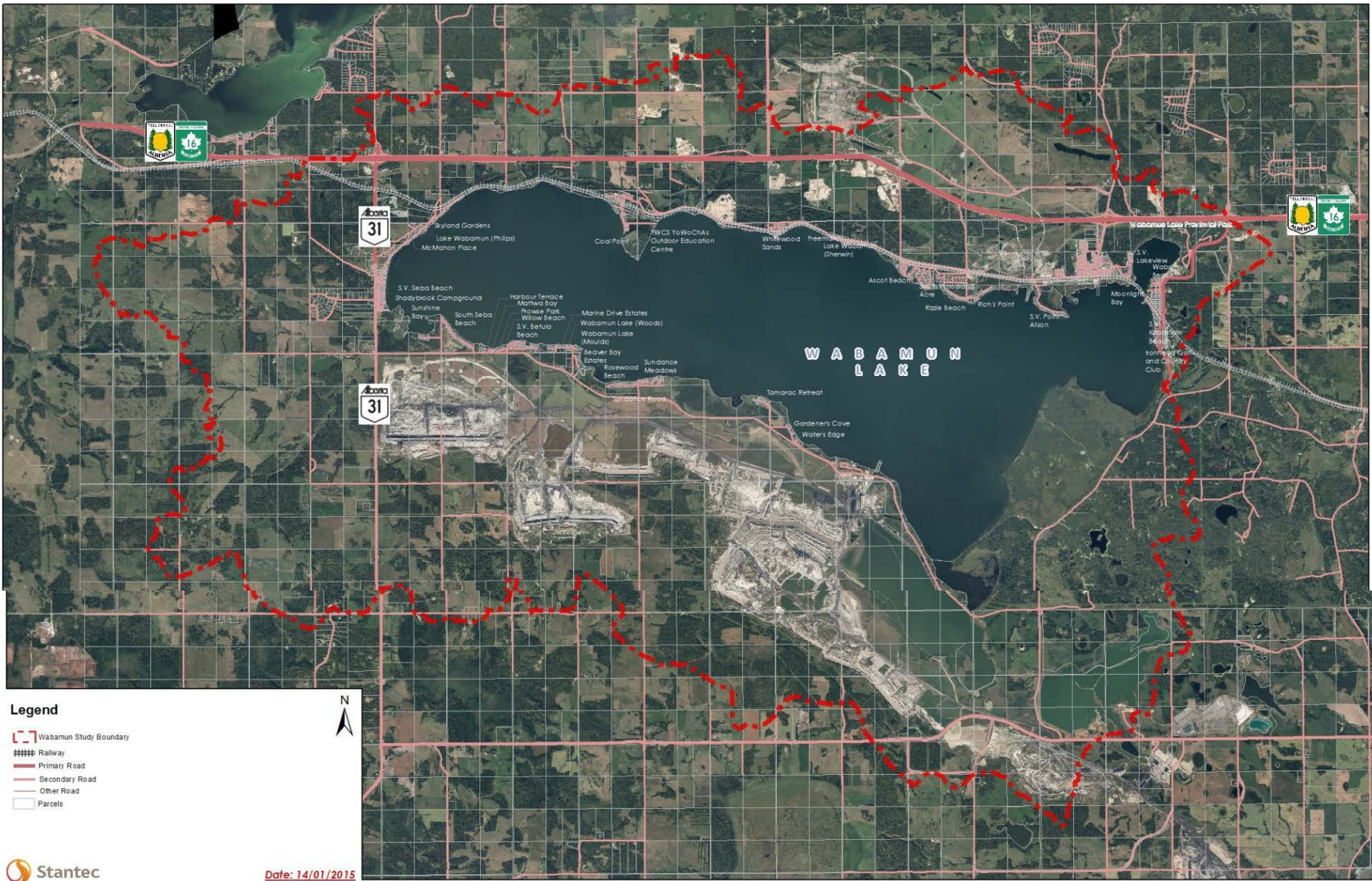


Wabamun Lake Sub-watershed Land Use Plan & Tool Box ALMS Workshop



September 24, 2015



Planning Process

Phase 1: WLSLUP Technical Review of Data

- compile historical and current scientific data and documentation
- provides a scientific basis for the WSLUP

Phase 2: WSLUP Development

- develop the WSLUP outlining the current health and land uses, future land use, environmental issues and other pressures
- list policies, procedures and regulation recommendations needed to guide future land use

Phase 3: WLSLUP Implementation and Policy Development

- develop an Implementation Plan that details the procedures, actions, and timing
- a Recommendations Report for proposed updates to the County's Environmental Conservation Master Plan as it relates to land use, the Land Use Bylaw and Municipal Development Plan

Phase 4: WLSLUP Toolbox and Tool Development

- develop a flexible Lake Land Use Plan Toolbox that the County and its regional partners can use when developing future lake land use plans

Plan Overview

(Watershed/Land-use Plan)

- The purpose of the Plan is to improve the health of the watershed, so it is sustainable and resistant to stress, while meeting the economic and social needs of its residents and visitors.
- Its is intended to be a long-range plan that will be adopted and implemented in a coordinated manner through a partnership between Federal, Provincial, Municipal decision makers, residents and visitors.
- It is intended to establish a vision for a desired future, and establish the sustainable environmental, economic, community, build environment and governance outcomes, objectives and actions we will need to get us there.

Wabamun Lake Sub-watershed Land Use Land Use Plan Technical Report

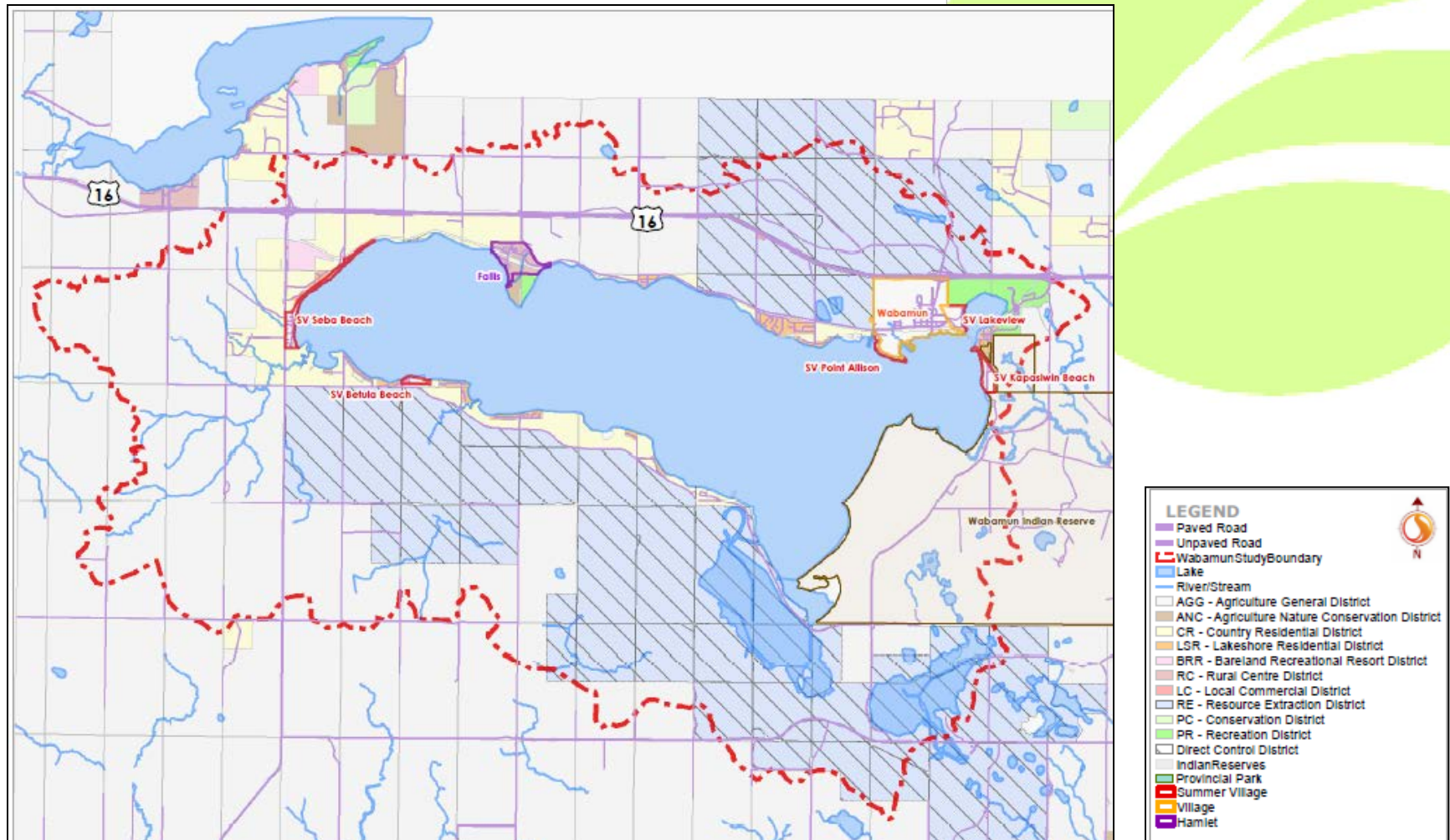


August 14, 2015

Land Use

- 7 municipalities within the boundary
 - 5 summer villages,
 - The Village of Wabamun,
 - Parkland County including hamlet of Fallis and numerous residential subdivisions
- TransAlta has mining rights to a large portion of land base adjacent to the lake
- Agriculture, aggregate, recreation, residential, energy production and transport/transmission
- Mixture of private and public lands
- Paul Band Indian Reserve No. 133A along the eastern shore
- Wabamun Lake Provincial Park (northeast corner)
- CNR main line runs through the Plan area along the north shore of the lake

Current Land Use



Water

Surface Water

- Maintaining lake levels that support all uses
- Maintaining or improving water quality
- Trans Alta adds treated water to the lake annually

Groundwater

- Maintaining or improving groundwater levels and groundwater quality

Air Quality

- Generally “good” although some local concerns exist

BIOLOGICAL HEALTH

- Aquatic Environment
- Terrestrial Environment
- Environmentally Significant Areas (ESA's)



Existing Toolbox and Tools

Phase 1

Information Sources - Engagement

- Stakeholder
- Public
- Residents
- Provincial, Municipal, Federal*
- Aboriginal
- Industry

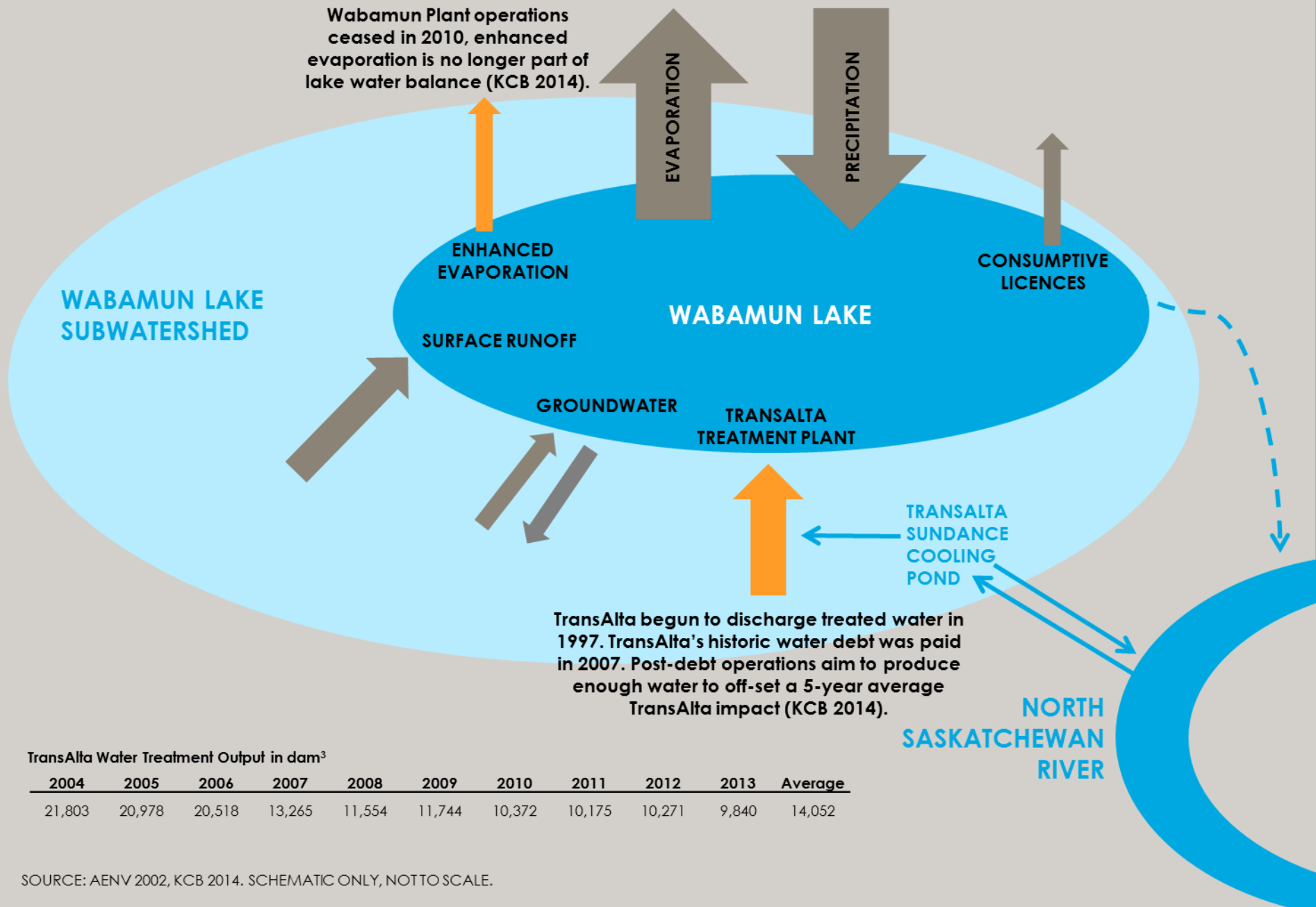
Existing Toolbox and Tools

Phase 1

Information Sources

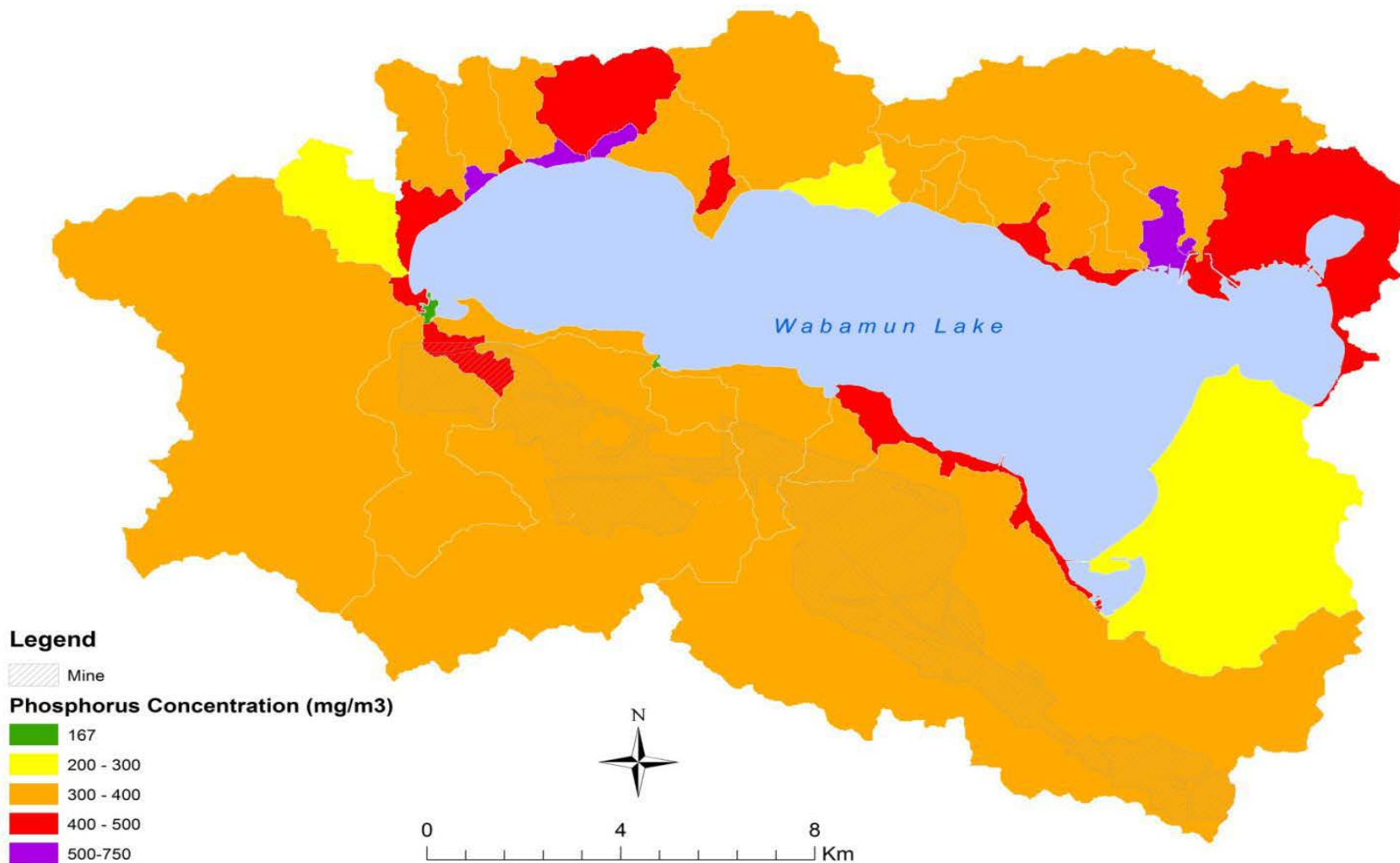
- Traditional/Scientific knowledge
 - Land use, geology, soils, tributaries, population, land cover, livestock, fish and wildlife, air quality
 - Surface and ground water quality (P/pollutants)
 - Surface and groundwater quantity
 - Culturally important features
 - Policy/regulations/jurisdiction (Fed, Prov, Muni)
 - Water Balance
 - Invasive species
 - Paleo-limnology
 - Shoreline Riparian Health Assessment
 - Environmentally Significant Areas (ESA's)

WATER BALANCE 2002-2014: Net increase in lake volume

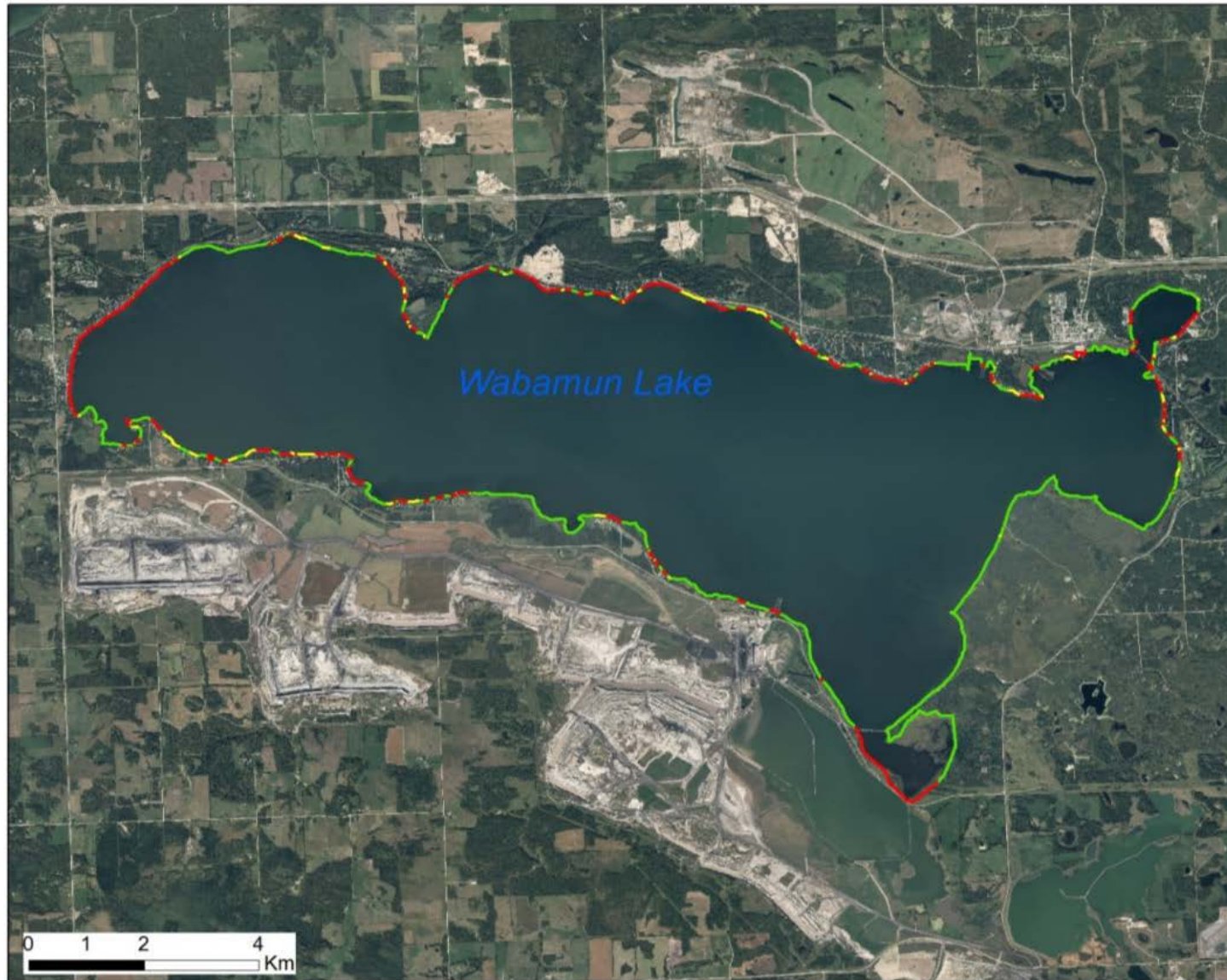


TransAlta Water Treatment Output in dam³

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Average |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|---------|
| 21,803 | 20,978 | 20,518 | 13,265 | 11,554 | 11,744 | 10,372 | 10,175 | 10,271 | 9,840 | 14,052 |



Wabamun Lake: Aerial Riparian Health Assessment (2014)



Inset Map Legend

- Lake Wabamun
- North Sask. River
- North Sask. Watershed



Map Legend

Shoreline Health Rating

- Healthy
- Moderately Impaired
- Highly Impaired

This map created for the Wabamun Watershed Management Council by the North Saskatchewan Watershed Alliance on January 30, 2015.

The information presented here is based on high resolution videography that was captured in August of 2014. As well, The orthophotographs captured in 2013 were provided by Parkland County. Funding for the project was provided by the Land Stewardship Centre





Date: 07/01/2015

Tools we should add to the Toolbox Phase 1

- Terrestrial and Wetland Health Assessment*
- Lake Recreation Carrying Capacity*
- Pollution Sources*
- Groundwater Quality and Quantity*

TOOLBOX and TOOLS

Phase 2

Engagement

- Stakeholder
- Public
- Aboriginal
- Residents
- Industries
- Provincial, Municipal and Federal*

Wabamun Lake Sub-Watershed Land-Use Plan Outcomes/Objectives/Actions Chart

(This Document is for Discussion Purposes Only and has not been vetted through Appropriate Councils, the Province of Alberta or other Organizations)

Our proposed Vision for the sub-watershed is:

"As integrated components, land and water will be jointly stewarded to improve the health and resiliency of the sub-watershed while fostering a sustainable and diverse economy within it. We will be innovative and creative in growing a sustainable community that provides equitable opportunities for all, and celebrates our heritage and culture within a healthy environment."

Outcome 1 – Environmental Sustainability

By taking a precautionary, informed (scientific/traditional knowledge) and coordinated approach to stewardship of the sub watershed (water, air quality and biodiversity).

| Objectives and Rationale | Consultant Team's Recommended Actions | Lead/Participant | | | |
|---|---|------------------|--------|--------------------------|-------------------------|
| | | Province | County | Villages Summer Villages | Community Associations* |
| SURFACE WATER QUALITY MAINTAINED OR IMPROVED Water quality is important to all life. Land use can affect water quality through run off that carries nutrients, pesticides, sediments, etc. from agricultural, residential, commercial and recreational areas into streams and the lake. Surface water quality limits can be set in management frameworks established through provincial regulation, requiring provincial and municipal decision makers to ensure they are not exceeded because of their approval decisions. Although the CN mainline is federal jurisdiction, the potential impact on the lake and nearby residents from the line and another potential derailment requires continued efforts to prevent negative impact to the sub-watershed. These proposed actions are intended to reduce the amount of runoff and reduce potential pollution events that reduce water quality. | <ul style="list-style-type: none"> Set phosphorus concentration and other limits in the lake and manage within these limits. | L | P | P | |
| | <ul style="list-style-type: none"> Work with the Federal Government and CN to identify and implement mitigation strategies to minimize the potential for future impacts of the CN mainline to the watershed and to potentially move it further away from the lake. | L | P | P | |
| | <ul style="list-style-type: none"> Identify point and non-point sources of pollutants and soil erosion in areas that have high nutrient loading. | L | P | P | |
| | <ul style="list-style-type: none"> Reduce the amounts of pollutants, nutrients and sediments in surface runoff including: <ul style="list-style-type: none"> Appropriate manure management practices. Conservation tilling (no till and reduced till). Restrict livestock access to riparian areas, set up livestock watering and salt/mineral sites away from riparian areas and water bodies. Within the high phosphorous concentration overlay areas, fertilizer containing phosphorous will be restricted. Within the moderate phosphorous concentration overlay areas, soil tests will be required before application of fertilizer containing phosphorous will be permitted. Implement lot-level measures that reduce runoff and pollution in areas of high nutrient loading (eg. reducing fertilizer use, increasing infiltration, capturing storm water runoff). Expanding existing initiatives (eg. ALUS, Green Acreages) and implementing new initiatives including the Blue Flag Program for beaches and marinas. | L | L | L | |
| | <ul style="list-style-type: none"> Improve water conservation and efficient use. | P | L | L | P |
| | <ul style="list-style-type: none"> No new oil and gas, aggregate, and mining operations will be approved in the sub watershed and existing operations will be phased out. | L | L | P | |
| | <ul style="list-style-type: none"> Better define requirements and enforcement for the management of existing gravel pits and other excavations including improved water recycling. | P | L | | |

TOOLBOX and TOOLS

Phase 3 & 4

Planning, Policy and Regulatory, Certifications

- Aligned/new municipal bylaws
- Inter-municipal Plan
- Sub-regional plan under ALSA and the NSRP
- Coordinated provincial/municipal approval and enforcement processes
- Increased enforcement
- Provincial regulation – bed and shore
- Federal regulation-boat speed, restrictions
- Blue Flag Program Canada
 - Beaches, Marinas, Boats

TOOLBOX and TOOLS

Phase 3 & 4

Best Management Practices

- Lake Stewardship Reference Guide: Association of Summer Villages of Alberta, 2006.
- Municipal Guide: Planning for a Healthy and Sustainable Watershed: North Saskatchewan Watershed Alliance
- The Shore Primer, Prairies Edition: A Cottage Owner's Guide to a Healthy Waterfront: Department of Fisheries and Oceans

TOOLBOX and TOOLS

Phase 3 & 4

Best Management Practices

- Environmental Manual for Alberta Farmsteads – Fuel Storage and Handling
- The Alberta Environmental Code of Practice for Pesticides.
- Snow Disposal Guidelines for the Province of Alberta
- Creative Approaches to Subdivision Development in the Bow River Basin: A Guide for Municipalities
- Guide to Naturalizing a Lakefront Shoreline 2010. Wabamun Watershed Management Council

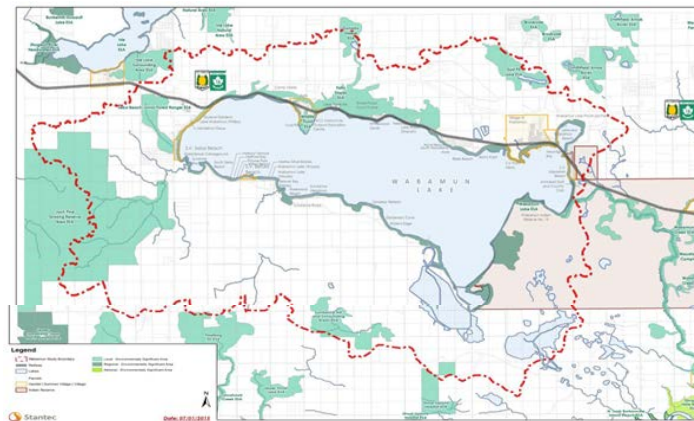
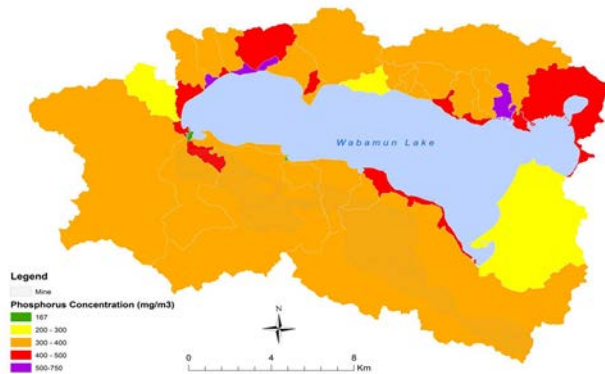
TOOLBOX and TOOLS

Phase 3 & 4

Best Management Practices

- Protecting Riparian Areas -Creative Approaches to Subdivision Development in the Bow River Basin
A Guide for Municipalities, Developers and Landowners
- Integrated Pest Management - City of Calgary
- Municipal Guide: Planning for a Healthy and Sustainable North Saskatchewan Watershed
- Efficient Use of Land Implementation Tools
Compendium, 2014

5. TOOLBOX and TOOLS



parkland
county

Wabamun Lake Subwatershed Land Use Plan



5. Next Steps

- Draft Plan for Community comment early 2016
- Implementation Plan Spring 2016
- Tools and Toolbox Spring 2016

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