



RECOMMENDATIONS TO IMPROVE MUNICIPAL WETLAND CONSERVATION IN ALBERTA

June 29, 2016

Final Report of the Wetland Municipal Engagement Working
Group to the
Alberta NAWMP Partnership Board



ACRONYMS

AAMDC	Alberta Association Municipal Districts and Counties
AEMERA	Alberta Environmental Monitoring, Evaluation and Reporting Agency
AEP	Alberta Environment and Parks
ALIDP	Alberta Low Impact Development Partnership
ALI	Alberta Land Institute
ALUS	Alternative Land Use Services
AUMA	Alberta Urban Municipalities Association
BMP	Best or Beneficial Management Practices
DUC	Ducks Unlimited Canada
ENGO	Environmental Non-government Organization
ER	Environmental Reserve
GOA	Government of Alberta
IDP	Inter-municipal Development Plan
LSCC	Land Stewardship Centre Canada
LUB	Land Use Bylaw
MDP	Municipal Development Plan
MGA	<i>Municipal Governments Act</i>
MR	Municipal Reserve
NAWMP	North American Waterfowl Management Plan
UDI	Urban Development Institute
WPAC	Watershed Planning and Advisory Council

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The following report is a compilation of ideas discussed over the course of the Agriculture and Wetland Stewardship Working Group meetings attended by independent partner organizations. As such, the report does not necessarily reflect the opinion of the Alberta NAWMP Partnership or its member agencies.

1. INTRODUCTION

Given the recent release of a new provincial wetland policy in Alberta, many sectors are examining how the policy will affect their work and how they can support policy implementation. In March 2014, the Alberta NAWMP Partnership hosted a forum entitled *Collaboration in Wetland Stewardship*. Attendees representing provincial and municipal governments, non-government organizations (NGO) and academia agreed on the need to work on wetland conservation in a more coordinated fashion, but a detailed approach to this collaboration remained unknown.

Throughout this document, we use the term 'wetland conservation' broadly to include a number of municipal wetland activities including management, protection, mitigation (avoid, minimize, replace), restoration, enhancement, etc.

To address this, a smaller workshop entitled *Wading Deeper into Wetland Stewardship* was co-hosted by Alberta NAWMP Partnership and the Land Stewardship Centre of Canada on February 6, 2015. At this workshop, stakeholders were asked, "*How can we work together on voluntary stewardship of Alberta's wetlands?*" Answers were consolidated into project ideas. One need identified as essential to successful wetland stewardship was greater municipal engagement and empowerment. Municipalities have demonstrated a will to support wetland stewardship (e.g., 89% approval for the Alberta Urban Municipalities Association's wetlands policy), however many challenges exist, including, but not limited to the following:

What is a wetland? There exists a broad interpretation of what a wetland is, how they are classified and delineated, and how ownership is determined (i.e. public or private). Complicating this is the high inter-annual variation that is characteristic of wetlands (e.g. wet one year, dry the next). Framing wetlands as components of watersheds provides helpful context in understanding their function and importance on a municipal landscape.

Why are wetlands important to municipalities? While conceptually supported, there is uncertainty and variability in the perceived importance of wetlands compared to competing land and surface water priorities at the local or site scales (i.e. buy-in to 'care' for wetlands). Again, integrating wetlands as components of watersheds and at times the solution to water management issues such as source water protection, flood mitigation, etc. improves their value to municipal leaders.

Who is responsible for wetlands? There is uncertainty around roles, responsibilities and processes to enable wetland stewardship, particularly coordination between provincial and municipal policy, legislation and regulation. In addition, implementation capacity and/or resources for wetland conservation are highly variable between municipalities.

How can wetlands be conserved? Municipalities may be unfamiliar or uncertain with the information and decision-support tools available to support wetland stewardship planning and implementation. For example, there is currently uncertainty around wetlands under the definition of Environmental Reserve within the *Municipal Government Act* (however note that the MGA is currently under review).

To address this need for greater municipal engagement, the Alberta NAWMP Partnership invited several stakeholders to participate in a Wetland Municipal Engagement Working Group (for Working Group Membership, see Appendix 1; for the Working Group's Terms of Reference, see Appendix 2). The Working Group was tasked with the following:

- A. Compile a list of municipalities and organizations actively involved in wetland stewardship in Alberta and interested in collaborating in the Working Group and a future pilot project.
- B. Evaluate current perceptions around wetland stewardship among municipalities and the range of perceived importance of wetlands relative to other land and surface water priorities at the local scale.
- C. Evaluate the degree of integration between municipalities and Watershed Planning and Advisory Councils (WPAC).
- D. Evaluate the level of understanding among municipalities around roles, responsibilities and processes to enable wetland stewardship (particularly coordination between provincial and municipal regulation and policy).
- E. Evaluate capacity and/or resources among municipalities for planning and implementing wetland stewardship.
- F. Evaluate current level of and perceived needs for information and decision support tools available among municipalities to support wetland stewardship planning and implementation (e.g. current and historical wetland inventories, target maps).
- G. Evaluate all sources and all agencies for information and decision support tools available that could be shared with municipalities to support wetland stewardship planning and implementation.
- H. Complete an analysis of the information collected to determine areas of overlap or gaps toward a conceptual framework for municipal engagement in wetland stewardship.
- I. Explore options to develop a municipal pilot peer-mentoring project.

Depending on the findings of the above, the Working Group may consider additional work in 2016-17 as follows:

- J. Initiate the pilot project (from I. above) with three candidate municipalities.

- K. Apply all available sources of information and decision support tools with selected candidate municipalities to support wetland stewardship planning and implementation.
- L. Assess and report on effectiveness of the pilot project in empowering selected municipalities to become wetland stewards.
- M. Recommend a voluntary, municipally led, province-wide framework to enable all municipalities to make effective and integrated wetland stewardship decisions.
- N. Recommend tools to support and sustain collaboration.
- O. Develop a plan to guide implementation of the framework in 2017 and beyond.

The work above should lead to greater support and assistance for municipalities as they begin to support implementation of the new Alberta Wetland Policy. This in turn will lead to better-informed and empowered municipalities that can make decisions leading to improved wetland conservation and stewardship across the province. Additional benefits include:

- A greater understanding of wetlands, wetland values, functions, etc.;
- Improved municipal support for the new Alberta Wetland Policy;
- Improved support for wetland conservation (including maintaining social/cultural, economic and environmental wetland values on the landscape);
- Improved collaboration between municipalities and between municipalities and other wetland managers;
- Opportunities to share learning's, build knowledge and leverage existing and perhaps new resources;
- Improved capacity for wetland management (particularly for smaller, rural municipalities);
- More proactive wetland management, with a greater emphasis on integrated, landscape-level planning rather than single point decision-making at the approvals stage; and
- Identification of opportunities to collaborate between industry and municipalities.

2. GETTING STARTED: THE CURRENT STATE OF MUNICIPAL WETLAND CONSERVATION IN ALBERTA

The Working Group carried out a number of activities in order to complete the tasks identified in their terms of reference. The groups' learning's are shared below.

Task A – Who is engaged in municipal wetland conservation in Alberta?

The Working Group compiled a list of agencies involved in wetland management in Alberta (see Appendix 3). The group also looked at what tools or programs these agencies offered. In particular, it examined these agencies from a municipal perspective to see how each agency supported municipal wetland management activities such as building awareness, knowledge and attitudes, developing skills, and carrying out wetland conservation actions. Some examples of key agencies and tools are shown in the table below.

Table 1. A sample of entities involved in municipal wetland conservation in Alberta.

	GOA	AUMA/AAMDC/ UDI/ALIDP	NAWMP	Other ENGOS	Academia/ Research
Action	Policy, legislation, implementation tools (directives, grants, etc.)	Transfer development credits; reserves, setbacks, easements	Restoration activities; compensation programs	LSCC wetland grants; ALUS program, land trusts; DUC restoration work	Alberta Land Institute reverse auctions
Skills	Rapid assessment tool; training, workshops	Storm water guidelines, standards and demo sites	Forums	Workshops, demo sites	Workshops; professional training
Attitudes	Education programs, Compliance & Enforcement	mentoring	Landowner recognition	Cows and Fish peer-to-peer interactions	conferences
Knowledge	Classification system, merged inventory, Agriculture BMPs	AUMA water micro-site; low impact development options	Youth programs	Fieldtrips, Interpretive wetlands	Studies, models, etc.
Awareness	Websites	AUMA wetland policy	Brochures, websites, videos	Brochures, websites	Websites, academic papers

Task B – What are current perceptions around wetland stewardship among municipalities? What is the range of perceived importance of wetlands relative to other land and surface water priorities at the local scale?

To answer these questions, the Working Group collaborated with Alberta Environment and Parks' Watershed Resiliency and Restoration Program (WRRP), which conducted a needs survey with a number of municipalities. Findings will be available upon survey completion (sometime after June 2016). In the interim, however, the Working Group noted that:

- There is a great deal of variation among Alberta's 300+ municipalities:
 - Geographically, municipalities have different wetland numbers, areal extent, types, historic losses, etc.
 - Municipalities also vary in the amount of capacity (human, financial and technical) they have to manage wetlands.
 - They also have different land uses, tax bases, development pressures and other needs that can influence wetland conservation decisions.
- This variation likely leads to diversity in the perceived importance of wetlands relative to other land use priorities. Some municipalities rate wetlands as very important and are successfully conserving them with policy and planning tools. Some of these municipalities are looking to become Wetland Replacement Agents under the new wetland policy. Others rate wetlands as lower priority, possibly because they have many, or they have other more immediate management concerns and/or limited capacity.
- The likelihood of a municipality rating wetlands of high importance relative to other land uses is likely improved if there is a good understanding of the presence (inventory) and role of wetlands in the local area and how they are contributing to watershed goods and services such as flood retention, stormwater treatment, groundwater recharge, climate change mitigation, etc. This information is often provided via municipal collaborations with environmental non-government organizations (ENGO) such as Ducks Unlimited Canada (DUC) or the regional Watershed Planning and Advisory Councils.

Task C – What is the degree of integration between municipalities and WPACs?

There are 11 Watershed Planning and Advisory Councils (WPAC) in Alberta, mandated by the Government of Alberta (GOA) to undertake watershed assessment and develop watershed management plans in support of achieving the goals and objectives of the provincial *Water for Life* strategy.

All 11 WPACs have municipal representation at the board level. The breakdown between rural and urban municipalities depends on the watershed (as per the table below).

Table 2. Municipal representation on Alberta's WPACs.

WPAC	Municipal Representation
Mighty Peace Watershed Alliance	Rural Municipalities (AAMDC) Small Urban Municipalities (City of Peace River) Large Urban Municipalities (City of Grande Prairie)
Athabasca Watershed Council	Three (3) elected seats for Municipal Government (Upper Basin, Lower Basin, Summer Villages)
Lesser Slave Watershed Council	Town of High Prairie Town of Slave Lake Municipal District of Big Lakes Municipal District of Lesser Slave River Individual landowners (e.g., cottages and country residential properties)
Beaver River Basin Council	Rural Municipal Government (Municipal District of Bonnyville, County of Lac La Biche) Urban Municipal Government (Town of Bonnyville City of Cold Lake)
North Saskatchewan Watershed Alliance	Five municipal sector seats (County of Clearwater, Brazeau County, Parkland County, County of St. Paul, Alberta Drainage Council) Large Urban Municipalities (City of Edmonton)
Battle River Basin Council	Three municipal government seats (Special Areas, City of Wetaskiwin, Municipal District of Wainwright)
Red Deer River Watershed Alliance	Four municipal government seats (Wheatland County, City of Red Deer, Mountainview County, Red Deer County)
Bow River Basin Council	Two municipal government seats
Oldman Watershed Council	Municipalities (City of Lethbridge, Municipal District of Taber, Municipality of Crowsnest Pass)
South East Alberta Watershed Alliance	Municipal Government, Urban (Medicine Hat) Municipal Government, Rural (Cypress County)
Milk River Watershed Council Canada	Two municipal government seats (County of Forty Mile, County of Warner) Town/Urban Municipality (Town of Milk River, Village of Coutts)

All 11 WPACs are in various stages of their mandate; most have completed or are completing state of the watershed reports. These reports often include a section on wetlands including inventories, health assessments and data gaps. Having completed state of reports, most of the 11 WPACs have moved into watershed management planning processes. These plans tend to focus on surface and ground water quality and quantity. However, most also include land cover/land use/disturbance and aquatic ecosystem health components that may include objectives for wetlands, or alternatively, for limits on disturbance in areas highly affected. Plans also recognize the importance of wetlands in connecting surface and ground waters via recharge and discharge areas.

Ideally, WPACs are completing watershed management plans in collaboration with municipalities, thus better aligning goals and collaboratively implementing management actions to achieve shared objectives. It is perhaps too early to tell how well this is occurring across the province. However, there is some anecdotal evidence of collaboration occurring at the sub-

watershed level (e.g. Vermillion Watershed Management Plan, Redwillow River Restoration Plan, etc); these cases may warrant further evaluation.

Task D – Evaluate the level of understanding among municipalities around roles, responsibilities and processes to enable wetland stewardship (particularly coordination between provincial and municipal regulation and policy).

Task E – Evaluate capacity and/or resources among municipalities for planning and implementing wetland stewardship.

Task F – Evaluate current level of and perceived needs for information and decision support tools available among municipalities to support wetland stewardship planning and implementation (e.g. current and historical wetland inventories, target maps).

Tasks D, E and F will be answered by the WRRP municipal needs survey. However, some initial findings from our conversations are included here. The Working Group noted that the level of understanding among municipalities around their roles, responsibilities and the systems that enable wetland conservation (particularly coordination between provincial and municipal policy, legislation and regulation) is highly variable. Most municipalities are aware of the new wetland policy but may have not yet looked at how they will implement it in their jurisdiction. Most municipalities agree more and earlier communication and support from the province regarding wetland policy implementation would be beneficial.

The capacity and resources available among municipalities for planning and implementing wetland stewardship are also highly variable. Some of the larger municipalities have access to GIS tools, planners and approvals staff. Others do not and are reliant on collaborations or support of ENGOs and/or other municipalities.

And finally, while both the province and groups like Ducks Unlimited Canada have made good progress in developing decision support tools such as wetland inventories, this information until recently was not easily accessible. It is also not always accurate or easily interpreted, and may not integrate with other water management issues of interest to a municipality such as ground water recharge, flood plain linkages, etc.

Task G – What Information and Tools are Available to Municipalities?

The Working Group looked at what information and support tools are currently available to municipalities to support wetland stewardship planning and implementation. A list of several key tools is provided below. In general, while there are a number of tools available, they are not always easy to find or easy to understand. Most municipal and other users would benefit from:

- having all the tools available listed in one place;
- having supporting information on what tool to use for what purpose;
- tool training; and
- having tools in a comprehensive framework that guides municipalities through a wetland conservation process, from policy and planning through to development approvals and on-the-ground wetland stewardship.

Table 3. A sample of tools available to assist municipalities with wetland conservation.

Category	Tool	Lead	Description	Link
assessment tool	Alberta Wetland Rapid Evaluation Tool - Guide	Government of Alberta	Used to assess the value of a wetland for the specific purpose of mitigation	http://aep.alberta.ca/water/programs-and-services/wetlands/documents/RapidEvaluationTool-Jun01-2015.pdf
calculator	crop production calculator	Government of Alberta	measures financial implications of avoiding or developing wetlands on agricultural lands	http://www.agric.gov.ab.ca/app21/ldc alc
course	Alberta Wetlands: From Classification to Policy	Aquality Environmental	A course for practitioners from policy to on the ground	http://www.aquality.ca/wetlands-course/
course	Decision-Making for Wetland Management Course	DUC	Offers information, tools to decision-makers to support wetland management	<i>In development</i>
demo site	Kennedale	City of Edmonton	constructed wetland	http://www.edmonton.ca/city_government/utilities/kennedale-end-of-pipe-constructed-wetland-project.aspx
grant	WRRP	AEP	Wetland stewardship	http://aep.alberta.ca/water/programs-and-services/watershed-resiliency-and-restoration-program/default.aspx
grant	Agricultural Watershed Enhancement	AB Agriculture & Forestry	Grant program	http://growingforward.alberta.ca/Programs/index.htm?contentId=AGRI_WTRSHED_PRG&useSecondary=true&active=no
guideline	Standard	Alberta Transportation	Standard monitoring protocols for constructed wetlands	http://www.transportation.alberta.ca/Content/docType29/production/SMP_fEWP_fc_HW.pdf
guideline	Guidelines for wetlands for water quality	Alberta Environment	Guidelines for designing natural and constructed wetlands for improving water quality	http://environment.gov.ab.ca/info/library/5711.pdf
mapping	Merged wetland inventory	Alberta Environment	Coarse level desktop inventory tool	http://aep.alberta.ca/forms-maps-services/maps/resource-data-product-catalogue/biophysical.aspx
municipal stewardship toolkit	Project A.W.E.S.O.M.E.	Red Deer River Watershed Alliance	Building municipal capacity in wetland/watershed management in the basin	<i>In progress</i>
Planning and permitting processes	area structure plans; area re-development plans; sub-division plans and approvals	municipalities	Wetland conservation objectives can be built into existing municipal processes.	See individual municipalities.

Category	Tool	Lead	Description	Link
plans	LUF Regional Plans, environmental management frameworks	AEP	could include wetland management objectives	https://landuse.alberta.ca/REGIONAL_PLANS/Pages/default.aspx
program	Wetland Lease Restoration Program (10 year lease)	DUC	Offers landowners compensation for wetland restoration	http://www.ducks.ca/resources/landowners/ten-year-lease-program/
program	Revolving Land Purchase Program	DUC	Provides long term wetland protection through conservation easements	http://www.ducks.ca/resources/landowners/revolving-land-conservation-program/
regulation	Model Land Use Bylaw	Pigeon Lake Watershed	Example of how environmental objectives can be incorporated into municipal processes.	http://www.plwmp.ca/model-land-use-bylaw/
research	Camrose Creek Research Project	DUC	Understanding the impact of wetland loss on water quality and quantity	http://www.ducks.ca/stories/water/watershed-research-at-camrose-creek/
reserve	Environmental and municipal reserves; easements	Alberta Municipal Affairs	can provide buffers around wetlands on private lands	file:///C:/Documents%20and%20Settings/Petra/My%20Documents/Downloads/Fundamentals_of_Environmental_Reserves_JS.pdf
restoration agent	Wetland Replacement Agent	AEP	Currently, DUC and the County of Vermilion are WRAs.	<i>WRA criteria and processes are currently in development by AEP.</i>
Reverse Auctions	Alberta Living Laboratories Wetland Project / Restore our wetlands	University of Alberta - Land Institute of Alberta	A project linking economic tools to wetland conservation.	http://www.albertalandinstitute.ca/research/research-projects/project/wetlands . See also http://restoreourwetlands.ca/

With the province having just released many of its tools required to implement the new wetland policy, it may be too early to gauge municipal understanding/use of these tools and their needs for other implementation support. Some municipalities and their clients are already using some GOA tools. Some have indicated there are issues to be worked out with existing tools (e.g., the rapid assessment tool, the application process, etc.). Better tools are needed including more accurate inventories of current wetlands, areas of high loss, areas suitable for restoration, etc. More training is also required for classification, assessment, and other activities. Finally, a central repository of information on what “works” and what does not with regard to municipal wetland policy implementation would also be beneficial.

3. WHERE DO WE GO FROM HERE? WHAT IS STANDING IN OUR WAY?

Having a good understanding of the current state of municipal engagement in wetland conservation, the Working Group discussed what municipal wetland conservation could look like, with concerted collaborative effort, in the near future. This vision of a *gold standard* of municipal wetland conservation includes the following:

Element:	Description of the Gold Standard:
Clear policy direction and support	Political support and resourcing from both municipal and provincial levels of government for the provincial wetland policy and its successful implementation; policy consistency (e.g. ephemeral waterbody management, regional <i>Water Act</i> decision-making.etc.) and alignment with other water and landuse policies (e.g. floodplain, source protection, climate change, etc); support for those municipalities with less capacity.
Clear roles and responsibilities	All agencies engaged in municipal wetland conservation are aware of one another and of each agency’s progress. In particular, there is good provincial and municipal coordination and integration, including collaborative decision-making (i.e., <i>Water Act</i> approvals, compensation/restoration requirements, etc.) occurring in a timely manner. Information sharing is streamlined and data shared is concise and relevant. There are opportunities for municipalities to collaborate with each other and with other wetland agencies; synergies are known and utilized. Alberta has become a model for successful wetland conservation.
A sound regulatory framework and clear mitigation process	There is clarity on the process, roles and responsibilities. Municipalities can choose whether to be a Wetland Replacement Agent and can access funding if they have a restoration project planned. Municipalities are involved in determining where restoration possibilities might exist and can compel restoration through their own processes on municipal lands. <i>Water Act</i> applications are shared with the appropriate municipality in a timely manner such that they can provide input into the provincial decision-making process. Decision-making is documented and transparent.
Resources for compliance and/or enforcement	Compliance and enforcement are resourced; provincial and municipal enforcement staff collaborate effectively; landowners understand and have the capacity to comply with the law; (e.g., Crown rights) and unauthorized wetland loss is declining.
Clear wetland management objectives in a plan	Broad wetland objectives are set in regional and/or watershed management plans and refined at the IDP, MDP and LUB scales. Municipal planning is supported by <i>Water Act</i> approvals. The definition of Environmental Reserve has been broadened under the Municipal Governments Act (MGA) to support the achievement of plan objectives.
Information supports decision-making	GIS-based wetland inventories are more accurate and easily accessible to all (including current and historical wetlands, areas of loss, areas for restoration, crown basins, etc). They are also repeated to show policy progress over time. Landowners have improved information and support when considering sub-division. Wetlands that are avoided are tracked so that they are not

	subsequently lost and policy progress can be measured. Avoidance is successfully occurring. Municipalities have better information on the value of services provided by wetlands in their jurisdiction.
Qualified wetland professionals	Training is available, professional standards are known and there are an adequate number of trained and qualified professionals to assess wetlands. Municipal planners are included in training initiatives.
Monitoring and assessment	AEP is monitoring and assessing the efficacy of the wetland policy overall. Data and analysis is available to all such that municipalities can also track progress within their jurisdiction.
Stewardship action	A provincial stewardship framework ensures stewardship groups and landowners can access funds and technical expertise to undertake wetland restoration and stewardship activities. Environmental Farm Plans are implemented by all landowners.
Education and Outreach	All Albertans are knowledgeable about wetlands and wetland management and understand the role of the Crown and Crown ownership of wetlands. There is a single platform where municipalities can go to see what education products are available and to share and develop knowledge and tools. There are opportunities for municipalities to learn from one another and to create shared messaging. Duplication of tool development and awareness and knowledge building efforts are reduced.
Water supply	A process for making water supply available for wetland restoration projects (where required) in closed or highly allocated basins is defined (i.e. an impoundment needs a water licence in a closed basin).
Capacity	Municipalities have the financial, technical and human capacity to undertake wetland conservation efficiently and effectively.

Task H – What are the gaps and issues?

With an understanding of the current state of wetland stewardship and municipal engagement, the Working Group completed an analysis to determine what is preventing the achievement of the gold standard of municipal wetland conservation. The following gaps and issues were identified:

Element:	Description of gaps and issues:
Clear policy direction and support	Economic barriers; competing land use/ interests; lack of political will, public support and funding; conflicting policies and definitions and a lack of consistency in interpretation and

	application of the MGA, MDP, LUB, ER/MR, etc.
Clear roles and responsibilities	Where they overlap, there is a lack of alignment and understanding of roles and responsibilities (authority); a lack of understanding of the triggers that bring wetlands into the municipal realm; a lack of communication such that provincial decisions at times conflict with municipal planning; and a lack of understanding of the tools available to municipalities to conserve wetlands.
A sound regulatory framework and clear mitigation process	It is very early days of wetland policy implementation. Parties will be identifying issues and gaps for some time. Need good communication and feedback loops to facilitate this exchange such that issues can be addressed in a timely fashion.
Resources for compliance and/or enforcement	A lack of resources at both the provincial and municipal level. Many landowners lack a basic understanding of wetlands and crown rights and the capacity and/or incentives to support the policy.
Clear wetland management objectives in a plan	Challenge of setting objectives, monitoring, and assessing performance. A lack of awareness, knowledge and discussion about the value of wetlands, the cost of avoidance and the trade-offs, unintended consequences (loss of agricultural lands) and economic considerations of wetland conservation. It is a challenge to move to proactive planning verses reactive regulatory decision making.
Information supports decision-making	Lack of good verified inventory information: the merged wetland inventory is not up to date, complete or accurate depending on the region. Municipalities may not know the extent of wetland occurrence (including type) within their municipalities. There is a lack of knowledge of how to integrate storm and other water management with wetland retention.
Qualified Wetland Professionals	Standards are currently unknown; training is not yet available; the number of professionals currently limited.
A monitoring and assessment process in place	To get buy-in, need to show the wetland policy is working. Currently it is unclear how avoidance, minimization, replacement and other performance measures will be monitored.
Stewardship action	Need increased understanding of and support for stewardship. There is currently a lack of recognition for good works.
Education and Outreach	Lack of understanding by landowners of what wetlands are; why wetlands are important; Crown ownership of wetlands; lack of recognition of ecological goods and services provided by wetlands and of the cost of maintaining these; challenge of moving municipalities (and others) from awareness (basic knowledge and understanding) to action (tools, capacity, processes, etc).
Water supply	Need to investigate that there is truly water available for the scale of

	restoration envisioned.
Capacity	Municipalities lack financial, technical and human capacity for wetland conservation.

While the Working Group does not have the answer to all of the issues listed above, they did discuss several areas of commonality. To begin with, many municipalities appear to *lack awareness* of their role in wetland conservation, the tools available to them, and the risk of not conserving wetlands. The Working Group recommended several steps to address this lack of awareness including the following:

- Produce a wetland 101 primer aimed at a municipal audience that includes description of a wetland, wetland types, and their linkage to ecological goods and services in a watershed from a municipal perspective.
- Produce a one-window online resource centre with municipal tools and resources (utilizing the www.WetlandsAlberta.ca website).
- Develop a wetland education network, taking a wetland literacy ladder approach to building awareness and knowledge about wetlands and their values.
- Simplify avoidance by removing regulatory and other barriers.
- Develop a business case for conserving wetland values (i.e. facilitate trade-off discussions through forums, research the economic benefits and the costs, explore unintended consequences, show “what’s in it for me” from a municipal perspective, relate to climate resiliency, etc.).

Similarly, a *lack of capacity* underlies many of the issues noted above. Some recommendation to address capacity challenges (directed at both the province and municipalities) are as follows:

- Use the www.WetlandsAlberta.ca website to promote awareness of available grants, incentives, programs, etc.
- Improve communication, collaboration (e.g. sharing information and expertise), and mentoring opportunities between municipalities and between municipalities and the province.
- Integrate wetland management with other existing management processes (source protection, flood plain, run-off, environmentally significant areas planning, climate change adaptation, watersheds etc).
- Recognize the full cost of the application process; reduce the cost via a 2-tiered or “fast-track” system that reflects different levels of risk or complexity.
- Improve the efficiency of current staff learning through mentoring, collaborating, etc. (note: this may occur through the new Inter-municipal collaboration frameworks).
- Dedicate some of the wetland compensation dollars to fund a municipal support person/office who can assist, mentor, educate, facilitate collaborations, etc. Could be

through NAWMP and would assist with integrating a landscape approach as opposed to a jurisdictional approach.

Additionally, the Working Group noted that many of the issues above arise because there is currently *a lack of alignment* between provincial and local wetland authorities, with some confusion around roles and responsibilities. To address this, the Group recommends that:

- Government policy be aligned (e.g. Alberta Wetland Policy and the new MGA)
- Both the province and local governments commit to the integration and continuous improvement of their respective roles and responsibilities. The GOA should acknowledge that municipalities have a role and vice versa. The GOA should recognize that local capacity may vary and that there is a need for good relationships with a commitment to maintain dialogue through webinars and communication tools.
- Continue to support a NAWMP municipal working group.
- Develop a guide to municipal wetland conservation with case studies showing how tools and authority have been used in the past and how barriers have been removed. Get agencies and experienced municipalities to commit to assist other municipalities to work through the guide.
- Upon completion of the new MGA, Update the *Stepping back from the Water's Edge* document, promote and distribute to municipalities. (Develop implementation tools for)
- Provide accessible legal advice to municipalities and developers on legislation, regulations, compliance (e.g. Summer Villages looking for pro bono legal assistance.)

Finally, the Working Group noted there is *a lack of good information, tools and processes to support proactive planning* versus relying solely on regulatory decision-making. To address this, they recommend the following:

- Identify risks and barriers to effective wetland planning and work to remove them.
- Share examples (case studies) of municipal wetland policy and planning documents; develop templates (e.g., a model wetland policy or plan).
- Use recognition (Emerald awards) to showcase good planning and other wetland initiatives.
- Continue to improve the accuracy of the publicly accessible Alberta Merged Wetland Inventory.
- Use the www.WetlandsAlberta.ca website to promote awareness of and access to available inventory products and show examples, tips of how to use different mapping products.
- Provide more information on crown / public lands claims.

4. CONCLUSION: GETTING TO THE GOLD STANDARD

The work of the Municipal Wetland Conservation Working Group came to an end on June 30, 2016. For the most part, and in the time allotted, the Group met its terms of reference. However, there is more work to be done.

To move from where we are today towards what we see in the future as the gold standard of municipal wetland conservation, the WG recommends that the Alberta NAWMP Partnership and its stakeholders continue with Tasks I through O. This includes creating and testing a municipal wetland conservation guide that is web-based and updated regularly with new materials and communication products. This guide should provide a roadmap for municipalities throughout the various phases of wetland conservation. To complete the guide, the next steps include:

- a) Draft the Guide: further flesh out the conceptual framework developed by the WG.
- b) Peer review: ask 3-4 municipalities with a history of wetland conservation (e.g. City of Calgary, Beaver County, AUMA Environment Committee, Mountain View County, City of Grande Prairie, etc.) to review the guide and revise as required.
- c) Pilot the guide with 3 municipalities: mentor these municipalities by providing tools and support for at least a year as they follow the guide 'roadmap' through various stages of wetland conservation.
- d) Assess pilot success: develop criteria to measure wetland conservation success (e.g., mapping is done; MDP has incorporated wetland objectives, etc.)
- e) Incorporate pilot learning's into a revised Guide.
- f) Develop a communications plan and launch the Guide across the province.
- g) Continue to update the guide and develop tools to support municipal wetland conservation across Alberta.

The WG also recommends that NAWMP improve overall communication between policy implementers. The Working Group recommends that a number of products to improve municipal wetland conservation be developed as soon as possible including:

- A ***municipal wetland primer*** that provides a basic understanding of wetland physical type and distribution, as well as a description of wetland values and functions from a municipal perspective. This document could be printed or electronic but should be developed in partnership with AUMA, AAMDC and ASVA, distributed and promoted through their networks.

- A **wetland information clearinghouse** or ‘one-stop’ shop for wetland information. This platform could build on the existing www.WetlandsAlberta.ca website but should have a section specific to municipalities.
- A canned **Wetland 101 and Wetland Policy Implementation presentation** (video or PowerPoint). Throughout its work, the WG heard how municipalities want more information on how the new Alberta Wetland Policy will be implemented. However, AEP has limited staff to make individual presentations throughout the province. Alberta NAWMP Partnership could work with AEP to keep a canned presentation up to date and on the www.WetlandsAlberta.ca website. The canned presentation can also be augmented by webinars and regional workshops as time and capacity allows.

If the above tasks are completed and the suggested tools are built, the Working Groups believes wetland conservation on the municipal landscape, could be greatly improved in Alberta.

APPENDIX 1 – TEAM MEMBERS

Name	Surname	Job Title	Affiliation
Michael	Barr	Alberta NAWMP Coordinator	AB NAWMP Partnership
Clara	Bartha	Planning Advisor	Municipal Affairs
Tasha	Blumenthal	Policy Analyst	AAMDC
Diana	Bingham	On-Farm Stewardship Coordinator	Alberta Agriculture and Forestry
Rachel	deVos	Director of Policy and Advocacy	AUMA
Angela	Fulton	Water Team lead, Regional Approvals	AEP
Amrita	Grewel	Program Research Coordinator	Land Stewardship Centre
Marissa	Koop	Environment Committee Chair (UDI)/ Senior Associate	Urban Development Institute / Stantec Consulting Ltd.
Eric	Macknak	Watershed Resiliency Lead	AEP
Dean	Morin	Field Inspector/Private Sewage Disposal	Municipal Affairs
Suzanne	Young	Senior Environmental Planner	City of Edmonton
Petra	Rowell	Project Manager	Consultant
Milana	Simikian	Provincial Policy Specialist	Ducks Unlimited Canada
Jocelyn	Thrasher-Haug	Manager, Environmental Planning	Strathcona County

APPENDIX 2 – WORKING GROUP TERMS OF REFERENCE



Terms of Reference Advancing Wetland Stewardship in Alberta through Municipal Engagement July 2015

Background

In March 2014, the Alberta NAWMP Partnership hosted a forum entitled *Collaboration in Wetland Stewardship*. Attendees representing provincial and municipal governments, non-government organizations (NGO) and academia agreed on the need to work in a more coordinated fashion, but "how to do this" remained unanswered. To address this, a smaller February 6, 2015, workshop entitled *Wading Deeper into Wetland Stewardship* was co-hosted by Alberta NAWMP and the Land Stewardship Centre of Canada. At this workshop, a diverse mix of wetland stewardship stakeholders was asked the practical question "How can we work together on voluntary stewardship of Alberta's wetlands?" Answers were consolidated into project ideas with hope that they may develop as tangible examples of working together toward mutual benefits and outcomes. Stakeholders acknowledged that ideally these experiences might lead to formation of a larger, voluntary, and collaborative framework.

Project description

One of two project ideas deemed essential to a successful wetland stewardship model was a focus on empowering municipalities as wetland stewards, termed municipal engagement. Municipalities have demonstrated a will to support wetland stewardship (89% approval for AUMA's new wetlands policy), however many challenges exist, including, but not limited to the following:

What? There exists a broad interpretation of what a wetland is, how they are classified and delineated, and how ownership is determined (i.e. public or private). Complicating this is the high inter-annual variation that is characteristic of wetlands (e.g. wet one year, dry the next). Framing wetlands as components of watersheds is helpful context.

Why? While conceptually supported, there is uncertainty and variability on the perceived importance of wetlands to competing land and surface water priorities at the local or site scale (i.e. buy-in to 'care' for wetlands)

Who? There is uncertainty around roles, responsibilities and process to enable wetland stewardship, particularly coordination between provincial and municipal regulation and policy. Also, variable implementation capacity and/or resources exist among municipalities

How? There is unfamiliarity with available information and decision support tools to support wetland stewardship planning and implementation. Also, there is uncertainty around wetlands under the definition of Environmental Reserves (Municipal Government Act)

The intent of this project is to pilot empowerment of up to 3 municipalities as wetland stewards (1 large urban >10K, 1 small urban < 10K, 1 rural, possibly connected (e.g. City of Red Deer and Red Deer County) by further assessing and seeking to overcome challenges identified above. This would include: i) a summary that builds a practical case for wetland stewardship in a municipal context (*why?*), ii) a summary that clarifies municipal roles and responsibilities in wetland stewardship (*who?*), and iii) a summary and test application of information and tools to support effective and integrated wetland stewardship decision-making by municipalities. Key steps and deliverables of this project were drawn from previous event discussions:

Step 1 Deliverables: Scoping and Membership

(Term: July 1 - September 30, 2015)

Review, modify and finalize Wetland Municipal Engagement Terms of Reference.

Compile list of municipalities and organizations actively involved in wetland stewardship in Alberta (key stakeholders)

Recommend Working Group core and associate membership

Determine willing agencies for collaboration in a Wetland Municipal Engagement Working Group, as well as candidate municipalities for test application (i.e., pilot)

Step 2 Deliverables: Situational Analysis and Conceptual Framework (Term: October 1, 2015 - March 31, 2016)

Note: selected method must acknowledge and comply with municipal systems and constraints.

Evaluate current perceptions around wetland stewardship among municipalities; what is the range of perceived importance of wetlands relative to other land and surface water priorities at the local scale? Also evaluate degree of integration between municipalities and WPACs.

Evaluate level of understanding among municipalities around role, responsibility and systems to enable wetland stewardship (particularly coordination between provincial and municipal regulation and policy). Also evaluate capacity and/or resources among municipalities for planning and implementing wetland stewardship

Evaluate current level of and perceived needs for information and decision support tools available among municipalities to support wetland stewardship planning and implementation (e.g. current and historical wetland inventories, target maps)

Evaluate all sources - all agencies for information and decision support tools available that could be shared with municipalities to support wetland stewardship planning and implementation

Complete an analysis of the information collected to determine areas of overlap or gaps toward a conceptual framework for municipal engagement in wetland stewardship

Note: i) link to Project Blue Thumb (contact Sharina Kennedy (E&P) or Milana Simikian (DUC)), and ii) link to WRRP programming, and iii) link to current updating of *Alberta's Wetlands; A Law and Policy Guide*

Explore options to develop a municipal peer mentoring program – starting with willing partners. E.g. AUMA website – if you need help, call....

Step 3 Deliverables: Pilot Project

(Term: April 1 2016 - March 31, 2017. Note: 1 year considered minimum requirement to properly assess multiple aspects of knowledge growth, technical applications, partner development, etc.)

Select and invite up to 3 candidate municipalities for test application (i.e., pilot)

Apply all available sources of information and decision support tools with selected municipality (or municipalities) to support wetland stewardship planning and implementation

Assess and report on effectiveness of pilot project in empowering selected municipalities as wetland stewards

Pending Step 4 Deliverables: Recommended Framework for Municipal Engagement in Wetland Stewardship

(Term: April 1, 2017 - June 30, 2017)

Recommend a voluntary, municipally-led provincial framework to enable all municipalities to make effective and integrated wetland stewardship decisions-

Recommend tools to support and sustain collaboration (e.g. online hub access to shared resources, success stories, challenges, and research)

Develop an implementation plan to guide a wetland stewardship framework in 2017 and beyond (Note: will require continued/expanded practical support for interested municipalities)

Project design

A small (5-7), voluntary Wetland Municipal Engagement Working Group will be formed by Alberta NAWMP soliciting members from key stakeholders. Meeting space, staff time, communication costs, and travel costs would be requested as in-kind contributions by participating key stakeholders

The project will be coordinated and supported by Alberta NAWMP through provision of a project leader/facilitator. Extraordinary information needs funded by AB NAWMP

Subject to TOR review (and amendment as needed), a Working Group will undertake Step 1 deliverables by the specified due date.

Upon completion of Step 1, the Working Group will reassess its members, then undertake Step 2 deliverables by the specified due date

Upon completion of Step 2, the Working Group will reassess its members, then undertake Step 3 deliverables by the specified due date

Note: Although a defined term is prescribed in the TOR, it is likely that continuation beyond that term by the same or similar body will be required to maintain momentum.

Possible Key stakeholders

Alberta Environment & Parks (2 = policy, regulator or public lands)Municipal Associations (2) plus 2 municipal planners + (later) 3 pilot Municipalities

Ducks Unlimited Canada (1)

ALUS (1)

? LSC (1)

Alberta Municipal Affairs (1)

Alberta Agriculture & Forestry (1)

UDI

Contact and Administrator

APPENDIX 3 – AGENCIES INVOLVED IN WETLAND CONSERVATION IN ALBERTA

Category	Name	Audience	Description	Website
Academia	Alberta Land Institute		working with Rockyview on reverse auctions for wetland restoration	http://www.albertalandinstitute.ca/
Academia	Grant MacEwan		<i>WETLANDS, LAND USE, AND POLICY: Alberta's Keystone Ecosystem at a Crossroads</i> Dr. David Locky	http://www.academia.edu/1535746/Wetlands_Land_Use_and_Policy_Alberta_s_Keystone_Ecosystem_at_a_Crossroads
Educators	Inside Education	teachers, students		http://www.insideeducation.ca/
ENGO	The Nature Conservancy of Canada and other land trusts	landowners, public		http://www.natureconservancy.ca/
ENGO	Ducks Unlimited Canada (Alberta)	policy-makers, decision-makers, land managers, etc.	mandate to conserve wetlands; wetland restoration programs, 10 year lease program; revolving land purchase program; wetland discovery days	http://www.ducks.ca/your-province/alberta/
ENGO	Cows and Fish		Riparian management	http://cowsandfish.org/
ENGO	Environmental Law Centre		Alberta Wetlands: A Law and Policy Guide (Arlene Kwasniak)	http://elc.ab.ca/search?search=wetland http://www.wetlandsalberta.ca/media/uploads/AlbertaWetlandsGuide.pdf
ENGO	Alberta Lake Management Society			http://alms.ca/
ENGO	Trout Unlimited Canada			http://www.tucanada.org/
ENGO	Alternative Land Use Services (ALUS)			http://www.alus.ca/
ENGO	Land Stewardship Centre		wetland grant program	http://www.landstewardship.org/
ENGO	Nature Alberta			http://naturealberta.ca/

Category	Name	Audience	Description	Website
ENGO	Strathcona Wilderness Centre		community and school curriculum programs on wetlands	http://www.strathcona.ca/departments/recreation-parks-and-culture/recreation-centres/strathcona-wilderness-centre/
GOA	Alberta Conservation Association		conservation lands	http://www.ab-conservation.com/
GOA	Environment and Parks	policy-makers, approvals	Water Act, Wetland Policy, ALSA, Public Lands Act Note: Ernie Hui Special Advisor Water Quality	http://aep.alberta.ca/water/programs-and-services/wetlands/alberta-wetland-policy.aspx
GOA	Alberta Innovates			http://www.albertainnovates.ca/
GOA	Alberta Agriculture and Forestry	promote BMPs		http://www.agric.gov.ab.ca/app21/rtw/index.jsp
GOA	Drainage Councils			http://www.alberta.ca/AGS-directory/B-I/B-I/ags-Drainage-Council-Mandate-and-Roles.pdf
GOA	Alberta Environment and Parks (Regulators)	applicants	Water Act approvals etc	http://aep.alberta.ca/water/programs-and-services/wetlands/default.aspx
GOC	Agriculture and Agri-Food Canada	promote BMPs	Growing Forward II programs promotes BMPs through EFPs	http://www.agr.gc.ca/eng/home/?id=1395690825741
GOC	DFO/Env Canada		National Policy on Wetland Conservation	http://publications.gc.ca/site/eng/100725/publication.html
Municipality	AUMA	Urban municipalities	Municipal Water Policy on Wetlands 2013	https://auma.ca/advocacy-services/resolutions/resolutions-index/municipal-water-policy-wetlands
Municipality	AAMDC	Rural municipalities		http://www.aamdc.com/
Municipality	ASVA	Summer villages		http://www.asva.ca/
Municipality	City of Airdrie		Great Spaces Plan	http://www.airdrie.ca/index.cfm?serviceID=984
Municipality	City of Calgary		Calgary Wetland Conservation Plan 2004	http://www.calgary.ca/CS/PS/Parks/Documents/Planning-and-Operations/Natural-Areas-and-Wetlands/wetland_conservation_plan.pdf
Municipality	City of Chestermere		Wetland Policy	http://www.asva.ca/
Municipality	City of Edmonton		Wetland Strategy Wetland Task force	http://www.edmonton.ca/city_government/documents/FINAL_Wetland_Strategy_low_res.pdf

Category	Name	Audience	Description	Website
Municipality	Parkland County		Environment Conservation Plan	http://www.parklandcountyy.com/About_Us/Projects_and_Studies/Completed_Projects_and_Studies/Environmental_Conservation_Master_Plan_and_Policy_Updates.htm
Municipality	Strathcona County		<i>Wetland Conservation Policy</i>	http://www.strathcona.ca/files/files/attachment-lls-mph-ser-009-036-wetland-conservation.pdf
Municipality	Town of Cochrane	Wetland plan	<i>A Wetlands and Riparian Areas Conservation and Management Plan For Cochrane, Alberta 2008</i>	https://www.cochrane.ca/DocumentCenter/View/501
Partnership	Beaver Hills Initiative			http://www.beaverhills.ca/
Partnership	Alberta Water Council			http://www.albertawatercouncil.ca/
Partnership	Watershed Planning & Advisory Councils			http://www.albertawpacs.ca/
Partnership	Watershed Stewardship Groups			http://www.landstewardship.org/ASN/
Partnership	Alberta NAWMP Partnership		North American Waterfowl Management Plan	http://www.abnawmp.ca/
Professional	Ag Fieldmen Association			http://www.aaaf.ab.ca/
Professional	Urban Development Institute	developers	Alberta and regional chapters	http://www.udiedmonton.com/
Professional	ASPB / ACTWS		Wetland courses	https://www.aspb.ab.ca/