

Conservation and Management of Riparian Lands and Uplands to Minimize Nutrient Loading and Pollution of Pigeon Lake

Model Land Use Bylaw Lakeshore Development Provisions

presented by

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ENGAGE

Outline

- ▶ Background
- ▶ Identification of Policy Issues
- ▶ Process
- ▶ Model Land Use Bylaw Provisions
- ▶ Application
- ▶ Beyond Pigeon Lake

Background



- ▶ Pigeon Lake Watershed Association
- ▶ Association of Pigeon Lake Municipalities
- ▶ Pigeon Lake Watershed Management Plan Steering Committee
- ▶ Solving problems at the source

Solving problems at the source

- ▶ Public participation
- ▶ Public-private partnerships/NGO & municipalities
- ▶ Pro-action
- ▶ Precautionary principle
- ▶ Pollution prevention (non-point sources)

Conserving and managing the natural ecological infrastructure that protects and sustains water quality **on private lands** adjacent to the lakeshore.



Association of Pigeon Lake Municipalities

- ▶ purposes of the APLM is to promote water quality in Pigeon Lake through local municipal action.
- ▶ adopted seven policy statements (2000) that are embedded in current land use bylaws

Planning principles

The 7 planning principles from the APLM, 2000

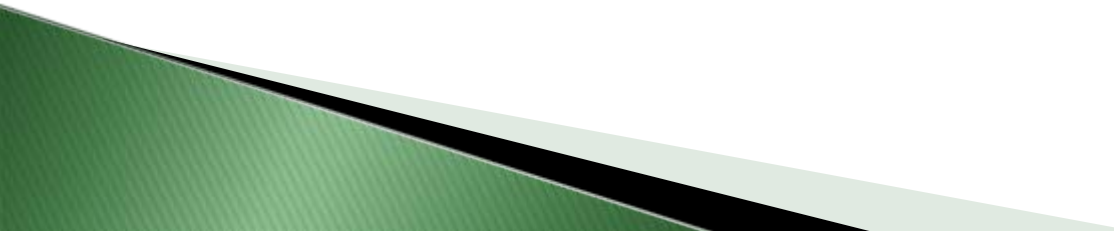
- ▶ Recognize the rights of the farming community
- ▶ Maintain water quality
- ▶ Protect groundwater flows
- ▶ Maintain public access to the lake
- ▶ Protect the fishery
- ▶ Allow suitable new development
- ▶ Keep open communication on development proposals.

Model Land Use Bylaw

Principles from Leduc County

Recognize

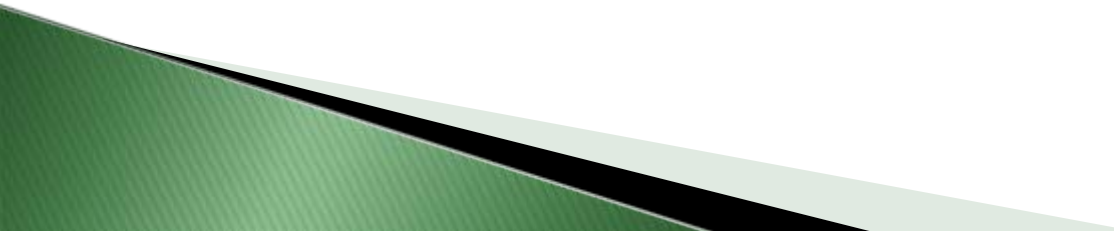
- ▶1. Improve the health of Pigeon Lake by identifying how and where water enters the lake and ensuring the **ecological infrastructure** that supports the source waters is protected.
- ▶2. Protect **riparian lands** adjoining natural drainage courses through site specific, performance based **building development setbacks** configured to absorb and filter pollutants draining from adjoining lands.
- ▶3. Maintain, protect, and enhance the **biodiversity** of the watershed while integrating human activities.

- ▶ 4. Recognize **the importance of Tide Creek** as the most consistent contributor of flowing water to the lake.
 - ▶ 5. **Agriculture is a valued** part of the Pigeon Lake cultural heritage and is important to everyone's survival.
 - ▶ 6. Recognize that **past ways of developing and maintaining recreational properties** have negatively impacted Pigeon Lake.
 - ▶ 7. Recognize that **some agricultural operations may negatively impact** Pigeon Lake.
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Restore

- ▶8. **Restoration of riparian lands and uplands** adjoining Pigeon Lake can be compatible with some types of development.
- ▶9. Explore opportunities to **reforest previously cleared reserve and open space lands** on new developments through the reintroduction of indigenous species of trees, shrubs and grasses.
- ▶10. **Enhance the percolation of storm runoff** into ground water by managing runoff as close to its source as possible.
- ▶11. Ensure the integrity of **existing indigenous tree stands**.
- ▶12. Not allow **surface water runoff** to access Pigeon Lake or naturally occurring wetlands directly without first passing through a holding pond or other constructed wetland area,

Refocus

- ▶13. Concentrate **new residential activity** away from the lakeshore.
 - ▶14. Give higher priority to **protection of riparian lands and uplands** that absorb or filter water entering the lake than to development.
 - ▶15. Design new subdivisions using **ecological design and low impact development** principles and practices.
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Reduce

- ▶ **16. Minimize disturbances to wetlands, riparian lands and uplands** that absorb or filter water from developed or industrial lands.
 - ▶ **17. Reduce the human footprint** in terms of space taken by individual building sites, thus maximizing the amount of open space available for habitat preservation and watershed restoration.
 - ▶ **18. Limit and, in places, restrict development** to ensure water entering Pigeon Lake has an opportunity to be absorbed and filtered through ecological infrastructure such as wetlands and the riparian lands adjacent to Tide Creek.
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Balancing competing principles

Maintain water
quality



Allow suitable new
development

Nutrient loading and algae growth



Water quality monitoring

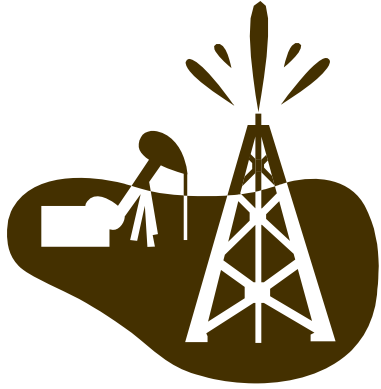
Photo: Bob Gibbs

PLWMP Steering Committee: Identification of Policy Issues

Sense of urgency

- ▶ Sources of human generated nutrients; and
- ▶ Maintenance and enhancement of natural ecological infrastructure (wetlands, riparian and lakeshore systems) that mitigate impacts and absorb nutrients.

Lakeshore land-uses



Lake experience



Process

- ▶ Pigeon Lake Watershed Management Plan Steering Committee
- ▶ Multi-stakeholder
- ▶ Municipalities at the table
- ▶ Two parallel projects for reducing nutrient loading:
 1. Reducing cosmetic fertilizer applications
 2. Model Land Use Bylaw provisions to protect riparian lands and uplands



Process

working together with a consultant

- ▶ Reviewed existing land use bylaws
- ▶ Reviewed area structure plan-Leduc County
- ▶ Reviewed concept plan-County of Wetaskiwin
- ▶ Lands within 800 metres from legal bank
- ▶ Menu of policy themes and statements to reduce nutrients and retain natural infrastructure
- ▶ Menu of provisions




Overview of MLUB document

Background

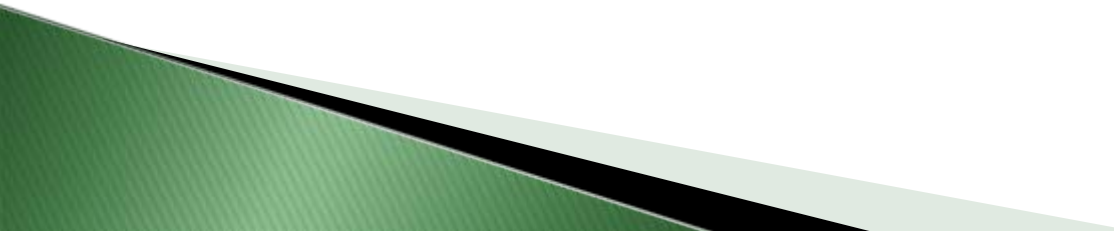
- ▶ Definitions
- ▶ Sources of law under MGA
- ▶ Policy framework for both Summer Villages and Counties

General Provisions

- Nutrient release reduction and natural buffers
 - New development-counties
 - Re-development of near lake lots-summer villages
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Overview of MLUB

Lakeshore Development Provisions

- Objectives
 - Interpretation (Definitions)
 - Development Permit process
 - BMPs
 - Permitted and discretionary land uses
 - General Requirements – Environmental Features
 - Setbacks and site coverage
 - Focus on landscaping and site coverage
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Model Land Use Bylaw

Lakeshore Development Provisions

Four purposes for creating the Lakeshore Development Provisions to regulate and control land use within 800 metres (a half-mile) of the legal bank of Pigeon Lake.



Purpose 1

1. to provide model land use bylaw provisions that may be used by Pigeon Lake municipalities to **implement and enforce land-based source control policies** with respect to reducing nutrient loading and other pollutants from entering the lake, caused by inappropriate use of riparian lands and uplands by private landowners



Purpose 2

2. to provide land use bylaw provisions that may be **used by summer villages** to regulate and control the redevelopment of private lands and buildings on the lakeshore to reduce nutrient loading in Pigeon Lake.

Purpose 3 and 4

3. **to raise awareness** among Pigeon Lake municipalities and others of lake management “best management practices” that might be utilized to improve water quality in Pigeon Lake; and
4. **to further develop shared community values** about appropriate private land use within lands adjoining Pigeon Lake to ensure that the ecological infrastructure required to sustain the lake’s aquatic ecosystem is managed and sustained for this and future generations.

Lands within 800m of legal bank

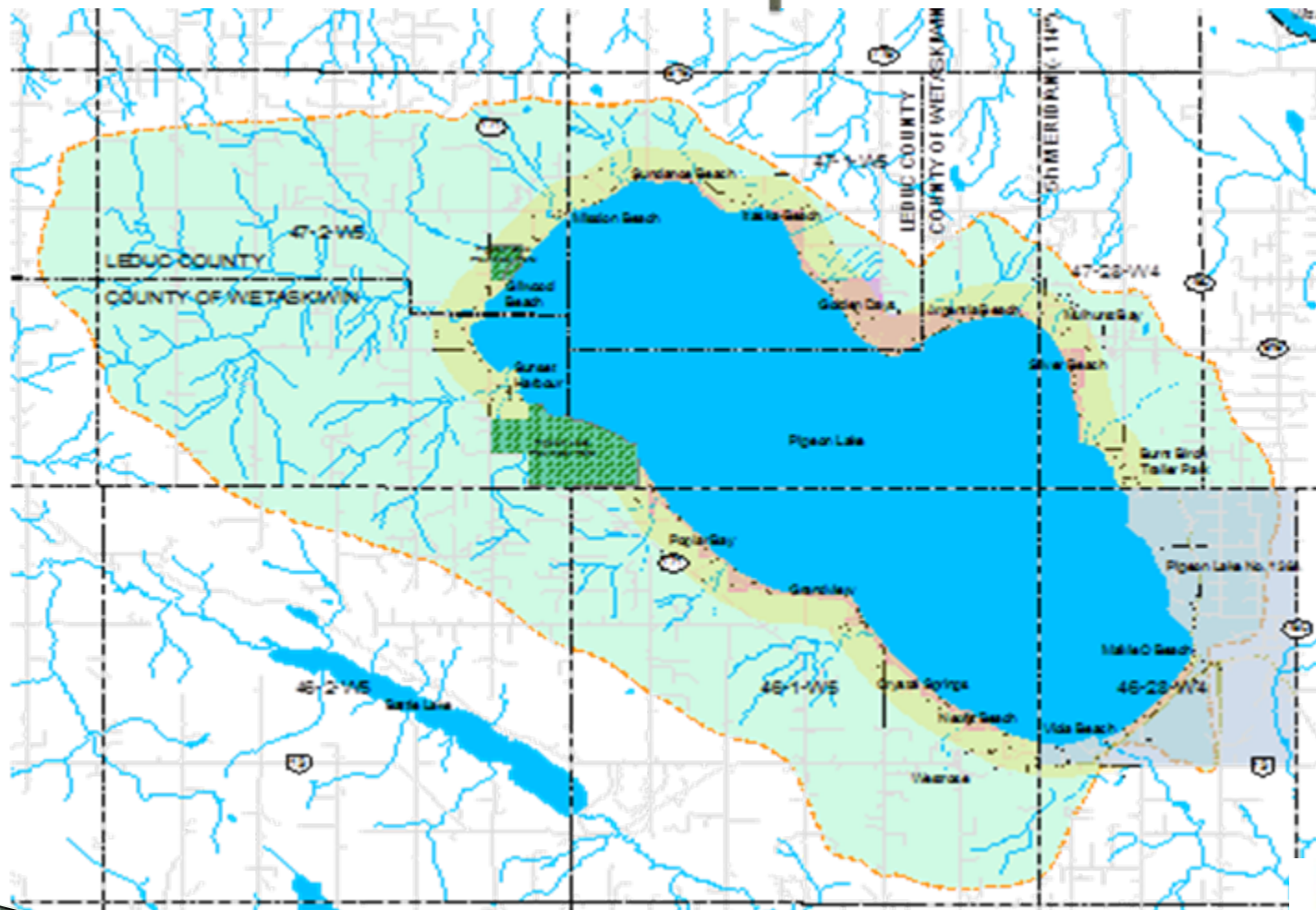
The MLUB is a template of “Lakeshore Development Provisions” for all lands within 800 metres of the legal bank of Pigeon Lake.

Provisions reflect that lands located within the **Lakeshore Development Area** in each municipality are influenced or impacted by land uses in the greater Pigeon Lake Watershed.



Pigeon Lake Watershed

“lakeshore development area”



Policy Themes and Statements

- ▶ **THEME 1: RESTRICTED LAND USES WITHIN THE LAKESHORE DEVELOPMENT AREA**
- ▶ **THEME 2: BUILDING DEVELOPMENT SETBACKS FROM THE LEGAL BANK**
- ▶ **THEME 3: CONSTRUCTION MANAGEMENT AND LANDSCAPING**
- ▶ **THEME 4: STORM DRAINAGE AND RAINWATER HARVESTING**
- ▶ **THEME 5: RIPARIAN LANDS AND WETLANDS**
- ▶ **THEME 6: RESERVE LANDS**



Menu of Provisions

- ▶ Draft Land Use Bylaw Amendment Bylaw
- ▶ General Purpose of a Land Use Bylaw
- ▶ Interpretation
- ▶ Purpose of Lakeshore Development Area Provisions
- ▶ Compliance with Provincial and Federal Law and Regulations
- ▶ General Provisions
- ▶ Restricted Uses
- ▶ Special Planning Study Requirements
- ▶ Requirements for a Development Permit
- ▶ Compatibility with Community Standards
- ▶ Non-conforming Land Uses and Buildings

http://www.google.ca/imgres?imgurl=http://www.dermott.ca/alb2005/pigeon1.jpg&imgrefurl=http://www.dermott.ca/alb2005/fotos.html&h=415&w=640&sz=36&tbnid=yH-ye0cBo8dtmHM:&tbnh=121&tbnw=187&zoom=1&usq=_e_P8oCg5UI9WxsLP30Bb_eAll-s=&docid=msvi1A61dbcCHM&sa=X&ei=gIVEUsvyMeKdigKp24HACQ&ved=0CDUQ9QEwBA

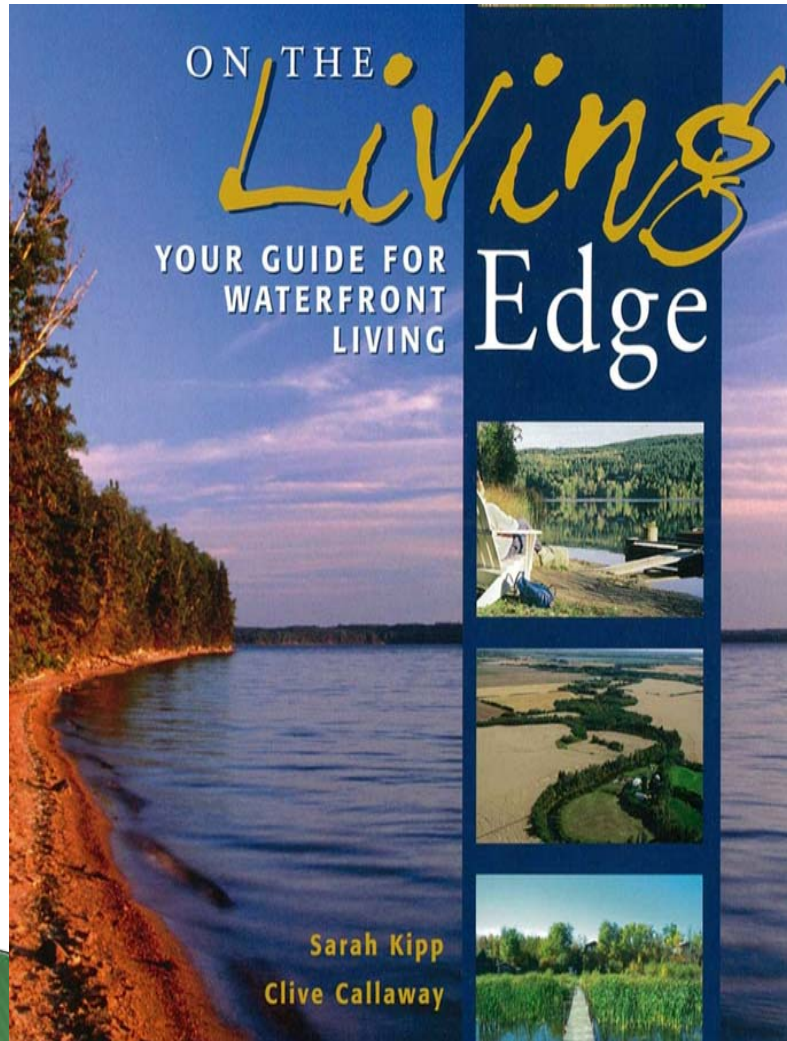


Menu of Provisions continued...

- ▶ Building Development Setbacks
- ▶ Restrictions on Use and Buildings in Setback Areas
- ▶ Special Planning Study Requirements
- ▶ Permitted Uses and Buildings
- ▶ Discretionary Uses and Buildings
- ▶ Lot Size and Site Coverage
- ▶ Site Drainage and Rainwater Harvesting
- ▶ Construction Management and Landscaping
- ▶ Private Wastewater Treatment and Storage
- ▶ Use and Development of Wetlands and Riparian Lands
- ▶ Use and Development of Reserve Lands
- ▶ Storage of Materials that Constitute a Pollution Hazard or Nuisance



Recommends Best Management Practices



Stepping Back from the Water

Stepping Back from the Water handbook is designed to assist municipalities, watershed groups, developers and landowners in Alberta's settled region determine appropriate water body setbacks for development around our lakes, rivers and wetlands. It will also encourage new policies for achieving riparian environmental outcomes.

<http://environment.gov.ab.ca/info/library/8554.pdf>

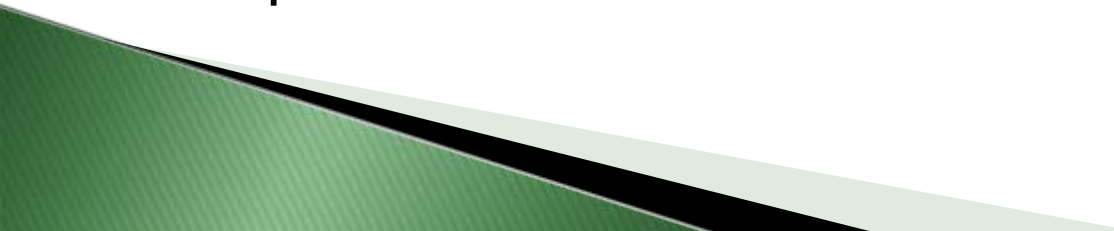
Application

- ▶ **Advisory** to municipalities- a tool
- ▶ Existing land-uses, development, and buildings are non-conforming uses that would not be affected by the adoption of bylaw provisions.
- ▶ When a landowner applies for a development permit for re-development that changes or intensifies land-use, or applies for subdivision approval, then any bylaw provisions previously adopted by the municipality would apply.

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Planning for incremental change

- ▶ Change to current land-use management practice is necessary
 - ▶ Can be introduced on an incremental basis
 - ▶ Education and learning are crucial
 - ▶ Learning together
 - ▶ Co-creation of knowledge and plans
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- ▶ More enjoyment from lake property and the lake experience
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http://www.google.ca/imgres?imgurl=http://img.wikinut.com/img/1wc-16_tgx906xaa/jpeg/0/Pigeon-Lake.-AB.jpeg&imgrefurl=http://jobs.wikinut.com/img/1wc-16_tgx906xaa/Pigeon-Lake.-AB&h=791&w=1479&sz=225&tbnid=RhM_o0uh5NHXwM:&tbnh=86&tbnw=161&zoom=1&usq=Uqg0a-XdlXKoTaqFdJCKe5slOKM=&docid=3egf_f60DAMxoM&sa=X&ei=glVEUsvyMeKdigKp24HACQ&ved=0CD4Q9QEwCA



Beyond Pigeon Lake

- ▶ Model Land Use Bylaw provisions will change over time as Pigeon Lake changes.
- ▶ Created for Pigeon Lake community of users.
- ▶ Other municipalities may want to consider the process and provisions, but will need to create their own tools to solve unique community issues.





Don't ask what your lake can do for you:
Ask what you can do for your lake.