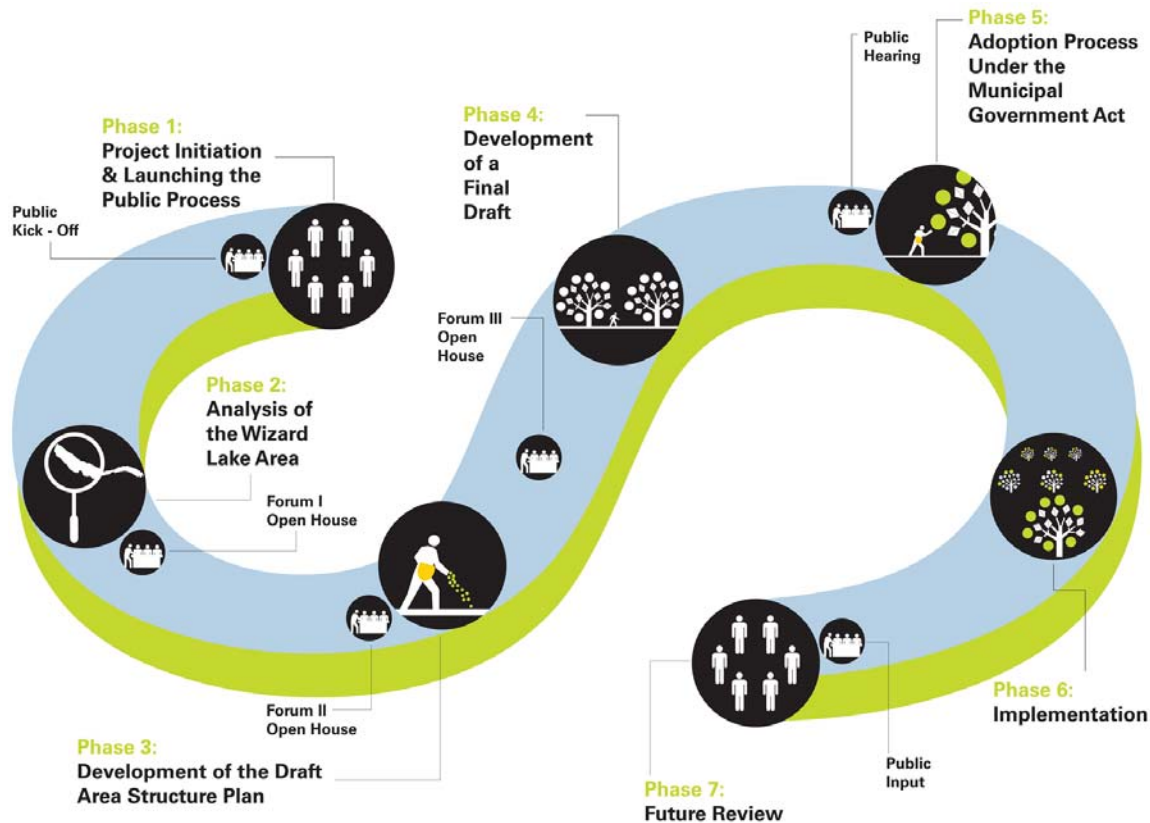


Figure 4: Process Diagram

To ensure a full understanding of the process diagram, it is important to note the methodology employed by which we progressed from one phase to the next one. From Phase 1 to Phase 3, the process included interaction between Leduc County, the public, the stakeholders and the consultant team through a series of open houses and workshops. The consultants, after having engaged the community, were to produce a draft plan based upon best practice in lake management.

In Phase 4, Leduc County worked towards a final draft with a focus group consisting of five groups representing the stakeholders and public of the plan area. In addition to this intense process, opportunities were given for any interested parties to submit comments and/or question via other communication forms such as the Leduc County's website and more traditionally via fax, phone and/or mail.

Phase 5 included adoption of the plan under the Municipal Government Act.

Phase 6, the implementation section of this plan proposes the methodology and the means by which these phases will be accomplished. Phase 7 is the future review of the plan to ensure its relevance.

1.3.1 Kick-off Event

The intent of the Wizard Lake Public Kick-off Event was to introduce the project process and the consultants to the community, and to bring the community on board as key participants throughout the unfolding of the Wizard Lake Area Structure Plan process. The event was regarded by the County and consultants as a success as there were over a hundred people in attendance, providing their comments and concerns.

The Kick-off Event presented an opportunity for people to ask a variety of questions, voice their opinions and seek clarity on the purpose and intent of the project. Also, many stories were told. It was a great opportunity for the consultants and County staff to have individual discussions with community members proving to be quite informative and reflecting the passion the community has for the area.



1.3.2 Stakeholder Interviews

At the outset of the project, the consultant team held a series of stakeholder interviews with groups and key individuals who took the opportunity to share their individual concerns, background knowledge and experience of the area. Some of the key messages and concerns that resulted from the interviews were focused on the existing level of lake activity and safety, the importance of agricultural functions, the pressure for and the impact of new development as well as the need for environmental conservation.



1.3.3 Forum 1: Workshop

Following the Kick-off Event and Stakeholder Interviews, the consultant team integrated the feedback in preparation for Forum 1. The Forum 1 Workshop was a full day event, providing an opportunity for residents, landowners and all key stakeholders interested in shaping the ASP to workshop their ideas, share their comments and influence the future of the Wizard Lake Watershed Area.

The morning session commenced with a presentation on what was completed to date and a review of the existing conditions analysis. Participants were then broken into working groups where each group discussed a Vision for the Wizard Lake Area in as much detail as possible and began to develop guiding principles to support the Vision.

The afternoon session was organized as a mapping exercise, providing participants with the opportunity to map out opportunities and constraints in the study area. This workshop focused on identifying recreational needs, mapping opportunities and constraints and identifying preliminary key ideas regarding the future of the Wizard Lake Study Area. The outcome included land use scenarios and an open space framework.

1.3.4 Forum 2: Open House

The consultant team further advanced the outcomes of Forum 1, exploring the emerging character areas, finalizing the vision and guiding principles, and developing three Hamlet Concept Options. These options, as well as the Open Space Plan and Recreational and Community Services Opportunities Plan, were presented to the public for feedback. All comments were recorded by the consultant team and used to inform the future of the ASP guiding the next steps in the process.

1.3.5 Forum 3: Open House

The draft Area Structure Plan was presented to the community at the Forum 3 Open House. The community input and feedback received from Forum 2 guided the development of the land use policies and provided direction for the implementation section included in the draft ASP. The Open House provided community members with the opportunity to present their ideas and input in an open floor discussion.

1.3.6 Focus Group

Following Forum 3, Leduc County received valuable feedback about the draft ASP. In an effort to address those comments, it was decided to utilize a focus group included two representatives each from different local stakeholder groups who have an interest in Wizard Lake and the ASP.

Four consecutive weeks were needed for the focus group to analyze and discuss the draft plan. The main purpose of this strategy was to develop recommendations on certain aspects of the plan that they felt were better suited for the community. Topics discussed were:

- Buffer zones/setbacks
- Impacts on agriculture
- Involvement of Wetaskiwin County
- Existing agricultural businesses and alternative methods for agriculture
- Need for the County to conduct a study on water levels and quality of Wizard Lake
- Solutions for existing conditions caused by nutrient dumping & water quality education
- Improvement of current services for resort residential subdivisions
- Redevelopment of existing residential areas
- Development Guidelines: Character areas (cluster country residential) and infrastructure
- The Hamlet
- Trail system
- Boat access to Wizard Lake & boat safety
- Jubilee park expansion



2. Area History

2.1 The Wizard Lake Area Structure Plan (1981)

The Wizard Lake Area Structure Plan (ASP), a summary of Regulations and Policies (Bylaw No. 1494-81), was adopted in 1981, and provided a framework for subsequent subdivision and development of lands within the Wizard Lake Study Area. Approximately 15 years after its adoption, it was determined that the policies required review before any new multi-lot subdivision or large scale development was to be approved. As a result, a technical committee of local residents was selected to review the Wizard Lake situation and identify issues pertaining to the future development of the area. A document, which identified a number of issues ranging from water quality, to tree cover, to boating, and sewer management, was prepared but was never adopted by Council. Each issue had an identified target and recommended actions to achieve that target. A similar process was undertaken in 2003 with a purpose “to set out policies to guide councils and staff when making decisions on the subdivision and development of land in the Wizard Lake watershed.” This process also didn’t lead to a revised ASP.

The attempts to review the Wizard Lake Area Structure Plan from 1981 both addressed a number of issues and each had the goal of maintaining or improving the quality of the natural environment surrounding Wizard Lake. The environmental significance of the Wizard Lake Watershed has been an important factor in each of these planning processes and was also a significant component of the strategy used for this ASP.

2.2 Environmental Significance

Leduc County, incorporated in 1963 and located to the immediate south of the City of Edmonton, has an expanding population of over 12,000 residents in an area encompassing 2,673 square kilometres. Leduc County is a rapidly growing part of the Capital Region and is an established hub of industry and development in central Alberta.

Wizard Lake is a popular fishing and water sport location, hosting an annual water skiing tournament in addition to many other activities. In the 1920’s, land was set aside on the north shore for park development, known today as Wizard Lake Jubilee Park, which is now one of the area’s premier campgrounds. Jubilee Park is considered a camper’s paradise boasting peak conditions for water skiing, fishing, canoeing and wind surfing. The park also has a reputation for having the best sunset experiences in the County.

The environmental significance of Wizard Lake and its catchment area is well recognized in Leduc County. It was identified as a Regionally Significant Environmentally Sensitive Area, due to its recreational sport fishery and important wildlife habitat (Westworth and Associates 1990).

Conjuring Creek, which drains from the east end of Wizard Lake, was also identified as a local environmentally sensitive area. Water quality issues for Wizard Lake have been foremost in the minds of councils and residents through planning documents, as well as two published reports concerning this issue specifically: Mitchell, 1999 undertaken by Alberta Environment; Alberta Lake Management Society, 2006 carried out under the “Lake Watch Program” of the Alberta Lake Management Society with support from Alberta Environment.

The uniqueness of Wizard Lake, with its large catchment area and relatively intact surrounding upland forest, requires careful consideration to ensure new development does not threaten the natural integrity of the lake. The environmental significance of the lake is also valuable from the perspective of the local residents and farmers as a major component to their livelihood and quality of life.

3. Policy Context

The Wizard Lake ASP has been prepared in the context of development principles and objectives drawn from a number of plans and policy statements. These comprehensive policy frameworks provide direction on planning matters at the provincial, regional and municipal level.

The following subsections summarize the principles and policies which guide the development of the Wizard Lake Area Structure Plan.

3.1 Provincial Policy Directives

3.1.1 Land-Use Framework

The purpose of the Land-Use Framework is to manage growth and to sustain the growing economy, while balancing social and environmental goals. The Land-Use Framework is based on principles of smart growth and a vision placing emphasis on respecting and managing Alberta's land; it is the foundation of its economic, environmental and social well-being. Emphasis is also placed on land use decisions which strive to reduce the human footprint on the landscape.

Actions taken to implement the Land-Use Framework must contribute to three desired outcomes, which are:

- Healthy economy supported by Alberta's land and natural resources
- Healthy ecosystems and environment
- People-friendly communities with ample recreational and cultural opportunities

At the time of adoption of this ASP, the North Saskatchewan River Regional Plan had not been initiated. When this plan is complete, Leduc County will evaluate the compliance of the Wizard Lake ASP with the regional plan as required by provincial legislation.



3.2 Regional Policy Directives

3.2.1 Capital Region Growth Plan

The Capital Regional Growth Plan guides the management of public and private lands and natural resources to achieve Alberta's long term economic, environmental and social goals. It promotes an integrated approach to planning for the future growth of the region and is the framework for making local decisions.

To determine whether development proposals comply with the regional vision, a series of principles and policies have been developed. It is required that all current policy documents be in conformity with the following principles:

- Protect the environment and resources
- Minimize regional footprint
- Strengthen communities
- Increase transportation choice
- Ensure efficient provision of services
- Support regional economic development

The Area Structure Plan complies with the Provincial Land Use Framework desired outcomes with the Regional Policy Directives outlined by the Capital Region Board (CRB), and is in conformity with all policies relevant to the plan area. The following CRB policies are directly compatible with the planning objectives developed in the ASP.

A. Preserve and protect the environment

- i. Any development which may cause detrimental effects such as erosion or pollution to lakes, rivers, water bodies and shorelines shall be prohibited unless appropriate mitigation measures are implemented.
- ii. Any development which fragments contiguous natural features, functions and habitat such as water systems, moraines, forests, wetlands and wildlife habitat and corridors shall be discouraged.
- iii. Support governmental environmental initiatives and seek opportunities for coordinated initiatives between municipalities.
- iv. Manage regional watersheds to protect, restore and ensure the sustainability of natural water systems.

B. Allow growth outside of priority growth areas

- i. Allow development outside of the priority growth areas if the following criteria are met:
 - a. It is contiguous to existing development.
 - b. It follows the principles and policies of this plan related to the form of development.
 - c. The level of services provided is appropriate to the form of development.
 - d. Development in this area will not adversely impact the provision of regional infrastructure required to service the priority growth areas.

C. Support cluster country residential development*

- i. Country residential uses shall be allowed in designated areas in a clustered form in order to preserve environmental or open space features. Such developments shall utilize municipal water and sanitary services. Private communal services may be allowed at the discretion of the Municipality.

D. Strengthen communities

- i. Integrate uses with adjacent developments to improve connectivity and accessibility to local parks, open space, commercial and community services.
- ii. Encourage co-location and/or shared use of compatible public service infrastructure, such as education facilities, parks and civic uses.

E. Support healthy communities

- i. Improve accessibility to community services by providing sidewalks, bicycle trails to encourage walking and cycling and locate these services within proximity to transit where possible.
- ii. CRB municipalities will work together to define and prioritize the need for and, if required, the future form, function and location of a system of regional parks, open space and greenways that will preserve important environmental and natural features for public purposes.

*Even though cluster country residential (CCR) development will be enabled under this plan, the Capital Region Growth Plan does not identify any designated CCR within the Wizard Lake ASP Area.

3.3 County Policy Directives

3.3.1 Leduc County Municipal Development Plan

The Leduc County Municipal Development Plan (MDP) effectively manages the subdivision and development of land in the County for the benefit of its present and future residents and their quality of life. The land within the Wizard Lake ASP is designated in the MDP as “Agricultural Area B.” The purpose of the Agricultural designation is “to conserve and protect extensive areas of land for agricultural uses; to encourage and accommodate a broad range of agricultural-related pursuits; and to retain and enhance the County’s agricultural community.”

A large component of the MDP is consideration for the environment and protection of environmentally sensitive areas, ensuring that development does not exert adverse impact on environmentally sensitive areas.

3.3.2 Leduc County Land Use Bylaw

The Leduc County Land Use Bylaw (Bylaw 7-08) is intended to regulate and control the use of lands and buildings in order to achieve orderly and economic development in the County consistent with the provisions of the Municipal Development Plan and other statutory plans. All land uses within the County are regulated by the Land Use Bylaw. The plan area is comprised of lands actually designated as Country Residential District (RC), Resort Residential District (RR) or Lake Watershed District (LW).

With the exception of two specific areas designated for Resort Residential on the North East side of the lake and one pocket of Country Residential, the majority of the area and north shoreline fall within the Lake Watershed District. Generally, this designation is focused specifically on minimizing environmental impacts and protecting the integrity of the lake, watershed and tree cover, while still “allowing for minimal development of recreational, residential, and agricultural uses.”

The Land Use Bylaw stipulates that permanent buildings within the 100 year floodplain of any watercourse shall not be permitted unless they are subject to flood-proofing to mitigate potential damage and the County is indemnified from potential liability.

The District Regulations for the Wizard Lake Watershed Study Area are illustrated on Figure SC1 – Analysis Map.

3.3.3 Leduc County Wizard Lake Area Structure Plan (1981)

The purpose of this plan is to set out policies which will guide council and staff when making decisions on the subdivision and development of land in the Wizard Lake Watershed Study Area.

Adopted in March, 1981, the Wizard Lake ASP was designed to be used as:

- A ready reference document for those regulations and policies applicable to the Wizard Lake area that have been developed pursuant to the Canada Shipping Act, the Municipal Government Act and the Planning Act
- The main guide for future development or land use change in the Wizard Lake area
- A document that may be used as a basis for a more detailed land use bylaw applicable to the Wizard Lake area

The plan states that “the two Councils agree all future development in the Wizard Lake study area must be governed by two goals:”

Goal 1: To maintain and where possible improve the quality of the natural environment.

Goal 2: To manage the use of the lake consistent with public safety and enjoyment.

3.3.4 Leduc County Parks & Open Spaces Master Plan (2006)

The Leduc County Parks and Open Spaces Master Plan provides policy direction and guides the future management of the County's parks and open spaces. The Master Plan is a non-statutory document that takes its overall direction from the Municipal Development Plan and the County Corporate Plan.

The Master Plan addresses population growth and the demand for more parks and open spaces. The plan also specifies that most of the urban municipalities within or adjacent to the County have developed local trail systems and are interested in development of a broader regional trail system. Walking and cycling trails were also identified through a facility needs assessment as a priority for new recreation facilities in the County. The Wizard Lake Area Structure Plan has taken this into consideration.

To satisfy the overall planning directions provided by the Municipal Development Plan and other relevant plans, specific visions, goals and objectives for the County's parks and open spaces have been developed.

A. Parks

Vision: "People enjoying our parks for fun, relaxation and quiet contemplation."

Goals: To maintain the quality of life for residents and visitors by providing access to a variety of outdoor recreation opportunities.

Objectives:

- Provide a variety of outdoor recreation opportunities to meet the needs of County residents on a year round basis.
- Provide regional outdoor recreation opportunities to support economic development for tourism.
- Ensure public access is available to all major lakes and rivers within the County.
- Identify and reserve lands that have potential to meet future recreation needs of County residents and visitors.
- Work cooperatively with other municipalities, agencies, organizations and the private sector to provide a variety of outdoor recreation opportunities.
- Direct major outdoor recreation facilities to be located in attractive natural settings in areas of high population concentration in the County.
- Use public financial resources effectively to accomplish these objectives.

B. Open Space

Vision: "Protected places providing the natural life support system for our community."

Goals: To maintain environmental quality by protecting the natural environment for the benefit of existing and future generations.

Objectives:

- Protect environmentally sensitive areas and provide a sustainable and biologically diverse open space system that represents the natural environment of Leduc County.
- Protect riparian zones adjacent to water bodies and the valley systems associated with rivers and major streams.
- Protect linear vegetation corridors to provide important ecological connections between existing and future open spaces.
- Maintain the large blocks of forested areas and native grasslands that remain in the County.
- Identify natural features that may present environmental hazards to people.
- Work cooperatively with other agencies, organizations, and landowners to protect the natural environment.

The Park Management policies within the Master Plan provide detailed principles guiding management of existing County parks and provide direction for the addition of new parks in Leduc County. The following policies correspond with the intentions of the Wizard Lake Area Structure Plan and have been carried forward. Additional policies are presented in Part B and C of this document.

Jubilee Park

Jubilee Park will be managed to provide family oriented, local and regional water-based recreation opportunities. Facilities will be provided for overnight camping, picnicking, swimming, boating and walking.

Enchantment Valley Park

The park area at Enchantment Valley will be managed to provide a local shoreline park for residents of the subdivision. An open grass play area, beach/swimming area and opportunities for boat docking will be provided.

Establishing New Parks

New parks will be developed in Leduc County in response to increased demands for outdoor recreation facilities. New park opportunities may be developed through a number of means including:

- Dedication of reserve lands or from money in place of land from new land subdivisions
- Transfer of sites or lands from other public agencies
- Donations
- Partnerships with other municipalities and agencies
- Acquisition by the County

The opportunity to develop new parks and recreation facilities in Leduc County will be pursued based on the following criteria:

1. Priority for County Residents

Leduc County's primary focus in providing new parks will be to provide outdoor recreation facilities that meet the needs of residents of the County. Facilities that attract visitors to the County and provide economic benefits to the region will be a second priority.

Day-use facilities: outdoor recreation trends are changing the types of facilities requested in the County. New parks will focus on providing more day-use facilities for casual activities like walking, cycling, picnicking, nature appreciation, dog walking and access to water for swimming, boating and fishing.

2. Ensure Lake Access for Recreation

New park lands and facilities will be supported on all major lakes within the County to ensure the public can access the lake and shoreline. Lake access may be provided by the County or other public agencies. Access opportunities will only be provided if the lake is capable of supporting new or additional recreation activity.

3. Protect Shorelines

County reserve lands located along lake and stream shorelines will be classified as Environmental Reserves. All shorelines will be retained by the County in order to ensure public access opportunities are available to the water's edge and surface.

Shoreline reserves are also important for the environmental role they play in protecting water quality, minimizing shoreline erosion and protecting fish and wildlife habitat.



3.3.5 Environmentally Sensitive Areas Study: Leduc County

This study provides an inventory of the environmentally sensitive areas (ESA) in Leduc County for the basis of formulating land use planning principles that will assist in future planning and environmental management in the region.

Wizard Lake has been identified in this study as ESA R13, and has been assessed to identify some key components and relevant considerations which should be utilized to address the significance and sensitivity of the lake. The study identifies Wizard Lake as being regionally significant and of high sensitivity.

The secondary water feature within the study area is Conjuring Creek. It is a tributary of Wizard Lake and drains the lake into the North Saskatchewan River. The study identifies Conjuring Creek as ESA L21 and as being locally significant and of moderate sensitivity.

3.3.6 Leduc County Transportation Master Plan (2001)

The Transportation Master Plan (TMP) analyzes the County's road network in the context of the long term. This plan suggests improvements to the existing transportation system policies and places priority on particular programs over the next ten years. All recommendations in the TMP are adhered to in the Wizard Lake ASP.

3.3.7 Leduc County – Roadway Management System (2005)

The Roadway Management System, Final Report, takes a comprehensive inventory of the existing roadway and bridge network and evaluates traffic activity, drainage and safety concerns and all other pertinent roadway data.

The report also defines strategies for development and preservation of the roadway network based on life-cycle costs, prioritizes capital projects and makes short and long term recommendations supported by cost scenarios.

The report reflects a preference for paved surface roads in terms of life cycle cost savings. Although the ASP is in conformity with recommendations related to extending the life cycle of roadway networks, as a priority, the ASP takes into consideration minimizing the impact on the natural environment and maintaining the general rural character of place. As such, the appropriate use of road surfaces should vary according to location and context.

3.3.8 Design Guidelines and Construction Standards for Developments - Leduc County

Design guidelines and construction standards for developments were approved in May 2005 for Leduc County. The guidelines provide direction and design criteria for water distribution, sanitary sewer, storm drainage and roadway systems when reviewing development applications in Leduc County. The policies and design criteria relating to roadway systems are particularly relevant to the ASP.

3.3.9 Municipal Guide – North Saskatchewan Watershed Alliance

The Municipal Guide is a resource for municipalities and other land managers interested in voluntary watershed stewardship. It is a valuable educational and planning tool for municipalities, developers, residents, and other stakeholders interested in examining their role in the management of a healthy and sustainable watershed.

The primary purpose of the guide is to establish cooperation and collaboration between municipalities and other stakeholders, which is essential for achieving watershed stewardship success at the municipal level. It highlights opportunities for municipalities to improve and further develop their role as watershed stewards, as new information and resources become available.

This document also provides an overview of the issues facing both urban and rural municipalities, such as the current threats to watershed health resulting from population growth and development pressures. It includes information about the components and values of a healthy watershed and how decisions made and activities occurring within individual municipalities impact the overall watershed. The document also provides an overview of the current state and the threats to the health of the North Saskatchewan River Watershed.

3.4 Supporting Studies

The following relevant studies and documents informed the Wizard Lake ASP and specifically the Recreational Needs Assessment Report (section 5.0):

- River Valley Alliance Demand Analysis 2006
- Alberta Recreation Survey 2004
- Leduc County Recreation Needs Assessment, November 2002
- Enchantment Valley subdivision and fire protection report
- Leduc County – Nisku Water System Analysis
- Beaver Hills Management Framework
- Wizard Lake Watershed and Lake Stewardship Association - Wizard Lake Boat Survey, 2008

4. Existing Conditions Analysis

In reviewing the existing conditions of Wizard Lake, the importance of the lake and its surrounding area was explored at a provincial, regional, county and site specific scale. The opportunities and constraints identified in the existing conditions analysis have been assessed at these different levels and the following section has been structured around these findings.



Provincial: Recreation Function & Connectivity

P1

Source: The percentage of Wizard Lake users is taken from the 2009 Jubilee Park Guest Reservation Summaries Stats. These stats do not include those guests who utilize the day use area.



Key Ideas: a provincial destination

- The study area is a major recreational draw for Central Alberta, where the main attractions are Wizard Lake (boating) and the Jubilee Park facilities (campgrounds).
- In 2008, Jubilee Park had 1404 different visitors, where 250 were from Leduc County and the municipalities within, 554 were from Edmonton, 583 from the remainder of Alberta, 15 were from out of province and 2 from out of country.
- Approximately 82 per cent of the visitors who utilize the activities associated with Wizard Lake are from outside Leduc County, 18 per cent are local or from the municipalities within the County.
- Approximately 81 per cent of people coming to the lake are from Central Alberta.

Provincial: Recreation Function & Connectivity

P2

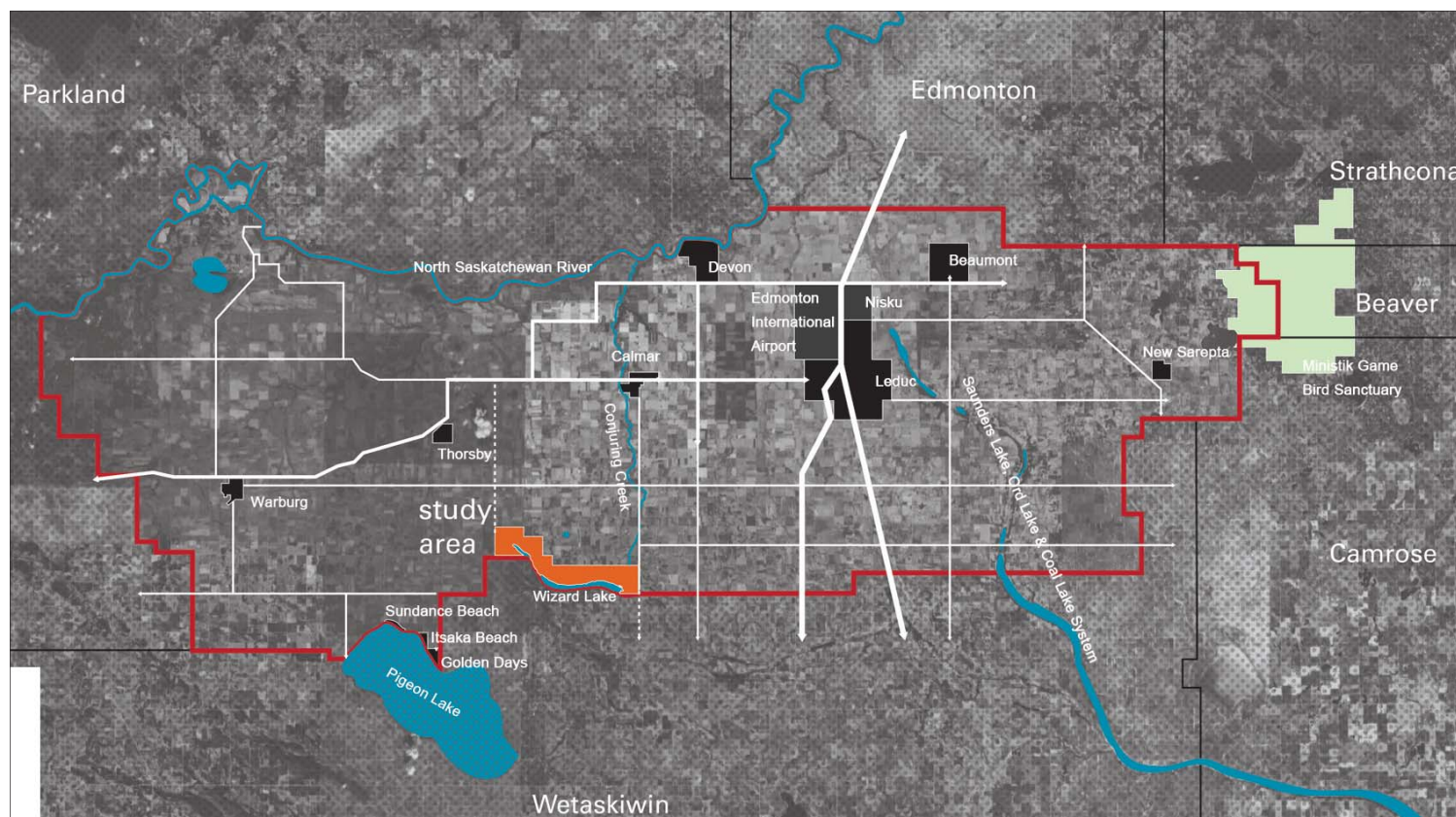


Key Ideas: a component of the greater watershed system

- The Study Area is part of the North Saskatchewan River watershed

County: Human Settlements, Connectivity & Environment

C1



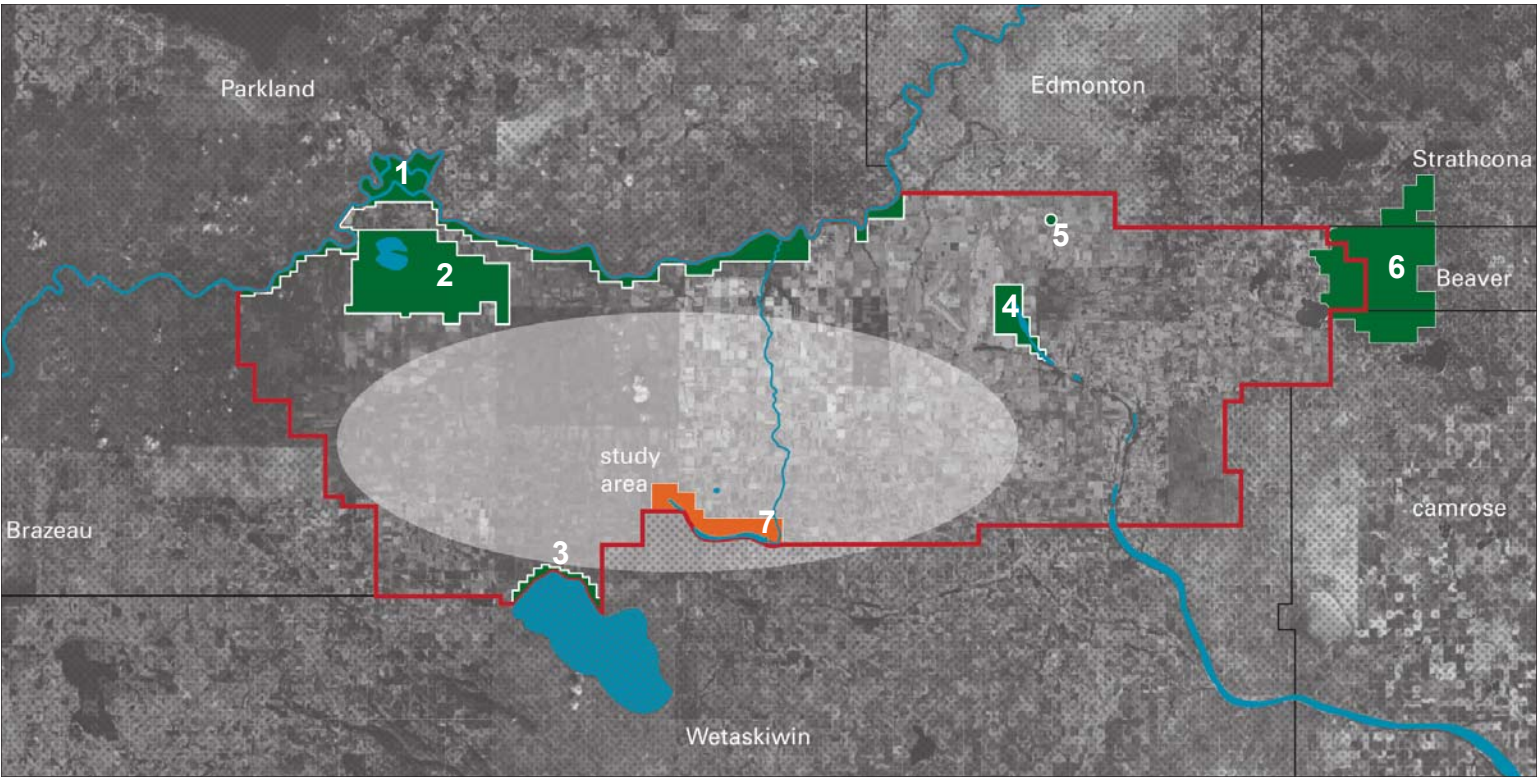
Legend

- Study Area
- Leduc County

Key Ideas: County scale, area of influence

- The Wizard Lake Watershed Study Area is central to the surrounding municipalities and hamlets.
- Access is somewhat limited as there is only one paved road connection to the lake area.
- The study area constitutes only the northern portion of the total watershed surrounding Wizard Lake. The southern portion is within Wetaskiwin County.
- The study area is one of three major recreational destinations within the area.

County: Environment - Proposed Regional Parks



Source for proposed parks: Leduc County Parks and Open Spaces Master Plan

Legend

Proposed Parks

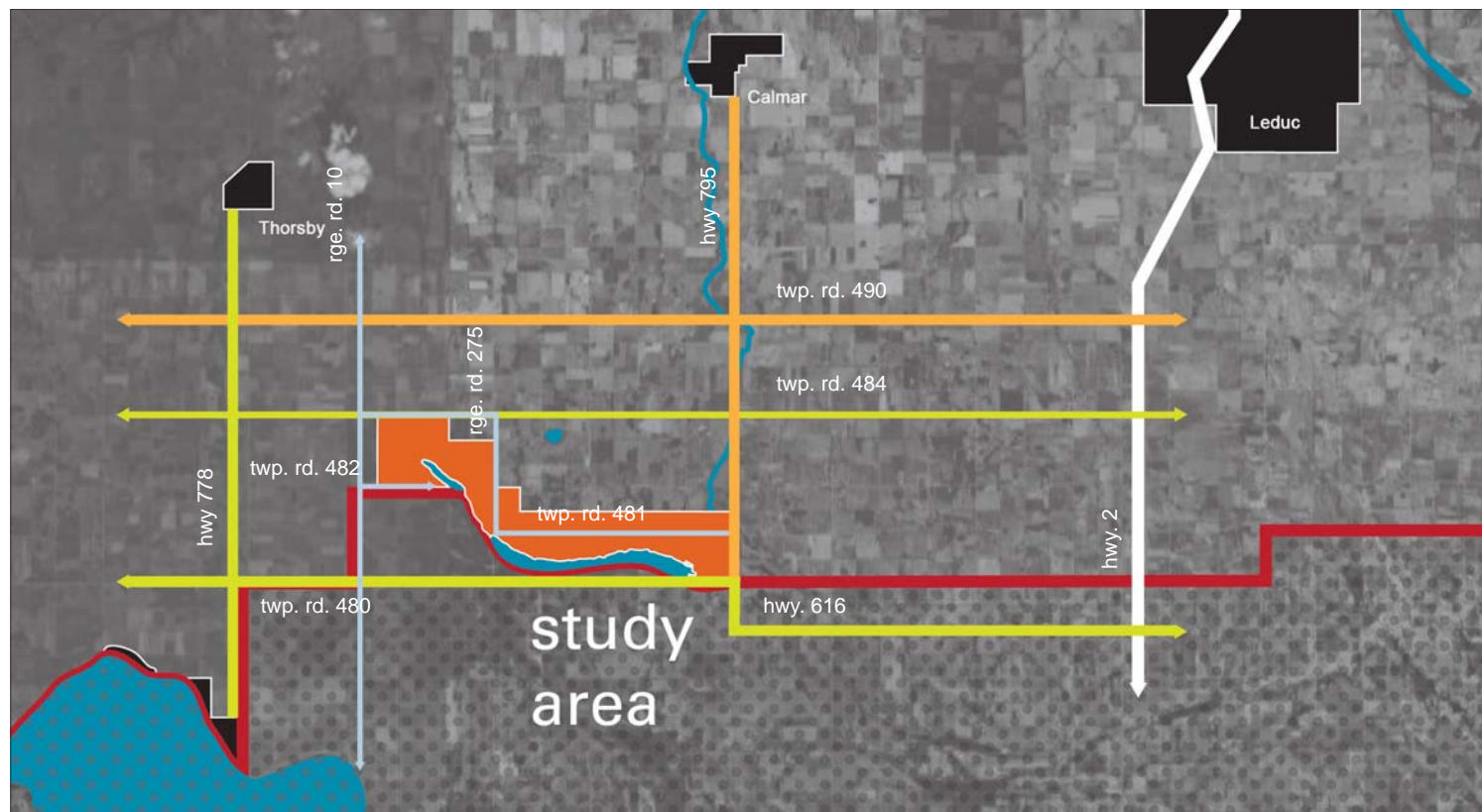
- | | |
|-----------------------------|----------------|
| 1. North Saskatchewan River | Leduc County |
| 2. Genesee | Study Area |
| 3. Pigeon Lake | Regional Parks |
| 4. Saunders Lake | |
| 5. Cawes Lake | |
| 6. Ministik Lake | |
| 7. Jubilee Park | |

Key Ideas: Opportunity to increase regional scale parks for the central County area

- There are a number of regional scale parks proposed for the County but few are proposed central to the County.

County: Connectivity - Existing Key Transportation Conditions

C3



Legend

Roadway Connections

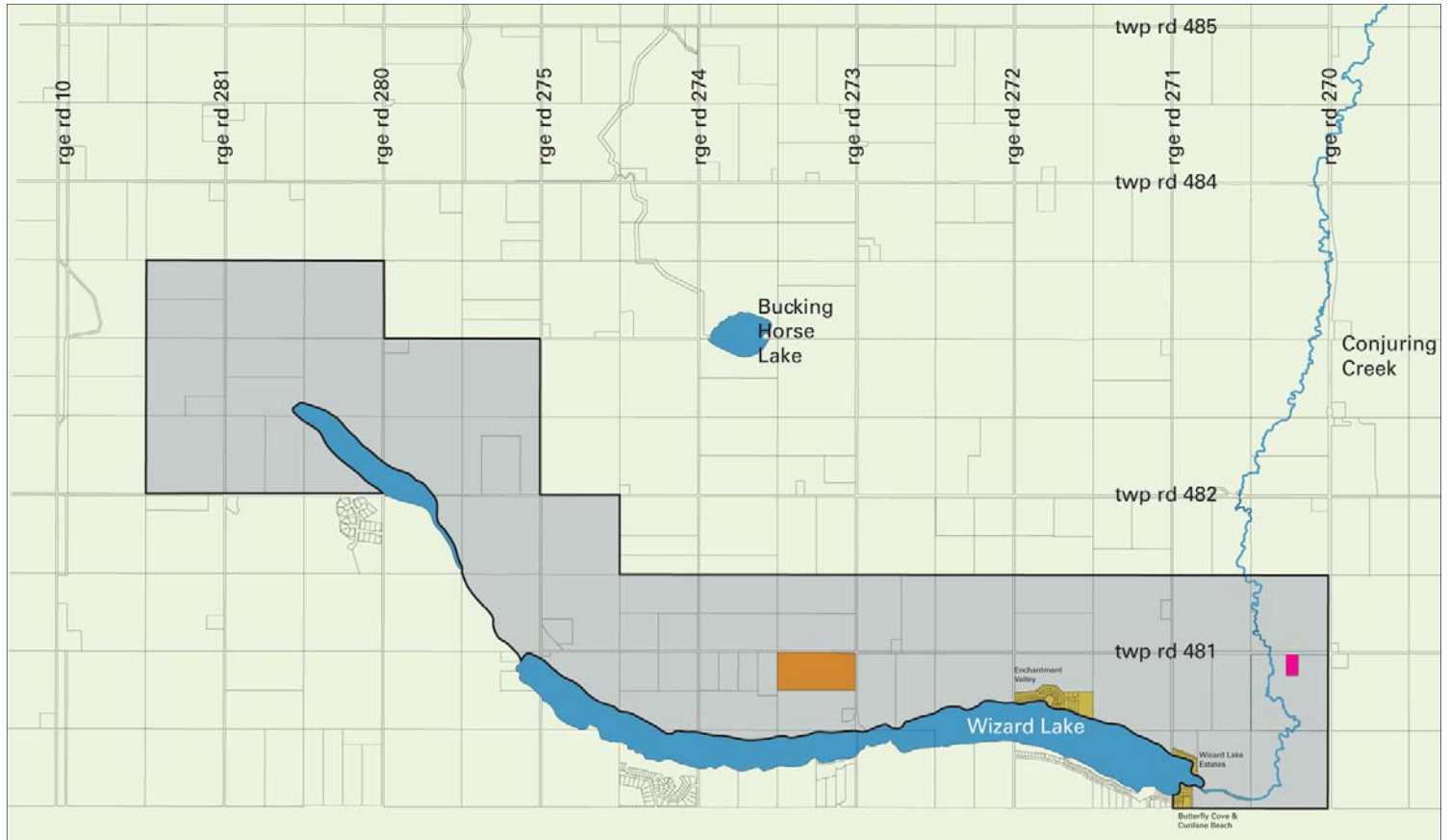


Key Ideas:

- There are eight road access locations on the north side of the lake.
- The key transportation destination is Jubilee Park, which attracts the majority of traffic to the area.
- All roads that connect to the study area are municipal with the exception of Hwy. 795.





Site Context: Policy - Land Use Designations

SC1



Source: Leduc County Land-Use Bylaw No. 7-08

Legend

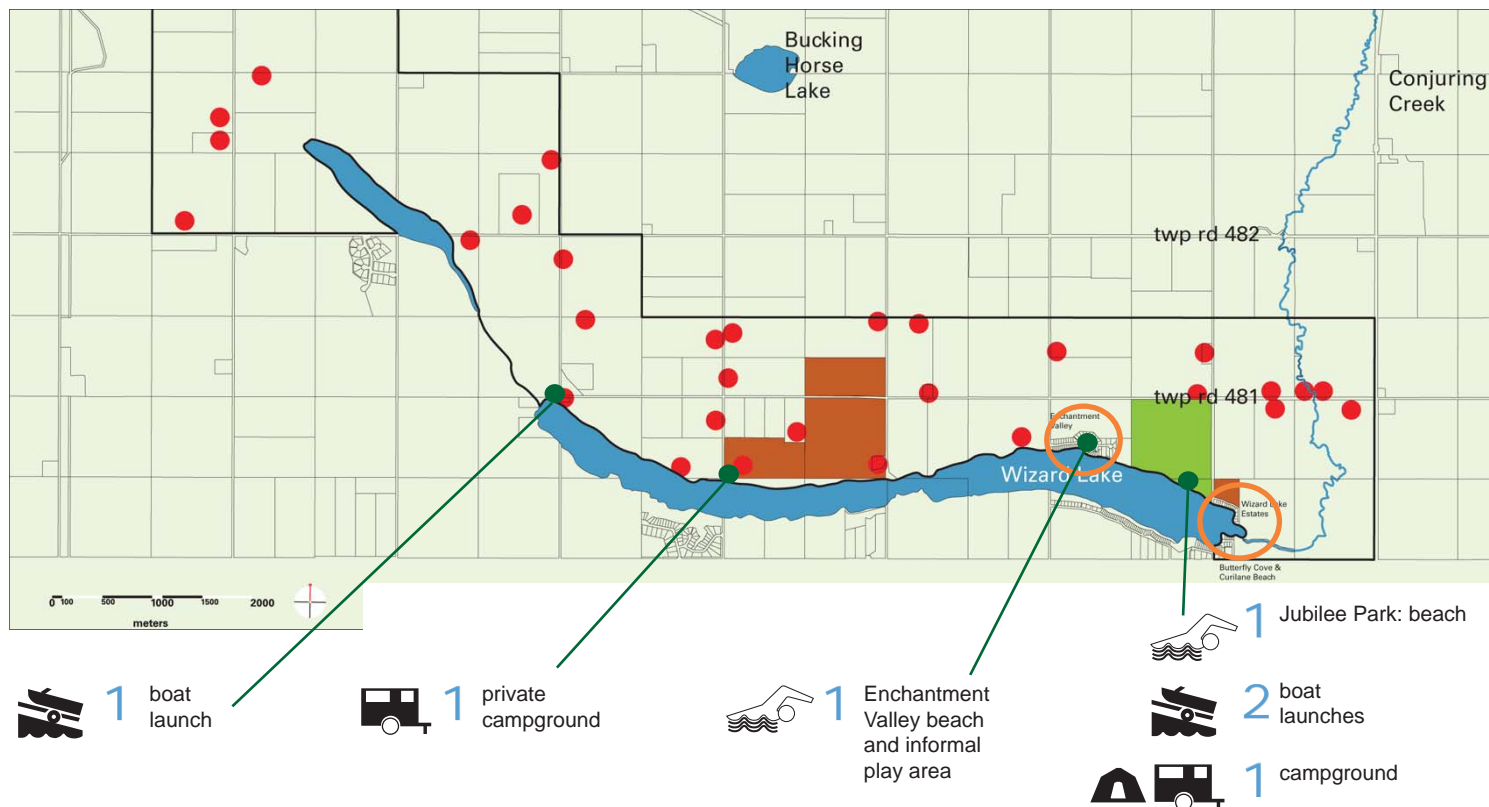
- | | |
|--|---|
|  LW- lake watershed |  DC- direct control: over the use and development of land or buildings within the County |
|  RC- county residential: uses allowed on low capability land, typical lot size = 1 ha |  RR- resort residential: shall not exceed the carrying capacity of the land or water resource; be designed so as to not limit public access to the lake; must conserve and protect natural vegetation, land forms, and wildlife areas; and provide for public parkland and open space along the immediate lakeshore. |

Key Ideas: The management of subdivision and development in the County for the benefit of present and future residents and their quality of life

- The land within the Wizard Lake ASP is generally designated in the MDP as Agricultural Area B “for the purpose of conserving and protecting extensive areas of land for agricultural uses; to encourage and accommodate a broad range of agricultural-related pursuits; and to retain and enhance the County’s agricultural community.”
- The Land Use Bylaw has specific policies to address land use in the area including the different types of residential use, confined livestock feeding operations and the specific uses requiring direct control.

Site Context: Human Settlement & Connectivity

SC2



Legend

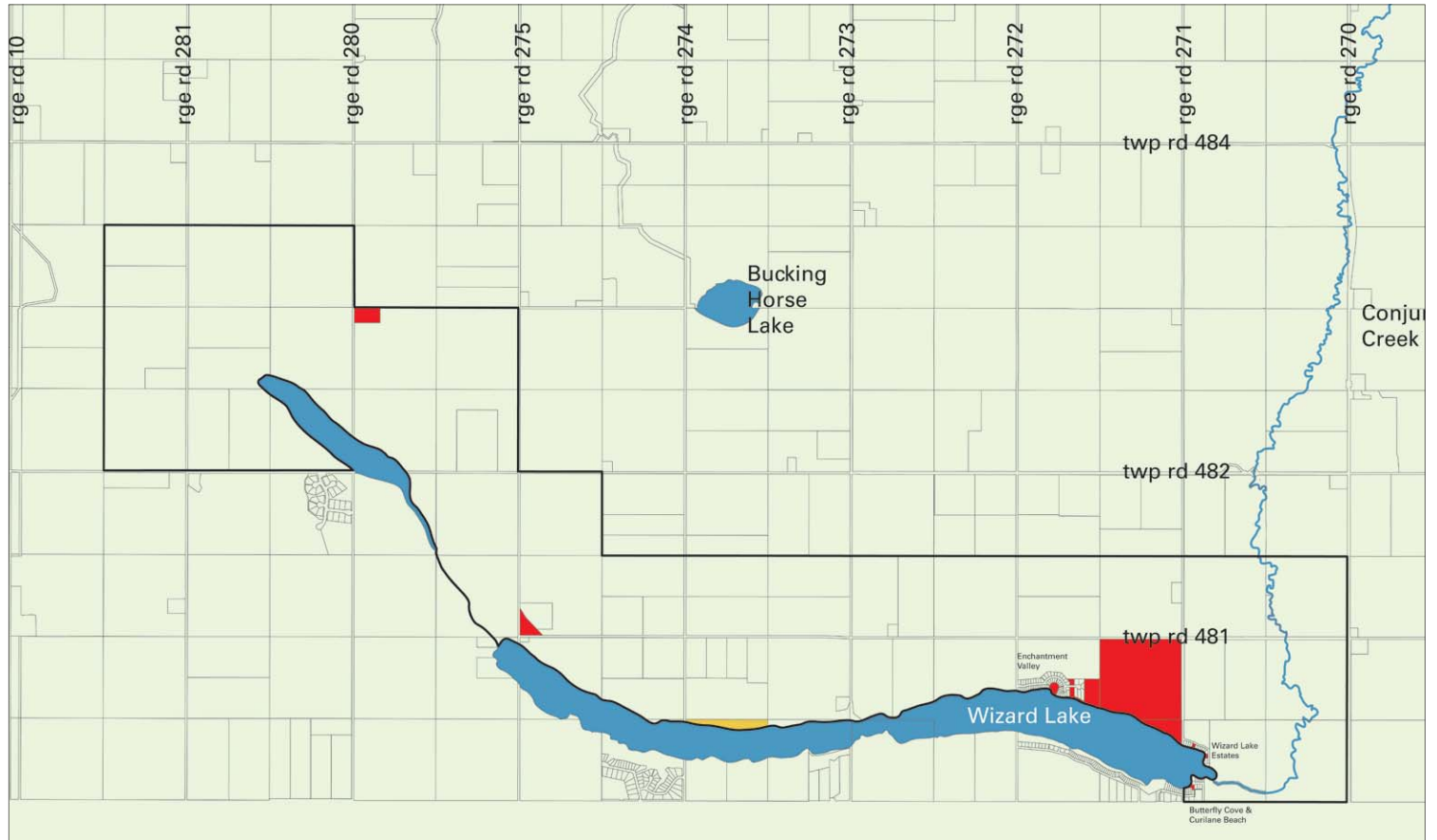
- parks
- approximate building locations
- existing subdivisions
- current subdivision applications on hold pending the Wizaro Lake ASP

Key Ideas: Existing Conditions

- The study area consists of environmentally sensitive natural forested areas and wetlands, farms and farm steads, three residential subdivisions along the lake, a regional and neighbourhood park with recreational facilities, boat launch areas, a private campground and numerous private boat docks.
- There is a County initiative to upgrade Jubilee Park and facilities.
- There are a few subdivision applications on hold for lands near the lake.
- The lake currently supports 275 residential shoreline developments; 153 in the County of Wetaskiwin (Hawken, Personal Communication) and 122 in Leduc County (Leduc County Land Ownership Map).

Site Context: Human Settlement - Public Ownership

SC3



Legend

- Leduc County
- Province of Alberta

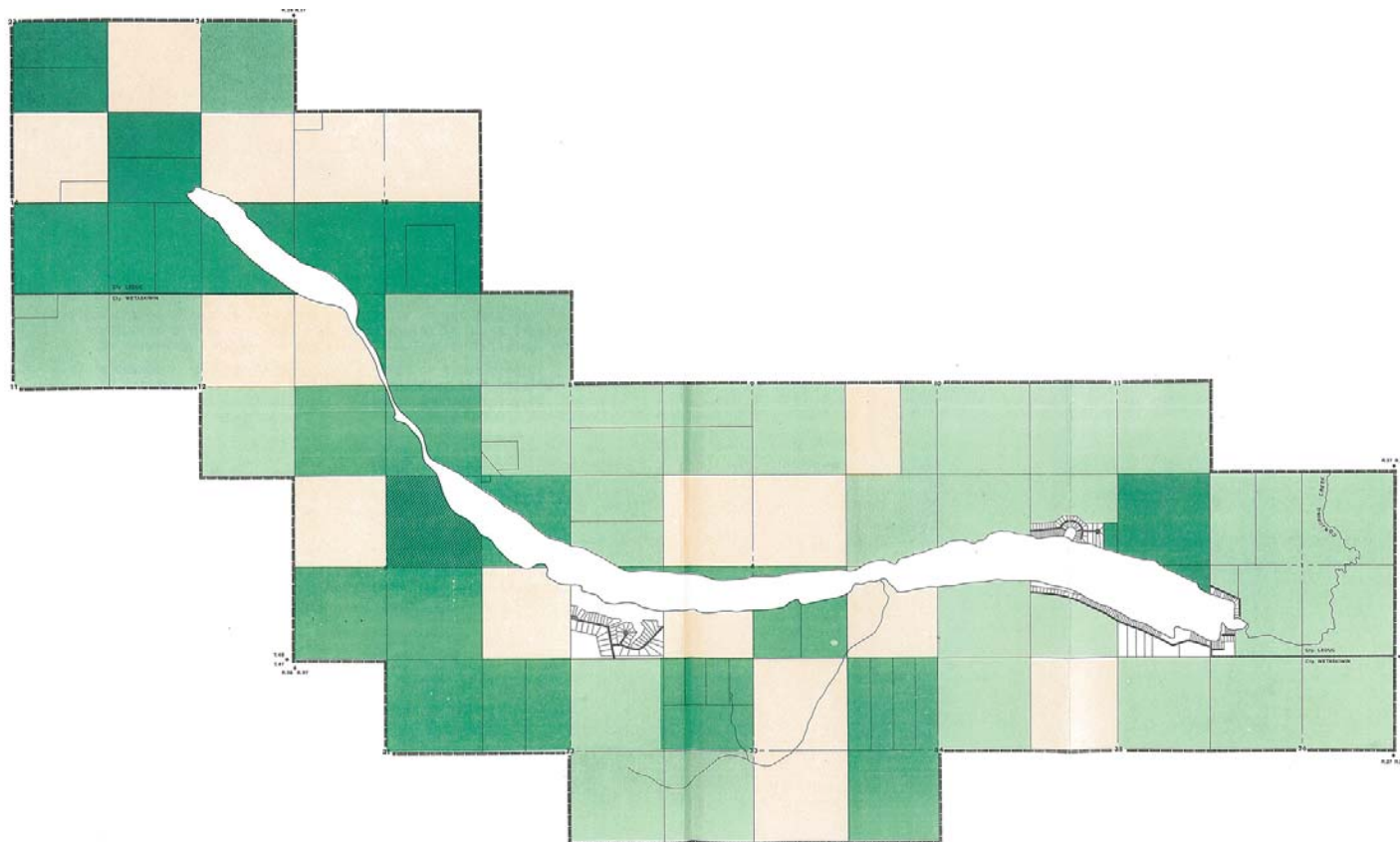
Source: Leduc County Parks & Open Spaces Master Plan

Key Ideas: to explore parks expansion, trail opportunities and open space system

- The land areas within County jurisdiction are public park sites (such as Jubilee Park and Enchantment Valley Park), open spaces along the immediate lakeshore for public access and lands designated as Municipal Reserve.
- There is an area of land along the central lakeshore that is under provincial jurisdiction. This site is identified as an old coal mine and is fairly flat land.

Site Context: Policy - Wizard Lake Area Structure Plan, 1981

SC4



Legend

Jubilee Park, Leduc County
 Potential park site, County of Westaskiwin
 Agricultural District - Farmland
 Agricultural District - Natural Enhancement
 Development Potential District

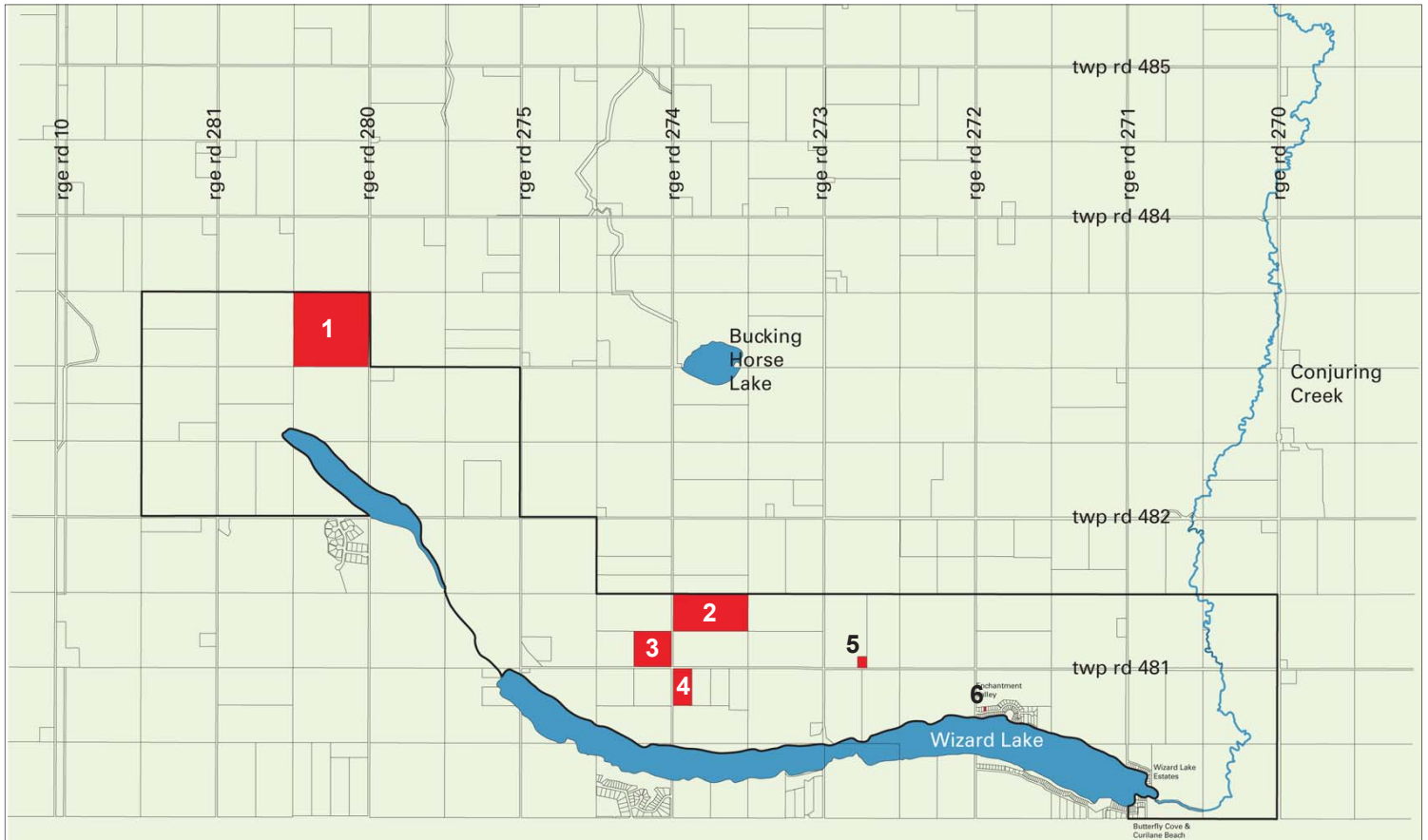


Key Ideas: land use objectives

- Development must support watershed protection.
- Prohibiting additional shoreline resort cottages and the development of existing resort cottage subdivisions must comply with the County Municipal Development Plan, the Land Use Bylaw and the Safety Codes Act.
- Designated Agricultural Districts: Farmland and Natural Enhancement - for the protection of lands for future agricultural production and to conserve the natural environment for its value, complimentary recreational uses, farming and to minimize impact.
- Development Potential District: areas having the potential for future recreational or residential development.

Site Context: Human Settlement - Existing Lot Sizes (1 of 2)

SC5a



Legend

existing lot size

Key Ideas

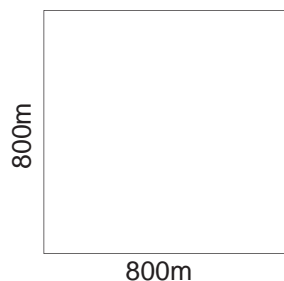
- The lot sizes present within the study area range from 64 hectares, which are primarily agricultural (AG) properties, to 0.11 hectares for the resort residential (RR) subdivisions. Seven existing lot sizes are identified and illustrated in the following schedule.

Site Context: Human Settlement - Existing Lot Sizes (2 of 2)

SC5b

Legend

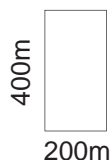
1



Lot Size

Quarter Section
6 900 000sqft
640 000m²
158 acres
64 hectares

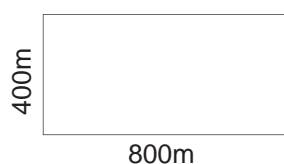
4



Lot Size

860 000sqft
80 000m²
20 acres
8 hectares

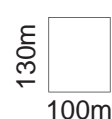
2



Lot Size

3 400 000sqft
320 000m²
80 acres
32.4 hectares

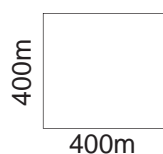
5



Lot Size

140 000sqft
13 000m²
3 acres
1.3 hectares

3



Lot Size

1 700 000sqft
160 000m²
40 acres
16 hectares

6



Lot Size

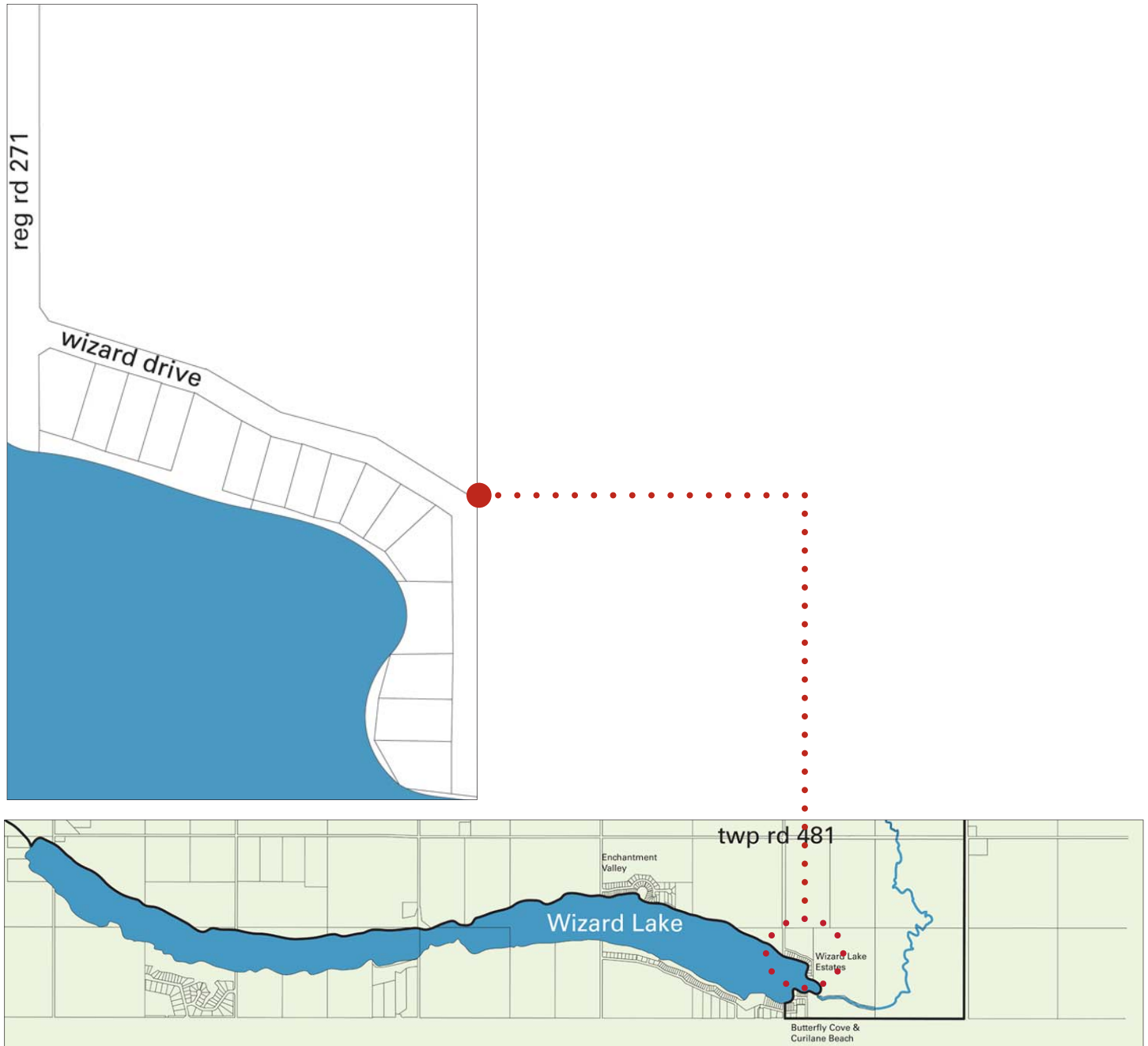
Typical Resort Residential
(RR) subdivisions
12 000sqft
1125m²
0.3 acres
0.1 hectares

Key Ideas

- Lot sizes found within the study area.

Site Context: Human Settlement - Wizard Lake Estates

SC6

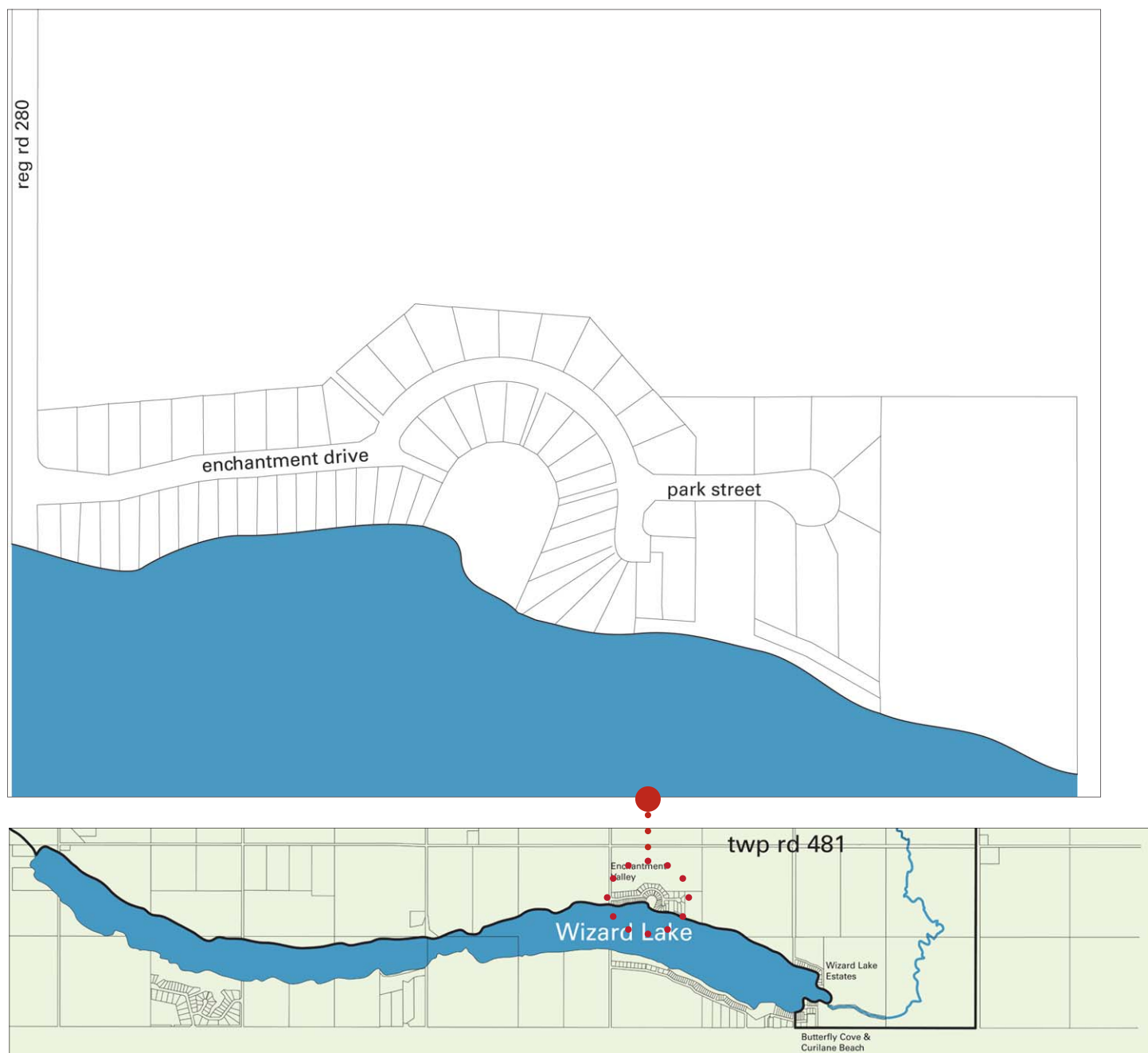


Key Ideas

- This existing residential development contains 15 lots and provides access to the lake.

Site Context: Human Settlement - Enchantment Valley

SC7



Key Ideas

- Enchantment Valley provides residential uses, a neighbourhood park and public pedestrian access to the lake. Although publicly accessible, pedestrian access is geared toward use by the surrounding residents as a means of minimizing the impact on the shoreline.
- There are 63 properties within this residential development.

Site Context: Human Settlement - Butterf y Cove & Curilane Beach

SC8

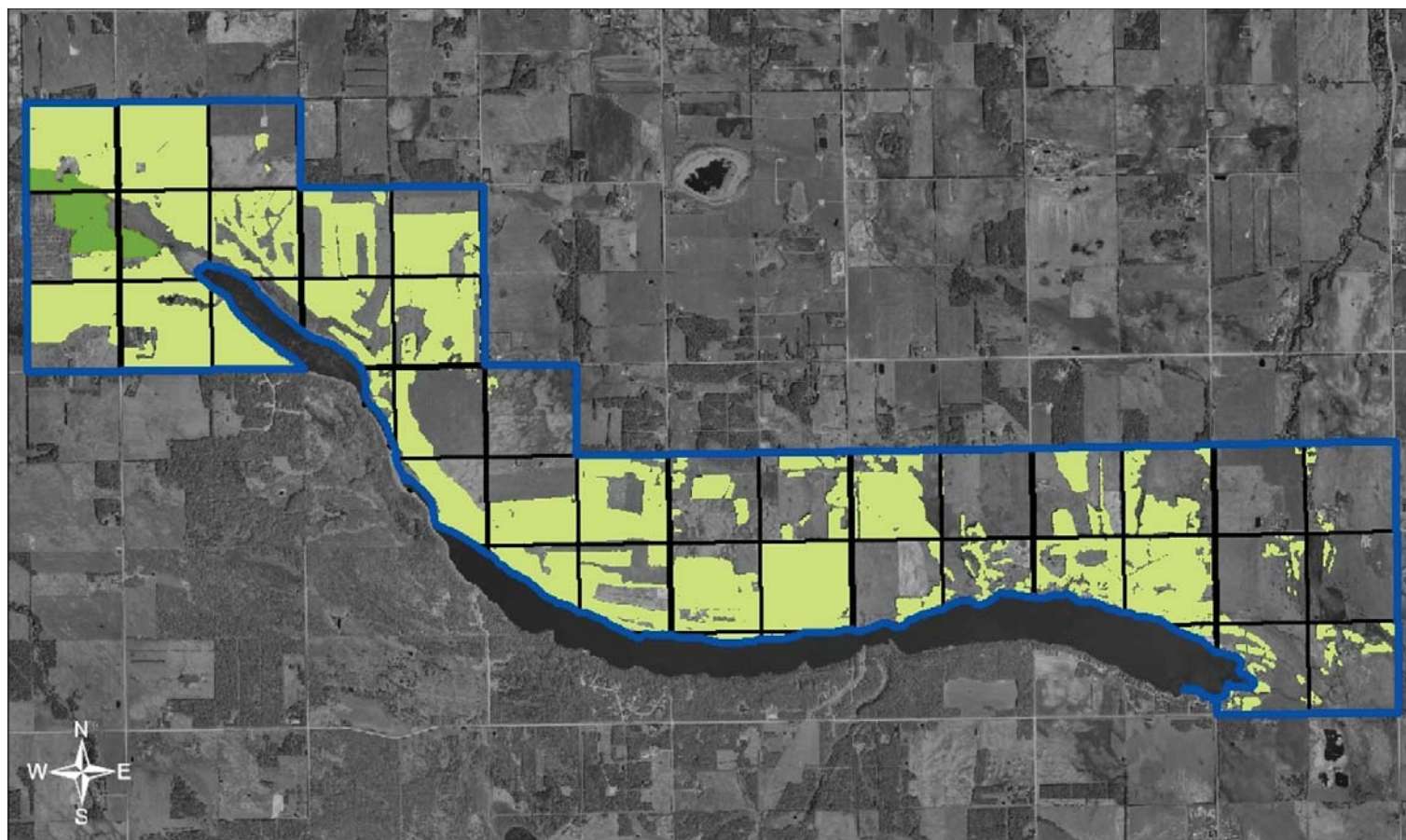


Key Ideas

- This existing residential development contains 16 lots and provides public pedestrian access to the lake.

Site Context: Environment - Forested Areas

SC9



Legend



Key Ideas

- Wizard Lake is located within the Dry Mixedwood Natural Subregion of Alberta—this zone is identified by undulating plains, aspen-dominated forests and fens and is the warmest Boreal Natural Subregion. A key feature of this subregion is aspen stands mixed with scattered white spruce interspersed with fens.
- A large portion of the study area is covered by intact forested areas that range from young to mature forests including deciduous and coniferous stands. The deciduous stands are dominated by trembling aspen and balsam poplar, with willow being the primary shrub found in low lying or wetland areas. Other common understory species included honeysuckle, beaked hazelnut, Saskatoon, wild sarsaparilla and black spruce tamarack found in the peatland areas.
- Although still forested, a number of properties in the eastern portion of the ASP have been heavily grazed and most of the natural ground vegetation has been impacted.
- Maintaining native vegetation is an essential part of ensuring the high ecological integrity of Wizard Lake.
- Land use surrounding Wizard Lake is primarily agricultural, which has resulted in the clearing of native vegetation for cultivation and pastureland.
- The remaining forested areas are intact mixedwood stands with relatively low abundance of invasive species.
- Large areas along the north shore, and within and north of Jubilee Park, consist of large intact deciduous forests.

Site Context: Environment - Forested Areas

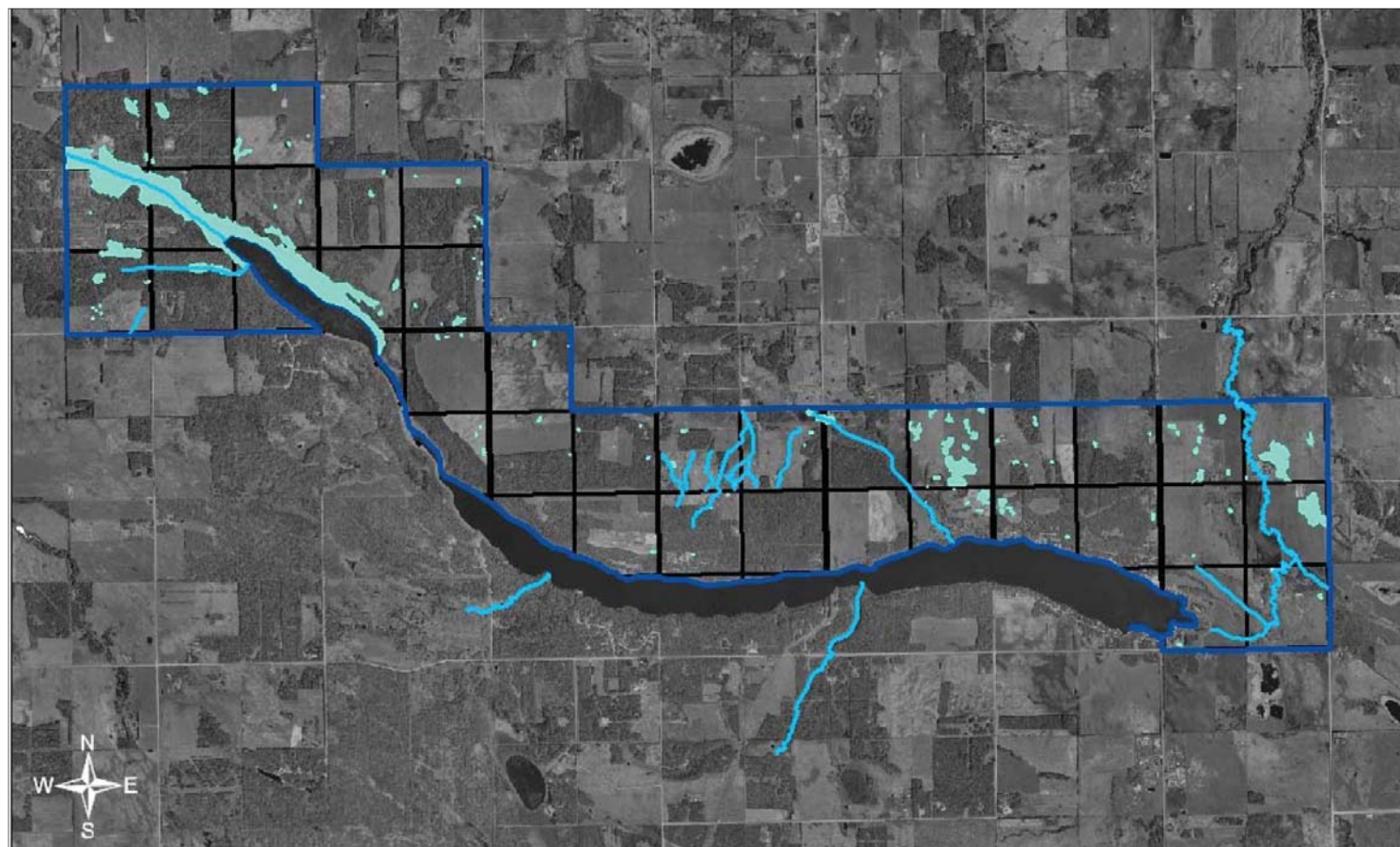
SC9

Key Ideas: (continued)

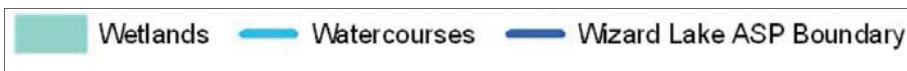
- Connectivity between core habitat areas is an important landscape feature, as it facilitates movement of organisms between patches, thereby increasing species richness and supporting biodiversity by promoting the spread of native species (Brudvig et al. 2009). There is presently good connectivity of wildlife habitat along most of the north shore of the lake and connections exist to large forest patches located on the south side of the lake in Wetaskawin County.
- Moving north from the shore of Wizard Lake, much of the land has been converted to agriculture, and few connections exist to forested habitat outside of the Wizard Lake Study Area.
- The natural intact forests and vegetation are an essential part of maintaining the ecological integrity of Wizard Lake for a number of reasons (i.e. rare plants, water quality, connectivity) and the large forested areas may act as refuge habitat for a number of species that may otherwise not inhabit the region, such as moose, weasels and forest song-birds.

Site Context: Environment - Hydrological Features

SC10



Legend



Key Ideas

- Wizard Lake serves as a water catchment basin for approximately 14 sections of surrounding land and is primarily spring or groundwater fed relying on run-off from adjacent lands.
- Air photo interpretation identified 110 potential wetlands above as well as eight natural water courses and one un-natural or modified watercourse (trench).
- The presence of these wetlands must be considered as hydrological constraints to development, and must be avoided.
- Wizard Lake is highly dependent on indirect run-off; therefore, these watercourses play a significant role in maintaining the water levels of the lake.
- Wildlife: there are six species identified—four avian and two reptile—that are believed to have a historical presence in the proximity of Wizard Lake. These are: the Red-Necked Grebe, Great Horned Owl, Northern Saw-Whet Owl, Osprey, Canadian Toad and the Red-Sided Garter Snake. Field investigations confirmed that habitats exists within the study area for all of these species and three of the six species were detected during surveys, including the Red-Necked Grebe, Great Horned Owl and Osprey. In addition, of the 54 provincially ranked vertebrate species having the potential to occur in the project area, eleven were detected during field investigation—all of which are ranked as “sensitive.” The study area is considered to contain many of the critical habitat elements that would support the presence of all of the 54 species.

Site Context: Environment - Hydrological Features

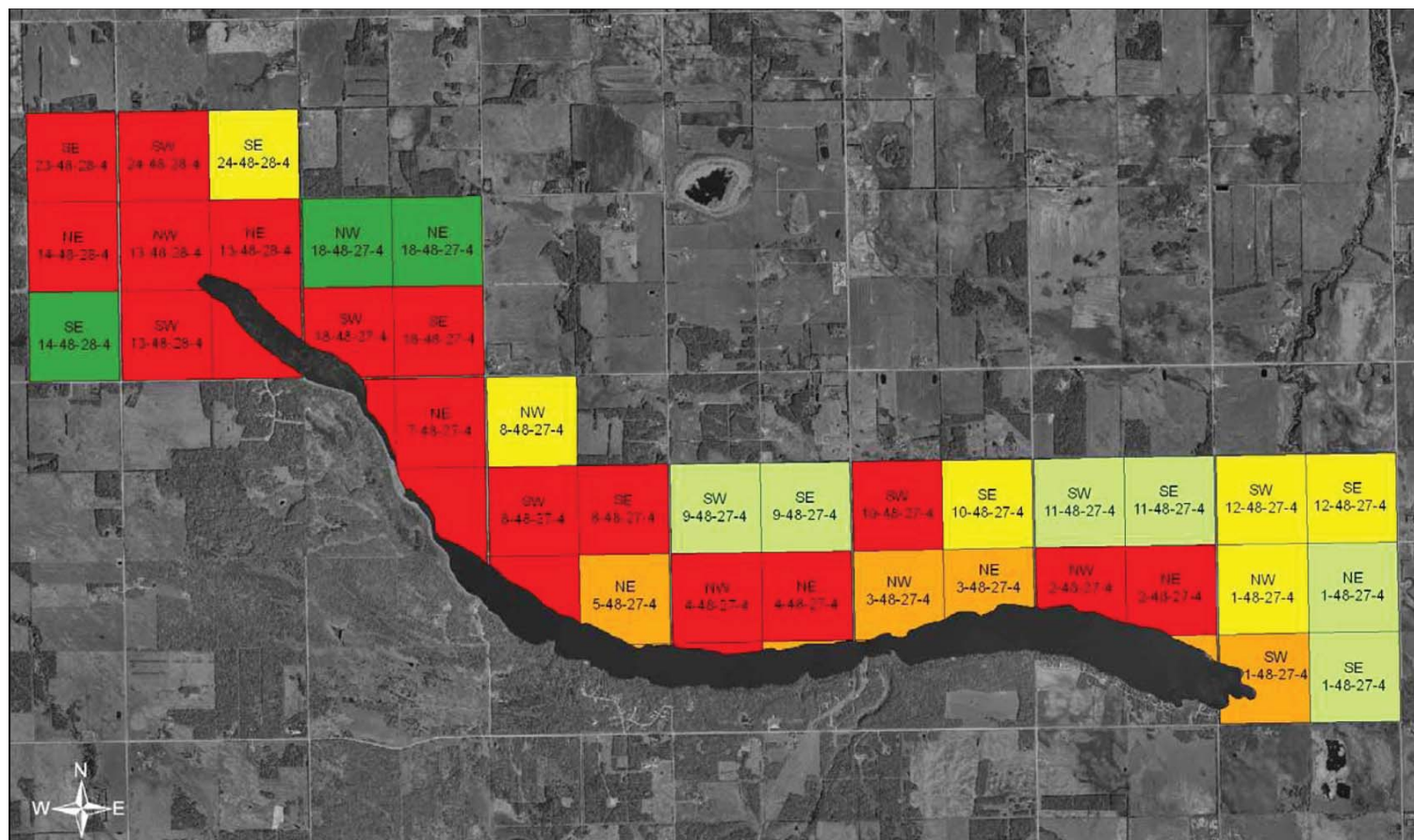
SC10

Key Ideas: (continued)

- **Rare Plants:** There are five basic habitats that could occur within the study area that are likely areas for rare plants. The most likely place being in the northwest corner—identified as Black Spruce Bog. The five basic habitats are: dry, sandy or rocky areas and grasslands; lakes, ponds, and streams; bogs, fens and calcareous areas; wet meadows and moist forests; and alkaline and saline environments. These areas are all considered high conservation priority.
- **Fish:** concerns include vegetation loss along the shorelines due to erosion and the possible outflow of future storm water management facilities.
- **Field assessment** revealed that many of these watercourses were highly ephemeral in nature. Given that Wizard Lake is highly dependent on indirect runoff (Mitchell & Prepas 1990), these ephemeral watercourses likely play a significant role in maintaining water levels in Wizard Lake.

Site Context: Environment - Priority Conservation Areas

SC11



Legend

High Ecological Value

- High Conservation Priority
- Stewardship Conservation Priority

Moderate Ecological Value

- High Conservation Priority
- Stewardship Conservation Priority

Stewardship Ecological Value

- Stewardship Conservation Priority

Key Ideas

The ecological value of each quarter section within the study area was ranked based on a series of ecological value assessment criteria (see following page). Each quarter section was ranked as having high, moderate or stewardship ecological value based on the environmental values they contained.

For each ecological value category (high, moderate, stewardship), a “conservation priority” (high or stewardship) was assigned to each quarter section based on the following criteria:

- High Ecological Value:
 - i. High Conservation Priority: quarter sections with equal to 50 per cent native vegetation in a relatively intact state
 - ii. Stewardship Conservation Priority: quarter sections that border the shore of Wizard Lake with less than 50 per cent native vegetation that are high priority for restoration due to their importance for maintenance of water quality and wildlife habitat.

Site Context: Environment - Priority Conservation Areas

SC11

Key Ideas: (continued)

- Moderate Ecological Value:
 - i. High Conservation Priority: quarter sections with 25 to 50 per cent native vegetation in a relatively intact state
 - ii. Stewardship Conservation Priority: quarter sections with 25 to 50 per cent native vegetation in a relatively intact state that are high priority for restoration due to their hydrologic sensitivity (i.e. wetlands and streams)
- Stewardship Ecological Value:
 - i. Stewardship Conservation Priority: quarter sections containing less than 25 per cent native vegetation that provide an opportunity to enhance the natural environment in conjunction with potential development. In particular, the restoration of riparian areas should be considered in areas identified as stewardship priority.

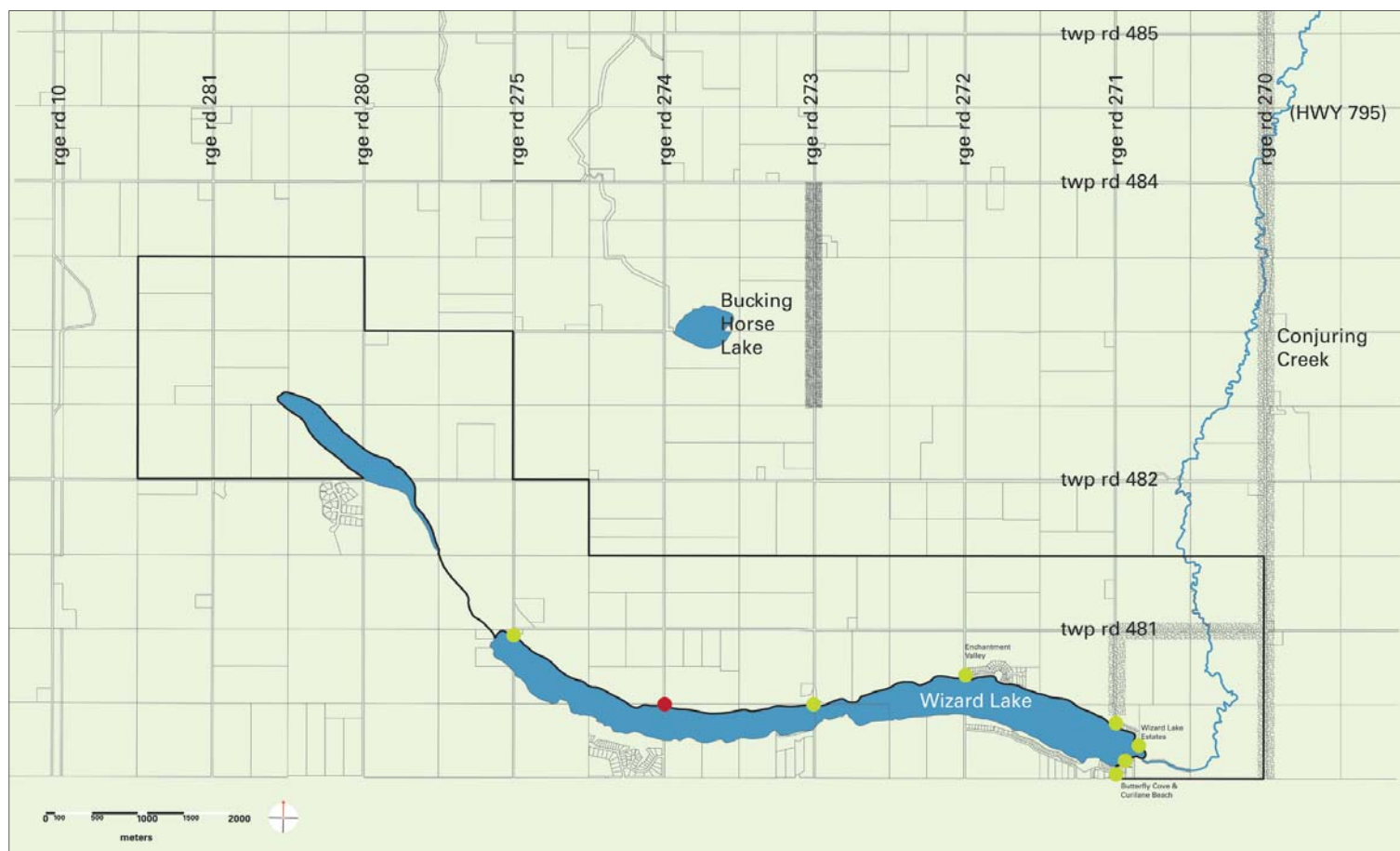
Ecological Value Assessment of the Wizard Lake Area's Natural Features

Using information collected from the desktop review and field reconnaissance, an ecological value assessment was conducted to evaluate the ecological importance of each quarter section in the project area. Environmental values that were considered in the assessment included:





1. Hydrological sensitivity: areas that are hydrologically sensitive due to their role(s) in surface or groundwater flows essential to the hydrology of the Wizard Lake watershed.
2. Riparian areas: areas associated with water bodies that provide important wildlife habitat, and connectivity among habitat as well as protecting water quality.
3. Lakeshore buffer: riparian areas around Wizard Lake that provide important wildlife habitat and connectivity among habitats, as well as protecting water quality.
4. Native vegetation: areas with intact native vegetation identified from air photo interpretation and field reconnaissance, which provide habitat for wildlife and rare plants. Categories include; less than 25 per cent, 25 to 50 per cent, and greater than 50 per cent vegetation coverage by quarter section.
5. Connectivity: areas that provide important linkages between habitats for movement of wildlife, including corridors of native vegetation (i.e. riparian areas) or patches of native vegetation which may act as stepping stones between habitats.
6. Capability for supporting focal species: evaluation of the capacity of each quarter section to support focal species guilds that have specific habitat requirements (i.e. dead wood, canopy cover) or specific landscape feature requirements (i.e. patch size, connectivity) that may make them vulnerable to development. Focal species guilds that were considered include:
 - Amphibians: use both wetland and upland habitats and require connectivity between these habitats. They indicate good water quality and habitat quality due to their restricted habitat requirements.
 - Wetland birds: use lakeshore and wetlands habitats for nesting and are dependent on surrounding upland habitat or emergent vegetation for nesting.
 - Forest songbirds: depend on complex forest structure (i.e. large trees, snags, CWD, shrub cover) to meet life requisites for breeding, foraging and security cover.
 - Forest-dwelling small mammals: rely on complex habitat structure (i.e. snags, downed wood, shrub cover) to meet life history requirements.
 - Raptors (birds of prey): require large attribute forest structures for nesting such as large trees and snags. Some raptors may require nearby open areas for foraging including agricultural fields.
 - Rare plants: have variable microhabitat requirements, but in general are dependent on old-growth forest with complex forest structure or wetland habitats
 - Fish: require good water quality and appropriate spawning habitats. May require emergent vegetation or rocky substrates along the lakeshore or overhanging vegetation.
7. Restoration: identifies areas where there are opportunities to restore degraded habitat thereby increasing the ecological significance or landscape level value of natural features.

Site Context: Connectivity - Roads & Access Points

SC12



Legend

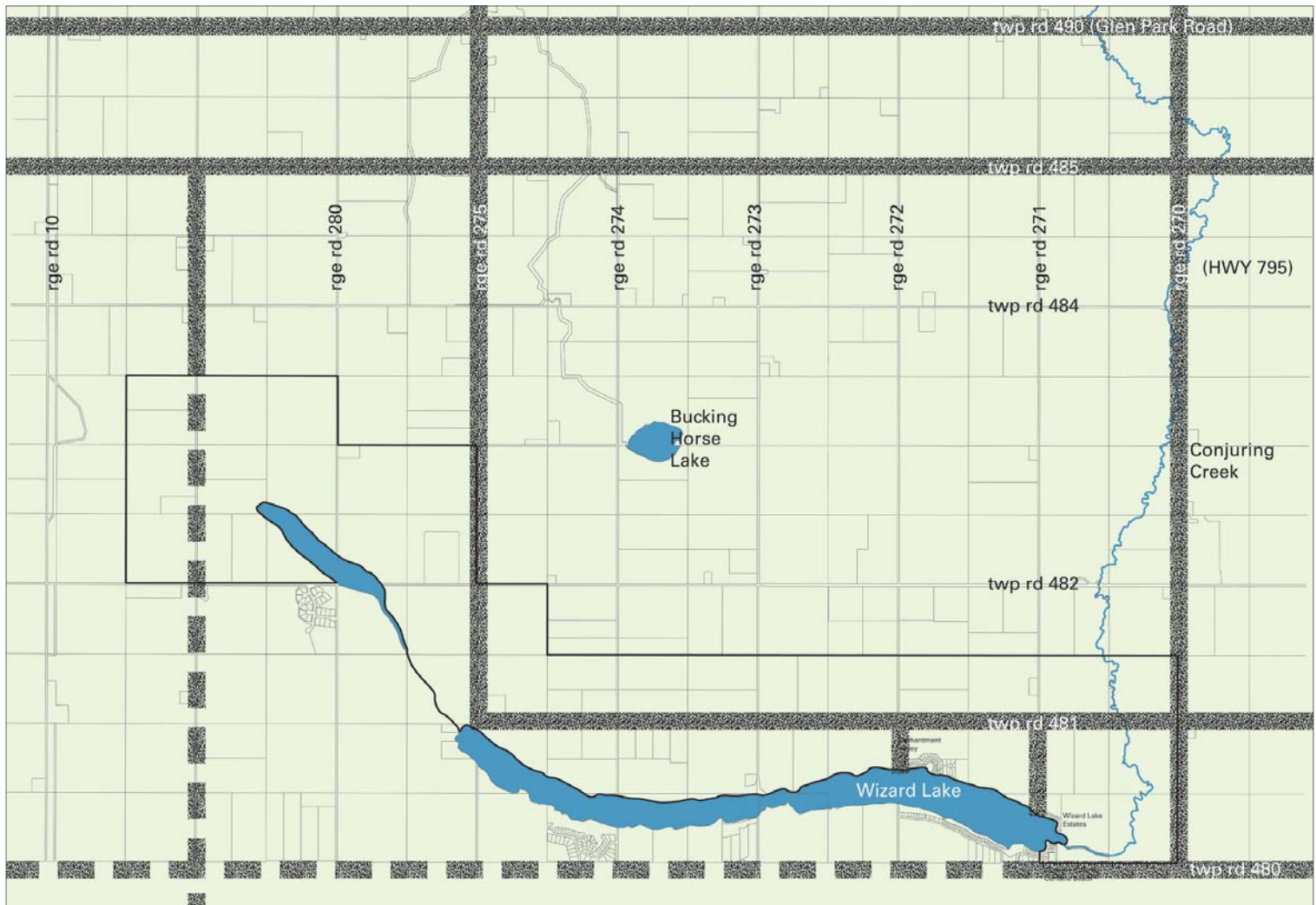
-  paved roads
-  high volume of truck activity
-  lake access point - publicly accessible only by foot and geared primarily for use by surrounding residents
-  lake access point - private

Key Ideas: Existing Transportation Conditions

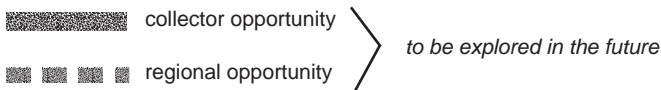
- The only paved roads that allow access to Jubilee Park are Hwy. 795 and the road sections on Township Road 481 and on Range Road 271.
- Two-way daily traffic volumes on Highway 795 and on Highway 778 are in the order of 1,100 vehicles per day and of 2,000 vehicles per day, respectively.
- The percentage of heavy vehicles using Highway 795 in the proximity of the Lake is approximately 15 per cent of the total traffic.
- The contribution of the recreational vehicles on the total traffic is over 7 per cent.
- A one mile section of Range Road 273, north of Township Road 482, has significant truck traffic activity associated with the oil and gas industry.
- Most of the access points to the lake are public but are geared to primarily resident use within the existing development areas. Increased public access to most of these points is not encouraged in order to minimize further impact to existing shoreline degradation.

Site Context: Connectivity - Opportunities & Constraints

SC13



Legend

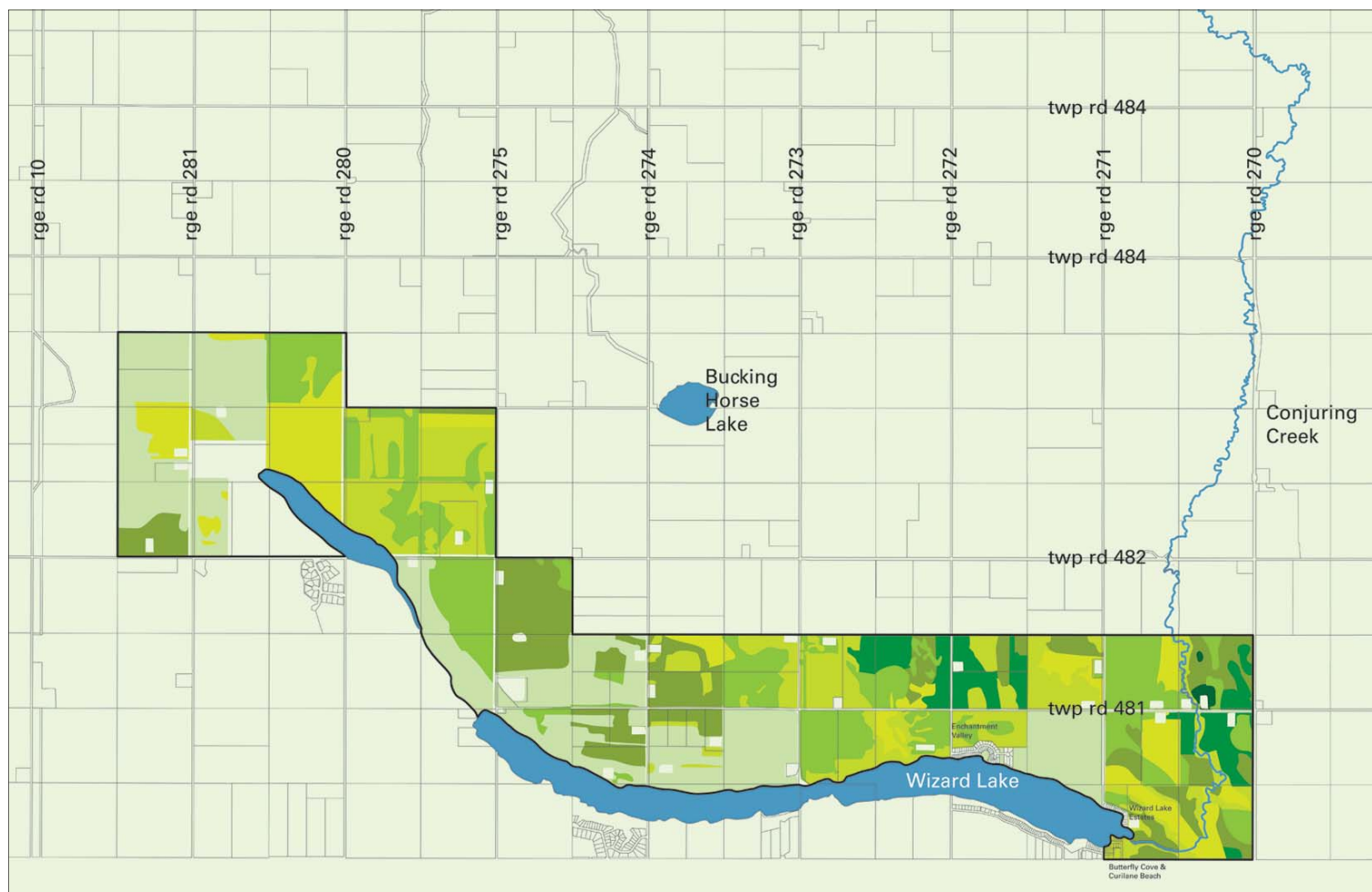


Key Ideas

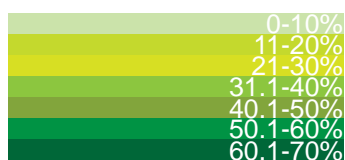
- Significant contributions of recreational vehicles are expected on the studied road network, which could suggest the need for pavement of some key road sections.
- The trigger point for widening a main circulating road within the studied area—from 2 to 4 travel lanes—is estimated to be 12,500 vehicles per day—equivalent to 3,750 recreation-oriented residential units with RV users. This is the maximum development intensity that could be accommodated on a two-lane paved road with a twelve meter road width, prior to transportation improvements
- High traffic demands associated with Pigeon Lake could attract traffic volumes to the Wizard Lake study area.

Site Context: Agriculture - Farmland Assessment Rating (FAR)

SC14



Legend

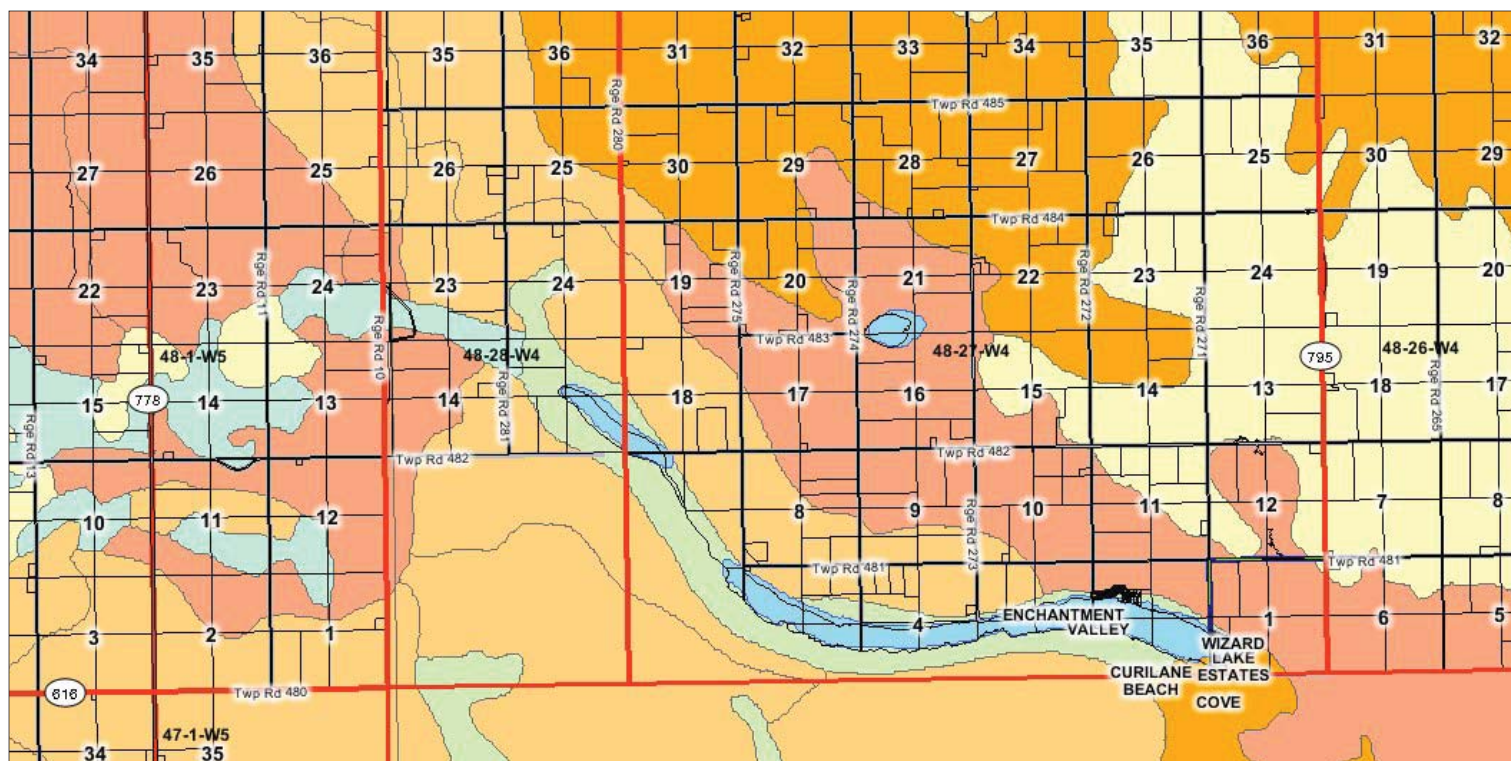


Key Ideas

- Leduc County considers high capability agricultural land to be cultivated and/or improved land with farmland assessment rating of 41 per cent or higher.







Site Context: Agriculture - Canada Land Inventory (CLI) Soils Ratings

SC15



*note - desktop analysis

Legend

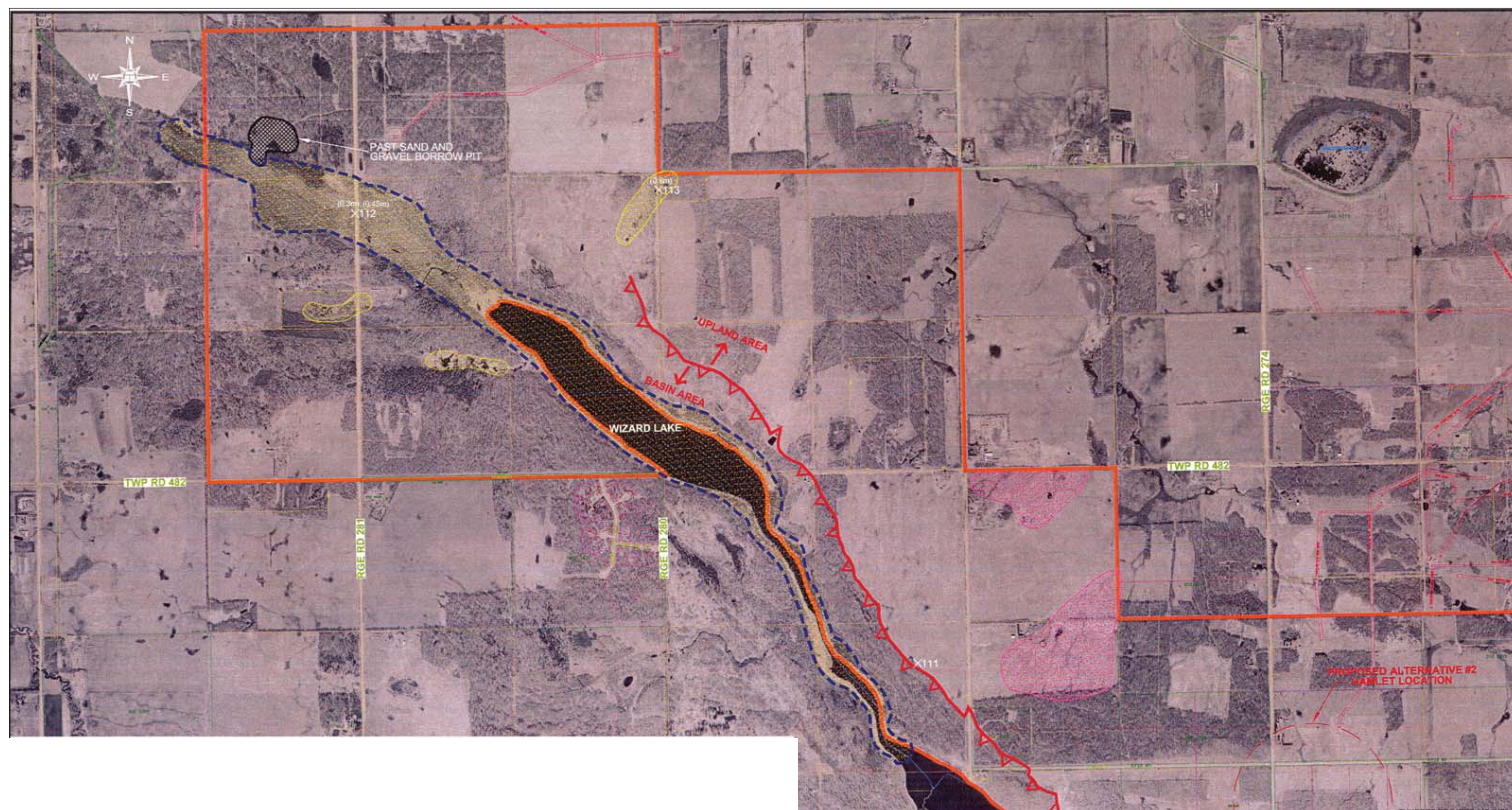
	Class 1: Prime Agricultural Land - no significant limitations in use for crops		Class 3: moderately severe limitations that restrict the range of crops or require special conservation practices		Class 5: very severe limitations that restrict their capability to producing perennial forage crops, and improvement practices are feasible
	Class 2: moderate limitations that restrict the range of crops or require moderate conservation practices		Class 4: severe limitations that restrict the range of crops or require special conservation practices, or both		Class 6: capable only of producing perennial forage crops, and improvement practices are not feasible

Key Ideas

- The predominant soil condition within the area has an average class rating of 3, mainly west and central.
- The eastern portion of the area reflects soils mainly within a class 2 category, with a small portion within a class 1 category.
- There are areas of class 5 and 6 soils around the lake edge and marsh areas.
- The soil conditions within the area consist of clay till underlain by bedrock, which is comprised of shale, sandstone and occasional coal layers.
- Organics (peat, muskeg and/or organic silt and clay) are apparent within the area in the vicinity of wetlands, sloughs and adjacent to water bodies.
- Leduc County considers high capability agricultural land to be wooded and/or improved land with a Canadian Land Inventory rating of Class 1, 2 and 3.

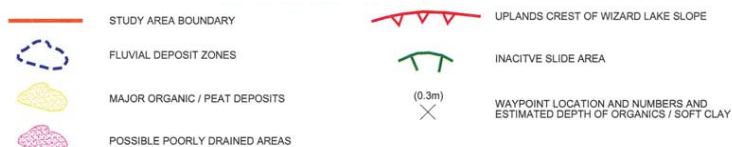
Site Context: Environment - Geotechnical Existing Conditions & Constraints (1 of 2)

SC16a



Legend

*note - desktop analysis

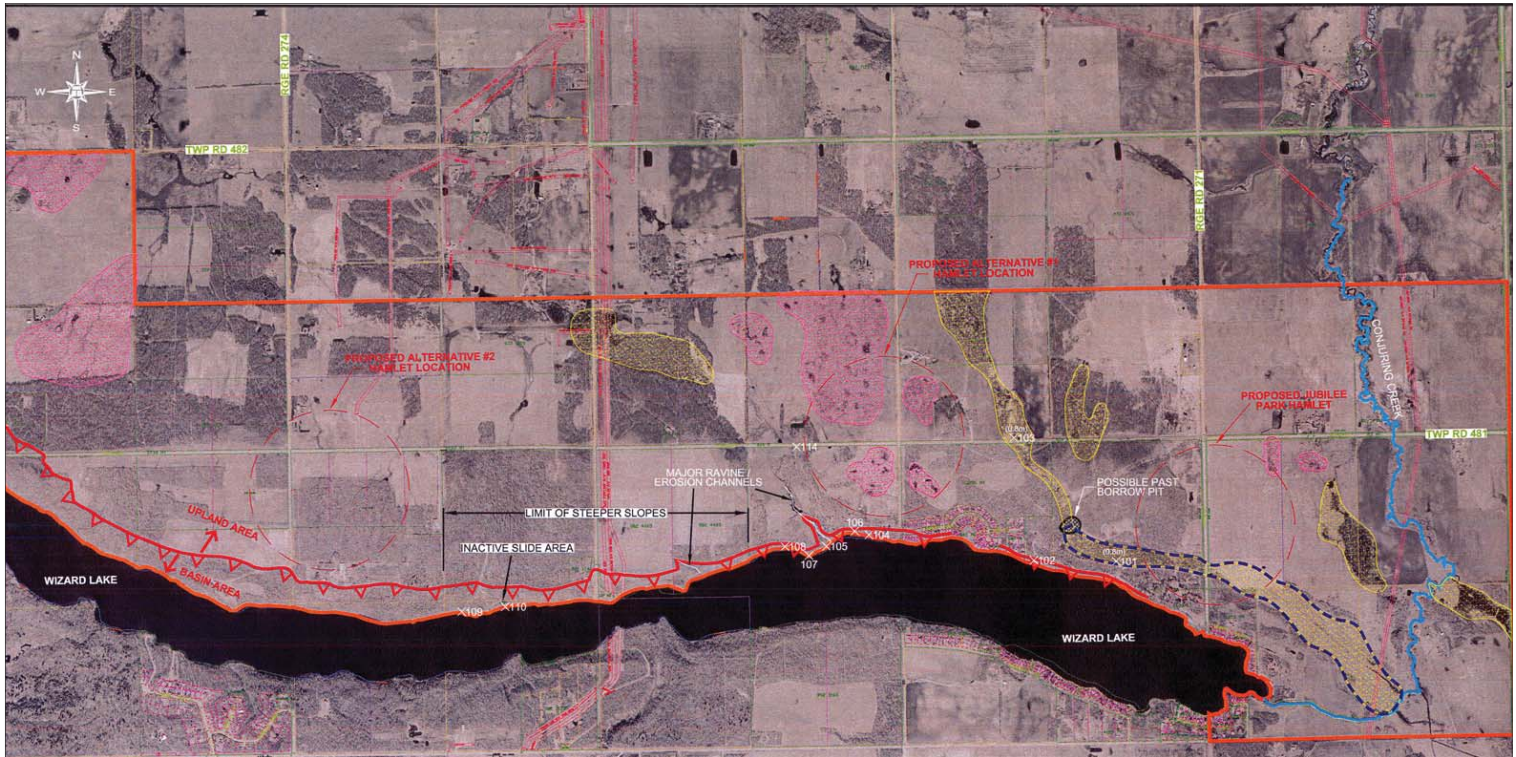


Key Ideas

- The use of septic fields will need to be assessed on a case-by-case basis.
- Vertical separation from groundwater may be an issue in some areas.
- Two zones of fluvial deposits (predominantly sands and silts with some gravels) have been identified.

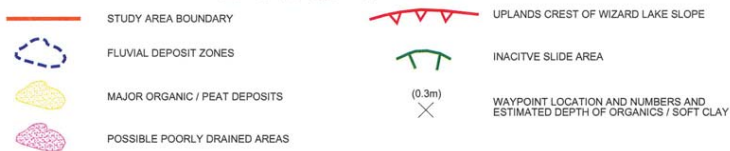
Site Context: Environment - Geotechnical Existing Conditions & Constraints (2 of 2)

SC16b



Legend

*note - desktop analysis



Key Ideas

- Top of bank set-back assessments should be made a requirement as part of any development application for lands adjacent to the lake.
- An erosion/drainage channel has been identified entering the lake from the southeastern side of NW 1/4 3-48-27-4. This feature will also be viewed during the site reconnaissance to determine its potential for further erosion (and undesirable siltation into the lake) and assessment of slope stability.
- Two large borrow pits (possibly gravel) were also identified.
- Steeper slopes have been located near the centre of the site and will be further assessed.

Site Context: Settlement - Geotechnical Existing Conditions & Constraints

SC17



Legend

*note - desktop analysis

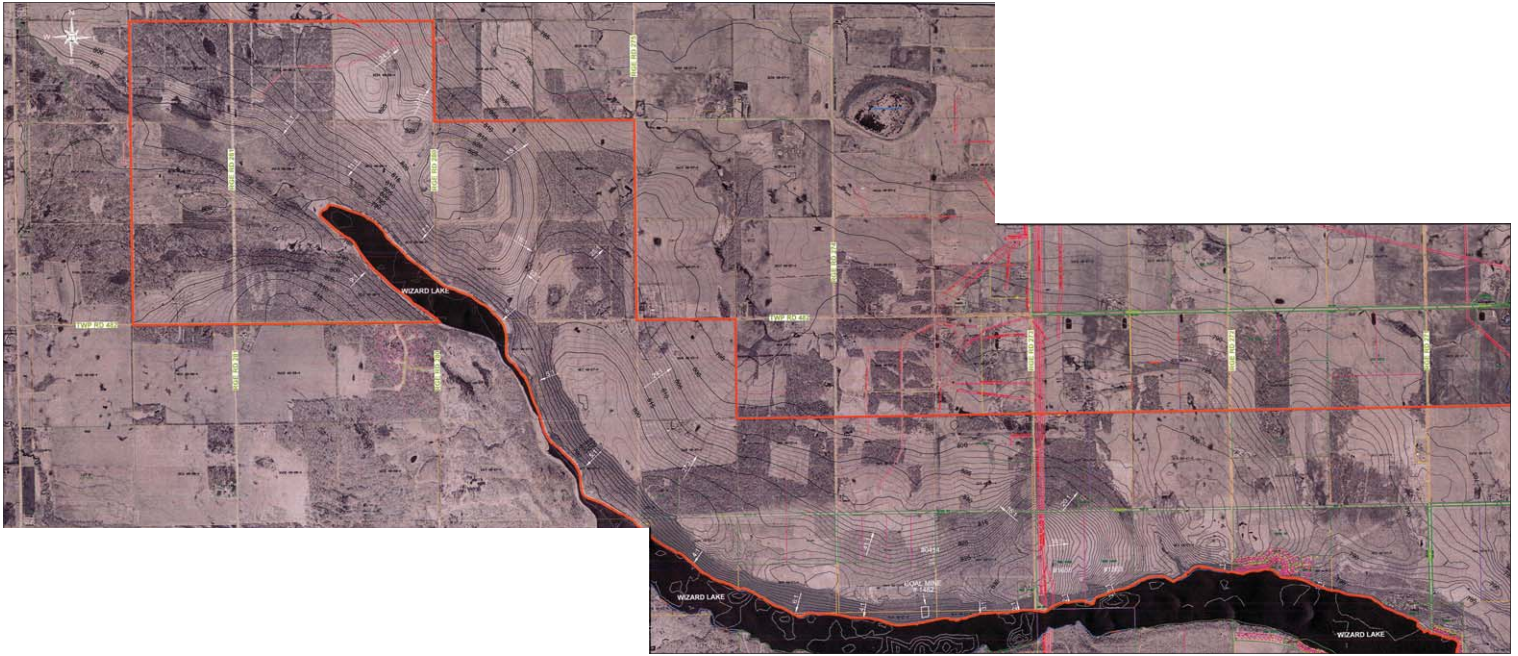
- Study Boundary
- Approximate Well Location & Number
- A Section Location
- ⊙ Other Water Wells
- ⊙ Other Wells

Key Ideas

- A total of 172 wells were identified in the area.
- The average water well depth in the area is 30m.
- The majority of wells found in the area are completed in the surficial bedrock of the Paskapoo Formation.
- Areas that are, in general, considered not suitable for development from a geotechnical perspective include zones within the Wizard Lake Basin or around Conjuring Creek within the 100 year flood level and on or near the slopes between the upland crest and lakeshore.

Site Context: Environment - Contours & Drainage Patterns

SC18



Legend

*note - desktop analysis

- Study Area Boundary
- 1m Contour Interval
- Slope Angle & Direction (H:V)

Key Ideas

- The major topographic feature of Wizard Lake is the north slope, which descends down in a south to southwest direction across the study area.
- Surface drainage within the area flows both northwards and towards Wizard Lake.
- Wizard Lake drains southeasterly into Conjuring Creek on the east end of the ASP area. Conjuring Creek, in turn, drains towards the North Saskatchewan River, located approximately 26 km to the north.
- The ground water table may be relatively close to the ground surface over some of the study area within the organic and poorly drained zones identified in the upland area and within the Wizard Lake Basin and hence may impact development.

5. Recreational Needs Assessment

A recreational needs assessment review was undertaken to determine the current and projected recreational needs of the Wizard Lake Watershed Area. The assessment included a review of the following recent recreational related background documents as well as discussion and confirmation of the current recreational status and area demands with Leduc County Parks and Recreation. Additional assessment included consultation with the community and key stakeholders at public events as well as the discussions with the Focus Group. The review also included an assessment of current regional, county and community oriented recreational initiatives that would affect the recreational use of the lake.

The assessment is paired with an awareness of the ecological vulnerability of the study area and the greater watershed; which remains a priority consideration throughout this study and in the assessment of future recreational use within the Wizard Lake watershed. Most important is the consideration for maintaining the natural stream flow within the watershed and the need to minimize the stresses of human activity on Wizard Lake and of the greater Saskatchewan River Watershed Basin.

5.1 Background Document Review

5.1.1 Leduc County Recreation Needs Assessment (November 2002)

A change in recreational trends for Leduc County is mainly due to the forecasted increase in a maturing population. The assessment was initiated by the need to understand what this change means in terms of meeting future recreation and leisure needs for the County and to review recreation service delivery that will meet future demands. The report focuses on trends, motivation and barriers in participation and assesses community program needs and interests. The report also identifies directions for meeting future recreational needs.

Changing recreational and social trends:

- An aging population has encouraged a greater appreciation for personal health and well-being, a demand for a change in recreational needs, in quality recreational environments and upgraded facilities, and in diversification of programs and activities.
- There is a greater demand for activities that are less stressful and leisure oriented such as yoga, and walking; and for activities that cater to a more health and fitness conscious group, especially as more women are participating.
- There is a greater demand for activities that are more individual and also more family oriented as more children are living at home – less team oriented, with combined programming for parents and children, and offers child care opportunities that make adult participation possible.
- There is a greater demand for activities that are more easily accessible and spontaneous, and makes efficient use of time especially for busy lifestyles.
- Reduced household incomes and recent increased gasoline costs are affecting the need for activities close to home and activities that are accessible, less programmed, and spontaneous.



5.1.2 March 2006 Leduc County Parks and Open Spaces Master Plan

The Parks and Open Spaces Master Plan reflects population growth trends and recreational demands that are congruent with the 2002 Leduc County Recreation Needs Assessment, Vision, Goals and Objectives. The plan reflects the trend for leisure recreation and the need for improved park quality and the quality of facilities, more park space, trails, enhancement of the natural environment toward a healthier environment and quality of life.

Identified below are a few key considerations outlined in the master plan for Leduc County and the future direction for outdoor recreation and parks within the County:

- “There is increased demand for more parks and camping opportunities at regional parks like Jubilee Park on Wizard Lake.”
- “The Province of Alberta is limiting its involvement in providing outdoor recreation facilities like campgrounds and boat launches.”
- There will be a “demand for more recreation facilities and a higher standard of park services will likely occur.”

Drivers for Change:

- Increased population growth for the County and the City of Edmonton
- Increased aging and young children
- Urban migration, thus migration of urban values and different needs—higher standard of park services
- Less travel away from home—affordability.
- Greater need for leisure and health oriented lifestyles, therefore greater value is placed on parks and open spaces especially natural parkland and the preservation of environmentally significant open spaces.

Recreational Demands:

- Passive recreation, quality facilities, accessibility for all, facilities for young children, flexible and more spontaneous opportunities, close to home facilities, more natural parkland.

Current Recreational Pursuits for Leduc County:

- Increased interest in walking trails and overnight camping at Wizard Lake, increased fishing at Pigeon Lake (increased boat launch facilities), off leash dog walking areas, public accessibility to the North Saskatchewan River Valley and quad and snowmobile off highway trails.



Recreational Initiatives of the Master Plan:

- The Master Plan has identified initiatives specific to meeting the recreational needs of the County, including new parks, existing park improvements and facilities, new trails through park redevelopment and private landowner development, coordination with the province, other municipalities and the private sector for parks management and services.

Initiatives relevant to Wizard Lake Study Area:

- Jubilee Park Upgrades: upgraded facilities and services, improved day use area/boat launch and redevelopment of the campground.
- Wizard Lake West Boat Launch: Range Road 275 will be maintained as a local, year round access point to the lake.
- New parks and trails within Jubilee: new parks and trails are planned to meet increasing demands for outdoor recreation facilities.

5.1.3 Alberta Recreation Survey (2004)

The purpose of the Alberta Recreation Survey was to identify the recreational trends and preferences of Albertans and the factors that influence their recreational choices. The survey looked at recreational pursuits of household residents and other respondents. The following are the top ten outdoor pursuits with the highest participation levels:

- pleasure walking, golf, cycling, overnight camping, jogging/running, gardening, fishing, hiking, soccer and attending live theatre.

The study also indicates that outdoor activities are becoming more popular, especially for exercise, and the greatest incline in activity is pleasure walking or walking a pet.

5.1.4 The River Valley Alliance Demand Analysis (2006)

A survey of Leduc County residents was undertaken in which the following key recreational activities were identified as important to recreation in the river valley.

- Walking, hiking, picnicking, cycling/biking, jogging/running, ice skating, nature walking, downhill skiing, attending special events/concerts, boating and fishing.



Taken by Andrew Barclay

Winner of the "People" category of the 2009 Wizard Lake Photo Contest



5.2 Public Consultation and Key Stakeholder Interviews

The initial stages of the Wizard Lake ASP process included stakeholder interviews, consultation with the Parks and Recreation Department, public open houses and a public workshop event where information was gathered pertaining to the recreational demands and future needs for the Wizard Lake Watershed Area.

The consultation generally echoed some of the conclusions arrived at in past studies and policies for Wizard Lake.

5.2.1 Summary of Key Stakeholder Consultation & Public Events Comments on Recreational Needs

- Concerns about the amount and type of boat use on the lake, boating facilities, the impact on the natural environment and safety of lake users.
- Need more regulated boat use – reduced numbers, limit types.
- Need to see more boats for fishing, which has been reduced over the years because of the amount of speed boat activity.
- Issues related to private property damage - need more regulation and enforcement around the lake, pertaining to trails, parks and open space uses.
- Trespassing using quads, dirt bikes, and ski-dos is an issue consistent among residents and farmers.
- Need to see more stewardship of the watershed and an increase in land based recreational use to offset the amount of boating on the lake – such as trails, nature walks, hiking, cross country skiing, lake swimming, canoeing, kayaking and cycling.

5.2.2 Consultation with Leduc County Parks and Recreation Department (PRD)

Current Trends - The current recreational pressures for the County are still geared toward the need for more passive recreation and day-to-day use activities such as walking, biking, hiking and picnicking. Two of the primary recreational demands are for boating and beach use; there is continued pressure to accommodate these activities on both Wizard and Pigeon Lakes.

The Current Role of Wizard Lake - Wizard Lake and Jubilee Park campground, without a doubt, have become a regional draw over the past few years with about 95% of visitors coming from outside of the County and about 80% from outside the region (Red Deer and Central Alberta). This pattern is evident for boaters as well.

Trails - The PRD is continuing to work toward expansion of a trails network for Leduc County. Regional Trail development is being investigated along the North Saskatchewan River through involvement with River Valley Alliance. The PRD is also working with Alberta Trail net and Trans Canada Trail to investigate opportunities within the County. Local trail development has been encouraged through subdivision development. Local development does not include off highway vehicles. Regional trails may include multiple uses.



Winter Lake Recreation - Informal on-the-lake activity is occurring more frequently, such as curling and ice fishing. Ice racing is growing in popularity on other lakes within the County, but is presently not a permitted use on Wizard Lake due to residential issues.

Education Oriented Recreation -The PRD has partnered with the Wizard Lake Watershed & Lake Stewardship Association to host educational sessions in the past and continue to work with Fisheries and Oceans to provide boat safety information. The County is also actively involved in an initiative called “Nature Deficit Disorder”, working to reunite youth with the woods.

Overnight Camping Initiatives - The PRD has a development plan for selected campgrounds within the County and is considering future campground opportunities for the North Saskatchewan River Valley. Pigeon Lake is currently without a County owned and operated campground site. The County is working with the Province, operators of both Pigeon Lake Provincial Park and Zeiner Park, towards new campground initiatives. The Province currently has a redevelopment plan underway for both parks. The demand for camping at both Pigeon and Wizard Lake remains high.

Nature Oriented Recreation – The PRD intends to encourage and promote nature orientated recreation in the future, through development of County lands north of the Park for trail and natural use. The County supports the Nature Conservancy of Canada through their protection of lands in the north/west portion of the County and have partnered with the University of Alberta for protection of some lands in Nisku.

The City of Leduc Recreational Centre - A large indoor recreational facility is now located in the City of Leduc, which offers a pool, water park, two indoor soccer fields, two ice rinks for skating, hockey, and curling, and a fitness centre. Leduc County is a partner in this facility. Residents of the Wizard Lake area can use this facility, as well as the arena in the Town of Calmar for additional recreational activities and programs.

6. Proposed Hamlet Concept Plans

After receiving public feedback at the Forum 2 Open House, it appeared that stakeholders and residents alike were in support of creating a stronger sense of community with elements such as:

- A place of assembly/community hall
- A fire hall, and
- A few additional services that would be accessible locally.

As a result of what was heard, three hamlet concept options were developed and circulated to the sub consultants for technical review and later presented at a public open house.

Alternative sites were reviewed and initial recommendations were based on the various levels of assessment. It was concluded that a hamlet at the intersection of Township Road 481 and Range Road 271 would be the preferred scenario for various reasons such as servicing, land use compatibility and minimizing environmental impact.

After much analysis and discussion with local stakeholders in regards to recreational and social needs, as well as in the actual environmental context—where we do not possess all desired information in regards to the lake’s carrying capacity—it was agreed that the hamlet concept was premature and should not be further explored at the present time.

Part B: The Area Structure Plan

7. Vision

The vision for the Wizard Lake Watershed Area is intended to guide future development in a direction that enhances and protects the natural environment. The vision demonstrates sustainability principles and brings to light the unique assets and identity of the lake area. The vision emerged for the public engagement process and serves as the foundation of this plan.

7.1 Vision Statements

1. The plan area shall remain a place where natural environment and agriculture is cherished and protected.
2. The area is a place with a strong sense of community and identity. The plan shall help build on those strong values.
3. Wizard Lake is a place for recreation. The plan shall strive to make this area healthier and safer.

8. Principles

1. Protect the long-term health of Wizard Lake's natural environment by conserving the quality of water and other natural systems as well as the integrity of the shoreline, biodiversity and wildlife habitat.
2. Conserve the cultural heritage of the Wizard Lake area including the agricultural ways of life and the tranquil character of the setting.
3. Support a strong sense of community and identity with people living, working, farming and visiting the Wizard Lake area.
4. Achieve a synergy of land uses between settlement, recreation, agriculture and natural conservation.
5. Encourage stewardship, collaboration and partnerships toward achieving common goals, nature preservation and sustainable development.
6. Support diverse, year-round opportunities for recreation sensitive to the natural environment, the local community while prioritizing safety.
7. Sustain a strong sense of place by ensuring development has consideration for the natural environment as well as the area's unique character and identity.
8. Improve connectivity and public access to the waterfront, especially for passive recreational uses.
9. Identify economic development opportunities for recreation, farming, tourism and education.



9. Approach

The Wizard Lake ASP provides a structure and guide for land use and development that prioritizes nature; creates a healthy and sustainable synergy of land uses; encourages complimentary land use opportunities that bring about unique relationships and innovative ideas; and recognizes the resource potential of the lake.

Paramount for the ASP is an approach that integrates an understanding of natural systems with the use of natural resources and natural environments through agriculture, recreation and settlements.

Natural environments and systems are protected for the systems' health as well as for human livelihood and recreation. As such, the approach of the Wizard Lake ASP is to recognize that natural environments and their systems within have intrinsic value.

Agriculture continues to evolve as a way of life and livelihood. In the plan area, agriculture has been present for many generations. The County recognizes that as our understanding of natural systems evolves, agricultural practices can also evolve toward better stewardship of the long-term sustainability of the environment.

Recreational activities are a significant part of the Lake's identity and use—while motorized boating is the largest component today, the approach taken in the ASP has been to diversify the lake and land-based recreational uses, providing opportunities throughout the year to enjoy the lake while respecting the area's identity, environment and local communities.

Human settlement in the ASP is approached in an integrated manner where the protection of natural systems is recognized as vital in all aspects of development. Minimizing the development footprint is the desired approach in the plan. The ASP introduces innovative and sustainable design practices and technologies that are sensitive to Wizard Lake's unique natural environment. New development (dwellings and buildings) and infrastructure (roads, etc.) are geared toward maintaining the character of the Wizard Lake Area.

Cluster development is a recommended approach supported by the Capital Region Growth Plan (2010) and provides opportunities to introduce a unique type of residential development that represents a conservation approach as priority. Wizard Lake could be marketed as an opportunity to experience a unique lifestyle in which to live and recreate. Cluster Country Residential development is a method of design that minimizes the impact on the natural environment and preserves larger areas for natural conservation compared to more traditional forms of development.



10. Character Areas

The development concept for the Wizard Lake ASP, (see Map 1.0 – Land Use Character Areas, page 53), has been prepared to provide a general land use scenario for the entire Wizard Lake study area. The Land Use Plan is defined by the following character areas reflecting the vision established for the Wizard Lake area. Each area has a unique identity, character and set of land use policies.

The character areas illustrated in this plan are the result of a methodology that encompassed:

- Technical and legal literature review
- Aerial photography analysis
- Field reconnaissance
- Input from and interaction with local stakeholders

Acknowledging that the plan area is relatively large and diverse in landscape and environmental features, the character areas and organic zone delineated in the concept map (map 1.0) should be considered as having soft boundaries. Further on-site investigation by registered professionals of Alberta will be required in order to analyze natural elements such as soil, water course, bank, vegetation, slope, hydrogeology and other important features that define the site conditions and sensitivity. The West Lake Conservation Area and the Watershed Conservation Area, due to their varying level of high sensitivity, will definitively require on-site analysis.

10.1 West Lake Conservation Area

The West Lake Conservation Area has been rated to be of the highest ecological value and highest conservation priority of the plan area. The area is defined by largely intact native vegetation consisting of coniferous forest located primarily within a fen and deciduous forest in upland areas. Of the entire Wizard Lake ASP study area, the lands in this location have the highest likelihood of containing rich habitats such as Black Spruce Bog, which are host to the majority of locally found rare plant species. Many rare plants have narrow environmental tolerance limits and, as a result, tend to occur in microhabitats, ephemeral areas, unusual landscape features or transition zones between ecosystems. The Black Spruce Bog habitat is of high ecological significance both within the ASP area as well as in Leduc County and the Parkland Natural Region, as a whole. The natural intact forests and vegetation are essential for maintaining the high ecological integrity of the Wizard Lake watershed. These forests provide habitat for rare plant and animal species, improve water quality and provide corridors for local wildlife that may otherwise not inhabit the region (i.e. moose, weasels and songbirds). In the context of the surrounding landscape, this natural area represents an important linkage to other natural areas in the region, and is part of a major ecological network which is centered around the North Saskatchewan River.

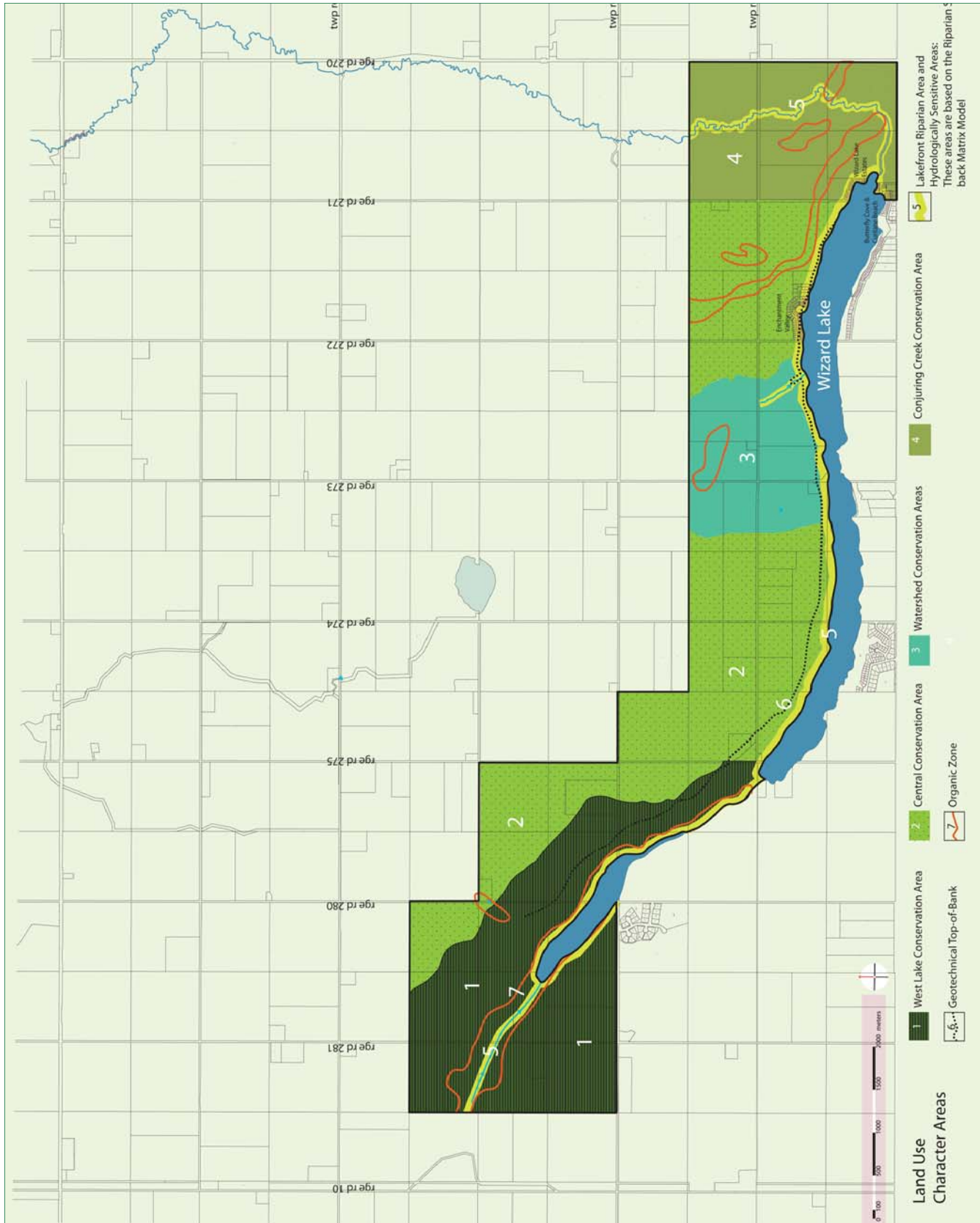
The West Lake Conservation Area is also important for maintaining healthy fish habitats and populations as it constitutes a large region of protected shallow water along the shoreline called the littoral zone, which hosts an abundance of aquatic vegetation. This area is characterized by rooted emergent or floating vegetation which is critical to maintaining healthy fish populations. These vegetated littoral zones provide security cover for juvenile pike and forage species such as yellow perch, fathead minnows, spottail shiners and white suckers.

Restoration and conservation of environmentally sensitive areas and systems in this area is a high priority. This includes enhancing the biodiversity of wetlands, woodlots, natural corridors and other areas that are significant for the protection of the natural environment, wildlife and the conservation of water quality.

10.1A: In order to protect and conserve fish, plant and wildlife habitat, development of the lakeshore shall not be permitted.

10.1B: Development within the West Lake Conservation Area shall be carefully managed.

Map 1.0: Land Use Character Areas



10.2 Lakefront Riparian & Hydrologically Sensitive Areas

Restoration and conservation of the Lakefront Riparian and hydrologically sensitive areas is pivotal for:

- improving water quality of the lake
- increasing fish and wildlife habitat
- protecting and providing wildlife corridors
- slope stability and control of erosion
- protection of fluvial hydrological systems and peat deposits

Protection and improvement of natural water flow, water based habitat and ground water quality will help ensure the long term sustainability of the lake. Hydrological areas such as moist to wet forests, bogs, fens, wetlands, streams and lakes increase the potential for rare plants to inhabit.

Cultural heritage features such as the coal mine will be protected and safety setbacks will also be established.

With the creation of the lakefront riparian area, the quality of the lake frontage, the natural embankment and the shoreline will be protected, while simultaneously preserving the natural views.

The northerly boundary of the lakefront riparian area and the boundaries of the hydrologically sensitive areas will be determined by the Leduc County Riparian Matrix Model.

10.2A: A riparian buffer setback will be established for the lakefront riparian areas as well as any hydrologically sensitive areas as defined in section 12.1. Conservation and protection of the riparian area is the primary purpose of each buffer.

10.3 Central Conservation Area

Balancing the conservation of environmentally sensitive areas while maintaining opportunity for development and sustaining agricultural practices is challenging in the Central Conservation Area due to the significant pockets of natural resources, forests and habitat—all of which must be taken into consideration.

The Central Conservation Area lands constitute a large component of the Wizard Lake ASP. They essentially connect the Conjuring Creek Conservation Area to the West Conservation Area. This area is mainly defined by moderate and stewardship ecological value as defined in this plan (see Part A).

Opportunities for small scale development exist when achieved in an environmentally and ecologically sensitive way. Pockets of residential development will be permitted when located and designed to have minimal impact.

10.3A: Acceptable new low density development in this area will be sensitive to natural systems and corridors and will accommodate the ongoing functions of farming within the area.

10.3B: Areas where development will not be permitted will present opportunities to reconnect and enhance the natural environment with wildlife habitat corridors.



10.4 Watershed Conservation Area

The desired outcome of the Watershed Conservation Area is to protect the ambient natural environment as well as the lake. Being located above or upland of the geotechnical top-of-bank is the defining characteristic of this area. It should be noted, however, that the drainage patterns of this area have the potential of impacting the lake and the surrounding watershed.

Low intensity residential development will be considered on a small scale, but only if designed to have an integrated approach to water management (i.e. managing potable water, wastewater and stormwater as one element, not separately). This will create very little to no negative impact on the lake or the watershed.

10.4A: Water infiltration shall be maximized and runoff minimized.

10.5 Conjuring Creek Conservation Area

The desired outcome of the Conjuring Creek Conservation Area is similar to the Watershed conservation area in that it is meant to protect the natural environment. The main feature for this area is that it constitutes the connecting point between the Wizard Lake watershed with the North Saskatchewan watershed. Therefore, any pollutant brought into this ecosystem will add to the cumulative effect of the Wizard Lake watershed on the North Saskatchewan watershed, which constitutes a vital potable water source for many communities.

Low intensity residential development will be considered on a small scale and will be dependent on the incorporation of designs that have an integrated approach to water management. The expectation is that these developments will have little to no negative impact on the lake or the adjoining watersheds.

10.5A: Water infiltration should be maximized and runoff minimized.

11. General Area Structure Plan Policies

11.1 The Natural Environment

Leduc County and its residents place high value on natural capital (including agricultural and environmental lands) and recognize the need to manage growth in a manner that is both sensitive to the environment and equitable to agricultural endeavors. Wizard Lake area stakeholders treasure their local environment from a recreational, aesthetic and ecological perspective. Key among these values is the continuance of ensuring high water quality, an abundant fishery, rich biodiversity and recreational enjoyment of the watershed area.

11.1A: Many character areas include features that connect the network of ecologically sensitive areas within the plan. Some of these lands will be designated as “environmental reserve” while others will be considered for environmental or conservation easement.

11.1.1 Natural Hydrology

Water is a critical issue in the Wizard Lake watershed; it has been identified by the Province of Alberta, the municipality and by local residents as a top priority.

11.1.1A: Maintaining natural flow regimes and water quality in order to sustain healthy aquatic ecosystems shall be achieved via different actions which shall be undertaken by Leduc County and the community.

11.1.1.1 Natural Flow Regimes

It is important to maintain the natural drainage and hydrological connections between streams and water bodies within the Wizard Lake watershed. Preserving and protecting wetlands and streams will contribute to maintaining water quality and quantity in Wizard Lake and will provide important habitat for fish, birds, amphibians, insects and plants. The following policies are important for the management and maintenance of the natural flow regimes:

- 11.1.1A:** Maintain riparian buffers around wetlands, tributaries of Wizard Lake watershed and Wizard Lake proper to protect water quantity and quality and provide habitat for wildlife.
- 11.1.1B:** Minimize the disruption of water flow in the Wizard Lake watershed (i.e. minimize the number and impact of crossing structures on individual streams).
- 11.1.1C:** Maintain and/or enhance naturally occurring wetlands, particularly the peatland on the west end of the lake.
- 11.1.1D:** Maintain surface water delivery to natural wetlands, streams and the lake within the range of natural variation.
- 11.1.1E:** Manage stormwater to minimize negative impacts to aquatic resources.
- 11.1.1F:** Removal of natural vegetation and alterations to the natural drainage of lands adjacent to an environmentally sensitive area shall be discouraged.
- 11.1.1G:** The Wizard Lake community shall replace and enhance historically lost natural vegetation.

11.1.1.2 Water Quality

Development can have a negative impact on water quality through changes to water chemistry and temperature, introduction of pollutants and sediment and water table disruptions. Mitigating these impacts will be an important requirement for any future development in the Wizard Lake watershed area. In order to maintain water quality and quantity, the following policies should be adhered to:

- 11.1.1.2A:** Manage the discharge of stormwater into Wizard Lake, its tributaries and natural wetlands in order to maintain the quality of surface water within and downstream of the ASP area.
- 11.1.1.2B:** Maintain and/or restore upland vegetation, natural riparian areas, contributing tributaries and surrounding wetlands to improve filtration and quality of surface water runoff. These measures will minimize the sediment entering the lake and will prevent further bank/shore erosion.
- 11.1.1.2C:** Monitor the Wizard Lake watershed to ensure that development and activity around the lake does not significantly impact water quality or quantity. Measurements and testing will, at a minimum, address temperature, pH levels, nutrient loading, salinity and sedimentation.
- 11.1.1.2D:** Manage sewage from residential developments and camping facilities appropriately to avoid the flow of organic materials into the lake.

11.1.2 Wildlife Habitat Quality & Quantity

11.1.2.1 Wildlife Habitat

In general, the diversity of ecosystems in the Wizard Lake watershed—including wetlands, coniferous and deciduous forests—support a high level of biodiversity, including both terrestrial and aquatic species. The old forests present in the region provide a high level of structural diversity (i.e. large trees, snags and downed wood) which are important to many forest-dwelling species. Along the margins of the lake, particularly in the west end, are large areas of marshland containing emergent vegetation such as cattails and rushes. These marshlands provide important habitat for nesting waterfowl, foraging wildlife and spawning fish. The following management considerations should be adhered to in order to maintain wildlife habitat:

- 11.1.2.1A:** Maintain intact habitat types (i.e. riparian areas, wetlands, coniferous forest, deciduous forest and peatland) to sustain the value of existing wildlife habitats in the plan area. Where development is permitted, minimize the clearing/disturbance of riparian and upland vegetation.
- 11.1.2.1B:** Reclaim or restore disturbed habitats to native vegetation.
- 11.1.2.1C:** Manage, where possible, invasive, weedy and/or non-native species to prevent their establishment and to minimize their spread.
- 11.1.2.1D:** Improve wildlife habitat and range in developed areas by including features within public spaces, along roadways and greenways that provide for and function as movement corridors or stepping-stone landscapes (i.e. planting native trees/shrubs and providing natural shelters, etc.)
- 11.1.2.1E:** Design all development to minimize the negative effects of the built environment on natural areas and wildlife.
- 11.1.2.1F:** Buffer natural areas and aquatic habitats to reduce impacts to wildlife.

11.1.2.2 Rare Peatland Habitat

The peatland that filters water flow into the northwest corner of Wizard Lake is a unique ecosystem type in the Central Parkland of Alberta, supporting at least two species listed as “sensitive,” including the boreal toad and the common yellowthroat. Future development within the ASP area should consider potential impacts to this peatland, particularly with respect to maintaining sub-surface water flow, water quality and quantity. Given the uniqueness of this habitat in the region and its high level of intactness, development in this area to ensure the ecological integrity and biodiversity value of this ecosystem are maintained. The following policies are in place to manage and protect the peatland:

- 11.1.2.2A:** Minimize any development in the peatland, where permitted, to maintain the ecological integrity of this rare ecosystem.
- 11.1.2.2B:** Buffer the peatland to maintain its ecological integrity.

11.1.3 Habitat Connectivity

Habitat connectivity is one of the most important considerations for managing wildlife in developed landscapes. Connectivity may be viewed as a property of the landscape as a whole, and focuses on the probability of species' movement being enhanced or impeded by various habitat types, structures and configurations. Corridors, such as riparian areas, are one potential conservation strategy to enhance movement when the whole landscape is considered. However, various other habitat configurations can promote movement. For example, habitat patches may be viewed as “stepping stones” for movement for some species, particularly birds. Currently, habitat connectivity is relatively high within the ASP area.



Class: Bird
Name: Mourning Dove
Scientific Name: *Zenaidura macroura*
Provincial Status: Secure



Class: Bird
Name: Perigrine Falcon
Scientific Name: *Falco peregrinus*
Provincial Status: At Risk



Class: Bird
Name: American Robin
Scientific Name: *Turdus migratorius*
Provincial Status: Secure



Class: Mammal
Name: Long-tailed Weasel
Scientific Name: *Mustela frenata*
Provincial Status: Maybe at Risk

To maintain this connectivity, the following policies should be adhered to:

- 11.1.3A:** Maintain intact habitat types (i.e. riparian areas, wetlands, coniferous forest and deciduous forest) to maintain connectivity among habitats in the ASP area.
- 11.1.3B:** Buffer riparian areas to maintain natural movement corridors.
- 11.1.3C:** Where development is permitted or currently exists, consideration should be given to habitat configuration and structure—including stepping stone habitats, greenways and riparian areas—to maintain or enhance habitat connectivity among habitat patches and wetlands.
- 11.1.3D:** Increase the permeability of developed areas by maximizing the amount of green space.

The Wizard Lake watershed also functions as a wildlife corridor at a regional level and is connected to the North Saskatchewan ecological network. In order to maintain this area as a wildlife corridor and support regionally viable wildlife populations over the long term, habitats within this watershed must remain functionally connected to habitats located on lands adjacent to the site. As such, the continuation and conservation of Conjuring Creek, the outflow of Wizard Lake, is critical to maintain a functional wildlife corridor with direct connections to the North Saskatchewan River.

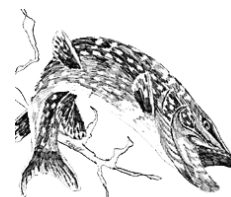
11.1.4 Wildlife

The Wizard Lake watershed is home to a large number of provincially and federally listed bird and amphibian species, as well as supporting a number of fish species. Given the ecological significance of the area to wildlife, future development should adhere to the following policies for maintaining, enhancing and/or creating habitat for birds, amphibians and fish:

- 11.1.4A:** Create and maintain diverse and abundant habitat and habitat elements that can be utilized by a variety of species.
- 11.1.4B:** Maintain and enhance the ecological function of wetlands to provide breeding habitat.
- 11.1.4C:** Use riparian buffers to maintain water quality and quantity within wetlands and to provide terrestrial habitat.
- 11.1.4D:** Maintain and enhance connectivity between wetlands to maintain important linkages between breeding sites.
- 11.1.4E:** Maintain and enhance connectivity between breeding habitat and upland terrestrial habitat where amphibians spend much of their time during the non-breeding season.
- 11.1.4F:** Maintain existing shoreline vegetation—particularly below top-of-bank—and avoid removal of shoreline vegetation between developed areas and the lake.
- 11.1.4G:** Ensure all new stream crossings and outfall structures, where permitted, are designed to minimize the impact on both fish and fish habitat in the Wizard Lake watershed and facilitate movement of fish.
- 11.1.4H:** Encourage use of floating, cantilever or post-supported docks as these structures minimize damage to the existing lake bottom and do not restrict the movement of fish and wildlife.
- 11.1.4I:** Ensure any cleared or mowed vegetation is removed from and disposed of away from the water's edge to avoid excess nutrients from being reintroduced to the water body as the vegetation decomposes.
- 11.1.4J:** Conduct a detailed fish and fish habitat assessment at the site of any proposed developments (i.e. bridges crossings, culverts or outfall structures) that may impact existing habitat and develop a habitat compensation/mitigation plan, if required.



Class: Herptiles
Name: Western Toad
Scientific Name: *Bufo boreas*
Provincial Status: Sensitive



Class: Fish
Name: Northern Pike
Scientific Name: *Esox lucius*
Provincial Status: Secure



Class: Plant
Name: Lily
Scientific Name: *Smilacina* spp.
Provincial Status: Secure



Class: Plant
Name: Orchid
Scientific Name: *Smilacina* spp.
Provincial Status: Undetermined

11.2 Recreation and Open Space

Wizard Lake serves as a valuable source of recreation. Currently, the lake is used as a boating/water skiing/camping destination by locals and visitors alike. The lake will be carefully managed to keep use at a sustainable level. In addition, future recreational development for the Wizard Lake area has the potential to shift attention away from a boating oriented focus to more leisure oriented, low-impact, land based recreational pursuits such as walking, hiking, cross-country skiing, cycling, bird watching and nature appreciation. Development of such activities may be implemented in a sustainable manner and designed to be flexible to the nuances of the natural landscape and topography.

- 11.2A:** Residents and visitors will be encouraged to feel connected to and appreciative of the natural environment in respect of the actual setting. All recreational interventions will demonstrate sustainable and ecological design/implementation.
- 11.2B:** Recreational uses on the lake during winter months, which have minimal negative impact on the natural ecology, such as ice fishing, curling and skating will be encouraged.
- 11.2C:** Use of off-road vehicles such as ATVs, dirt bikes and snowmobiles should be avoided on sensitive lands, trails or in low impact recreational areas. Leduc County will regulate such activities on public land and strongly encourage landowners to manage such activity on their private land(s) appropriately.

11.2.1 Trail Network

An important aspect of expanding the recreational opportunities and the potential for the community to experience the lake and the watershed resources is the enhancement of the trail network. This initiative coincides with provincial initiatives that seek to make natural assets such as rivers and lakes accessible to all for recreation. The priority for the trail network in the ASP is to provide a robust publicly accessible trail route within Jubilee Park. Eventually, Leduc County may wish to explore extending the trail network on public land. However, this exercise should not precede the revision of the Leduc County Parks and Open Spaces Master Plan where the County will work with residents and other stakeholders to design a trail network that has minimal impact on the natural environment and adjacent land uses. At this time, a study including both an environmental and a social component in addition to a recreational needs assessment should be undertaken by Leduc County.

Leduc County and other stewards should educate users on the features of the trail system, especially in areas of sensitivity, using promotional tools/brochures such as a trail map.

- 11.2.1A:** Any stakeholder desiring to develop private trails on their land shall do so using a variety of trail types and implementation that is responsive to the nuances and sensitivity of the topography and landscape.

11.2.2 Provincial and Municipal Reserve Lands

The County has acquired municipal reserve lands within the Wizard Lake area for the purpose of future parks and open space consideration. Most of the identified sites (see Figure SC3, page 23) have ecologically sensitive features that must be considered when planning for recreational use of these lands. The reserve lands should be maintained as opportunities for parks and open space. Open space may contribute to the repair and enhancement of the natural environment as well as increasing public safety when used in coordination with environmental reserve.

- 11.2.2A:** All natural features within parks and open spaces must remain protected, conserved, and sensitively integrated in any recreational use.

11.2.3 Municipal Reserve and Environmental Reserve Strategy

As permitted under the Municipal Government Act (MGA), Leduc County will require dedication of municipal reserve (MR) as development occurs within the plan area.

- 11.2.3A:** Within the plan area, the MR may be used to create additional protection along natural features with open spaces where appropriate or a separation (buffer) between land uses which might create certain nuisances.
- 11.2.3B:** Environmental Reserve will be dedicated pursuant to the MGA.



11.3 Community and Emergency Services

The Wizard Lake Watershed Area has a level of community services that essentially relates to the recreational needs. As for convenience services and public assembly, nearby point of service seem to satisfy most of the stakeholders. Any demand for such type of activity could be evaluated on a case-by-case scenario.

As for emergency services, fire prevention is certainly the main concern. Past incidents have highlighted the need for special attention to be directed at private access, emergency access, landscaping and clearing of vegetation for all existing and future development (see Part C – Implementation, page 79 for more details). Furthermore, Leduc County should conduct a risk assessment for this plan area.

Within the plan area, no schools exist. The closest school is located on Highway 795, north of the plan area.

11.3A: The County will continue to work in close collaboration with the school boards to evaluate future needs.

11.4 Cultural Heritage Resources

The only recorded historical resource site within the ASP area is a historic coal mine, located on the SW-4-48-27-W4M. There are, however, areas of high archeological potential within the ASP area. These areas include any undisturbed land, especially around Wizard Lake and the adjoining tributaries. The Alberta Historic Resources Management Branch (HRMB) will evaluate the need for Historic Resource Impact Assessments at the application stage when specific subdivision or developments are being planned.

11.4A: Any proposed development that will impact lands that have not been disturbed by agriculture or other development must be reviewed by the Alberta Historic Resources Management Branch (HRMB).

11.4B: A Heritage Survey Site form must be completed for any standing structure built prior to 1960.



11.5 Agriculture

Agriculture is a vital component of the Wizard Lake Watershed Area. That being said, the majority of farmland within the study area is deemed less viable in terms of agricultural capability. The Municipal Development Plan deems lands with a farmland assessment rating (FAR) of 41 per cent and higher to be high capability agricultural land. The highest rating in the study area is 49.9 per cent, which occurs only in small pockets across the study area. This ASP encourages the preservation of any high capacity agricultural lands and environmentally compatible agricultural practices.

11.5.1 Protection of Agriculture

- 11.5.1A:** All high capability agricultural lands and agricultural endeavors will be protected.
- 11.5.1B:** Agricultural land will not be given up for development unless it can be proven that agricultural uses are not feasible or sustainable.
- 11.5.1C:** Agricultural land that is no longer feasible or sustainable will be considered an opportunity to replace the natural ecology.
- 11.5.1D:** Any new development must seek to achieve a healthy synergy with adjacent agricultural lands.

11.5.2 Agricultural Practices

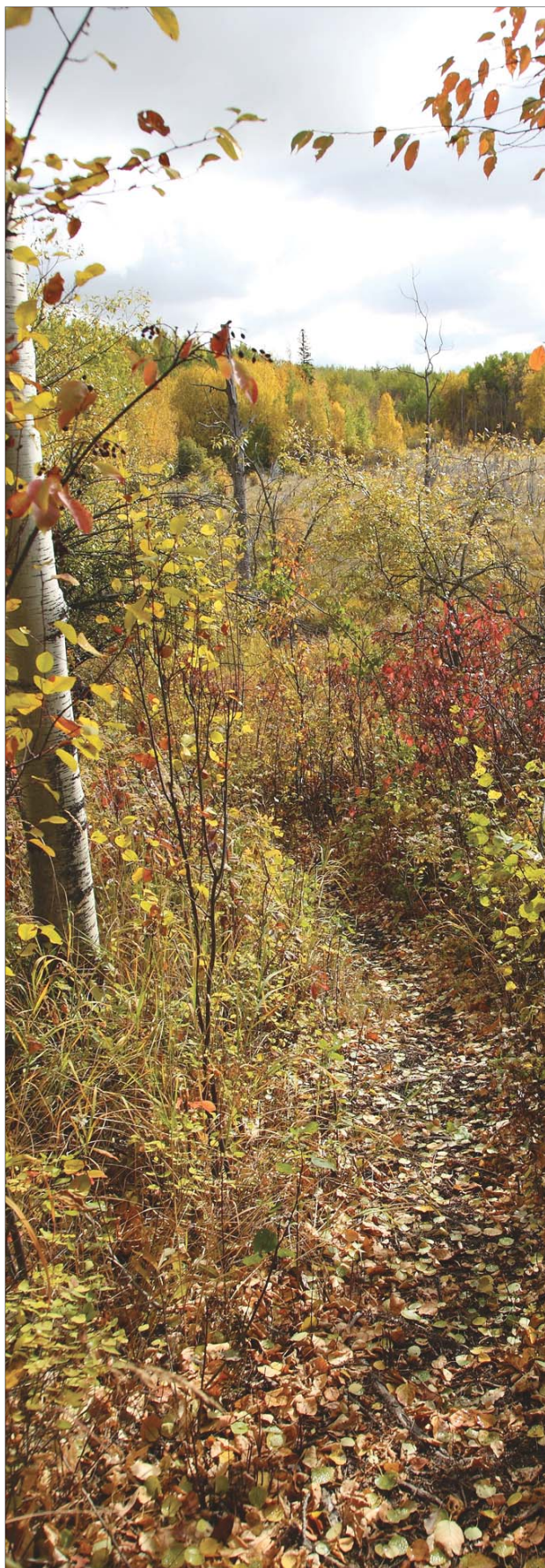
- 11.5.2A:** The farming community is encouraged to utilize sustainable agricultural practices and seek out new techniques and innovative agriculture options toward the conservation of natural areas and systems.
- 11.5.2B:** Leduc County shall raise awareness for better use of pesticides and herbicides on agricultural lands.
- 11.5.2C:** Discourage any agricultural practice—such as cattle grazing adjacent to water bodies/lakes/streams/wetlands—that negatively impacts the natural environment.
- 11.5.2D:** Any built form or infrastructure development for the purpose of farming, which alters or fragments contiguous natural features, functions and habitat—such as water systems, forest woodlots, wetlands, stream habitats, water courses, wildlife habitat and corridors—will be discouraged.
- 11.5.2E:** Agricultural uses should as much as possible integrate rather than alter natural features such as wetlands, woodlots, water courses, drainage and wildlife habitat; riparian setbacks will be adhered to and natural landscape protective buffers provided.
- 11.5.2F:** Leduc County encourages education programs to integrate the natural environment with the farming environment.

11.5.3 Alternative Agriculture

In areas where existing farmland is poor in terms of food or forage production, alternative agricultural practices will be permitted, particularly for farming areas that are close to sensitive natural resources.

If agricultural use is proven to be no longer feasible or sustainable, farmers are encouraged to restore the land to a natural state—with the assistance of natural conservation agencies—to contribute to conserving and protecting adjacent sensitive areas.

- 11.5.3A:** Leduc County will allow agricultural operations to diversify and in order to make them more economically viable.



11.6 Environmental Concerns and Development Setback Requirements

The following are requirements based on a Phase 1 Environmental Site Assessment (ESA) utilized to identify potential and actual site contamination on the basis of record reviews, visual site inspections and evaluation and reporting. The Phase 1 ESA found:

- Existing operational upstream oil and gas facilities within the ASP area pose potential environmental concerns, including negatively impacting underlying soil and groundwater at each facility location.
- Facilities have setback implications for future land development.
- Abandoned and or reclaimed oil and gas wells may have negatively impacted the underlying soil and groundwater at each site.
- Spill records in the area indicate that there is potential for ongoing environmental concerns from oil and gas sources.

11.6.1 Environmental Constraints

These environmental findings helped formulate the following guidelines and policies:

- Reclaimed oil and gas well sites should be located and visually inspected for signs of negative environmental impact. Indicators of potential environmental degradation include: soil staining; hydrocarbon odor, poor or no vegetation growth, inconsistent surrounding landscape, vegetation patterns and soil structural patterns.
- According to Alberta Energy and Resources Conservation Board (ERCB) guidelines, a minimum setback of five meters from the former well centre of an abandoned oil and gas site is required for unrestricted country residential development of more than eight permanent dwelling units per quarter section.
- An eight metre wide access route and a 10 x 15 metre working area around an active well centre are also required (EUB/ERCB). The ERCB requires greater setbacks for pipelines containing H₂S.
- Leduc County Land Use Bylaw requires certain setbacks from a pipeline right-of-way. The most restrictive setback shall apply.
- Further investigation may be required to determine if current reclamation criteria have been met for any development planned near abandoned well sites.
- Further investigation of the underground coal mines located within NW-03-48-27-W4 will be required if development is proposed (see Map 3.0 – Environmental Constraints, page 85).
- The coal mines identified in the ERCB Coal Atlas should be located and their status verified.
- The soil and vegetation should be visually inspected for signs of negative environmental impacts where development is contemplated or where potential environmental constraints may be located.

11.6.1A: The Alberta Energy Resources Conservation Board shall be consulted regarding required setbacks around existing and reclaimed oil and gas wells and other facilities before development is contemplated.

11.6.1B: The soil and vegetation in the vicinity of each mine shall be visually assessed for signs of negative impacts.

11.7 Servicing: Water Supply, Waste Water Collection, Stormwater Management and Utilities

The following servicing guidelines are based on the ASP Land Use Character Areas which estimate approximately 160 existing residences within the study area. These include three existing multi-lot residential subdivisions and numerous existing acreage style dwelling units. In addition, there will be several clustered developments of acreage lots throughout the remainder of the study area. It is important to note that at the time that the servicing concepts were developed, a hamlet was contemplated in the future of the plan area.

The servicing recommendations include water supply, wastewater collection, stormwater management and power and gas for the area. For more details, see the Wizard Lake Area Structure Plan Servicing Concept prepared under separate cover for this plan.

11.7.1 Storm Water Management

11.7.1.1 Lake Level Data

Lake level measurement is collected during the summer months of each year, and is available for the period of 1968 to 2008. The maximum recorded water level is 784.7 meters, the minimum recorded water level is 783.6 meters, and average water level is 784.0 meters. Based on these results, and keeping a factor of safety, the suggested high water level is 785.0 meters.

Freeboard to the lake is determined by maximum possible wave heights due to wind action during the period of high water level. Since Wizard Lake is a narrow and long lake with steep banks, the effect of wind to the water surface is minimized. Therefore, a freeboard of approximately 1.0 metres depth is suggested.

11.7.1.1A: The recommended freeboard elevation for development along the lake shore is 786.0 meters.

11.7.1.2 Pre-development Flow Rates

The majority of the proposed development is outside of the Wizard Lake watershed and will discharge to Conjuring Creek or its tributary watercourses.

11.7.1.2A: The predevelopment discharge rate for Conjuring Creek shall be established and utilized for stormwater management in these areas.

There is a hydrometric station installed at the outlet of the Wizard Lake (Conjuring Creek) Station #05DF002 catchment area 34.2 km². Water level and discharge data are available for the period of 1924 to 1931; the station has no records after 1931.

Flood frequency analyses have been conducted using the maximum daily flow data for the period of 1924 to 1931. Six different methods of frequency analysis; Normal, Log Normal-2, Log Normal-3, Gumbel, Pearson-3 and Log Pearson-3 distribution were applied to the data.

Based on the results of frequency analysis, Log-Normal 3 distribution best fits the recorded maximum daily data series. These values were adopted in further analysis.

Based on the selected distribution, the 1:100 year pre-development flow rate is calculated to be 2.35 L/s/ha (8 m³/s for 34.2 km²). As there is very limited data for Conjuring Creek, this number was compared with other values for nearby areas. This value was found to compare well with the results for nearby areas. The report entitled Regional Runoff Characteristics of the North Saskatchewan River Basin (Alberta Environment, 1988) determined 1:100 year pre-development flow rates for three nearby hydrometric stations located on Blackmud Creek, Strawberry Creek, and Whitemud Creek. The average 1:100 year maximum pre-development discharge rate for these stations is 2.53 L/s/ha.

11.7.1.2B: All future developments discharging to Wizard Lake or Conjuring Creek, within the Area Structure Plan boundary, limit discharge to a maximum of 2.35 l/s/ha.

11.7.1.3 Watershed and Water Quality

The majority of developed land within the Wizard Lake watershed is being used for agriculture, lake shore residential or recreational development. All of these land uses are known contributors of nutrient pollution to surface and groundwater supplies via surface runoff or infiltration. These types of land use within the lake watershed can have a significant impact on the water quality of the lake (see Map 2.0. Major Drainage page 84).

The main nutrients of concern for the water quality of the lake are nitrogen and phosphorus. In particular, as phosphorus levels increase, the lake can become eutrophic and will be susceptible to blue-green algal blooms. Previous studies indicate that Wizard Lake has phosphorus levels high enough to be classified as eutrophic (Mitchell & Prepas, 1990; Mitchell, 1998). This is consistent with the occurrence of algal blooms reported by many residents. Typical contributors to phosphorus loading include runoff from urbanized residential areas and agricultural land, especially livestock operations. Infiltration of sewage effluents from leaking or improperly installed private septic systems also has potential to be a major contributor. The following policies aim to improve water quality.

- 11.7.1.3A:** For any future development, the quality of water discharging to the lake shall be managed and improved to prevent excessive nutrient loading.
- 11.7.1.3B:** Stormwater management facilities shall be utilized in future multi-lot developments in order to limit surface flow and discharge to pre-development flow rates.
- 11.7.1.3C:** Stormwater management facilities shall be designed to improve water quality. At a minimum, all facilities will meet Alberta Environment Standards for water quality.
- 11.7.1.3D:** The pre-development discharge rate of 2.35 L/s/ha determined in the previous section (11.8.1.2) shall be applied to stormwater management facilities for development areas discharging to Conjuring Creek, as well as those discharging to Wizard Lake. This low discharge rate will help to address both runoff quantity and water quality. Past experience has shown that stormwater management facilities for country residential developments typically require a low discharge rate in order to achieve the minimum detention time required by Alberta Environment. This detention time will help to promote the removal of pollutants through settlement and biological processes.

The following are recommendations to further improve water quality:

- Engineered wetlands are recommended because they typically provide better water quality enhancement than wet ponds or dry ponds. Aesthetically, wetlands also provide a more naturalized appearance.
- The connection of existing and future developments to a piped sewer system is recommended to help to reduce the potential source of nutrient loading.
- Where necessary, innovative water quality enhancement technologies should be adopted.
- Technologies such as Sorbitive MEDIA are a commonly used best management practice for phosphorous removal.
- Other low impact development practices that do not increase infiltration into the slope can also be considered. These practices include rain barrels, green roofs and controlled runoff to infiltration areas away from the slope.

11.7.2 Water

There are several options available to provide potable water for future development. These options include the following: private groundwater wells, communal wells, cisterns, extension of a regional transmission line from Calmar, and extension of a water supply line from Thorsby (see the Wizard Lake Area Structure Plan Servicing Report December 2009 for a detailed explanation of the options). Based on the options available, potable water servicing to the area provided by a regional supplier would be desirable but appears cost prohibitive for the time being. For future developments, groundwater wells or cisterns may be the only feasible options. Due to the effect on the water table, cisterns are the preferred option when a distribution system cannot be implemented. Cluster country residential developments will be required to provide a method of potable water servicing that meets County and Provincial Regulations.

- 11.7.2A:** As development is proposed and opportunities present themselves, Leduc County and local stakeholders should explore the feasibility of municipal potable water or communal system.

11.7.3 Local Wastewater Collection

Although a local wastewater collection systems would be desirable, private sewage disposal system (PSDS) may be the only feasible option at this time. However, care must be taken to ensure that these systems are properly designed and maintained. If fields are proposed, percolation and groundwater testing will be required for approval. All developments will be required to confirm that any proposed PSDS is in compliance with the current Alberta Private Sewage Disposal Systems Standard of Practice. In addition, it is recommended that all landowners with an existing holding tank(s) have their tank(s) assessed by a professional private sewage installer to confirm that the tank(s) are water tight and not leaking.

11.7.3A: As development is proposed and opportunities present themselves, Leduc County and the stakeholders should explore the feasibility of a municipal wastewater or communal system.

11.7.4 Power

All future developments of up to 300 lots will be serviced by Battle River Rural Electrification Association.

While there is adequate infrastructure to accommodate some additional development, it is anticipated that some upgrades may be required to service the amount of development anticipated in this ASP area. Battle River does not anticipate any major obstacles to upgrade the system and provide servicing for the new developments.

11.7.4A: Underground power servicing should be provided for all future multi-lot developments while either overhead or underground servicing should be suitable for acreage-style developments.

11.7.5 Gas

The majority of existing residents within the study area receive natural gas servicing from ATCO Gas. Discussions with this provider indicate that the infrastructure in place can accommodate some new development but offsite upgrades may be required to service the number of lots anticipated in the ASP area. However, it is anticipated that there will not be any major obstacles to upgrade the system and provide this service.

The existing gas main servicing Jubilee Park and Wizard Lake Estates is aligned along the east side of Range Road 271, approximately 30 metres outside of the right of way.

11.7.5A: Natural gas servicing should be provided for all future developments.

11.8 Geotechnical Assessment

11.8.1 General

Areas that are generally considered unsuitable for development from a geotechnical perspective include zones within the Wizard Lake Basin or around Conjuring Creek within the 100 year flood level and, or near, the slopes between the geotechnical top-of-bank and lakeshore.

11.8.1A: Development is prohibited within organic zones.

11.8.1B: Development proposals shall maintain existing topography and drainage pattern as much as possible (i.e.: minimize re-grading for new developments).

11.8.1C: Stormwater management facilities should be located in low lying areas.

Poorly drained areas where development is permitted are associated with undulating terrain where the low areas do not have outlets for surface water run-off.

11.8.1D: Undulating terrains shall be improved during development by site grading design that will maintain positive drainage, and by developing stormwater management facilities at key locations.

11.8.2 Temporary Excavation Considerations

The depth of buried sewers and waterlines will generally be in the range of three to five metres of ground surface in development areas. Open excavation by conventional methods is generally expected to be feasible throughout the site.

In certain areas where development is permitted, dewatering may be required prior to excavation in areas where more extensive wet sand and silt layers are within the clay till, and where organics, coal seams or sandstone bedrock units are encountered, depending on the depth of sewer installations.

11.8.2A: Excavation is not permitted within any of the identified organic zones.

Site specific geotechnical investigations may be undertaken for all utility installations in the ASP area, especially in the West Lake Conservation Area. Test pits may be excavated at selected locations along the alignment at the time of tendering to provide information to the contractors regarding trench performance and dewatering requirements.

11.8.2B: An environmental assessment and geotechnical investigation must be undertaken prior to any development of additional dwelling units within the West Lake Conservation Area.

11.8.3 Storm Water Management Ponds

Engineered wetlands are the most desirable method to manage storm water due to their biological functionality and their natural appearance.

11.8.3A: Wet and/or dry ponds shall be permitted in storm water management design. Engineered wetland opportunities shall be explored prior to the hearing of subdivision applications.

11.8.3B: Test hole drilling shall be carried out once the storm water management element locations are finalized. As such, the groundwater table will be considered in the design and construction of the storm water management system, as it may be within the depth of excavation.

11.8.3C: Any storm water management strategy shall be built in compliance with Leduc County Design Standards, and any storm water management facility (SWMF) shall be approved by Alberta Environment.

Where required, the near surface clay till should typically be suitable for use as material for constructing a compacted clay liner. This would need to be confirmed with index testing and triaxial permeability testing on representative soil samples after compaction in the laboratory to a specified density. As an alternative, a geomembrane liner may be considered.

11.8.3D: If existing wetlands are to be used as stormwater management facilities, sediment forebays shall be constructed to promote the removal of suspended solid from runoff prior to entering the wetland.

11.8.4 Subdivision Developments

- 11.8.4A:** Trunk sewers and wet ponds shall only be located in areas where development is permitted.
- 11.8.4B:** New vegetation will be required on slopes where vegetation was removed as a result of past activities as a condition for approval of a development proposal. The use of local indigenous species for planting is recommended.
- 11.8.4C:** For current development near slopes, surface water should be directed away from the slope crest or alternatively brought down the slope in a manner to reduce erosion.
- 11.8.4D:** Soils or deleterious materials such as lawn clippings should not be placed on slopes or crest area.
- 11.8.4E:** Excavation at the geotechnical top-of-bank is prohibited.
- 11.8.4F:** Leduc County shall encourage lot level stormwater re-use (i.e. rain barrels for collection and re-use for lawn and garden irrigation).
- 11.8.4G:** Every development shall minimize clearing of vegetation and size of impervious surfaces on parcels will facilitate groundwater recharge.
- 11.8.4H:** Any subdivision with four or more lots shall have an internal road built to Leduc County Design Standards.

11.8.5 Weeping Tile Connections

Weeping tile may be considered for structures constructed with basements.

It is suggested that the foundation drains should be connected to one of the following:

- sumps and pumps discharging to the ground surface,
- separate foundation drain collector sewer; and
- storm sewers.

Foundation drains should not be connected to the sanitary sewer system when available. However it is important that the local groundwater supply is not depleted.

- 11.8.5A:** The surface shall be graded to direct this discharge away from the house to a vegetated pervious area that will promote recharge of the groundwater supply.

11.8.6 Coal Mines

- 11.8.6A:** For future subdivision and development planned in areas where past mining activity has potentially occurred (see Map 3.0 - Environmental Constraints, page 95), a risk or hazard assessment shall be undertaken to determine the likelihood of future ground subsidence or sinkhole development.
- 11.8.6B:** Installation of trunk sewers should be avoided through areas where past mine activity has occurred.

11.9 Transportation

The following policies apply to roadway development in the ASP area:

11.9.1 Access

11.9.1A: Leduc County shall maintain public access to the lake. Municipal reserves are for the use of all people, not just local residents.

11.9.1B: Current public vehicular access to the lake is permitted only at the west and east boat launch areas.

11.9.2 Road Development

Township Road 481 and Range Road 271 should be designed as modified County Local Roads within the ASP area. This road classification includes a nine metre to 12 metre wide pavement and a 20.0 metre to 30.0 metre right-of-way with a rural cross section (ditch). The current road width of these two connectors is 9.2 metres. The remaining road network should maintain its current designation of County local roads. However, it should be noted that the gravel surface recommended in the County's Transportation Master Plan (See Appendix F in the TIA Report) for roadways carrying lower traffic volumes.

Township Road 481 is envisioned as the main east-west collector road for the ASP area. This road connects to Highway 795 to the east, which is expected to generate the majority of trips (similar to current travel patterns).

Given the projected traffic flows and type of vehicles (including passenger cars with recreational vehicle and boat trailers), paving will be required in accordance with Leduc County standards. The County's surfacing guidelines require paving for roadways with an average annual daily traffic (AADT) of more than 400 and a gravel roadway is allowed an AADT of less than 100. Due to the use of Township Road 481 in the area, this roadway will serve more than 400 VPD in 2009. However, it should be noted that the recommended improvement will be required as a long term improvement for the year 2029 (the next 20 year horizon). Township Road 481 will require pavement or chip sealed surface (light pavement surface) from Range Road 271 to Range Road 275.

The Township Road 481 and Highway 795 intersection will require a Type IIa treatment by 2013 –year 4, a Type IIIa treatment by 2018 –year 9- and, a Type IVa treatment by 2026 –year 17. The intersection treatment type IVa, recommended above, is needed to accommodate weekday peak hour period traffic flows by 2029 (20-year time horizon).

Delineation road lighting on the eastbound approach of the junction of Highway 795 and Township Road 481 is recommended by 2018 – year 9.

11.9.2A: The County should establish a cost sharing mechanism such that all developable lands will contribute to the ultimate transportation network for the plan area.

11.9.2B: All new roads are to be constructed, to the satisfaction of the County, at the cost of the developer.

11.9.2C: The County shall explore funding mechanisms for roadway upgrades and potential projects such as Township Road 481 pavement.

Improvements to Township Road 481/Highway 795 could be cost shared between the County and the Province as per the Alberta Transportation's Policy TCE-TS-509.

As development and subdivision occurs, a traffic impact assessment will be required to assess the potential impacts and determine the need, if any, for cost-sharing of road upgrades.

11.9.2D: Leduc County shall monitor traffic.

Access onto County roads within any proposed concept plan is to have a minimum spacing interval of 60 metres or such greater or lesser as determined by the County, taking into account the Transportation Association of Canada guidelines.

11.10 Land Use Transitions

11.10.1 Transitions between Land Uses

In order to ensure coordinated transition between land uses, a dense buffer strip around any new residential development that is adjacent to existing farming operations shall be used as an interface between land uses.

11.10.1A: Buffers used as transition area shall be planted by the residential developer to compliment the natural environment (i.e. using indigenous plant material that builds on the surrounding forests) and to extend natural and wildlife corridors.

12. Land Use Polices and Guidelines

All the land use categories defined in this section are considered with conservation as a priority. The policies reflect a relatively well balanced approach toward responding to social and environmental needs. These policies and guidelines are specific to each of the conservation areas (see Map 1.0 – Land Use Character Areas, page 53).

12.1 Riparian & Conservation Buffers

This section presents three types of special areas where development will be prohibited due to environmental sensitivity and/or public safety. The protection of these areas will help ensure the long term viability of the lake but, by itself, does not constitute a guaranty of success. Other mechanisms, trends and habits will need to be implemented or modified to increase our chances of maintaining a healthy lake. The following sections and Part C of the plan address some vital elements for the sustainability of the lake.



12.1.1 Lakefront Riparian Area and Buffer

The Lakefront Riparian Area and its buffer may be considerably greater than what is currently used by municipalities in regard to setbacks and buffers from the wetlands and lakes. This ASP requires buffers to be established for the riparian area based on experience, research and best practice assessments from the collaborative land use planning, ecological, geotechnical and hydrogeological perspectives for the preservation of natural environments.

12.1.1A: The Riparian Setback Matrix Model shall be used to ensure the protection of the lake from pollutants (phosphorous / nitrogen) from both agricultural activities and settlement.

12.1.2 Geotechnical Buffer

The geotechnical buffer will help maintain slope stability and associated vegetation, which are crucial in minimizing erosion and sedimentation; processes that drastically impact the long term stability of the lakeshore and lake waters. This buffer also has a purpose of ensuring public safety. Prohibiting development in these areas is to ensure public safety, slope stability, management of sediment entering the lake, and the protection of the lake from pollutants.

12.1.2A: This ASP requires a geotechnical buffer area which constitutes protection of the shoreline up to the geotechnical top-of-bank and approved by Leduc County Council.

12.1.2B: An additional minimal distance of 20 meters from the top-of-bank northward will also be required before development can occur unless otherwise supported by a geotechnical study prepared by a certified professional engineer of Alberta.

The geotechnical top-of-bank illustrated on Map 1.0 – Land Use Character Areas (page 53) is a result of a desktop analysis based upon a seven degree slope (7°), and does not represent the actual location of the top-of-bank.

12.1.2C: Development proposals may be required to be accompanied by an onsite geotechnical analysis delineating the top-of-bank and the geotechnical constraints associated with the site to the satisfaction of Leduc County.



12.1.3 Hydrological Buffer

The following is the rationale for the proposed buffer widths on the hydrological features outlined in the Wizard Lake Area Structure Plan. Important values identified during the evaluation of the Wizard Lake area and during public meetings included:

- Maintaining or improving water quality of Wizard Lake
- Maintaining a sustainable fishery in Wizard Lake
- Maintaining and improving biodiversity in the region

Riparian buffers provide a mechanism which can help sustain these aquatic values into the future.

The primary purpose of a riparian buffer is to protect the water quality of hydrological features such as wetlands, streams and lakes. It is important to remember that impacts to the hydrology of Wizard Lake come primarily from surrounding land uses within the watershed. Given the inherent connectedness of aquatic ecosystems, on the surface and underground, maintaining hydrological connectivity is imperative for ecosystem process and function. Further, the position of aquatic ecosystems in the landscape (generally the lowest point) means that they are receivers of upstream, upland and (to a lesser extent) downstream impacts (Pringle 2001, Nel et al. 2009). As a consequence, one of the main challenges of freshwater conservation is the management of threats that may be geographically distant from conservation areas of interest. Natural vegetation surrounding hydrological features has been shown to be the most important predictor of riparian and instream health (Amis et al 2007). Natural vegetation buffers regulate stream processes like erosion, sediment transport and channel morphology (Berkman and Rabeni 1987; Osborne and Kovacic 1993; and Naiman et al. 1993). Essentially, these buffers function as a natural water filter not only sustaining their ecological value, but also meeting human values for domestic water use, agricultural activities and recreation.

12.1.3A: Due to the sensitivity of these areas and their diversity within the plan area, riparian buffers will be established as per on-site analysis by a certified professional registered in the province of Alberta using the Riparian Setback Matrix Model.

12.1.3B: For any land that is host, transected by or within 30 meters of a water body, the Riparian Setback Matrix Model shall be used as prescribed by Leduc County's Riparian Setback Matrix Model Policy.

12.2 West Lake Conservation Area

The West Lake Conservation Area constitutes lands of moderate to mainly high ecological value (see Maps SC9-11, page 30), and is defined by the study boundary to the north, west and south and by the watershed boundary to the east ending at Range Road 275. The priority for the West Lake Conservation Area is to maintain the intactness and ecological integrity of existing natural areas and features. The area focuses on the west end of the lake where relatively large areas of intact native vegetation exist. This includes a unique peatland habitat including bogs, fens and unique stands of black spruce trees, which are of high ecological significance both within the ASP area as well as in Leduc County and the Parkland Natural Region, as a whole. As well, there is a lakefront riparian area that is unique in



Hydrological Features

habitat to the balance of the lake area. Within Leduc County, much of the natural vegetation has been converted to alternative land use. Consequently, the remaining intact systems represent important opportunities to sustain natural ecosystems and regional biodiversity. In the context of the surrounding landscape, this natural area represents an important linkage to other natural areas in the region and is part of a major ecological network which centres on the North Saskatchewan River. Limiting development in this zone will help to maintain water quality, increase habitat quality and connectivity and maintain the regional importance of this area.

12.2.1 Natural Conservation

- 12.2.1A:** Conserve, protect, and enhance all of the area's natural resources.
- 12.2.1B:** All policy recommendations for the lakefront riparian area, regarding the treatment of the lake edge and buffer areas, apply to the portion of lake within this zone. In addition, no development is permitted in any riparian area, riparian buffer or within any major organic/peat deposit zones within this area (see map 1.0, page 53).
- 12.2.1C:** No new clearing of the land shall be permitted within this area unless it is in compliance with the required built form.
- 12.2.1D:** Priority should be given to restoring and enhancing areas that are adjacent to natural or wooded areas where native vegetation has been cleared.
- 12.2.1E:** Any residential development or agricultural use adjacent to this conservation area should comply with setback requirements and policies for the protection and conservation of any adjacent natural resource as defined for this area.
- 12.2.1F:** When creating 16.2 hectares parcel or bigger, conservation easement shall be used to identify and preserve environmentally significant component and/or area.

12.2.2 Built Form

- 12.2.2A:** Each quarter section shall be permitted to subdivide; however, the result cannot exceed four separate title areas. The minimum parcel size permitted for subdivision shall be 16.2 hectares (40 acres).
- 12.2.2B:** A maximum of one environmentally responsible dwelling unit (no secondary dwelling unit allowed) shall be permitted on lots with a minimum area of 16.2 hectares (40 acres).
- 12.2.2C:** Where one or more cleared areas are available for the erection of the dwelling unit, additional clearing shall not be permitted.
- 12.2.2D:** In the event that the title is completely forested, clearing shall be limited to a maximum of 1 acre for the residential purposes. No clearing, however, shall be permitted within a riparian area or a riparian buffer.



West Lake Conservation Area - Black Spruce & Fen

12.3 Lakefront Riparian and Hydrologically Sensitive Areas

The lakefront riparian area starts from the shoreline and extends toward the uplands. Its northerly boundary is scientifically defined by a certified professional of Alberta who analyzes on-site criteria. The hydrologically sensitive areas are water features that play a vital role in the ecosystem of the plan area. These areas, illustrated on Land Use Character Area Map (page 53) include Conjuring Creek, major ravine channel courses and major organic/peat deposits. The priority for these sites is the same for the lakefront riparian area in terms of protection, maintenance, restoration and enhancement.

In the event that on-site analysis reveals the presence of a hydrologically sensitive area on a property (illustrated on Land Use Character Area Map, page 53), and that area will be subject to the same policies and requirements stated in this plan for riparian and hydrologically sensitive areas. In such cases, buffering will be provided and shall meet the requirements of this plan.



Hydrologically Sensitive Areas



Wildlife Habitat Corridors

12.3.1 Natural Conservation

- 12.3.1A:** Conserve, protect, and enhance all of the area's natural resources.
- 12.3.1B:** No new vegetation clearing is permitted and existing natural vegetation shall be maintained and protected.
- 12.3.1C:** Priority should be given to restoring, stabilizing and enhancing areas where native vegetation has been previously cleared, especially in the steep slope areas and areas where slope erosion has occurred.
- 12.3.1D:** Priority should be given to restoring and enhancing areas where water streams, ravines and any other water courses have been previously impacted.
- 12.3.1E:** No new agricultural practices or development will be permitted within this area.
- 12.3.1F:** No development in any major organic or peat deposit area as identified on Map 1.0 Land Use Character Areas (page 53).
- 12.3.1G:** Major organic/peat deposits should be integrated within open space sites.

12.3.2 Built Form

- 12.3.2A:** New subdivision of land shall not be permitted and no new residential development will be permitted due to the environmental sensitivity of these areas.
- 12.3.2B:** The creation of new boat launches or boat jetties for public or private use is prohibited. Opportunities to share boat launches between properties should be considered to reduce the amount of impact along the shoreline.

12.3.3 Recreation and Open Space

An opportunity for a low impact nature trail for walking, hiking, running and cross country skiing parallel to the lake could be considered for this area in the future if, after completion of the actual Jubilee Park, there is still demand for an additional recreational component. As previously stated, this should not occur prior to a review of the Leduc County Parks and Open Space Master Plan, which will be conducted within a public process.

12.4 Central Conservation Area

The Central Conservation Area is located between the West Lake Conservation Area and the Conjuring Creek Conservation Area, north of the lakefront riparian area (including its buffer). Even though this area has variable levels of sensitivity, conservation is a priority for the well being of the lake and its watershed.

Within this area, there are significant pockets of natural resources, forested areas, habitats and watercourses which need to be conserved and protected. There are also opportunities for additional pockets of residential development and recreational opportunities in areas where the landscape has already been considerably altered. The priority for this area is the balance of sustainable development with existing natural features.

12.4.1 Natural Conservation

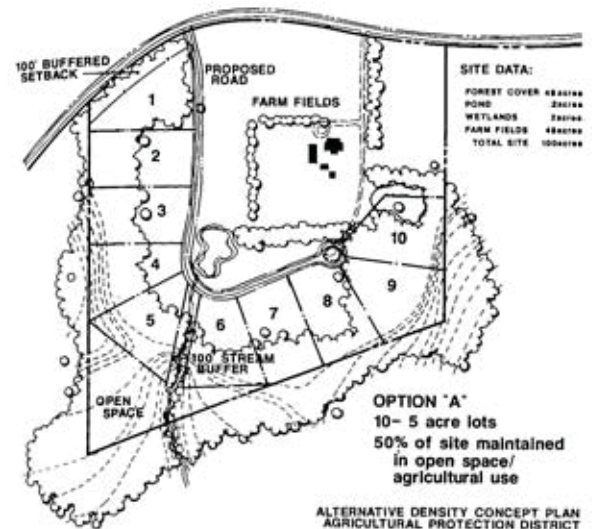
- 12.4.1A:** Conserve, protect and enhance all of the area's natural resources.
- 12.4.1B:** Development shall occur primarily in areas that have already been cleared to minimize disturbance to intact habitats.
- 12.4.1C:** Restore and enhance areas where native vegetation has been cleared and is not deemed appropriate for development.
- 12.4.1D:** Any new vegetation clearing will be limited only to occur in areas that are considered appropriate for development according to the built form and recreational uses. In these instances, an environmental impact assessment for the proposed development will be required before any clearing can happen.

12.4.2 Built Form

- 12.4.2A:** Allow further country residential development within this area in a clustered or traditional pattern.
- 12.4.2B:** A minimum 2 hectares (5 acres) lot subdivision is permitted for new residential development to a maximum of 32 lots per ¼ Section (160 acres).
- 12.4.2C:** Only one dwelling unit shall be permitted per lot.
- 12.4.2D:** Where one or more cleared areas are available for the erection of the dwelling unit, additional clearing shall not be permitted.

12.4.3 Agriculture

- 12.4.3A:** Protect and integrate the existing agricultural lifestyle with residential development.
- 12.4.3B:** Leduc County shall define specific efficient transportation and servicing routes for agricultural uses and operations through consultation with local area farmers.
- 12.4.3C:** The farming community shall explore agricultural uses and programs that are compatible to the watershed ecology.



Example of 5 - 10 acre cluster development.
Source: Rural by Design, Randall Arendt, 1994

12.5 Watershed Conservation Areas

The Watershed Conservation Area is centrally located in the plan area considered ecologically sensitive and drains toward Wizard Lake. This area presents a different opportunity for development than the Central Conservation Area and constitutes an excellent area to implement low-impact development strategies. The priority for this area is to protect the natural features while allowing certain opportunities for environmentally friendly development.

12.5.1 Natural Conservation

- 12.5.1A:** Conserve, protect and enhance environmentally sensitive areas and agricultural farm land.
- 12.5.1B:** Proper hydrological mitigation shall be required in subdivision proposals to ensure that water movement remains as undisrupted as possible for new development.
- 12.5.1C:** Any development proposal shall provide a natural riparian buffer to protect existing habitats.

12.5.2 Built Form

- 12.5.2A:** Leduc County will allow further country residential development within this area in a clustered or traditional pattern.
- 12.5.2B:** A minimum 4 hectare (10 acre) lot subdivision is permitted for new residential or farm development to a maximum of 16 lots per ¼ Section (160 acres).
- 12.5.2C:** Only one dwelling unit will be permitted per lot.
- 12.5.2D:** Where one or more cleared areas are available for the erection of the dwelling unit, additional clearing will not be permitted.

12.5.3 Agriculture

- 12.5.3A:** Protect and integrate the existing agricultural lifestyle with residential development.
- 12.5.3B:** Leduc County shall clearly define specific transportation and servicing routes for agricultural operations in order to minimize conflicts and expectations between residential use and agricultural operations.

12.6 Conjuring Creek Conservation Areas

The Conjuring Creek Conservation Areas is the area east of Range Road 271. This area connects the Wizard Lake watershed with the North Saskatchewan River watershed. This area presents limited opportunities for development and constitutes an excellent area to implement a low-impact development strategy. The priority for this area is to protect the natural features while allowing certain opportunities for environmentally friendly development.

12.6.1 Natural Conservation

- 12.6.1A:** Conserve, protect, and enhance environmentally sensitive areas and agricultural farm land.
- 12.6.1B:** Protect the major organic zones as define in Map 1.0 - Land Use Character Area (page 53).

12.6.2 Built Form

- 12.6.2A:** Leduc County will allow further country residential development within this area in a clustered or traditional pattern.
- 12.6.2B:** A minimum 4 hectare (10 acre) lot subdivision is permitted for new residential or farm development to a maximum of 16 lots per ¼ Section (160 acres).
- 12.6.2C:** Only one dwelling unit will be permitted per lot.
- 12.6.2D:** Where one or more cleared areas are available for the erection of the dwelling unit, additional clearing will not be permitted.

12.6.3 Agriculture

- 12.6.3A:** Protect and integrate the existing agricultural lifestyle with residential development.
- 12.6.3B:** Leduc County shall clearly define specific transportation and servicing routes for agricultural operations in order to minimize conflicts and expectations between residential use and agricultural operations.

12.7 General Built Form Principles

The following are general built form policies that apply to all of the character areas in the Wizard Lake Area Structure Plan and should be considered in conjunction with the specific policies outlined for each area.

- 12.7A:** All subdivision will require: the preservation and conservation of existing natural features; minimal impact on agricultural lands; and protection of any cultural heritage resources.
- 12.7B:** Any built form or infrastructure development which alters or fragments contiguous natural features, functions and habitat—such as water systems, forest woodlots, wetlands, stream habitats, water courses, wildlife habitat and corridors—will be discouraged.
- 12.7C:** Subdivision of land will be considered on the basis of enhancement and protection of existing resources, avoiding division of habitat and natural features.
- 12.7D:** All subdivision applications should demonstrate how low-impact principle will be implemented and how stormwater management will be conducted in order to minimize all potential effects on the watershed.
- 12.7E:** New agricultural structures such as greenhouses and farm-related educational facilities are permitted provided they are implemented in a manner that is sensitive to the natural environment and that they minimize the built form footprint and impact.
- 12.7F:** The building area for residential purposes—including the dwelling unit, driveway, and manicured landscape—will be limited to 0.4 hectares (1.0 acre). The remainder of the parcel can be used either for agricultural endeavours or to maximize the overall percentage of land for conservation thus increasing the opportunities to protect and enhance natural habitats, wildlife corridors and hydrological areas.
- 12.7G:** All new development will integrate natural features as a priority and provide for adequate setbacks and protective riparian buffers for any natural feature, woodlot, wetland, water course or stream habitat to preserve the environmental integrity. An environmental impact assessment of the land area and an inventory of natural features should be undertaken prior to subdivision or development approval to ensure that developers are aware of existing natural features and that alternative measures are undertaken to mitigate any impact or loss of natural features. The County should establish its own Municipal Environmental Impact Assessment Criteria to address development within conservation areas.
- 12.7H:** Subdivision applications shall include structure setback assessment and geotechnical assessment.
- 12.7I:** Sensitive low-impact designed construction and technologies for built form and servicing that is responsive to the natural environment and reflects cutting edge sustainability practices will be implemented in all areas where residential development is permitted.
- 12.7J:** Provide a densely planted forest buffer in keeping with existing forest stands and fencing around any new residential development that is adjacent to existing farming operations as an interface between uses. This buffer should be planted to compliment the natural environment (i.e. using indigenous plant material that builds on the surrounding forests), by extending wildlife corridors and accommodating nature trails.
- 12.7K:** Conditional to subdivision approval, a landscaping plan including a replant area containing a minimum of two trees per gross acre of land being contemplated for subdivision will be required unless the title is already 90 per cent forested.

12.7.1 Cluster Country Residential Development

The concept of cluster country residential (CCR) development is a recommended built form for the County that is supported by the policies outlined in the Capital Region Growth Plan (2010). Development potential for CCR development should be assessed on a site by site basis.

Clustering of residential parcels provides an opportunity:

- To introduce a unique type of residential development that represents a conservation approach as priority.
- To minimize the impact on the natural environment and to preserve larger areas for natural conservation where needed.
- For a more flexible layout of units that can better respond to the nuances of the existing topography and natural features.
- To link open spaces in order to provide larger recreational land areas for the community and to also increase wildlife corridors.

CCR provides opportunity for joint development agreements between landowners as a means of conserving natural features, whereby each landowner has the opportunity to comprehensively plan their properties as a single holding in order to achieve broader conservation objectives. It is a process that does not require municipal involvement in purchasing development rights, transferring development rights or land banking. Instead, the process entails a joint agreement by which landowners identify the amount of developable land that each brings to the table. The net proceeds of development are simply divided proportionately according to the percentage of the potential development contributed by each landowner. (Ref. Rural By Design, Randall Arendt, 1994)

The following policies shall be adhered to for cluster country residential development:

- 12.7.1A:** New dwelling units shall be located in proximity to each other with a maximum separation distance and a minimum separation distance in accordance with the land use bylaw. Front and side setbacks must also be in accordance with fire safety standards as established and the LUB, especially pertaining to the close proximity requirements, privacy and the need to meet all Alberta Safety Codes, specifically High Intensity Residential Fire (H.I.R.F.) requirements. Landscaping and buffering measures can be used between units to achieve greater levels of privacy and add to the natural environment.
- 12.7.1B:** No new residential access roads other than the access to within the cluster development shall be constructed to service additional residential units. Existing road structure, servicing and access/egress points should be used. A single internal road access from the main Range Road or Township Road is permitted to service all dwelling units, unless an emergency access is required by Leduc County.
- 12.7.1C:** Site development shall take advantage of the existing topography so that development seems hidden and well integrated within the landscape, thereby increasing the natural visual aspect of the area and reducing grading requirements.
- 12.7.1D:** Minimize land area used for domestic development in order to maximize the area dedicated to the conservation of agricultural land and the management of natural habitats.

12.7.1E: Leduc County shall permit the minimum lot size prescribed by the built form of each character area to be reduced for the purpose of enabling a CCR development only if all of the following conditions are met:

- A caveat is registered on title to indicate that no further subdivision shall be undertaken unless it is in compliance with the provisions of this ASP.
- The land from the original title is devoted to remain in a natural state and/or for agriculture endeavors represents a minimum of 70 per cent of the original title area.
- The natural areas in the cluster development is owned by Leduc County, an association, a land trust or any conservation organization recognized by Leduc County, or remains in private ownership. In private ownership, the natural areas will be identified by a conservation easement register on the title. In the event of common ownership of a natural area, Leduc County will require registration of appropriate legal documents at the time of endorsement of the subdivision.
- Servicing and engineering is communally planned and in accordance with Alberta's legislation and Leduc County's requirements in terms of design standards.
- The proposed development includes a low impact development strategy accompanied by an outline plan acceptable to Leduc County's standards.

12.7.1F: To create an incentive for the development of CCR subdivisions, the County will allow the number of dwelling units per $\frac{1}{4}$ section, in each respective character area, to be doubled. However the minimum lot size for each character area must be met, and under no circumstances will the number of dwelling units be permitted to exceed 32 per $\frac{1}{4}$ section.

12.7.1G: Notwithstanding the above policy, where subdivision has occurred resulting in densities exceeding the 32 dwelling units per quarter section at the time of adoption of this ASP, any further subdivision will:

- be regulated in accordance with the minimum lot size criteria within its respective character area
- not be subject to the double density provision
- not be able to exceed the 50 dwelling units per quarter section limit as required by the Capital Region Growth Plan.

Part C: Implementation

13. Implementation Strategy

Over the next 20 to 25 years, the Wizard Lake Area Structure Plan will direct the process for conservation, protection and education of the natural environment and will guide development and the development process in a sustainable manner that is complimentary to this unique natural resource.

The following section outlines strategies to aid the evolution of this plan, and to bring the vision to fruition over the next 25 years. In addition, the ASP should be reviewed within a five to ten year period as a way of:

- Monitoring the ASP and the effectiveness of the policy recommendations
- Revisiting the vision, goals and objectives
- Identifying areas for amendments to the ASP

13.1 ASP Implementation Priorities

Key priorities for implementation include:

- Mitigation, restoration and protection of the natural environment, especially any existing natural features that are stressed or are in danger of being severely degraded, such as areas of slope erosion, deforestation of unique natural features and habitats, disruption of natural waterways, water quality contamination and ground contamination of the soil.
- Focus on initiatives to bring together the community and encourage stewardship for the area.
- Establish an awareness strategy to educate and increase awareness about the Wizard Lake watershed and to generate funding for the ASP recommendations.



13.2 Development Staging

13.2.1 Traditional & Cluster Country Residential Development

Development of new dwellings in traditional and cluster country residential format is expected to occur as applications come forward and will develop in accordance with the policies of this ASP.

Since development will be low density and without the availability of municipal services in the short term, development sequence and location are unpredictable. However, we can anticipate that the few subdivision applications received while this ASP was in preparation will probably be the first to be processed. This will be an opportunity to begin implementing this plan.

Based on the character areas and their respective built form, potential development will vary according to the selected format (traditional versus clustered). Development constraints and the policies from this ASP will also manage the amount and form of development. Finally, we cannot underestimate the importance of the market as a “driver” for the form, amount and phasing of development.

As for the market, Leduc County's records illustrate that since 1960, 345 dwelling units have been built at an average of 6.9 units per year.

The following table gives an estimate of the potential development per character area using the respective built form according to the gross area. Elements such as municipal reserves and environmental reserves dedication, public utility lots requirements and on-site constraints (either geotechnical constraint or environmentally sensitive areas) will probably significantly reduce the amount of development within the plan area since they normally account for about 30 per cent of the gross area.

Character Areas	Gross Area	Minimum Development (all traditional)	Maximum Development (all clustered)
Lakefront Riparian & Hydrologically Sensitive Areas	To be determined with on-site analysis	No development within this area	No development within this area
West Lake Conservation Area	Approx. 10 1/4 section	40	80
Central Conservation Area	Approx. 15 1/4 section	480	480
Watershed Conservation Area	Approx 4 1/4 section	64	128
Conjuring Creek Conservation Area	Approx. 5.5 1/4 section	88	176
Total:		672	864
Total with 30% deduction:		470	605

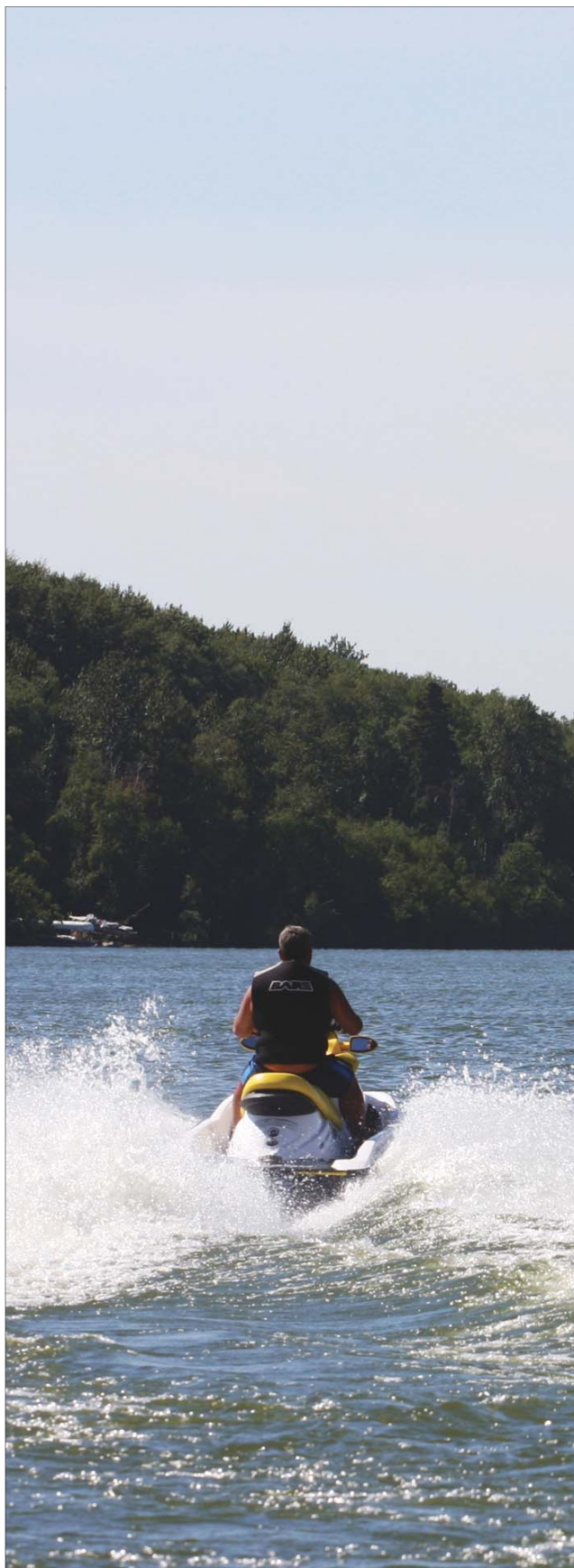
Based on recent market trends recorded at Leduc County, it is unlikely that the plan area will achieve its full development potential within the lifespan of this ASP.

13.2.2 Road Infrastructure Improvements

According to the pavement maintenance program, Alberta Transportation has plans to consider the implementation of the following improvements:

- 2017** - Highway 795 in the proximity of Township Road 481 (road section between kilometre 16 and kilometre 24):
- Replace pavement surface along this highway.

Apart from the improvements anticipated from Alberta Transportation, Leduc County will monitor the traffic generation and level of services from key road segments as the plan area evolves, identifying future road improvements as early as possible.



13.3 General Infrastructure and Servicing

13.3A: In order to be in keeping with the sustainable approach to development within this ASP, Leduc County shall investigate local waste management services and accessibility measures, such as local composting and recycling stations.

13.4 Development/Servicing Agreements

13.4A: Multi-Landowner Development – for joint land development between two or more landowners, development applications must include an outline plan that:

- Demonstrates cluster development
- Demonstrates the potential to protect, incorporate and enhance existing natural features and viable farmland
- Demonstrates sustainable design and services for a full build-out scenario
- Agrees to a developers' group agreement with other landowners who are part of a joint land development scenario
- Identifies open space and park opportunities

13.4B: Municipal Partnerships - Leduc County shall work together with the County of Wetaskiwin to explore future joint planning initiatives that could address conservation, protection and enforcement issues for Wizard Lake and the surrounding watershed. Alignment of policy objectives for the entire lake, are mutually beneficial for both municipalities.

13.5 Protection and Management of Environmentally Sensitive Areas

13.5A: Leduc County shall designate the West Lake Conservation Area, the Lakefront Riparian Area, the hydrologically sensitive areas and any other environmentally sensitive areas identified during detailed environmental impact assessments for environmental protection. Environmental reserve, environmental reserve easement or conservation easements shall be utilized to ensure that these areas are protected.

13.6 Branding and Marketing Strategy

The ASP presents the opportunity to redefine the purpose, potential, and assets of the watershed and lake. Currently, Wizard Lake is known primarily for power boating and related activities such as wake boarding and waterskiing and has become a destination mainly for those activities. The County needs to reposition the area by rebranding it as "The Wizard Lake Watershed," not just Wizard Lake.

13.6A: Leduc County shall promote the Wizard Lake Watershed as a unique natural asset.

13.7 Public Participation

13.7.1 Public Education, Awareness and Stewardship

13.7.1A: Leduc County shall investigate:

- Building and maintaining partnerships with the local Councillors, associations and Non-Governmental Organization in order to raise awareness of the issues facing the watershed and the need for special management for this area.
- Providing information packages and education opportunities through the Alberta Fish and Wildlife's Landowner Habitat Program on how to maintain forest cover and wildlife habitats.
- Providing information to local farmers on the advantages of innovative and alternative agricultural practices.
- Increasing public awareness, understanding and appreciation for the natural surroundings by introducing environmental education programs within the local schools and community to help promote an understanding and appreciation for the natural environment and encourage stewardship at a local scale.
- Encouraging and supporting local groups and agencies in their efforts to protect environmentally sensitive areas.
- Establishing opportunities for residents and community groups to initiate/participate in nature education, interpretation and "story telling."
- Initiating a County-wide environmental awareness campaign, focusing on the rebranding of Wizard Lake with emphasis on making this campaign relevant to youth.

13.8 Capital Budget Allocation

There are no major immediate budget implications associated with this area structure plan. However, the County may consider public realm improvements such as parks and recreational facilities that will require an upfront investment. In these instances, a detailed landscape plan will be required to produce a costing estimate and allocate funds. Improvement to the west end boat launch may be considered an example of such a project. Other capital investments in the public realm such as road or infrastructure expansions should be associated to, and triggered by, specific developments.

The conservation of some natural areas may also require a budget which should be determined through the creation of a Natural Conservation Management Plan. Future plans and studies may also be an investment that Leduc County should anticipate.

13.8A: For future plans and studies, opportunities for different types of funding shall be explored, including fundraising among groups and individuals sympathetic to the goals and plans for the conservation and recreational areas.

13.9 Need for Future Plans & Studies

It is recommended that the following future plans and studies be pursued:

- Environmental Study of the Lake: an environmental assessment of the current status of the lake water body should be undertaken as a follow-up to this plan and should include a review of its hydrology, recharge areas for springs, water quality, aquatic systems, fish content and waterfowl.
- Municipal Environmental Impact Assessment Criteria: the County should establish its own municipal environmental impact assessment criteria to address development within conservation areas.
- Parks and Open Space Master Plan: following the Jubilee Park redevelopment plan's completion—anticipated in a few years—Leduc County should review this vital strategic plan with stakeholders.
- Detailed Environmental Constraints Review: a detailed review of available mine plans should be carried out to assess the potential impact if proposed development is in close proximity to the old mine areas (this should be done once the vertical and horizontal alignment of sewer lines is determined). More in depth record searches should be undertaken from current or past oil and gas companies or from the Alberta Energy and Resources Conservation Board.

13.10 Redistricting and Subdivision

The majority of land within the ASP is currently under the Lake Watershed (LW) district designation in the Land Use Bylaw. To implement most of the provisions of this ASP, subdividing and redistricting will have to occur, accompanied by the need to simultaneously amend the Land Use Bylaw and the Municipal Development Plan.

13.10A: Outline plans will be required with supporting studies for all multi-lot proposals.

Maps

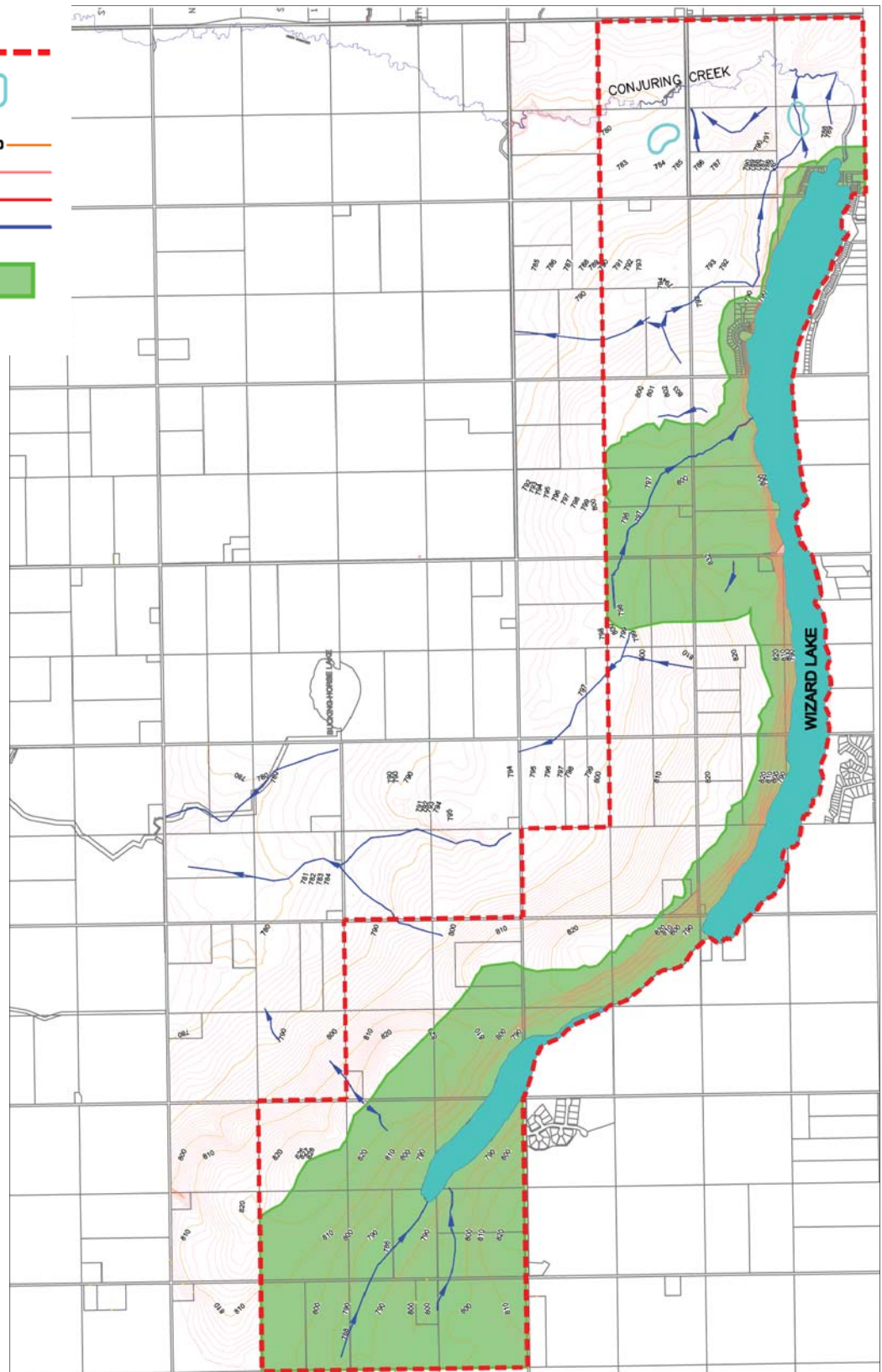
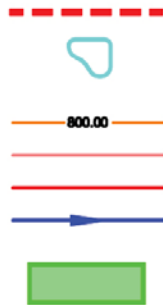
Map 2.0: Major Drainage

LEGEND:

STUDY AREA BOUNDARY
PROPOSED STORM WATER
FACILITIES

MAJOR CONTOURS EVERY 10m
MINOR CONTOURS EVERY 1m
CATCHMENT AREA BOUNDARIES
MAJOR DRAINAGE DIRECTION

WIZARD LAKE WATERSHED

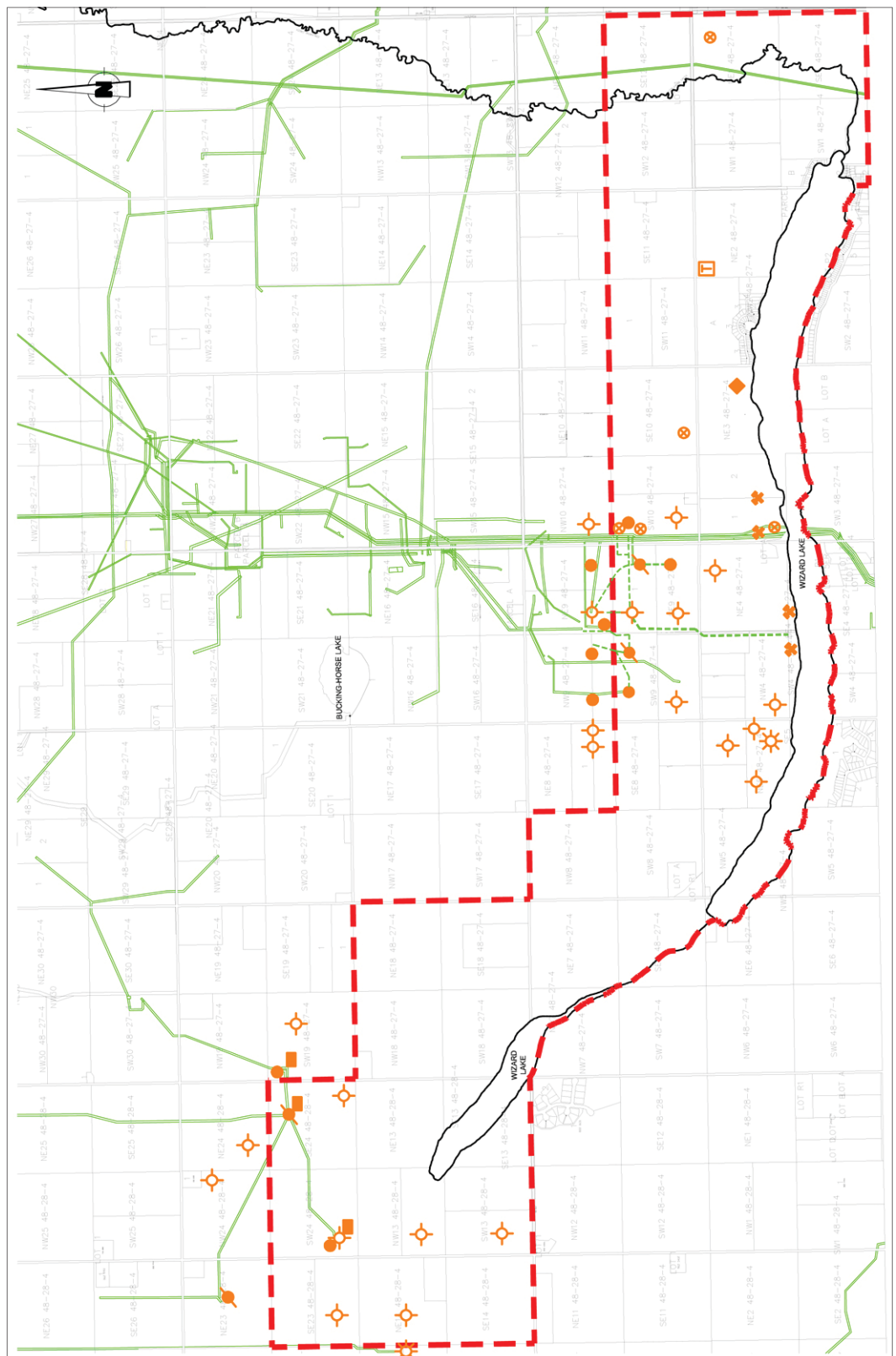


Maps

Map 3.0: Environmental Constraints

LEGEND:

- STUDY AREA BOUNDARY
- ☀ ACTIVE GAS WELL
- ACTIVE OIL WELL
- SUSPENDED OIL WELL
- ⊕ ABANDONED WELL
- ⌚ WASTE TRANSFER STATION
- OIL BATTERY
- ✱ ABANDONED COAL MINE
- ◆ CATTLE OPERATION
- ⊗ OTHER FACILITIES
- PIPELINE RIGHT OF WAY (R.O.W.)
- PIPELINE (NO RIGHT OF WAY)



Part D: Appendix

Glossary

Agricultural Tourism: this type of tourism focuses on recreational experiences and visits to rural settings or rural projects where tourists participate in and experience many kinds of activities, events or attractions. For example, it allows participants to learn about and experience an agricultural way of life, including the care of livestock, the growth of crops and the care of farm animals.

Bioswale: linear planted drainage channels that move storm water run-off as slowly as possible along a gentle incline, keeping precipitation on site as long as possible to allow it to soak into the ground (Sustainable landscape construction: a guide to green building outdoors, By J. William Thompson, Kim Sorvig).

Borrow Pit: an excavated hole left where stones or other materials have been dug up for use in construction work elsewhere.

Capability for Supporting Focal Species: evaluation of the capacity of each quarter section to support focal species guilds that have specific habitat requirements (i.e. dead wood, canopy cover) or specific landscape feature requirements (i.e. patch size, connectivity) that may make them vulnerable to development. Focal species guilds that were considered include:

- Amphibians: use both wetland and upland habitats and require connectivity between these habitats. They indicate good water and habitat quality due to their restricted habitat requirements
- Wetland birds: use lakeshore and wetlands habitats for nesting and are dependent on surrounding upland habitat or emergent vegetation for nesting
- Forest songbirds: depend on complex forest structure (i.e. large trees, snags, CWD, shrub cover) to meet life requisites for breeding, foraging and security cover
- Forest-dwelling small mammals: rely on complex habitat structure (i.e. snags, downed wood, shrub cover) to meet life history requirements
- Raptors (birds of prey): require large attribute forest structures for nesting, such as large trees and snags. Some raptors may require nearby open areas for foraging, including agricultural fields
- Rare plants: have variable microhabitat requirements but, in general, are dependent on old-growth forest with complex forest structure or wetland habitats
- Fish: require good water quality and appropriate spawning habitats. May require emergent vegetation or rocky substrates along the lakeshore or overhanging vegetation

Confined Feeding Operation: fenced or enclosed land or buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing and any other building or structure directly related to that purpose but does not include residences, livestock seasonal feeding and bedding sites, equestrian stables, auction markets, race tracks or exhibition grounds (as defined by the Agricultural Operation Practices Act).

Connectivity: areas that provide important linkages between habitats for movement of wildlife including corridors of native vegetation (i.e. riparian areas) or patches of native vegetation which may act as stepping stones between habitats.

Dry Pond: a dry pond is typically a low-lying grassed or paved area which is normally dry but is designed to temporarily retain excess run-off and thereby reduce the peak outflow rates following a rainfall event. Typically these ponds are situated in natural depressions of a suitable size.

Ephemeral: defined as temporary and lasting only briefly. In relation to this ASP, ephemeral has been used to describe wetlands and drainage. Ephemeral wetlands and drainage are often seasonal in nature and water is only found in them for short periods of time, usually in the spring or after long periods of heavy rainfall.

Eutrophic: lacking oxygen. Used to describe a body of water whose oxygen content is depleted by organic nutrients.

Freeboard: the space from the top of an embankment to the highest flood elevation. For the purposes of floodplain management, the space is often required as a safety margin to account for waves, debris and miscalculations.

Hydrological Sensitivity: areas that are hydrologically sensitive due to their role(s) in surface or groundwater flows essential to the hydrology of the Wizard Lake watershed.

Lakeshore Buffer: riparian areas around Wizard Lake that provide important wildlife habitat and connectivity among habitats as well as protecting water quality.

Native Vegetation: areas with intact native vegetation providing habitat for wildlife and rare plants—identified from air photo interpretation and field reconnaissance. Categories include: less than 25 per cent, 25 to 50 per cent and greater than 50 per cent vegetation coverage by quarter section.

Organic Zone: an area containing organics (peat, muskeg and/or organic silt and clay).

Permeable Parking: permeable pavement treatments allow rainwater to filter into the ground while providing a durable surface for vehicles to park on. Permeable parking lots can be composed of porous materials such as interlocking concrete blocks or plastic cell networks which allow grass and other vegetation to poke through.

Restoration: identifies areas where there are opportunities to restore degraded habitat thereby increasing the ecological significance or landscape level value of natural features.

Riparian Areas: areas associated with water bodies that provide important wildlife habitat and connectivity among habitat as well as protecting water quality.

Wet Ponds: wet ponds collect and store storm run-off for a significant period, releasing it after the storm run-off from the contributing area has ended. Storm water management lakes often accommodate recreation or aesthetic use around a permanent minimum level pond.

White Zone (of Alberta): Alberta is divided into two major areas based on settlement and the presence of forests: white zones and green zones. Covering 31 per cent of the land base of Alberta, the white zone consists of land that is settled and primarily used for agriculture. Alberta's privately owned land (28.5 per cent of Alberta) is virtually all in the white zone. The majority of Albertans live within the white zone, which is comprised of approximately 5 percent of Alberta's public lands. Public lands in the white zone contain Alberta's most endangered species.

References

Technical Reports

Fiera Biological Consulting Ltd.

Ecological Assessment & Recommendations for the Wizard Lake Area Structure Plan, January, 2010

MMM Group

Wizard Lake Area Structure Plan Servicing Concept

Transportation Impact Assessment Report, February, 2010

Phase I Environmental Site Assessment Report, January 2010

Thurber Engineering Ltd.

Wizard Lake Area Structure Plan Preliminary Hydrogeological and Geotechnical Assessment

Other References

Arendt, Randall, 1994, Rural By Design; Maintaining Small Town Character.

Summary of Public Input

Summary of Stakeholder Interviews

Held in Leduc County, February 25, 2009

Stakeholders:

- Enchantment Valley Taxpayers Association - Terry Reynolds, Eric Olsen
- Thorsby and District Chamber of Commerce - Fish and Game - Ruth Harrison
- Wizard Lake Watershed & Lake Stewardship Association - Laverne Falkner,
- Aquality Environmental Consulting - Dr. Markus Thormann (about to undertake work for the Watershed Association)
- Friends of Leduc Area Green Space FLAG - Dean Whitford

The consultant team held a series of stakeholder interviews with focused groups and key individuals that took the opportunity to share their individual concerns and provide consultants with the background knowledge and experience of the area. Some of the key messages and concerns that resulted from the interviews were focused around the existing level of lake activity and safety, the impact of new development and the need for environmental conservation.

Among stakeholders, there was hesitation and reservations toward intensification around the lake. Although there was consensus that some development is inevitable, it was strongly urged that no more development take place around the lake. Concerns were that additional development on the lake will result in more boat use. The use of motorized boats is increasing and resulting in a compromised safety for those who wish to use the lake for more passive and leisurely activities such as swimming and canoeing. For this reason, it is feared that development will have a high impact on the lake and will increase the amount of activity, which stakeholders feel is already at its capacity.

There was also general agreement from all stakeholders that preserving the environmental conditions around the lake should be considered a priority for the Area Structure Plan. Stakeholders feel quite passionate about conserving the natural features of the lake and protecting the surrounding area from development. The effects of boating are known to have a negative impact on the natural habitat and stakeholders are advocating for environmentally sensitive areas to be protected. To protect these areas, it was felt that there is the need for more policy and restrictive Land Use Bylaws. Boating permits and limits on the amount of boating activity by enforcement as a means of resolving these issues were also solutions raised during the discussion.

There is a real fear that Wizard Lake will mimic or follow the same development pattern as Pigeon Lake, which is regarded as having poor water quality and being very densely developed. Stakeholders were clear that their intent was not to prohibit development, but instead to ensure that development considers everything in terms of impact and effect on the lake (i.e. sewage capacity, water quality, wildlife habitat and the safety of people using the lake for recreation). For this to happen, stakeholders felt it was necessary that more controls and regulations be put in place to ensure that development is sustainable and progresses in an environmentally sensitive way.

The long term vision for stakeholders was to see more trail systems for walking and hiking, to place more limits on boating and development, to protect the land surrounding the lake and to allow for an increase in passive recreational uses (especially in the winter) such as cross country skiing, ice fishing and curling, ect. Most importantly, the shared vision of all stakeholders was to preserve the character and attractive natural environment which makes the lake so desirable.

Recorded Comments from Forum 1: Public Workshop

Held in Leduc County, May 2, 2009

Ideas were generated in each of the working groups at the Forum 1 Workshop and were recorded on flip charts. The following are the comments from both the morning and afternoon workshop sessions and are recorded verbatim as they were documented during the workshops.

Key Points from the Visioning Exercise:

Preservation and Conservation

- Environmental protection and preservation of the lake should be the number one priority
- The shoreline and marshland should be protected
- No subdivisions or development should take place along the shoreline
- Existing agricultural land should remain as it is
- Preserve habitats/ biodiversity - the health of lake is important, and should be maintained
- Maintain the tranquil environment
- Manage existing wildlife (deer/moose) - reduce hunting trapping opportunities
- Management of shoreline environments - shoreline setbacks
- Shoreline protection and habitat protection - protect wildlife corridors
- Ultimate conservation and preservation of wildlife along waterfront
- Compatible agricultural management
- Protect quality and sustainability of lake (water quality)
- Environmental control and responsibility for future developments
- The ecosystem of the lake is under stress, any further usage would destroy the eco-balance
- Preservation of natural habitats, specifically within reserve areas
- Lakefront should be utilized for environmental purposes, not development
- Preservation of existing agricultural land
- Regulation and Enforcement
- Boating control - a licensing system should be put in place to control boating on the lake – boating priority should be given to the property owners surrounding the lake
- Limit the number and size of boats allowed on the lake - no big boats, horse power limitation
- Reserve part of lake for quiet activities
- Control the type of septic tanks used along the lake
- If trails were created, maintenance and control would be required
- Designated recreation areas need to be monitored and controlled
- Better enforcement - Wizard Lake Enforcement Hotline
- Hunting is a concern when the rules are not followed (high velocity rifles are an issue)
- Control noise on the lake by enforcing boating regulations
- Signage to control ATV, dirt bikes and skidoo use
- Policing and monitoring of drinking, speeding, etc.
- Better enforcement of lake zoning

Development

- 5 acre max subdivisions should be allowed
- Only controlled development should be permitted
- Identify development (major development) setbacks – outside

Watershed Area

- Regulate lot sizes and densities
- Wizard Lake should limit development that impacts the lake
- Development should be controlled
- Developers must have long term interest in the lake (stewardship)

- Environmental control and responsibility on future development must be priority
- Development should start in the east and work its way west
- A good development might be a small community centre
- Development should be accessible to Jubilee Park
- Density must be kept low
- Mix of land uses i.e. commercial, residential, agricultural, industrial
- Poor agricultural land should be divided
- Increase lot sizes in order to lower density
- Co-ordinate and manage development - development should not occur in a piecemeal fashion and should respect the environment
- Development should be uniform around the lake

Safety

- Safety on water, sea-doo's, and water boats are problematic
- Safe recreation area
- Community Culture
- County Community building/ Community centre/ Community hall
- Any development around the lake has to be conducive to the community
- Have consideration for the integration of land uses that work together such as subdivisions, campgrounds, golf courses, etc.
- Maintain the delicate balance of community uses
- Preserve way of life for the residents
- Utilize the lake for the residents, rather than for the outsiders wanting access to the lake – Currently the community is avoiding the lake due to heavy weekend usage by outsiders

Recreation

- There should be more activities to attract those who are local to the lake
- Priorities for the Park & Rec. (County) to use the facilities
- Wizard Lake should be a shared amenity
- Zoning the lake in terms of boating - designate certain areas of lake for certain activities, separating the lake into quadrants (east, central and west)
- Integrate a trail system around the lake
- Recreational opportunities should be available for those in the community who don't have boats
- Concern over boat launches adjacent to reserve areas
- Motorsports (boating) activities should be limited
- Controlled boat launch areas - have one boat launch where the number of boats are controlled
- Decrease the number of boats launched from Jubilee Park
- Introduce more parks!
- Large boats cause erosions which affect animal habitats
- Introduce more passive recreational options such as fishing, swimming, rowboats, winter curling, and cross country skiing
- Designate a family/ passive use area
- North side of lake is not safe for swimming – this area should remain for boating only
- Implement nature stewardship for schools
- The abandoned greenhouse property may be an ideal location to develop a bird watching/sightseeing location for children/students
- West portion of lake needs to be preserved for wildlife
- Increase non-motorized boating by decreasing the wave action caused by motorized boats
- Create a No Wake Zone
- Control access to lake by limiting public boat launch to Jubilee Park
- Under current conditions, the lake is at maximum boating capacity
- Identify where and when uses should occur
- Have Jubilee Park become a common area for passive uses

- Control aggressive (motorized) recreational uses – this could be achieved by creating specific space for these activities
- Establish walking trail systems that provide connectivity in public areas

Servicing

- Ensure the area is properly serviced
- Offer more public programs i.e. garbage control
- Improve the water quality of the lake
- Have local infrastructure such as fire, police, waste management, sewage, fire exits, support for seniors available on a regular basis
- Have paved roads and dust suppression
- Have better public access and parking control
- Introduce more community oriented services
- Riparian Health Assessment recommended
- Waste management control - wastewater treatment is important
- Manage stormwater and run off
- Eliminate chemicals, herbicides, insecticides
- Standardize sewage systems

Respect for the Lake

- Recreation with respect for conservation
- Wizard Lake will be better respected by all
- Visitors do not understand the “country lifestyle” and need have respect not only for the land, but also for the residents who live there

Key Points from the Afternoon Exercise:

Opportunities and Constraints

- Marshland needs to be preserved
- Runoff is not a real concern as the watershed flows to the north
- Natural ice curling rink
- The area is becoming less segregated and more cultural
- Need development setbacks from the lake
- Market gardens are a good balance between agriculture and settlement
- Preserve good agricultural land
- Properties should be a minimum of 5 acres to ensure low density
- Wastewater management should be better controlled
- The ridge area along the shoreline creates an opportunity for development
- Limit large scale commercial operations
- A museum or information centre would be a positive addition to the community
- Flatten hilltop/reduce road grade/slope
- Higher standard of roads – dust/noise abatement
- Enchantment Valley road oiled and draining into lake
- West park of the lake is less used, prefer to keep it that way
- Worry about speedboats and possible fatalities
- Wave action is eroding the shore
- Snowmobilers do not obey boundaries

Land Use Plan

- Concentrate density in certain areas
- No future development should be considered
- 24 lots per quarter section
- More recreational parks should be introduced in the future

- Setbacks should be applied to the top of the bank
- Zone the lake into 3 zones – separating motorized activities from those that are passive
- Zone One: Water Skiing –controlled Quantity, Speed
- Zone Two: Fishing
- Zone Three: Wildlife, nature, and Paddling
- No subdivisions or industrial uses should be permitted
- Agricultural setback? – best management practice for agriculture
- Existing agricultural land should stay as it is now
- Any agricultural land should be developed based on soil rating
- County should set up rules for the watershed area regarding subdivision development
- Watershed – type of lot size, percentage of tree cover, restricted use
- Construction guidelines should be applied
- No multi-lot/ high density within study area or greater than 10 acre lot size
- No intensive livestock
- Line defined by hydrological divide or half mile buffer
- Place restrictions on development adjacent and abutting lake
- Erosion /drainage issues by subdivision at west end of lake (basin area)
- Setback from top-of-bank rather than shoreline
- Restrict private sewage in watershed area
- Capture and retain natural and pristine essence of lake
- Restrict CFO's in watershed area
- Maximum density – country residential style
- Keep land in natural settings
- Setback to lake for all development - prevent erosion
- Preservation of vegetation along shoreline and bank
- No subdivisions should be built for monetary gain
- Development can occur as long as it does not negatively impact the lake
- Development should not be placed before protection of the lake
- Development should not occur on good county soil
- Upgrade requirement for emergence services
- More consideration for conservation areas
- Further detail on high sensitivity lands
- High restriction of development in red areas
- Increased landowner participation
- Environmental control and responsibility for future developments
- Rural settings should be maintained
- A balance between the environment and uses when developing
- Policing and monitoring of drinking, speeding, etc
- Lakefront should be used for environment, not development
- Recreation
- Introduce a walking trail over the western third of the lake
- Picnic sites
- Turn provincial park into day use
- Parking lots would have washrooms, and garbage cans
- Wildlife historical centre
- Cross country ski site
- Fishing/Swimming areas
- Spot for non-motorized boats
- Permitting system to control boat use
- No quads
- Fishing – year round
- Winter recreation – cross country skiing, walking trail, skating rink
- Wild life observation
- Peddling

- Day use picnic area away from park
- Swimming
- Senior community centre to build community
- Golf course
- Fishing
- Utilize the Jubilee playground
- Better access to park, use of park facilities
- Protect unique and rare species
- Make note of wild cranberries along the northern shore
- Adequate access for boat launch to lake
- Improve or remove west boat launch
- Enhance open space at Enchantment Valley and ultimately connect it to Jubilee Park
- Enhance county bush land with walking trails
- Guide on west side of lake (hunting)
- Potential for educational sessions/gatherings
- Need a meeting point with parking/facilities
- Foot paths
- Increased maintenance of trails
- Designated ATV trails/areas
- Designated walking/biking/horseback trails
- Activities that take in the beautiful autumn scenery

Other Comments

- Revisit the plan every five years
- Make a plan for everybody
- Warn traffic about wildlife and cattle on RR to twp. Rd. 482, perhaps 274
- Lack of respect - visitors to the area do not care about the health of the lake
- A saturation point where country living/identity is lost
- "Don't kill the goose that lays the golden egg"
- Initial and long term costs - who is responsible for funding?



Wizard Lake ASP – Bylaw Amendments

LEDUC COUNTY

[illegible]

BYLAW NO. 24-11

LEDUC COUNTY

**A BYLAW OF LEDUC COUNTY, IN THE PROVINCE OF ALBERTA, FOR THE PURPOSE OF
AMENDING THE WIZARD LAKE AREA STRUCTURE PLAN BYLAW NO. 17-10.**

WHEREAS

Pursuant to the Municipal Government Act, being Chapter M-26, Revised Statutes of Alberta 2000 and amendments thereto, the Council of Leduc County deems it to be in the public interest to amend the Wizard Lake Area Structure Plan Bylaw No. 17-10;

NOW THEREFORE

Be it resolved that the Council of Leduc County, duly assembled, enacts that Bylaw No. 17-10 be amended as follows:

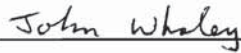
1. That the boundary of the Central Conservation Area shown on "Map 1: Land Use Character Areas" be extended to include Block B, Plan 5353 NY, Pt. S.W. 1-48-27-W4th as shown on the attached Schedule A: Proposed Amendment Map.

This By-law shall take effect on the date of the third reading

Read a first time this 7th day of June, A.D., 2011.

Read a second time this 7th day of June, A.D., 2011.

Read a third time with the unanimous consent of Council Members present and finally passed this 7th day of June, A.D., 2011.



MAYOR



COUNTY MANAGER

*Proposed Amendment to:
Wizard Lake Area Structure Plan*

Area: 5.77 ha±

To alter Map 1.0, (Land Use Character Area)
To amend entire parcel designation from:
Conjuring Creek Character Area
to: Central Conservation Area

Rge Rd 271

Wizard Dr.

Legal Description: Pt. SW 1-48-27-W4
Block B, Plan 5353NY

Applicants: Michael O'Shaugnessy
& Leslie Merrett

Land Owner: Michael O'Shaugnessy

SCHEDULE "A"
Proposed Amendment to WLASP



BYLAW NO. 12-13
LEDUC COUNTY

A BYLAW OF LEDUC COUNTY, IN THE PROVINCE OF ALBERTA, TO AMEND THE WIZARD LAKE AREA STRUCTURE PLAN BYLAW NO. 17-10.

WHEREAS

The Council of Leduc County deems it to be in the public interest to amend the Wizard Lake Area Structure Plan Bylaw No. 17-10;

NOW THEREFORE,

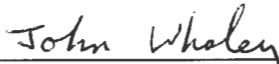
be it resolved that the Council of Leduc County, duly assembled, hereby enacts that Bylaw No. 17-10 be amended as follows:


1. **To amend Section 12.2.2 – Built Form as follows:**
Delete - 12.2.2B: A maximum of one environmentally responsible dwelling unit (no secondary dwelling unit allowed) shall be permitted on lots with a minimum area of 16.2 hectares (40 acres).
2. **To amend Section 12.4.2 - Built Form as follows:**
Delete 12.4.2C: Only one dwelling unit shall be permitted per lot.
3. **To amend Section 12.5.2 - Built Form as follows:**
Delete 12.5.2C: Only one dwelling unit will be permitted per lot.
4. **To amend Section 12.6.2 - Built Form as follows:**
Delete 12.6.2C: Only one dwelling unit shall be permitted per lot.

This By-law shall take effect on the date of the third reading.

Read a first time this 11th day of June, 2013.


Read a second time this 11th day of June, 2013

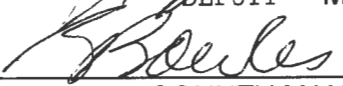


MAYOR


COUNTY MANAGER

Read a third time passed this 25th day of June, 2013.



DEPUTY MAYOR


COUNTY MANAGER