

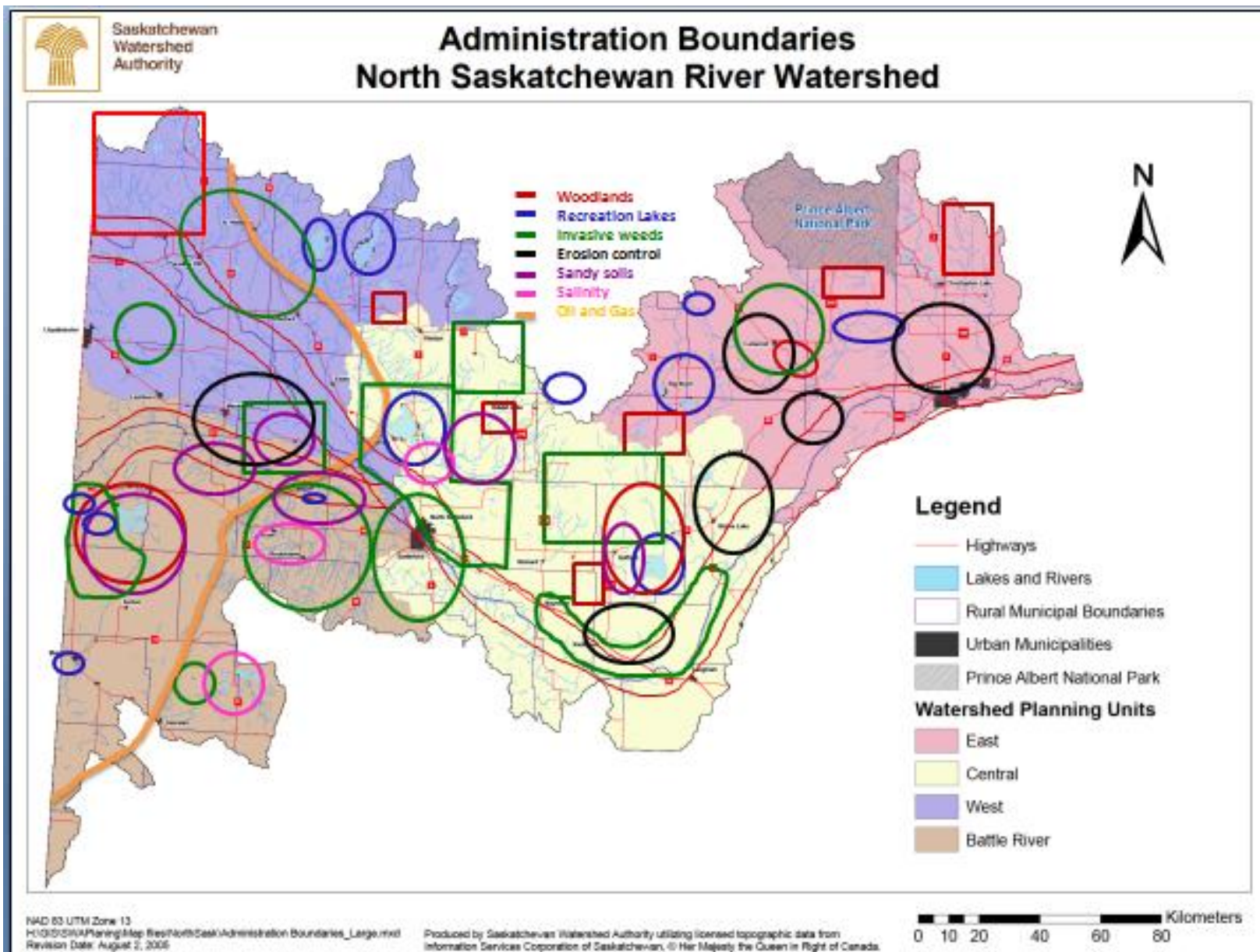
### **Broad Goals for the North Saskatchewan River Watershed**

- Safe guard groundwater and surface water
- Promote healthy stable soils and natural areas
- Grass roots promotion of the positive influence agriculture has on the environment
- Educate producers on agri-environmental hazards
- Help producers receive financial reward for environmental improvements
- Ensure producers understand the value of good management practices
- Protect pollinators
- Enhance biodiversity, air quality, water quality and soil health
- Encourage stewardship and ethics within agriculture
- Manage manure as a resource not a waste
- Educate producers on the quality and quantity of wetlands

### **Major Threats and Issues in the North Saskatchewan River Watershed**

- Invasive plants (including by not limited to leafy spurge, scentless chamomile, common tansy, yellow toadflax, Russian knapweed, oxeye daisy & hoary alyssum)
- Flooding, excess moisture, salinity and marginal soils
- Manure management
- Nutrient management on cropland
- Erosion control
- Desertification
- Abandoned wells
- Removal of habitat (including but not limited to shelterbelts and natural areas)
- Increase in monocultures which lead to increased pest pressures
- Increased pressures of recreational users on agriculture land and effects on water quality
- On-farm waste dumps (active and abandoned)
- Loss of forages in rotation
- Improved riparian area management

- Harmful public perceptions of agriculture practices
- Man-made drainage
- Intensive Livestock Operations (of any size)



The above map identifies target areas within the watershed that the AEGP will be focussing time and resources on to improve the agri-environmental impact producers have in the watershed. The areas identified by squares are primarily community pastures or provincial forest areas with grazing leases, while the remaining polygons encompass any other key target area.

KEY TARGET AREAS	WHERE?	WHAT?	WHO?
<b>Deep Aquifers</b> - Ribstone - Judith River	- Throughout watershed	- Well decommissioning - Protecting wells - Water quality monitoring & benchmarking	- Public - Ag & Water related Industries - Landowners - Water Security Agency (WSA)
<b>Shallow Aquifers</b>	- Throughout Battle River area - Mervin R.M. - Edam - Round Hill R.M.	- Well decommissioning - Water quality monitoring & benchmarking - Education of land management practices that can affect shallow aquifers (ex. Livestock wintering sites, fertilizer use , septic systems)	- All rural landowners - WSA - Cottage owners
<b>Native Prairie &amp; Wooded Areas</b>	- Manitou Sandhills - Battle River Valley - Community pastures (former federal & provincial) - Uplands of Redberry Lake	- Promote maintenance of native prairie and importance to biodiversity and water quality - Educate about WSA native prairie program - Promote good grazing management - Education on conducting riparian, prairie and forest health assessments	- Landowners - Renters - Lessees - Lands Branch (Ministry of Agriculture, MoA) - Ministry of Environment (MoE)
<b>Recreational Lakes</b>	- Refer to list in scan	- Promote off-site watering BMPs - Survey to gauge potential impact of livestock or fertilizer inputs around lakes - Water quality monitoring and benchmarking - Promote BMPs around riparian area management - Promote erosion control & erosion control BMPs - Monitor for invasive weeds and work to reduce impact on riparian areas - Educate recreational users of the	- Landowners around lakes - Ranchers - Farmers - WSA - Lake Stewardship groups

KEY TARGET AREAS	WHERE?	WHAT?	WHO?
		improvements made to agricultural practices that preserve habitat, riparian areas and water quality.	- Cottage owners - First Nations
<b>Surface water</b>	- Throughout the watershed	- Promote drainage stewardship - Education to prevent illegal drainage - Educate on importance of proper manure management near surface water - Promote off-site watering BMPs	- Ranchers - Farmers - Ducks Unlimited Canada (DUC) - WSA
<b>Tributaries to the North Sask River, Recreational Lakes &amp; Other Creeks</b>	- Effective Drainage area	- Educate on proper use of exclusion fence BMP and riparian area grazing management - Determine if ILOs exist on these tributaries and promote BMPs to protect tributaries from contamination - Promote proper on farm waste management and agriculture material recycling (such as grain bags and used machinery oil) - Promote off-site water system BMP - Water quality monitoring & benchmarking	- Ranchers along creeks - Feeder Associations - 4H clubs - Farmers - Rural Municipalities (R.M.s) - First Nations - WSA - MoA - North Saskatchewan River Basin Council (NSRBC)
<b>Invasive Plants</b>	- Refer to maps - R.M.s of North Battleford & Meota etc. (refer to map) - NSR Valleys - Areas with leafy spurge (Redberry) - Battleford area - Cut Knife area - Manitou Sandhills - Roadsides - Railroads	- Educate on identification & management - Support establishment of weed management areas - Develop integrated weed management plans - Encourage R.M.s to hire weed inspectors - Map problem areas in entire watershed - Lobby for provincial funding	- R.M.s - Harvey Anderson (SARM) - Dave Whitehead (in charge of Northwest Weed Management Area) - Public - Ranchers - Farmers - MoA (Clark Brenzil & regional forage specialists) - Agri-Business - Ministry of Highways and Infrastructure

- First Nations
- Parks (regional, provincial, federal)
- DUC
- Invasive Species Council

KEY TARGET AREAS	WHERE?	WHAT?	WHO?
<b>Flooded agriculture land</b>	<ul style="list-style-type: none"> <li>- Radisson</li> <li>- Borden</li> </ul>	<ul style="list-style-type: none"> <li>- Promote erosion control BMPs</li> <li>- Promote BMP pertaining to seeding marginal land to permanent cover (will also help with salinity issues)</li> </ul>	<ul style="list-style-type: none"> <li>- Landowners</li> <li>- R.M.s (especially on eroded ditches)</li> </ul>

ISSUES?	WHERE?	WHAT?	WHO?
<b>Removal of natural or native habitat</b>	<ul style="list-style-type: none"> <li>- Within or near cropland</li> <li>- Marginal land</li> </ul>	<ul style="list-style-type: none"> <li>- Education on the value of the areas</li> </ul>	<ul style="list-style-type: none"> <li>- Pollinator experts</li> <li>- Farmers with large equipment</li> </ul>
<b>Salinity</b>	<ul style="list-style-type: none"> <li>- All affected areas</li> <li>- South of Muddy Lake/Unity</li> </ul>	<ul style="list-style-type: none"> <li>- Identify areas</li> <li>- Promote establishment of perennial forages</li> <li>- Education on BMPs</li> <li>- Educate local producers</li> </ul>	<ul style="list-style-type: none"> <li>- Landowners</li> <li>- Agri-Business</li> <li>- MoA</li> </ul>
<b>Sandy Soils</b>	<ul style="list-style-type: none"> <li>- Refer to map</li> <li>- Battleford</li> <li>- Battle River Hills</li> <li>- Manitou Sandhills</li> </ul>	<ul style="list-style-type: none"> <li>- Maintain what is in permanent cover</li> <li>- Promote BMPs and programs that encourage seeding perennial forages</li> <li>- Educate on ways to reduce erosion</li> <li>- Continuous cropping (eliminate summerfallowing)</li> </ul>	<ul style="list-style-type: none"> <li>- Landowners</li> </ul>
<b>Pesticides (impact on water quality and biodiversity)</b>	<ul style="list-style-type: none"> <li>- Cropland</li> </ul>	<ul style="list-style-type: none"> <li>- Promote other aspects of integrated pest management</li> <li>- Educate on impacts of pesticide use</li> <li>- Water quality testing and publicize post-study results</li> </ul>	<ul style="list-style-type: none"> <li>- Annual crop farmers</li> <li>- University of Saskatchewan</li> <li>- Pollinator experts</li> </ul>

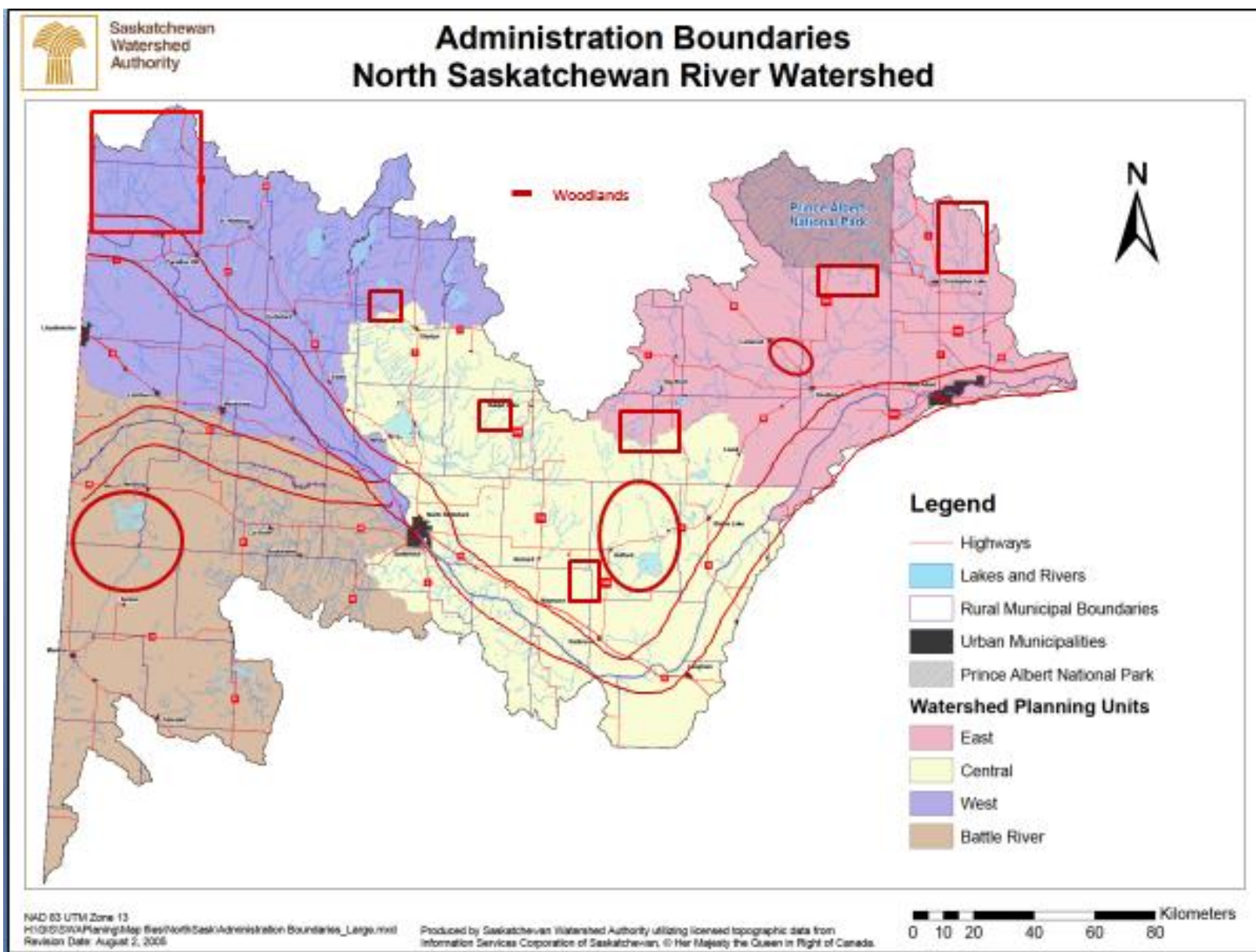
ISSUES?	WHERE?	WHAT?	WHO?
<b>Manure Management</b>	<ul style="list-style-type: none"> <li>- Winter confinement areas</li> <li>- Extensive wintering areas</li> <li>- Corral run-off</li> <li>- Nutrient management</li> </ul>	<ul style="list-style-type: none"> <li>- Promote farm-yard run-off control BMPs</li> <li>- Promote corral relocation BMPs</li> <li>- Education on choosing appropriate wintering sites</li> <li>- Educate on proper use of portable windbreaks</li> <li>- Encourage manure nutrient management planning</li> </ul>	<ul style="list-style-type: none"> <li>- Landowners</li> <li>- Producers</li> <li>- Ag Operations (MoA)</li> <li>- Agri-Business</li> </ul>
<b>Nutrient Management on Cropland</b>	<ul style="list-style-type: none"> <li>- Effective drainage area</li> </ul>	<ul style="list-style-type: none"> <li>- Promote technology to reduce overlap and over application of nutrients</li> <li>- Promote annual or bi-annual soil testing</li> <li>- Promote nutrient management planning for use with VRT</li> </ul>	<ul style="list-style-type: none"> <li>- Early adopters of innovative technology</li> <li>- Influential producers in the watershed</li> <li>- Agri-Business</li> </ul>
<b>Grazing Management</b>	<ul style="list-style-type: none"> <li>- Upland tame and native - pastures</li> </ul>	<ul style="list-style-type: none"> <li>- Promote proper stocking rates</li> <li>- Promote graze and rest periods</li> <li>- Identify optimal grass mixes to seed</li> </ul>	<ul style="list-style-type: none"> <li>- All livestock producers</li> </ul>
<b>On farm dump sites</b>	<ul style="list-style-type: none"> <li>- Morin Lake</li> <li>- Any on farm dump</li> </ul>	<ul style="list-style-type: none"> <li>- Education and awareness about the risks of on farms dump sites</li> <li>- Create a BMP for decommissioning dumps</li> <li>- Coordinate existing farm waste management and recycling programs (for example, grain bag recycling program, rinsed pesticide containers, used oil recycling etc.)</li> </ul>	<ul style="list-style-type: none"> <li>- R.M.s</li> <li>- Farmers</li> <li>- Ranchers</li> <li>- Sask Waste Reduction Council</li> <li>- Municipal landfills</li> <li>- MoE</li> <li>- First Nations</li> </ul>
<b>Drainage</b>	<ul style="list-style-type: none"> <li>- R.M. Of Canwood</li> <li>- R.M. Of Shellbrook</li> <li>- Meath Park area</li> <li>- R.M. Of Buckland</li> </ul>	<ul style="list-style-type: none"> <li>- Education and awareness on the effects of drainage</li> <li>- Promote benefits of wetlands and riparian areas</li> <li>- Promote restoration of drained land</li> </ul>	<ul style="list-style-type: none"> <li>- Ranchers</li> <li>- Farmers</li> <li>- WSA</li> <li>- DUC</li> <li>- R.M.s</li> <li>- Ministry of Highways and Infrastructure</li> </ul>

<b>Oil &amp; Gas</b>	- Turtleford area	- Better understanding of impacts of oil & gas activity on water quality in the area - Organize meetings between industry/public/landowners/ NSRBC to begin dialogue around water usage and quality	- Canadian Association of Petroleum Producers (CAPP)
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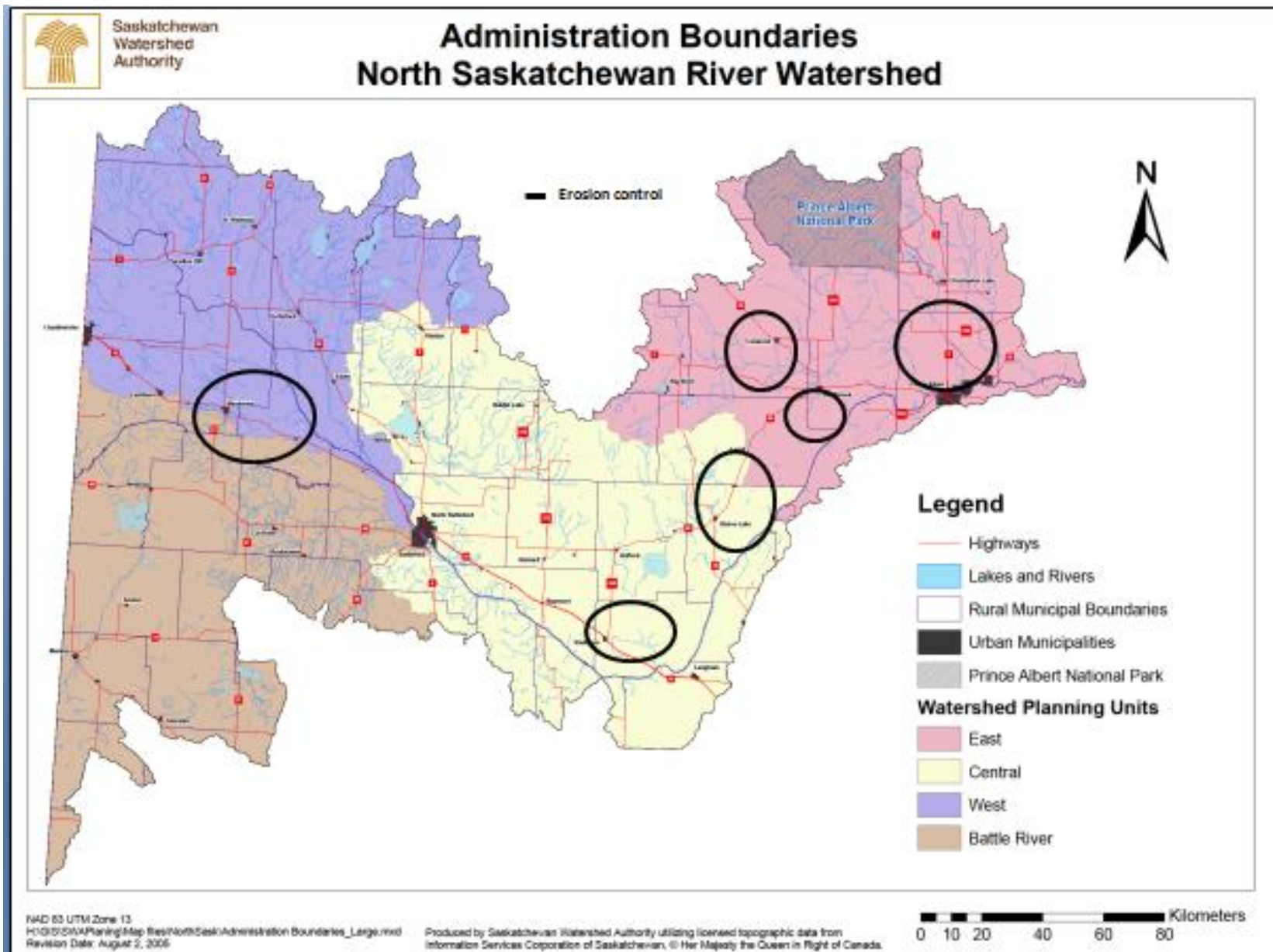


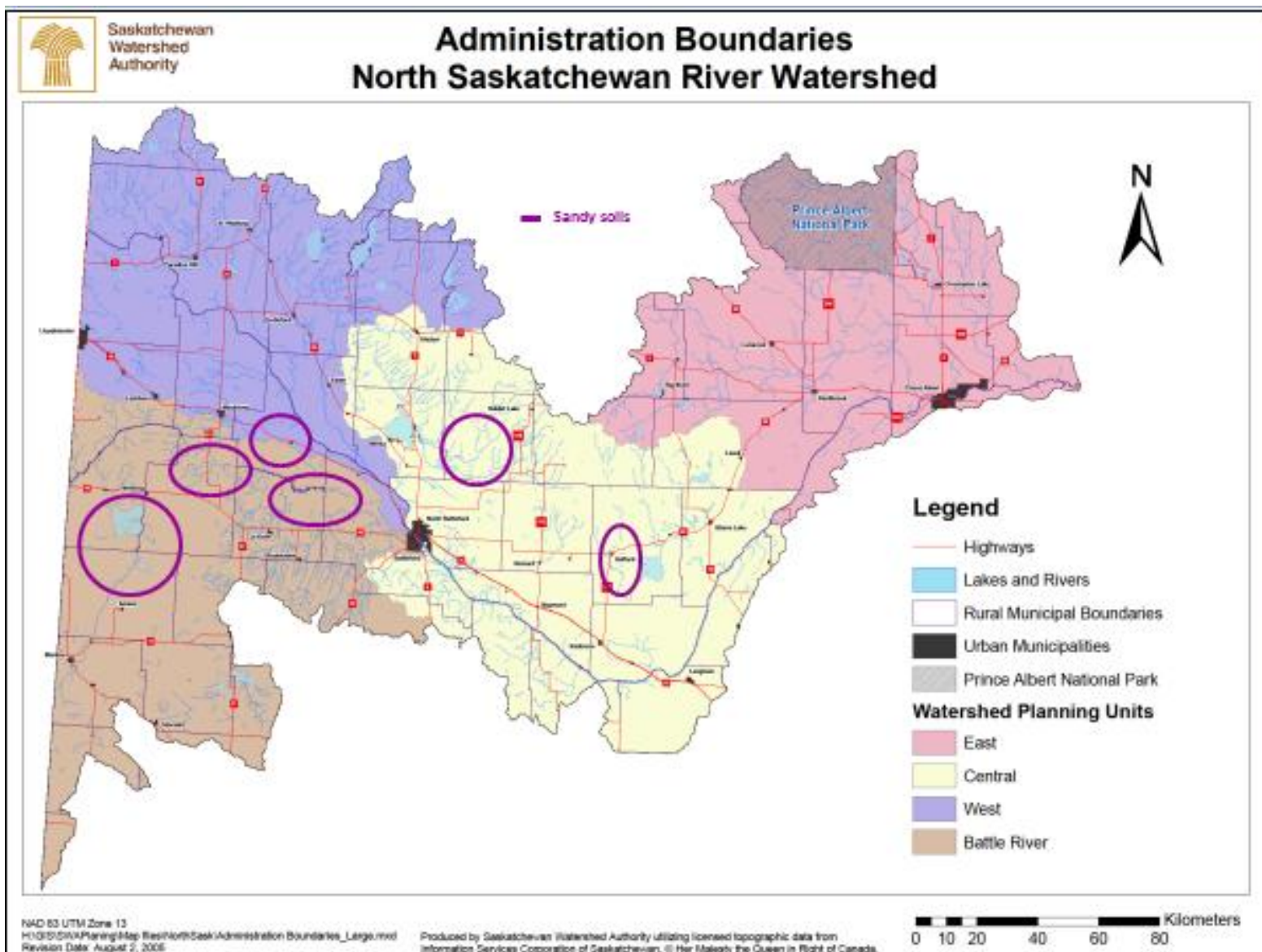
Based on the above key target areas identified by the four working AEGP boards in each region, the North Saskatchewan River AEGP has developed the following 5-year work plan. Each Target Topic has an associated map that visually highlights the areas the AEGP will be focussing on each topic.

TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Natural Areas (Woodlands, Uplands, Pastures)</b>		Field Days- Pasture School, Riparian Health and Forest Health 2 field Days one in each area - Paradise Hill and the Canwood / Shellbrook / Paddockwood area	Starting year 3 work with pasture patron groups to help ensure grazing management plans are developed for the transitioning Federal Pastures	Continue to work with pasture patron groups on grazing management plans	Continue to work with pasture patron groups on grazing management plans	Promote WSA's Prairie Stewardship Program

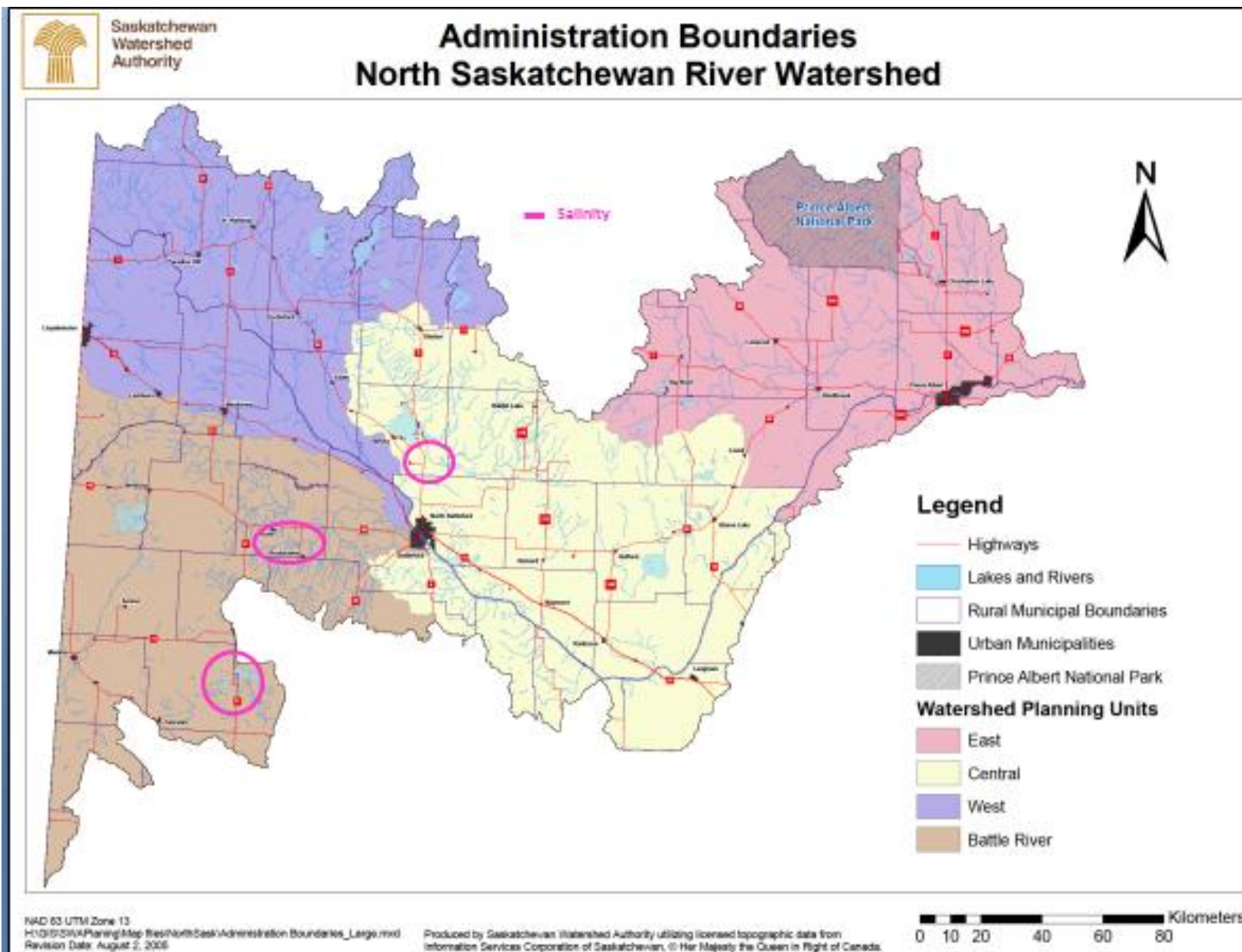


TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Erosion Control &amp; Sandy Soil</b>		Education on potential funding Cropland conversion projects (FSP,WSA,DUC). Identify some wetland restoration projects.			Workshop on LIRA Flood and Drought Project	Educate and promote awareness about erosion control programs Meet with RMs Attend Trade Shows Possible ADOPT projects and Lake Winnipeg Project Candidate



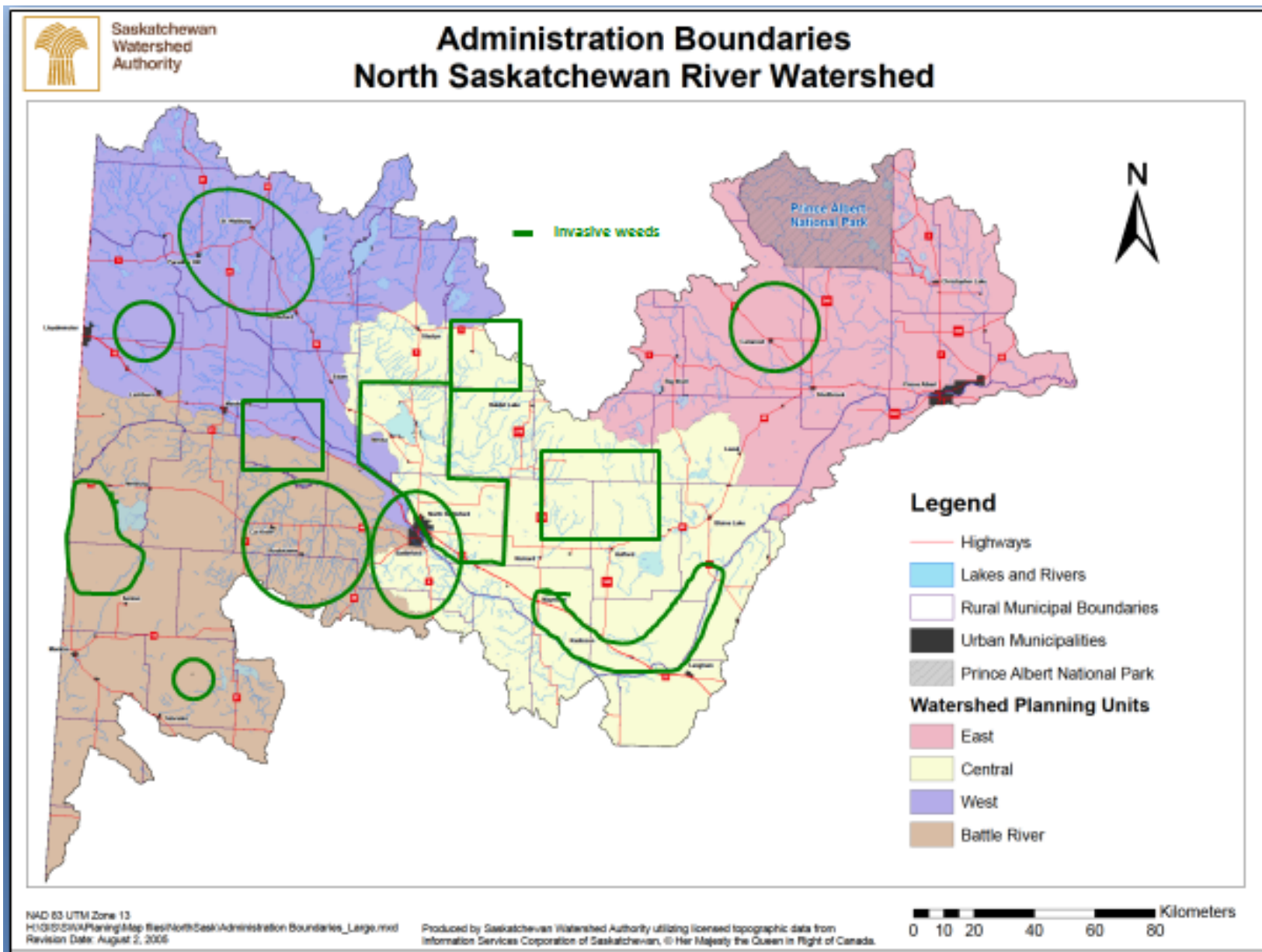


TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Salinity</b>	Identify saline areas for demonstration projects	Establish perennial forages Education on salinity and have a producer forum to assist with FAQ	Evaluate success of demonstration sites	Evaluate success of demonstration sites	Evaluate success of demonstration sites	Goal 2 Demonstration Sites

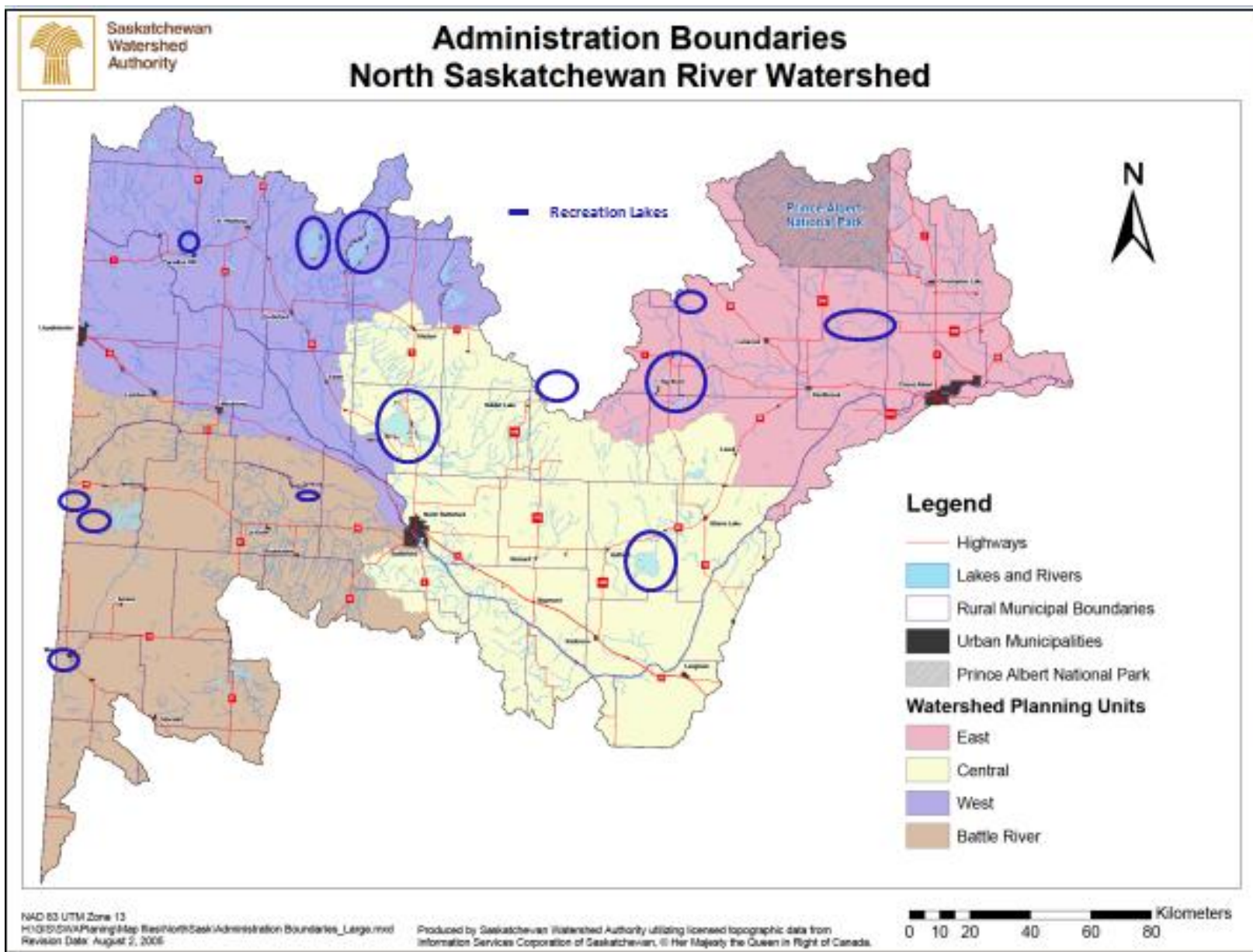


TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Invasive Weeds</b>	Develop relationship with existing municipal weed inspectors. Encourage RMs to appoint weed inspectors.	Assist in areas with weed problems to access funding and to develop weed management areas. Work with MoA to identify areas and contribute to provincial database. Work with existing weed management areas (WMA) and with Manitou Lake to set up WMA .	Mapping Invasive weeds continues	Mapping Invasive weeds continues	Mapping Invasive weeds continues	Educate producers on identification and management of invasive weeds

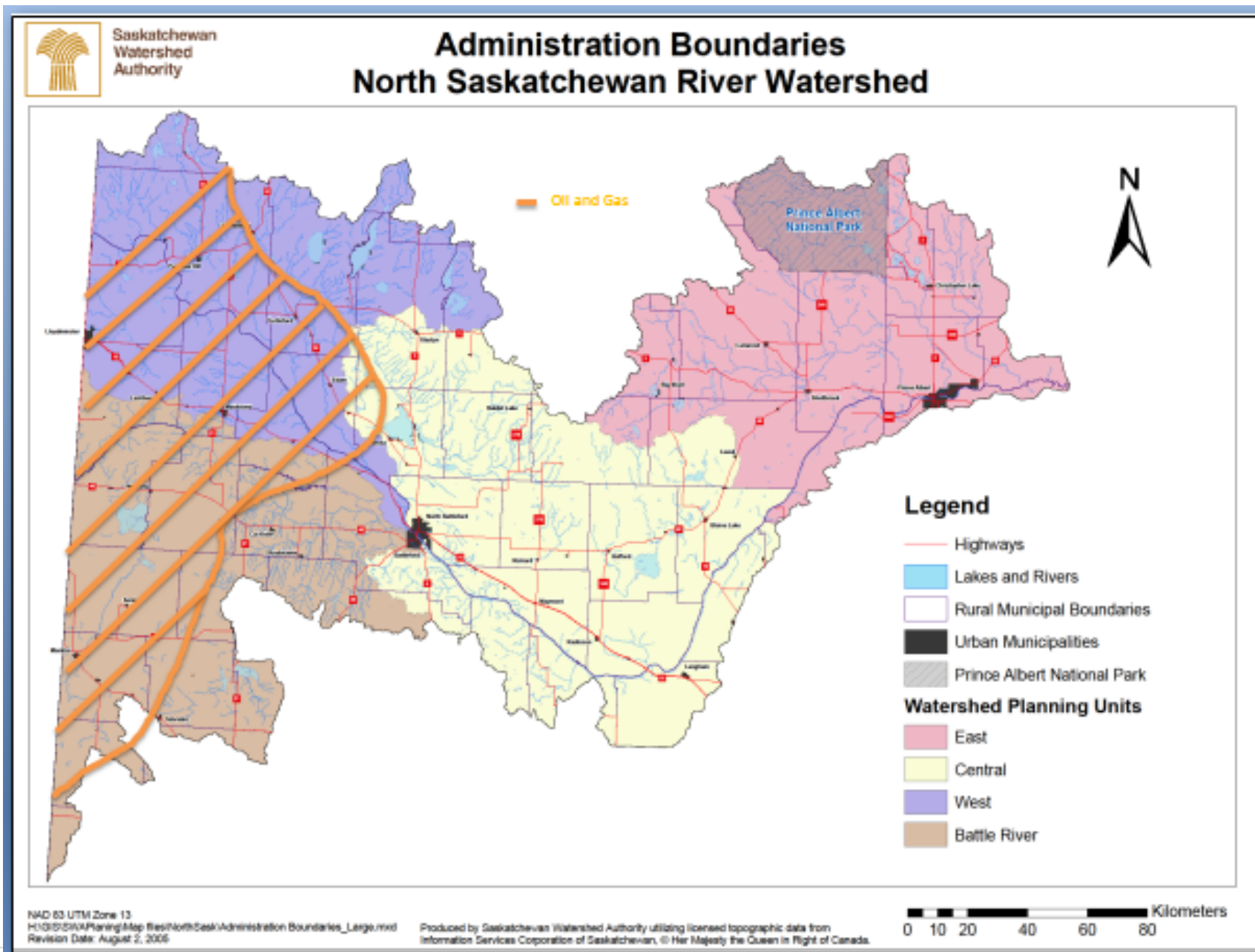




TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Recreational Lakes</b>	Research potential off-site watering systems demonstration sites. Nutrient management articles in papers and newsletters. Research industry contacts for VRT in the watershed. Possible grant proposal writing. Reconnect with existing Lake Stewardship groups	Workshop - off-site watering system Providing education resources to cottage owners related to invasive weeds, water quality erosion control and waste disposal and recycling.	Riparian Health Assessments Water Quality Monitoring	Riparian Health Assessments Water Quality Monitoring	Riparian Health Assessments Water Quality Monitoring	Goal 1 off-site watering system demonstration site per region



TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Oil and Gas</b>	Landowner education on impacts of oil and gas, management and development for example weeds, soil erosion, club root transmission, water quality issues and health effects on livestock					



There are several issues that the North Saskatchewan River AEGP would like to target across the watershed.

TARGET TOPICS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEARS 1-5
<b>Well Decommissioning</b>		Workshop - Well Decommissioning in conjunction with well head protection. 2 Field days throughout Watershed				Goal 100 decommissioning projects throughout Watershed
<b>Protecting Well Heads</b>		workshop as above				Goal 10 well head protection projects throughout Watershed
<b>Surface Water</b>		Survey the number of cattle/operations that use tributary streams to recreational lakes or NSR for livestock watering to gauge potential impact. Determine, by satellite imagery, areas along surface water that are most at risk from crop activities such as areas without a	Work with 5 producers in each area to move to an off-site watering system that utilizes a tributary surface source	Work with 5 producers in each area to move to an off-site watering system that utilizes a tributary surface source	Work with 5 producers in each area to move to an off-site watering system that utilizes a tributary surface source	Promote the FRWIP and off-site watering systems. Goal to apply for 20 miles of exclusion fencing through FSP to limit livestock access to surface water.

	permanent buffer strip between cropland and surface water.				
<b>On Farm Dumps</b>	Promote existing recycling programs and facilities for recyclable farm materials (eg. grain bags, used oil and pesticide containers)	Write a BMP to deal with decommissioning existing and abandoned on-farm dump sites.	Decommissioning on farm dump sites	Decommissioning on farm dump sites	Goal - Work with 5 producers to decommission on farm dump sites.
<b>Environmental Farm Plans</b>	Promote EFP completion by producers throughout the watershed				