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An Evaluation of Municipal-Provincial Wetland Management Partnerships in Alberta

FINAL REPORT



Prepared for:
County of Vermilion River & The City of Calgary

April 2019
Project 1859

FIERA
Biological Consulting



Executive Summary

Wetlands are key habitats that provide a range of ecosystem benefits to human communities across local, regional, and provincial scales. Despite the recognized importance of wetlands and riparian lands in the maintenance of watershed health, these habitats have been impacted and lost at alarming rates over the last century; however, more recently, there is growing awareness of the need to better conserve and manage wetlands and their associated riparian habitats. Since 1993, provincial wetland policies in Alberta have managed wetland resources using the mitigation hierarchy, whereby wetland impacts are avoided and minimized, and as a last resort, lost habitat is replaced either on-site or off-site through restoration or enhancement of previously degraded habitat, or through construction of new habitat.

Traditionally, the provincial government has relied on permittee-responsible wetland replacement on-site, or has designated a third-party Wetland Restoration Agent (WRA) to collect restoration fees that are paid in-lieu of on-site replacement, who is then responsible for undertaking wetland replacement activities off-site. For most of the wetland losses that have occurred in the province since 2005, the designated WRA has been Ducks Unlimited Canada; however, two municipalities, The City of Calgary and the County of Vermilion River, have also acted as a WRA for various periods of time between 2004 and 2018. With acknowledgement from the provincial government, The City of Calgary began to plan and deliver on-site permittee-responsible mitigation, as well as collect restoration payments in-lieu of on-site compensation in 2004 and continued in the role of a WRA until 2015. Similarly, the County of Vermilion River entered into a five-year pilot project with the provincial government in 2013 to test the efficacy of a rural municipality collecting wetland compensation payments and applying the payments to restoration projects within their jurisdiction. This pilot project ended in May of 2018.

On December 1, 2018, the provincial government transitioned to a Wetland Restoration Program that includes a new centralized wetland restoration fund administered by the Government of Alberta. Within this new program, designated WRAs have been eliminated, and the delivery of wetland restoration projects will theoretically include opportunities for any interested organization(s) that qualify for the work through a competitive bidding process. In light of the transition to this new restoration system, The City of Calgary and the County of Vermilion River commissioned this study to review their WRA programs, with the goal of describing the key successes and challenges experienced by each municipality during their tenure as a WRA. Further, the intent of this project is to reflect upon the experiences of both The City and the County to provide recommendations for how the Government of Alberta can more effectively engage municipalities as partners in wetland management moving forward. The insights and recommendations presented in this report were informed by 15 semi-structured, key-informant interviews conducted with a range of municipal and provincial government personnel, as well as representatives of other organizations, who regularly interact with the provincial wetland policy and/or were directly involved in the design or delivery of municipal wetland restoration programs in Alberta.

There was overwhelming consensus amongst those interviewed for this report that municipalities play a key role in achieving more effective wetland management in Alberta. Municipalities have intimate knowledge about their land base and are uniquely positioned to leverage partnerships with a wide range of organizations to identify priority management areas and deliver environmental programs both locally and at a larger watershed scale. Despite these key strengths, both The City of Calgary and County of

Vermilion River faced a variety of constraints that limited their success as Wetland Restoration Agents. This included a lack of clarity around the goals, objectives, and expectations for restoration, which was exacerbated by a lack of communication and trust. Further, both the municipalities and the provincial government were challenged by limited resources, both in terms of the number and expertise of the people committed to the wetland restoration programs, as well as the amount and quality of the data and information available to execute the work. Finally, there were challenges related to policy and legislative concordance, which created regulatory confusion and goal ambiguity for personnel in the provincial government, as well as those municipal staff tasked with delivering the restoration projects. Importantly, both municipalities also achieved some success in their tenure as a WRA, not least of which was the restoration of wetland habitat, which ultimately was the objective of the programs. Further, each municipality increased their organization's understanding of the provincial Wetland Policy, and also increased the awareness of their constituents regarding the value and benefits of wetlands. In addition, each municipality formed new and strengthened existing partnerships with other organizations engaged in wetland management in Alberta.

Moving forward, there appears to be a great deal of opportunity for municipalities to adopt local, sub-region, or intermunicipal policies or plans that articulate local goals and priorities for both wetland conservation and restoration. This local control is enabled through the *Alberta Land Stewardship Act*, is recognized in the Wetland Policy and its supporting Directives, and was further encouraged by many of the provincial government employees that we spoke to as part of this project. In order for municipalities to be effective wetland managers and delivery agents for restoration projects, however, additional tools need to be enabled by the Government of Alberta. In particular, wetland enhancement was identified as a critically important tool for both urban and rural municipalities, and a number of municipalities appear interested in engaging with the provincial government to assist in the development of a provincial wetland enhancement Directive. This partnership could include a pilot project to identify and monitor commonly employed enhancement practices, with the objective of using this information to develop a scientifically credible approach to assessing enhancement outcomes. Additionally, municipalities need access to data and information that can be used to help track wetland losses and identify potential restoration sites. In absence of the provincial government providing this information to municipalities, the Government of Alberta needs to consider how to enable municipal access to wetland restoration funds for the purpose of non-restorative replacement activities that would include creating drained wetland inventories and/or spatially targeting and prioritizing wetlands for conservation or restoration.

While there appears to be new and exciting opportunities for municipalities to partner with the provincial government in the context of the new Wetland Restoration Program, more needs to be done to clarify the criteria that will be used by the provincial government to award restoration funds to organizations that have submitted proposals to access these financial resources. This should include engagement with municipalities from across Alberta to ensure that local priorities and perspectives are considered and integrated into selection criteria. Given the timeline for intake of the first round of restoration proposals, which we understand to be the spring of 2019, this engagement should be a high priority for provincial staff in the Operations Division who are responsible for the administration of the program.

Ultimately, more meaningful partnerships between municipalities and the provincial government will require an effort from both sides. Specifically, the focus should be on creating productive and meaningful communication that can lead to trusting and productive partnerships. By enabling greater and more meaningful participation of municipalities in wetland management, local, regional, and provincial objectives for wetland conservation and restoration are more likely to be achieved.



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1.0 Introduction

From the perspective of water resource management and maintaining both aquatic and terrestrial ecosystem health, wetlands are of critical importance. Ecologically, wetlands are key habitats for a large number of aquatic and terrestrial species, and are significant components of larger hydrologic systems that provide important ecosystem services to human communities. For example, wetlands serve a crucial role in water filtration and treatment, and stabilize water supplies through the amelioration of floods and droughts. Wetlands also provide a number of other less recognized regulating, provisioning, cultural, and supporting services that significantly contribute to human well-being, such as nutrient cycling modulation, erosion control, pollination, and aesthetic appreciation. They also support recreational opportunities, such as hunting and bird watching. Further, within the larger ecosystem, the role and function of wetlands in the reception and storage of surface and groundwater flows, and atmospheric deposition, make them important sentinels of both local and regional ecosystem change.

Despite the recognized importance of wetlands and riparian lands in the maintenance of watershed health, these habitats have been impacted and lost at alarming rates over the last century; however, more recently, there is growing awareness of the need to better conserve and manage wetlands and their associated riparian habitats, both at local and regional scales. In particular, municipalities across Alberta have recognized the value and importance of retaining and conserving wetlands, and are increasingly interested in being more actively engaged in wetland restoration and enhancement within their jurisdictions. The County of Vermilion River (hereafter CVR) and The City of Calgary (hereafter The City) are two of only three organizations in Alberta that have been recognized by the provincial government to act as a Wetland Restoration Agent (WRA). With acknowledgement from the provincial government, The City began working to plan and deliver on-site permittee-responsible mitigation, as well as collect restoration payments in-lieu of on-site compensation after the adoption of their municipal wetland policy in 2004. Similarly, CVR entered into a formal five-year agreement with the provincial government in 2013, as part of a pilot project to test the efficacy of a rural municipality collecting wetland compensation payments and applying these payments within their jurisdiction.

While The City of Calgary and CVR had established practices and processes for undertaking wetland restoration work, both municipalities encountered limitations and barriers that frustrated their efforts to find, acquire, and restore wetland habitat during their tenure as WRAs. Despite a strong commitment to and interest in continuing in the role as a WRA, the provincial government rescinded Calgary's WRA status in 2015 and CVR's status in May of 2018, despite that fact that both Calgary and CVR had collected substantial sums of money earmarked for wetland restoration within their jurisdictions. As of December 1, 2018, a new centralized wetland replacement fund has been established, which has ostensibly eliminated the need for a formal "Wetland Restoration Agent", because the government contends that this new centralized fund can be accessed by any organization interested in delivering wetland restoration projects moving forward. How municipalities fit into this new system of wetland restoration delivery, however, is still unknown, and there have been expressions of both cautious optimism as well as healthy skepticism that this new program will enable municipalities to engage in wetland restoration in a meaningful way.

Given the important role of municipalities in wetland conservation and restoration, and the widespread interest expressed by other municipalities to act in the capacity of a wetland restoration delivery agent or to undertake permittee-responsible habitat replacement, understanding the past successes and challenges experienced by CVR and The City in their role as a WRA is important for improving wetland policy outcomes in Alberta. As such, the goal of this project is to summarize and review the WRA programs of both The City and the CVR in order to document program accomplishments and challenges, with the overall objective of providing recommendations for how municipal governments can be more meaningfully engaged in wetland management in Alberta on a go-forward basis.

This report begins with a historical review of wetland policy development and implementation in Alberta, including an overview of the initial development of restoration and compensation guidelines in the mid-2000s and the role of Wetland Restoration Agents in the delivery of wetland restoration projects. This review also describes the new provincial Wetland Policy that was introduced in September of 2013, and the staged implementation of the policy in the White and Green Areas of the province between September 2013 and January 2019. Details regarding the development and release of implementation guidance documents and Directives during this period are also discussed. This historical review also includes a detailed description of the role of The City and CVR as Wetland Restoration Agents, including an overview of why and how these municipalities became designated as WRAs, as well as the major events and decisions that influenced their experiences and successes as WRAs.

The background chapter is followed by a discussion of the key challenges and successes experienced by The City and CVR in the delivery of wetland restoration programs between 2004 and 2019, as informed by key-informant interviews. This analysis also includes perspectives from other municipalities in Alberta who were engaged in wetland management activities during this time, but were not formally designated as WRAs. We conclude the report by providing recommendations for how municipalities can be more meaningfully engaged in wetland management moving forward, including how they might participate as restoration delivery agents within the new centralized Wetland Restoration Program that is being administered by the provincial government.



2.0 Methods

This work was heavily informed by in-depth, semi-structured interviews with key-informants. Key informants are individuals within a group or community who possess 'expert' or specialized knowledge (Tremblay 1957; Given 2008). The use of the key informant technique was essential to achieving the aim of this study, as key informants possess first-hand, in-depth, and specialized knowledge about wetland policy implementation in Alberta. In total, 15 key informants who regularly interact with the provincial wetland policy, and/or were directly involved in the design or delivery of municipal wetland restoration programs in Alberta were purposefully sampled from a range of organizations. This included personnel from The City and CVR, as well as other urban and rural municipal governments in central Alberta. Interviews conducted with provincial government staff included personnel from various departments and regions of the province, thereby providing a range of views geographically and from across the regulatory and policy spectrum. Personnel who worked for private or not-for-profit organizations, who either participated directly in the municipal WRA programs or were familiar with the role of municipalities in wetland management, were also interviewed.

Key informants were selected with an effort to ensure that the full range of perspectives on the role of municipalities in wetland management were included, and interviews were conducted until saturation was reached, i.e., no new arguments were advanced among respondents. Interviews were recorded, transcribed, and coded for major themes. To illustrate major themes, a select number of representative quotes have been included in the report. If required, the selected quotes were edited for clarity and where direct quotes are presented, only the organization affiliation and the date of the interview are provided to protect the identity of the interview participant. Information gathered from interviews was supplemented with personal communication (e.g., emails, phone calls) to verify and expand upon the key themes that were identified during the initial interview.

In addition to the interviews, a comprehensive review of the scientific and grey literature was conducted to further expand upon the history of wetland policy, wetland compensation, and the role of WRAs in Alberta. Specifically, a large amount of historical material related to the wetland restoration programs administered by The City and CVR were obtained and reviewed to provide a comprehensive description of the design and implementation of the municipal programs. Finally, information gathered in January 2019 at a workshop attended by rural and urban municipalities who met to discuss the future role of municipalities in wetland management was also used to inform recommendations for how to improve municipal/provincial partnerships and engagement of municipalities in wetland management moving forward.



3.0 Background

3.1. Overview of Provincial Wetland Policy in Alberta

3.1.1. Interim Wetland Policy (1993)

The province of Alberta was one of the first provincial jurisdictions in Canada to introduce a provincial wetland policy in 1993. Entitled "*Wetland Management in the Settled Area of Alberta: An Interim Policy*", this policy focused on the management of marsh wetland habitats in the settled region (the "White area") of the province, with a stated goal of sustaining "the social, economic, and environmental benefits that functioning wetlands provide, now and in the future" (Alberta Water Resources Commission 1993, pg. 1). The implementation of the policy largely focused on achieving a no net loss of wetland area through the application of the mitigation hierarchy, which aims to first avoid wetland habitats; second, to mitigate for the loss or degradation of unavoidable impacts as near to the site of impact as possible; and third, to enhance, restore, or create wetland habitat in areas where they have been depleted or degraded.

Despite having a provincial wetland policy in place, little progress was made in the conservation of wetland habitat in Alberta until the introduction of the *Water Act* in 1999. This new legislation replaced the out-dated *Water Resources Act*, and shifted the regulatory focus away from simply water allocation towards a more comprehensive purpose for supporting and promoting the "conservation and management of water, including the wise allocation and use of water."[1]

Under the *Water Act*, any activity that "causes, may cause or may become capable of causing an effect on the aquatic environment"[2] requires an approval, and in making a decision about granting an approval, the government "may consider any existing, potential or cumulative effects on the aquatic environment."[3] This legislation thus became the mechanism through which the provincial government could promote the goals and objectives of the interim wetland policy.

3.1.2. Provincial Wetland Restoration/Compensation Guidelines (2005/2007)

While the interim wetland policy used the mitigation sequence of avoid, minimize and compensate as a foundation for the conservation of wetland habitats, many proponents applying for an approval to impact a wetland under the *Water Act* skipped over the avoidance and minimization steps and proceeded directly to compensation (Clare et al. 2011; Clare & Krogman 2013). Given the heavy reliance on this step in the mitigation sequence, and in light of clear differences in how regional government offices were making decisions about acceptable types of compensation, the provincial government released a wetland compensation guidance document in 2005, which was reissued in 2007 with minimal changes (Alberta

[1] Water Act, R.S.A. 2000, c. W-3, §2
[2] Water Act, R.S.A. 2000, c. W-3, §1(1)(b)(i)(D)
[3] Water Act, R.S.A. 2000, c. W-3, §38(2)(b)(i)

Environment & Sustainable Resource Development 2007). These guidelines were issued with the aim of clarifying expectations around acceptable types of compensation, preferred compensation site location, and suitable compensation ratios. Importantly, these guidelines created a standard for wetland compensation decisions and guided compensation practices in Alberta for government regulators, proponents who created or restored wetland habitats, and third party agencies who were responsible for restoring wetland habitats.

The 2007 provincial compensation and restoration guidelines outlined two mechanisms for wetland compensation:

- Permittee-responsible restoration, where the proponent causing the impact was responsible for compensating for the loss of wetland area as per the guidelines, or;
- The payment of a fee by the proponent in lieu of restoring wetland area, which was paid to a third party Wetland Restoration Agent (WRA) who was responsible for delivering wetland restoration on behalf of the proponent.

The guidelines also outlined principles for undertaking wetland restoration activities with respect to the acceptable types and location for restoration projects, as well as the compensation ratios that should be used to calculate the amount of compensatory habitat to be created. Importantly, the guidelines specified that "Compensation will be provided through restoration of drained or altered naturally occurring wetlands" (Alberta Environment & Sustainable Resource Development 2007. pg. 1) and that WRAs "will not be permitted to construct artificial wetlands for the sole purpose of receiving compensation funds" (Alberta Environment & Sustainable Resource Development 2007, pg. 2).

Initially, Ducks Unlimited Canada (DUC) was the primary agency that was recognized by the government to receive the in-lieu fee (ILF) payments, and for most of the wetland impacts that occurred in Alberta compensation payments were being made to DUC through restoration agreements negotiated between DUC and the project proponent, with the wetland compensation primarily being delivered in areas deemed by DUC to be high priority from a programmatic perspective. The exception to this was any wetland loss that occurred within the municipal boundary of Calgary, for which compensation was paid directly to The City of Calgary. Acting from direction provided by their 2004 municipal wetland policy, The City collected in-lieu fees between 2004 and 2015, although the primary wetland management objective for The City was not the collection of in-lieu fees, but rather, to encourage on-site compensation through minimization of impacts, construction of naturalized storm water management facilities, or enhancements of previously degraded wetlands.

In approximately 2008, the provincial government began the process of developing a new provincial wetland policy that would replace the 1993 Interim Wetland Policy and apply to all private and Crown-owned lands in the province. During the development of the new policy, municipalities throughout Alberta became increasingly engaged and interested in wetland restoration, with many of them actively approaching the provincial government to have conversations about being recognized as a Wetland Restoration Agent. This was because many municipalities were frustrated that wetland losses within their jurisdictions were being replaced in other municipalities that were often located outside the watershed or region of impact (Clare & Krogman 2013). This relocation of wetland habitat was occurring because DUC had organizational priorities that targeted specific geographies and types of wetlands for the restoration work. As a consequence, municipalities began to raise concerns about the loss of natural habitats and associated ecosystem services from their jurisdictions, and began to question whether there should be more WRAs acting in Alberta.

In April 2010, the Auditor General of Alberta released a report that included a review of the provincial wetland compensation process, which raised concerns about an apparent lack of provincial government control and oversight over the Wetland Restoration Agent program. In particular, the report noted that there were no enforceable agreements in place between the provincial government and DUC, and no process for reviewing, verifying, or monitoring financial and operational actions and outcomes (Auditor General of Alberta 2010). Further, the report noted that The City of Calgary had established its own

wetland policy, and that “both the City and Environment’s wetland compensation practices would apply” in the case of a wetland impact within Calgary (Auditor General of Alberta 2010, pg. 73). The report also noted that the City’s compensation program “follows different guidelines”, particularly with respect to the City’s approach to accepting a replacement ration of 1:1, and that “Environment has not documented why these differing standards are acceptable” (Ibid). The overall recommendation put forward by the Auditor General was that the GOA needed to improve accountability by formalizing relationships with partners and monitoring the relationships more closely.

In November of 2011, the County of Vermilion River (CVR) submitted a formal request to the Government of Alberta to be recognized as a WRA, and on December 13, 2011, CVR received a Letter of Understanding from the provincial government authorizing them to begin collecting compensation monies for wetland impacts occurring within their municipal boundaries. In September 2012, the County of Vermilion River submitted a Business Plan to the GOA outlining the County’s proposed approach to wetland mitigation (County of Vermilion River 2012), and on April 23, 2013, the County and the Government of Alberta entered into a Memorandum of Agreement (MOA) that recognized the County of Vermilion River as an “interim” Wetland Restoration Agent for a period of five years. The MOA made reference to the 2007 Wetland Restoration/Compensation Guide and the County’s Business Plan, and specified that the Guide “shall govern the collection of Compensation, and the carrying out of wetland restoration and enhancement work, by the County” (Minister of Environment and Sustainable Resource Development 2013, pg. 2). Thus, the County began work as a WRA with the understanding that wetland compensation within their jurisdiction would include a combination of wetland restoration and enhancement activities.

3.1.3. Alberta Wetland Policy (2013)

The Government of Alberta released a new provincial wetland policy in September of 2013. Based on the permitting provisions of the *Water Act*, the Alberta Wetland Policy prohibits the unauthorized drainage or disturbance of wetlands, with a stated goal to “conserve, restore, protect, and manage Alberta’s wetlands to sustain the benefits they provide to the environment, society, and economy” (GOA 2013, pg. 2). Similar to the 1993 Interim Policy, the 2013 Policy is built upon the mitigation hierarchy as a foundational principal, where impacts to wetlands should first be avoided, and then minimized, and as a last resort, unavoidable impacts should be compensated through habitat replacement that “will seek to replace wetland value” (GOA 2013, pg. 15).

Importantly, the Policy makes reference to place-based decision making and the need to consider local economic, social, and environmental priorities, as well as considering local land-use and regional planning as part of site-specific regulatory decision making. The Policy further articulates that wetland replacement can take two forms: 1) Restorative replacement, where the wetland loss is compensated through the restoration, enhancement or construction of another wetland, or 2) Non-restorative Replacement, that includes alternatives that support the maintenance of wetland value through advancing the state of wetland science and management. Examples of Non-restorative Replacement given in the Policy include research into wetland restoration measures, development of wetland inventories, wetland securement for long-term conservation, public education, and wetland health assessment, modeling, and monitoring.

While the Alberta Wetland Policy was released in 2013, implementation of the Policy in the White Area did not come into force until June 1, 2015, with implementation in the Green Area following on July 4, 2016. As a result, decisions about wetland management and compensation in the White Area between September 2013 and June 1, 2015 were still being made as per the direction provided in the 1993 Interim Policy and the 2007 Restoration/Compensation Guide. As part of the staged implementation of the new Policy, the GOA released the first iteration of the provincial Mitigation Directive on June 1, 2015. This Mitigation Directive provided guidance to proponents regarding how wetland losses should be evaluated, the ratios for habitat replacement, and the information that would be considered by the provincial government in making a decision to grant a *Water Act* approval. This Directive reinforced the place-

based, local decision-making considerations that were outlined in the 2013 Policy, and specifically noted that "Proponents may be required to avoid wetlands and adverse effects on wetlands in consideration of … wetland management objectives in the Alberta Land Stewardship Act Regional Plans, or nested Sub-Regional Plans; Wetland management objectives within any other statutory plan or legislation; Municipal plans and bylaws under the Municipal Government Act" (GOA 2015, pg. 2).

Further, the 2015 Mitigation Directive outlined a framework for replacement of wetland habitat, which included one of three options:

- The purchase of credits in a wetland mitigation bank;
- Permittee-responsible wetland habitat replacement that could include a restoration, enhancement, or construction project, and;
- The use of in-lieu fee payments made to a designated wetland replacement agent (WRA).

Importantly, the Mitigation Directive provided a list of designated WRAs, which included Ducks Unlimited Canada, The City of Calgary, and the County of Vermilion River, but did not include any details regarding what was considered to be acceptable or prohibited activities for WRAs in the use or application of restoration payments. Presumably, as long as the projects being proposed by WRAs were consistent with the principles and requirements specified in the 2015 Mitigation Directive and the 2013 Policy, then projects being brought forward by WRAs would be approved by the GOA. It should be noted that while there have been five iterations of this Mitigation Directive released by the GOA between June 2015 and December 2018, the content and direction provided by the Mitigation Directive has not materially changed, with the primary exception being that in the July 4, 2016 version of the Directive, The City of Calgary was no longer listed as a designated WRA.

In October 2015, shortly after the 2013 wetland policy was formally implemented in the White Area, the Auditor General released a report that once again examined the provincial government's wetland policy and restoration program. As a follow-up to the 2010 findings, this audit concluded that signed agreements were still not in place with all organizations acting as WRAs, and that "the department still does not have sufficient monitoring in place to ensure that wetland restoration agencies are in fact restoring the wetland as required" (Auditor General of Alberta 2015, pg. 43). This report once again reiterated a recommendation that the provincial government formalize its relationships with WRAs, as well as tighten controls over wetland restoration procedures.

On November 1, 2016 the provincial wetland Restoration Directive was released, and this document more explicitly outlined the requirements for the development of a wetland restorative replacement plan, and recognized wetland restoration, construction, or enhancement as acceptable types of restorative replacement (GOA 2016). In this Directive, restoration is defined as the "reestablishment of hydrology, vegetation and wetland processes within a previously drained wetland" and enhancement is defined as "actions taken to increase the function and/or health of an existing, albeit degraded, wetland", but further states that the purpose of the Directive is to provide direction on acceptable approaches to wetland *restoration*, and that "separate directives will be published in the future for wetland construction and enhancement" (GOA 2016, pg. 6). Thus, the 2016 Restoration Directive has a strong focus on restoration activities that aim to re-establish the natural hydrology of a previously drained mineral wetland (i.e., most typically a marsh), either through the removal of tile drains, the plugging of a drainage ditch with an earthen plug or engineered structure, or through the re-establishment of a previously diverted water source. This Directive articulates the government's apparent preference for restoration projects, rather than projects that are focused on wetland construction or enhancement, despite all three approaches being outlined as acceptable types of habitat replacement in the Wetland Policy and the Directives that had been published to-date.

The most recent issuance of Directives in support of the Wetland Policy implementation came in December of 2018, when the GOA released a Directive for permittee-responsible wetland construction (GOA 2018a) along with a Guide to wetland construction in stormwater management facilities (GOA

2018b). These documents were followed in January 2019 by a factsheet that outlines the new process for submitting in-lieu fee payments to a GOA centralized fund (GOA 2019). Within this new wetland construction Directive, the government has re-stated the position that wetland replacement is limited to restoration of a previously drained wetland or the construction of a "new" wetland, and has further clarified the obligations and expectations around wetland construction and the utilization of stormwater management facilities as replacement habitat. Perhaps most significantly, the GOA has created a wetland replacement fund that is now controlled and administered by the provincial government, thereby eliminating "Wetland Restoration Agents" that have previously collected fees and delivered restoration projects on behalf of the government. Within this new system, all fees are collected by the GOA and a publically-posted request for proposals will be issued by the government that will call for the restoration of wetlands within a specified priority area by vendors acting as restoration delivery agents. The GOA has indicated that this approach will enable "more delivery agents to participate in wetland restoration activities across a broader geographic area" and "will ensure that wetland ecosystem services are restored in municipalities where wetlands have been lost or removed" (GOA 2019, pg. 3). This move away from WRAs and towards a centralized restoration fund administered by the provincial government may have been, in part, a response to the findings outlined in the 2010 and 2015 Auditor General's Report that suggested the need for tighter government controls over wetland restoration fees and outcomes.

As of January 2019, the Government of Alberta has transited into an "implementation stage", whereby the focus of the provincial government over the next five years will be to grant *Water Act* approvals and administer restoration projects that are consistent with the Wetland Policy and the Mitigation and Restoration Directives released to-date.[4] The primary focus during this five-year implementation period will be to evaluate whether provincial wetland management objectives can be achieved through the policy mechanisms that have been developed. As such, it is not the intention of the GOA to develop any new Directives related to wetland enhancement until the existing approach to wetland restoration, which is primarily focused on the restoration of ditch-drained marsh wetlands, can be fully tested.[5] Given that this new regulatory regime has eliminated the role of Wetland Restoration Agents, and the apparent focus of the provincial government on restoring ditch-drained marsh wetlands in high priority areas of the province over the next five years, many municipalities are uncertain about if, and how, they can remain meaningfully engaged in wetland management and restoration projects going forward.

[4] Interview with Government of Alberta employee, January 2019.
[5] Ibid.

Table 1. Summary of the key legislative and policy milestones associated with wetland management in Alberta and the wetland restroation programs administered by The City of Calgary and County of Vermilion River.

Year	Legislation, Policy, or Directive	Description
1993	Interim Wetland Policy for the Settled Region	• Focused on the management of marsh wetland habitats in the White Area, the goal of the policy was to "sustain the social, economic, and environmental benefits that functioning wetlands provide, now and in the future". No guidance or implementation documents accompanied the release of the policy.
1999	Water Act	• Approvals for disturbing or destroying a wetland in Alberta are granted under the *Water Act.* The stated purpose of the Act is to "support and promote the conservation and management of water", while also "recognizing the need for Albert's economic growth and prosperity". The *Act* is the statutory mechanism through which the government can promote the wetland policy goal.
2004	City of Calgary Wetland Policy	• Outlines expectations for compensation of wetlands lost within The City limits, including a procedure for calculating restoration payments based on land value prices at the site of impact.
2005	Provincial Wetland Restoration/Compensation Guide	• First release of guidelines outlining expectations for wetland restoration and compensation including acceptable types of compensation, preferred location for compensation sites, and compensation ratios.
2006	Bow, Oldman, and South Saskatchewan River Basin Water Allocation Order (closure order)	• River basins closed to the issuance of any new water licences, with all existing water licences remaining in place.
2007	Provincial Wetland Restoration/Compensation Guide	• Restoration and compensation guidelines re-issued with minimal changes.
2010	Auditor General report reviewing wetland restoration program	• Key recommendations include the formalization of partnerships with restoration agents through clear, enforceable agreements, and improvement of accountability through the monitoring of outcomes.
2013	Memorandum of Agreement signed between GOA and CVR	• CVR recognized as "Wetland Restoration Agency" in April 2013. MOA is signed under the Interim Wetland Policy and references the 2007 Provincial Wetland Restoration/Compensation Guide
	Alberta Wetland Policy	• New provincial wetland policy released in September 2013, and wetland replacement ratios are calculated based upon wetland functional values. Implementation of the policy is deferred to June 1, 2015 for the White Area and July 4, 2016 for the Green Area.
2015	Alberta Wetland Mitigation Directive	• Published on June 1, 2015, along with the official launch of the implementation of the Wetland Policy in the White Area. This directive provides guidance and criteria for implementing the mitigation hierarchy, including requirements for wetland habitat replacement.
	Auditor General report reviewing wetland restoration program	• As a follow-up to the 2010 report, this report notes that the recommendations from the previous report have not been fully implemented and that better controls over restoration programs are still required.
2016	Alberta Wetland Restoration Directive	• Outlines requirements for a wetland restorative replacement plan and recognizes wetland restoration, construction, or enhancement as acceptable types of restorative replacement. Further states that the purpose of the Directive is to provide direction on acceptable approaches to wetland restoration, and that "separate directives will be published in the future for wetland construction and enhancement."
2018	Directive for Permittee-Responsible Wetland Construction and Guide to Wetland Construction in Stormwater Management Facilities	• Released in December 2018, these documents clarify obligations and expectations around permittee-responsible wetland replacement, including wetland construction and utilizing stormwater management facilities as replacement habitat.
	Establishment of Wetland Restoration Program	• As of December 1, 2018, all restoration fees will be directed to a centralized, government-controlled fund. Fees will be expended on restoration projects in "priority areas", as per a call for proposals. Restoration work will be executed by vendors acting as delivery agents.

3.2. History of Municipalities Acting as WRAs in Alberta

3.2.1. City of Calgary

The City of Calgary was the first municipal jurisdiction in Alberta to develop and implement a municipal wetland policy, which was approved by Council in 2004 (City of Calgary 2004). The impetus for the development of The City's Wetland Conservation Plan grew from an increasing local consciousness that both historic and contemporary rates of wetland loss within The City were high, and this understanding coupled with a number of high priority land development projects, translated into strong political pressure to act. Specifically, a citywide inventory that was completed in the early 2000s showed that The City had lost upwards of 90% of the wetlands within their municipal boundaries. At the same time, Calgary was experiencing extremely high rates of urban growth, and the remaining wetlands within The City were increasingly being threatened by land development. Due to these growing pressures on and impacts to wetlands, the Director of the Department of Environment Southern Region office, which granted *Water Act* approvals for impacts to wetlands, communicated to municipal staff that The City had an obligation to ensure that land development projects were consistent with the provincial wetland management goals and suggested that The City develop a municipal policy that was consistent with the provincial policy[6]. These discussions between the provincial government and The City were occurring at the same time as several high-profile and contentious land development projects that involved wetlands, and as a result, "local politics riveted a lot of attention onto the issue of wetlands"[7], which were highly favorable for the development and adoption of a municipal wetland policy that promoted local wetland conservation and management interests.

The City's approach to the development of a municipal wetland conservation plan was to be consistent with, and build upon, the principals of the 1993 provincial wetland policy. During the development of the municipal policy, City staff engaged with municipal lawyers and professors in the Faculty of Law at the University of Calgary, who had expertise in municipal and water law, to ensure that: 1) The City was acting within their authority as delegated under the *Municipal Government Act* and 2) the municipal wetland policy aligned with provincial and federal policies. One of the stated goals of The City's policy is "no net loss" of wetland habitat, and consistent with the provincial wetland management approach, The City adopted the mitigation hierarchy as a foundation of their policy. As per the mitigation hierarchy, The City's wetland conservation plan articulates a preference for avoidance and minimization, with the mitigation of loss including restoration or enhancement of disturbed wetlands, creation of wetlands, or "compensation banking" that includes a payment to The City to enhance or create a wetland on behalf of the proponent (City of Calgary 2004).

While the principles of The City's policy were consistent with the 1993 provincial policy, the municipal policy was distinctly different from the 2007 provincial Wetland Restoration/Compensation Guide in the way that compensation ratios were calculated. The City's approach to calculating compensation ratios was tied to the powers given to municipalities under the *Municipal Governments Act*, which strictly governs how municipal governments can acquire and release lands that are designated as Environmental Reserve. Under the MGA, municipalities cannot apply ratios, and as such, The City "set up wetland compensation on a 1:1 basis."[8] The City's approach to calculating compensation fees was also distinct from the approach that was being used by Ducks Unlimited Canada; however, The City's approach was arguably still in-line with the 2007 Restoration/Compensation Guide, given that the Guide did not explicitly articulate a formula for calculating compensation costs. Instead, the Guide provided a "compensation example" that outlined the types of costs to consider when establishing a compensation fee, including: "land acquisition, including upland area and wetland margins, cost of restoration work, cost of monitoring

[6] Interview with City of Calgary employee, December 2018.
[7] Ibid.
[8] Email correspondence with City of Calgary employee, March 2019.

the site and an administration fee if necessary" (GOA 2007, pg. 9). The Guide further noted that compensation "cost may vary depending on the type, size, location, land securement costs and restoration development" (Ibid). Ultimately, the provincial government left it up to the WRA to determine what the compensation cost would be for any given project, and the terms of the compensation agreement were between the WRA and the project proponent, with the agreement being referenced in the associated *Water Act* approval.

Unlike the relatively simple compensation example outlined in the Restoration/Compensation Guide, the compensation payments for wetland impacts in The City were calculated using a more complex approach that included consideration of wetland function, wetland area, the land value price at the site of the impact, and restoration cost, which was calculated as follows:

$$CO = \Sigma[(RC * WA)* \% FV] + [LV * WA]$$

where,

CO = Compensation owed
RC = Restoration cost per hectare
WA = Wetland area in hectares
%FV = Functional value of wetland as a percentage
LV = Land Value at disturbance site (taken as value of municipal reserve cash-in-lieu price of raw land value, 30-days prior to subdivision)

Because The City based their cost calculation on land value prices at the site of impact, the compensation fees paid to and collected by The City were substantially higher than the fees being paid by proponents in other regions of the province who were working with DUC as the designated WRA. The rationale for using land value prior to subdivision as the basis for calculating wetland compensation fees was two-fold: 1) this allowed The City to buy land on the market for wetland restoration, given the substantially higher cost of land within Calgary as compared to surrounding areas, and 2) The City hoped that the higher compensation fees would create an economic incentive to avoid and retain wetlands. While the Director of the Southern Region office for the GOA initially raised some concerns about this proposed approach to calculating compensation fees within Calgary, ultimately, the Director supported the 1:1 compensation ratio and the approach to calculating restoration fees as outlined in the City's 2004 municipal wetland policy.

Notably, when the provincial government released the Restoration/Compensation Guide in 2005, and re-issued the document again in 2007, there was no engagement with The City to discuss alignment of the municipal and provincial approaches to calculating compensation ratios and/or fees. Further, while various representatives from the GOA were engaged in conversations with The City during the development of the municipal policy, and provided support by participating as members of the Key Stakeholder Advisory Committee, there was never any formal agreement drafted between The City and the province that acknowledged Calgary as a Wetland Restoration Agent. Rather, there was an implicit agreement between personnel who issued regional *Water Act* approvals and City of Calgary staff that the province would issue *Water Act* approvals consistent with The City's wetland policy, and that the municipal policy would be used to inform decisions regarding wetland mitigation.[9] As such, there was a high degree of cooperation between personnel who issued *Water Act* approvals for the provincial government and The City in the first several years that followed the adoption of Calgary's municipal wetland policy.[10]

While The City's wetland policy outlines a process for calculating compensation payments in-lieu of habitat creation or replacement, The City has a strong preference for "no-money compensation" applied

[9] Interview with Government of Alberta employee, December 2018.
[10] Interview with Government of Alberta employee, December 2018.

on-site, or alternatively, off-site but still within The City limits.[11] As articulated by the municipal policy, proponents are required to mitigate impacts to one or more of the following wetland features and functions: wetland and upland communities; wildlife; hydrologic regimes; flood attenuation and erosion control; cultural, recreational educational and urban design values (City of Calgary 2004). Importantly, The City's primary objective with their wetland policy is to encourage a "different form of development", whereby wetlands are either retained on-site, or if impacts cannot be avoided, the function is replaced in the same location as the loss.[12] Consequently, the vast majority of mitigation in The City has taken the form of permittee-responsible on-site habitat construction; however, compensation payments have also been made for a number of projects, and due to The City's approach to using land value prices at the site of impact to calculate payments, The City had amassed a large compensation fund by 2010.

While The City had a clear preference for on-site compensation that would retain hydrologic function within the basin of impact, the approach to using stormwater facilities to supply retained wetlands with water post-development or integrating natural wetlands into an engineered facility, began to receive more scrutiny from the Southern Region Office by 2010. This was due in part to the closure of the Bow, Oldman, and South Saskatchewan River basins to new water licences in August of 2006 (GOA 2007). This closure order protected the water rights of existing licence holders while at the same time prohibiting the issuance of any new water licences; however, it wasn't until approximately 2010 when the regional office began to suggest that The City's on-site restoration approach was in conflict with the basin closure order. The argument being put forward by the Regional Office staff was that water being detained in engineered stormwater facilities was being diverted away from downstream water licence holders. As a result, Approvals staff in the Southern Region Office began to suggest that a water licence was required for wetland compensation projects; however, because of the basin closure order a new licence could not be obtained. By 2012, the province also began to demand more from proponents with respect to the design of the engineered storm facilities to ensure that the compensatory habitat met provincial requirements for hydrologic and ecological function; however, the province did not have any clear guidelines for stormwater wetland design, nor was there consistent direction from the Regional Office regarding whether a water licence was required for on-site wetland construction.

By 2014, the GOA began to indicate that on-site wetland compensation would not be permitted without an evaporative loss licence, and protracted discussions between The City, land developers, and the GOA on the issue began to make on-site permittee-responsible wetland compensation more difficult and time consuming. As a result, most project proponents began to opt for in-lieu fee payments, which in turn increased The City's compensation fund and their compensatory habitat obligation. Because Calgary's wetland policy and their approach to on-site wetland compensation was very much tied to stormwater – either as a water supply for retained wetlands or as a wetland habitat replacement – the GOA's approach to enforcing the basin closure order eliminated many of the compensation projects The City could realistically pursue. At the same time, the GOA had released the new provincial Wetland Policy, and the apparent preference for the restoration of ditch drained wetlands over other types of compensation made it nearly impossible for The City to extinguish their compensatory habitat obligations within their municipal boundary due to a lack of ditch drained marsh wetlands.

Given the limitations associated with wetland restoration within Calgary, The City began to investigate opportunities for restoring wetland habitat outside the city limits, an approach that was approved by City Council (UE2008-09); however, The City faced challenges with this approach. First, The City had to work with neighbouring municipalities to negotiate compensation projects that respected the interests of each municipality, while also ensuring that the approach was consistent with requirements specified under the provincial Wetland Policy and supporting Directives. Further, moving outside The City did not eliminate issues associated with the basin closure order. In fact, GOA personnel in the Southern Region office continued to take the position that the restoration of a natural wetland basin would result in the diversion of water that could infringe on the rights of existing water licence holders, and as such, a water licence

[11] Interview with City of Calgary employee, December 2018.
[12] Ibid.

was required for wetland restoration. Finally, the GOA required that The City work with Ducks Unlimited Canada as the delivery agent for wetland restoration activities outside the city limits, which posed additional challenges due to issues around the organizational mandate and priorities of DUC, which generally limited the amount of work that DUC would do within or near major urban municipalities. Additionally, landowners in the region were hesitant to work with DUC, which made recruitment of some private land owners who had suitable ditch drained wetlands more difficult.

In combination, the constraints imposed by the basin closure order and the complexity and difficulty of working outside the city limits lead to what City personnel described as a "slow ballooning of [compensation] money", where The City had funds to direct towards wetland restoration, but they could not use the money for projects that were consistent with their municipal wetland policy.[13] While The City was committed to finding new and innovative ways of extinguishing their wetland replacement obligations, including partnering with the University of Alberta in 2013 to pilot a reverse auction in Rocky View County, there were only a handful of projects that resulted in wetland compensation on the ground. By their own admission, The City acknowledges that "in the view of the people doing the approvals, we were all over the map because we were trying to figure out how to get something in the ground and it probably drove them up the wall … and neither [The City nor the GOA] dealt substantively with the issues."[14]

On June 1, 2015, when the new provincial Wetland Policy came into force in the White Area, the status of The City of Calgary as a WRA became even more tenuous. While there had been on-going discussions between The City and the provincial government regarding the execution of a formal Memorandum of Agreement (MOA) to extend the WRA status of The City, the release of the provincial Mitigation Directive called into question the viability of The City as a restoration agent. This is because the Mitigation Directive outlined fixed replacement costs for wetland compensation for each of the Relative Wetland Value Assessment Units (RWVAU) in the province, and the replacement fees specified for the RWVAU containing The City of Calgary are substantially lower than the fees The City was collecting under their municipal wetland policy (e.g., $17,650/ha being charged by the province versus ~$450,000/ha being charged by The City).[15] As a result, the fiscal incentive for land developers to undertake on-site permittee responsible compensation has been eliminated, thereby undermining The City's objective of retaining wetland benefits at the site of the impact. Further, the substantially reduced replacement fees make it financially unfeasible to undertake wetland restoration within city limits, as land value prices to secure a wetland or parcel of land for wetland construction far exceed the replacement costs that are being collected as per the 2015 Mitigation Directive. As a result, The City chose not to pursue an MOA to continue in their role as a WRA, as they simply did not feel that the new Mitigation Directive, coupled with the challenges of working within a closed basin, provided sufficient conditions for The City to be successful as a Wetland Restoration Agent.

The withdrawal of The City's WRA status meant that The City had very few tools remaining with which to manage wetlands within their municipal boundaries. One of the tools that The City still retains is the power given under the *Municipal Government Act* to designate a wetland as Environmental Reserve (ER) at subdivision; however, The City has not been exercising this authority, in part because the basin closure order does not allow for wetlands to be augmented with treated stormwater post-development. As such, The City does not feel that wetlands designated as ER are hydrologically viable, and retaining these features without ensuring that the wetland can receive treated surface water runoff would mean that The City is taking on a maintenance liability. Because of this, The City feels that they have a "weakened rationale to protect wetlands where they are" because they "can't take something [as Environmental Reserve] that is going to be a dry, weedy liability."[16]

[13] Interview with City of Calgary employee, December 2018.
[14] Ibid.
[15] Ibid.
[16] Ibid.

The City also feels strongly that there are many opportunities within Calgary to meet local wetland management goals through wetland enhancement. Notably, this approach is consistent with the provincial Wetland Policy, which acknowledges wetland enhancement as one of the acceptable mechanisms for wetland restorative replacement. Despite this, The City has experienced resistance from the GOA, primarily because the provincial government does not feel that there is an effective mechanism in place to adequately measure the "ecological lift" that results from enhancement,[17] and because the GOA is currently focused on evaluating whether the Wetland Policy goals can be achieved through the restoration of ditch drained wetlands before introducing the option of wetland enhancement.[18]

Presently, given the constraints imposed by the basin closure order, the low wetland replacement costs being charged by the provincial government within Calgary, and the focus on ditch drained wetlands as the preferred approach to wetland restoration, there is a feeling that wetland management outcomes in The City of Calgary are "worse now than they were 15 years ago".[19] The City feels strongly that the existing policy Directives seriously constrain municipalities, particularly large urban municipalities, in terms of the tools that are available for retaining and restoring wetlands within their jurisdictions. While The City feels that there may be a role for municipalities in the new wetland restoration program that was announced in December of 2018, there are still many questions regarding how this program will prioritize restoration projects, and whether urban municipalities will be afforded an opportunity to meaningfully participate in a way that allows them to achieve their own local wetland management goals, while also contributing to provincial wetland management objectives.

3.2.2. County of Vermilion River

Like many municipalities in Alberta, the County of Vermilion River (CVR) was motivated to become a Wetland Restoration Agent because of growing concern and frustration over the amount of money that was leaving the County in the form of compensatory wetland payments. Prior to CVR being recognized as a WRA, Ducks Unlimited Canada was receiving all of the compensation payments for wetland impacts in the County, and the fees collected by DUC were primarily being directed towards wetland restoration projects in other jurisdictions and watersheds. Given that a large amount of the wetland restoration payments were coming as a result of the County's own road construction and maintenance program, there was awareness that taxpayer dollars were leaving the County with little benefit to the ratepayers.[20] In addition to these financial considerations, CVR was experiencing surface water management issues, and there was a recognition that more effective wetland management could reduce flooding and contribute to water quality improvements in the local watershed.[21]

In 2010, the County of Vermilion River launched the ALUS Canada Vermilion River program, which provided incentives to farmers within CVR to adopt best management practices that improved environmental resources on-farm, such as riparian buffers, fencing exclusion, alternative watering systems, and other practices. Partnering with ALUS Canada illustrated to County Administration that there were opportunities for CVR to adopt programs that had a positive local effect on the environment, and that these positive impacts ultimately benefitted ratepayers within the County. At the same time, the Regional Office was staffed by personnel, including the District Approvals Manager, that were very supportive of municipalities "thinking outside the box" and they encouraged CVR to consider acting in the role of a Wetland Restoration Agent.[22]

In November of 2011, the County of Vermilion River submitted a formal request to the provincial government to be recognized as a WRA, and on December 13, 2011, CVR received a Letter of

[17] Interview with Government of Alberta employee, December 2018.
[18] Interview with Government of Alberta employee, January 2019.
[19] Interview with City of Calgary employee, December 2018.
[20] Interview with County of Vermilion River employee, November 2018.
[21] Interview with County of Vermilion River employee, December 2018.
[22] Interview with County of Vermilion River employee, November 2018.

Understanding from the GOA authorizing them to begin collecting wetland compensation monies for wetland impacts occurring within their municipal boundaries. This Letter of Authorization also indicated that the County must hold the funds in trust until such a time as a formal wetland restoration plan was drafted and submitted to the provincial government for approval. The Letter of Authorization was also accompanied by an Information Letter entitled "*Wetland Compensation/Mitigation supplemental options Provincial Wetland Restoration/Compensation Guide 2007*" (dated April 2010). This information letter outlined options for wetland compensation that included an extensive and wide-ranging list of acceptable restoration activities, such as:

- Acquisition of riparian areas including plantings of native vegetation to either increase or improve the biological diversity and riparian area adjacent to wetlands, creeks and/or rivers to enhance local water quality, local water recharge, fish and wildlife habitat, flood reduction;
- Wetland restoration and rehabilitation;
- Wetland enhancement;
- Wetland educations programs;
- Storm water management which includes grassed swales, as-constructed wetlands and/or extended wet ponds;
- Fencing water bodies from livestock usage and develop livestock watering systems away from riparian areas;
- Academic research and development assistance;
- Other options to enhance biological diversity and/or acquire environmentally significant areas.

In March 2012, CVR began collecting wetland restoration fees for wetland loss within the County, and in September 2012, submitted a Business Plan to the District Approvals Manager that outlined the County's proposed approach to wetland mitigation (County of Vermilion River 2012). This business plan articulated the County intent to "use a combination of restored, created and enhanced wetlands to mitigate wetland loss" (County of Vermilion River 2012, pg. 1), with wetland restorations expected to make up the "bulk" of the mitigation projects. The Business Plan also articulated the administrative approach and financial accountabilities of the program, how sites would be selected and prioritized for restoration, and the County's monitoring and reporting obligations, which included a 30 year monitoring term and annual progress and financial reporting to the GOA. In addition, the Business Plan articulated that the County would actively seek out additional expertise and capacity through the formation of a Wetland Technical Committee, whose role was to help to identify potential projects and review technical reports prior to submission to the GOA for a *Water Act* approval (County of Vermilion River 2012).[23] The Business Plan also described how the County would leverage their own staff resources, including their GIS, Agricultural & Environment, and Planning & Development departments, to provide support to the delivery of the program through the formation of a Wetland Interdepartmental Committee made up of representatives from various County departments. While the Plan was submitted to the GOA for approval, the government did not provide any advice or direction on the Business Plan activities; rather, the government was focused on ensuring the Plan sufficiently captured financial accountabilities.[24]

On April 23, 2013, the County and the Government of Alberta entered into a Memorandum of Agreement (MOA) that recognized the County of Vermilion River as an "interim" Wetland Restoration Agent for a period of five years. The MOA made reference to the 2007 Wetland Restoration/Compensation Guide and the County's Business Plan, and specified in Section 2.1 that "the County is a designated WRA under the provisions of the Guide for the purposes of receiving Compensation and carrying out wetland restoration and *enhancement* projects, within the County of Vermilion River" (Minister of Environment and Sustainable Resource Development 2013, pg. 2, emphasis added). Thus, the County began work as a

[23] Email correspondence with County of Vermilion River employee, March 2019.
[24] Written response to questions posed via email, Government of Alberta employee, February 2019.

WRA with the understanding that wetland compensation within their jurisdiction would include a combination of wetland restoration and enhancement activities.

The MOA also alluded to the on-going wetland policy development that was occurring at the time, indicating in Section 5.1 that "This agreement may be amended at any time by mutual agreement of the Parties through an exchange of letters, or in accordance with the Province's wetland governance framework, once finalized" (Minister of Environment and Sustainable Resource Development 2013, pg. 4). Thus, there was an acknowledgement in the MOA, which pre-dated the release of the new Policy by approximately five months, that the new provincial wetland management framework may influence the activities of CVR once the governance framework was "finalized". At the time of signing, however, there was no clear indication as to whether, or when, the pilot project would be affected by any provincial wetland policy changes.

Following the approval of the County's Business Plan and the signing of the MOA, there was no further articulation of the details of the County's WRA pilot program. For example, the County did not develop a more detailed implementation plan identifying and outlining the project(s) that CVR was planning to target during the initial year of the restoration program, and for which the GOA could provide feedback prior to the County investing time and resources into the development of the project(s). Further, there was no communication plan or any common understanding of the process for engagement between the GOA and CVR to discuss successes and challenges, or to resolve issues outside of the annual reporting that was outlined in the Business Plan.[25] While the Business Plan provided a vision and high-level goals for the program, County personnel who were involved in the delivery of the program suggested that more could have been done prior to the initiation of the pilot to clearly articulate the objectives of the program, outline the policies, procedures, or bylaws that would need to be created or revised, identify baseline data that were required, and develop mechanisms for measuring and evaluating program success, such that there was a common and shared understanding of the expectations and requirements for the program at the outset.[26]

Within the first year (2013) of the restoration program, the County was focused on the evaluation of two potential projects: the first being the McNabb Habitat Project, which was located on municipally-owned lands, and the second being the Headon project, which was a project on private land that was brought forward by ALUS Canada (County of Vermilion River 2013). The County also directed resources towards compiling existing wetland inventories and reviewing the data to identify potential restoration sites, in addition to developing governance processes such as a Terms Of Reference for the Wetland Interdepartmental Committee and Wetland Technical Committee. Importantly, the provincial government released the new wetland policy in September of 2013, and because the implementation of this policy was phased, there were no implementation guidelines accompanying the Policy. As such, the GOA was publically communicating through their website and in other written materials that the new policy would not come into effect in the White Area until June 1, 2015, and that "Previously approved projects, and project applications submitted and under review prior to June 1, 2015 in the White Area and June 1, 2016 in the Green Area, are not subject to wetland replacement requirements under the Alberta Wetland Policy" (GOA 2015, pp. 1). As such, personnel from the County, as well as some who worked in the Regional Office understood that within the context of the CVR pilot project, "restoration, enhancement and riparian improvements if authorized under the *Water Act* were recognized as acceptable projects within the policy of the day"[27] and that the activities outlined in the County's business plan and the MOA were still viable options for restoration projects.

In 2014, during the second year of the project, the goal of CVR was to have two wetland restoration projects completed: one on County land (McNabb) and a second on private land (Headon). Due to the complexity involved in drafting a 30-year conservation agreement, the County chose to delay the Headon

[25] Interview with County of Vermilion River employee, December 2018.
[26] Ibid.
[27] Written response to questions posed via email, Government of Alberta employee, February 2019.

project until 2015 to allow for the finalization of the agreement; thus, the McNabb project was the primary focus of the program for 2014. Early in 2014, the County worked with their Technical Committee to scope the project, which included wetland restoration, enhancement, and construction along with the creation of an interpretive park to showcase the wetlands. A version of the project was submitted to the GOA for review in June, which resulted in suggested revisions to the project scope. In October, a revised version of the project was submitted in support of the County's request for a *Water Act* approval for the project, and while the County hoped to complete this project in 2014, an Approval was not granted by the GOA until May of 2015.

It should be noted that the County of Vermilion River had no prior experience delivering wetland restoration projects, and the GOA had no formal guidance for WRAs related to the type of reporting that was required to secure a *Water Act* approval for wetland restoration projects. Further, as of 2014, the GOA had not yet released standardized protocol to assess wetland condition or the Wetland Impact and Assessment Reporting guidelines. As a result, the County was left to develop their own operating and reporting procedures, with little formal input from the provincial government regarding what type of data and documentation was required to secure a restoration project approval. Because of this, CVR felt that they "were basically treading water trying to figure it out on our own," and they were not getting proactive or constructive feedback from the GOA that would help move the project forward: "for a pilot project to work, you need a partnership. You need constant communication and back and forth, including conversations with constructive criticism and suggestions, and [CVR] wasn't getting any of that".[28]

The third (2015) and fourth (2016) years of the CVR pilot project were ones in which there was a tremendous amount of change with respect to the provincial wetland policy. In June of 2015, the policy was formally implemented in the White Area and a number of documents were realised in support of the Policy implementation, including the Mitigation Directive. As described earlier, the Mitigation Directive provided proponents with unavoidable wetland loss with guidance on how to evaluate the impacts of the loss, the ratios for habitat replacement, and what information would be considered by the provincial government when making a decision to grant a *Water Act* approval. However, this Directive did not provide any details regarding acceptable or prohibited activities for WRAs in the delivery of restoration projects, and there was no clear direction provided as to whether wetland enhancement would or would not be considered an acceptable restorative replacement approach. Further, as per Section 2.1 and Section 2.2 of the MOA signed in 2013, it was the County's understanding that wetland enhancements were an acceptable form of restoration, and this understanding was articulated in the 2015 Annual Report that CVR submitted to the GOA (County of Vermilion River 2015).

Despite this, there remained an apparent disconnect between what the County understood, and what the GOA's position was, regarding acceptable approaches to restoration. Specifically, a provincial government employee articulated in an interview: "The new policy roll-out created some uncertainty and confusion over why they [CVR] weren't given the flexibility written into the policy [as it relates to enhancement], but this was because they were operating under the previous interim guidelines that said that enhancement was not allowed."[29] Essentially, the position by some in the provincial government was that the CVR had signed an MOA to engage in a pilot project that made reference to the 2007 Compensation/Restoration Guidelines, and that these guidelines prohibited enhancement; thus, it was their view that the County was not able to undertake enhancement, despite the new Wetland Policy articulating that this approach was considered an acceptable form of restorative replacement.[30]

This fundamental misunderstanding as to what type of restoration project would be accepted by the GOA resulted in a large number of wetland enhancement projects being put forward by CVR in 2015 and 2016, with many of them being withdrawn after a review by government staff because they did not meet the GOA restoration requirements (County of Vermilion River 2016). The provincial government's position on

[28] Interview with County of Vermilion River employee, December 2018.
[29] Interview with Government of Alberta employee, December 2018.
[30] Ibid.

acceptable types of restorative replacement were further clarified with the release of the Restoration Directive in November 2016, which as stated earlier, has a strong focus on restoration activities that aim to re-establish the natural hydrology of a previously drained mineral wetland (i.e., most typically a marsh), either through the removal of tile drains, the plugging of a drainage ditch with an earthen plug or engineered structure, or through the re-establishment of a previously diverted water source. According to the GOA, most of the proposals submitted by CVR did not involve the restoration of a drained wetland and the technical reports that were submitted did not provide sufficient information to allow for a comprehensive review of the restoration proposal; thus, the GOA felt that the submitted restoration plans were often unclear or were deemed to be not in-line with the Policy.[31] Personnel who worked for the GOA also felt that there was a communication gap early on in the project planning stage, which was a time that they felt that CVR should have been working with key people in government to ensure that their restoration proposals were in-line with what the GOA would approve. However, other personnel in government felt that "the specifics of the new policy were difficult to determine with respect to restoration because the Directives focusing on these topics [were] slow to develop,"[32] making it difficult for CVR to understand and comply with the provincial government's requirements for restoration.

It should be noted that GOA personnel also acknowledged that communication was not just an issue for CVR, but rather, there were communication issues on both sides: "They [CVR] were a legacy pilot project and we were focused heavily on policy implementation. We wanted them to be successful, but we didn't have a lot of resources to support them."[33] Further, government personnel who worked more closely with CVR felt that the GOA failed to provide the County with clear direction throughout the project, and that "valuable information that could have been used by the CVR to adapt their approach was not provided in good time to allow for operational adjustments."[34] Related to this, County personnel noted that they often received important information about proposed policy implementation changes from a source other than the GOA, for example "when the draft Restoration Directive came out … the province didn't send it to us; we had to get it from a third party."[35]

By the final year of the pilot project (2017), the County understood that the province would not entertain any wetland enhancement or construction projects, and as such, shifted their focus towards identifying suitable restoration sites on private land. In order to identify landowners who would be willing to restore a previously drained wetland, the County attempted to run a reverse auction that was advertised through radio and newspaper ads, as well as on the County website, and at a number of community events (County of Vermilion River 2017). While the auction did not receive any submissions from landowners, CVR felt that the promotion activities did increase awareness within the County regarding the importance and value of wetlands. In 2017, the County also directed resources towards completing a review of current and historic air photos, and identified 205 wetlands that appeared to be suitable candidates for restoration. Despite these efforts, CVR was not able to identify any additional sites for restoration during the final year of the pilot project; however, the County felt that a major constraint in the willingness of landowners to restore was related to the above average wet conditions that were experienced in 2016 and 2017 (County of Vermilion River 2017). As someone from CVR explained, most of the phone calls the County received related to the wetland program were from people who wanted help with drainage, or farmers who were interested in consolidating multiple basins into a single basin, but there were very few landowners that were interested in restoring a previously drained wetland.[36]

Further, by 2017, it was the County's understanding that the only sites that the GOA would approve for restoration were marsh wetlands that had a drainage ditch and a perfectly drained basin without any water. According to CVR, a member of the Wetland Technical Committee, who represented the GOA, told

[31] Ibid.
[32] Written response to questions posed via email, Government of Alberta employee, February 2019.
[33] Interview with Government of Alberta employee, December 2018.
[34] Written response to questions posed via email, Government of Alberta employee, February 2019
[35] Interview with County of Vermilion River employee, December 2018.
[36] Interview with County of Vermilion River employee, November 2018.

them that they should not pursue an approval for “anything that hasn't been well drained, because if there is water in it, it's a wetland, and you are enhancing and not restoring”.[37] This made the identification of suitable sites very difficult, given that most farmers were not interested in the restoration of a perfectly drained basin. The understanding that an imperfectly drained wetland basin was viewed by the GOA as an enhancement rather than a candidate for restoration was shared by The City of Calgary, who at the time was also trying to advance restoration projects within the Nose Creek Watershed. Notably, however, GOA staff that were interviewed for this projected indicated that this was likely a “misunderstanding amongst the regions because from a provincial perspective, we would consider the restoration of partially drained wetland to be restoration. The difficulty is calculating the amount of replacement credit to be given for this, but generally, this has been allowed and DUC gets credit for these activities. If there is evidence of clear ditching and there is a clear opportunity for a ditch plug, then these are suitable restoration sites.”[38] This apparent inconsistency and confusion over whether incompletely drained wetlands are considered to be *restoration* or *enhancement* opportunities by the GOA is not insignificant, as there are a great number of incompletely drained wetland basins across the settled region of the province. That both the County of Vermilion River and City of Calgary understood these incompletely drained wetlands were not viable restoration projects likely had a significant impact on the number of wetland restoration projects that they were able to deliver as WRAs.

By the end of the five-year pilot project, the County of Vermilion River had identified 12 potential sites for wetland restoration, enhancement, or construction activities. Three of these sites received a *Water Act* approval; however, one of the projects did not proceed because the landowner withdrew their consent prior to the restoration work being initiated. Many people who were involved in this pilot project felt that the low number of restoration projects could be attributed to timing; the pilot spanned a period in which the regulatory environment was highly dynamic and the GOA’s expectations for wetland restoration was evolving and changing. Further, because of the phased implementation of the Policy, the GOA had expectations around wetland restoration that were largely evolving internally, but had not been clearly articulated publically in the form of written guidance or Directives. Due to the strained communication between the County and the GOA, these expectations were not being effectively delivered to CVR, as articulated by one County employee: “We had a lot of issues with clear communication back and forth, not really getting any clear direction on what we were allowed and not allowed to do.”[39]

Communication clearly impacted outcomes of the pilot project, but there was also a sentiment that the GOA may have been too risk averse in their engagement with CVR, and that the opportunity to capitalize on experiential learning through the pilot was not fully realized. For example, some saw the pilot as an opportunity for the GOA to try new restoration approaches and test enhancement methods, but this would have required the GOA to take a “more open-minded approach to projects, be willing to learn from failure or struggles, and perhaps engage in riskier projects that could provide insight, rather than close the window of opportunity”.[40] From the perspective of CVR, the constraints that the GOA placed on the County with respect to what was considered acceptable restoration was counter to the spirit of a pilot project: “[CVR] went into this on blind trust and perhaps we were naïve, because we thought that everything in the Business Plan was completely on the table, and that being a pilot project, we would have the leeway and the support of [the GOA] to do enhancements and some of the other things that we wanted to do. The fact was, once we got into it, none of that was on the table, none of that was being developed, and [the GOA] didn’t want us to get ahead of ourselves and so we hit a lot of roadblocks.”[41]

While the total number of restoration projects and area of restored wetlands delivered during the pilot project was relatively low, many who participated in the process felt that the project was a success from the perspective of building greater capacity for wetland management within CVR, as well as

[37] Ibid.
[38] Interview with Government of Alberta employee, December 2018.
[39] Interview with County of Vermilion River employee, December 2018.
[40] Written response to questions posed via email, Government of Alberta employee, February 2019.
[41] Interview with County of Vermilion River employee, November 2018.

communicating to residents within the County the value of wetlands. Ultimately, the County was able to develop internal processes and capacity that will continue to serve them with respect to improved management of wetlands. For example, one County employee told us: “I think awareness was increased from a department perspective, and definitely within the Planning and Development Department. I got called in a couple times to discuss wetland issues with potential developers; what the steps were and what their roles and responsibilities were. So, [participation in the pilot] definitely increased the knowledge internally within the County”.[42] How the County might leverage this knowledge as the province transitions to a new Wetland Restoration Program remains somewhat unknown.

[42] Ibid.



4.0 Results: Key Themes from Interviews

4.1. Municipalities & Wetland Management

4.1.1. Is there a Role for Municipalities in Wetland Management?

> "*Municipalities can make a substantial difference on the ground and if we can leverage that interest, desire, and enthusiasm it serves us all much better*"
>
> – Government of Alberta Employee

There was overwhelming consensus across all those who were interviewed that municipalities are key players in the management of wetlands, and as one provincial government employee articulated, "from my perspective, we won't be successful unless we can engage municipalities in a meaningful way on this file".[43] While all agreed that municipalities are important stakeholders in achieving local and provincial wetland management objectives, some questioned whether the provincial government is prepared to meaningfully engage with municipalities, as articulated by someone from The City of Calgary who said "I see a role for us; whether the opportunity is afforded to us is another question."[44]

A representative from The City of Edmonton, who was actively engaged in trying to negotiate a WRA agreement with the provincial government in 2012, shared this sentiment.[45] At that time, The City of Edmonton had invested significant resources into creating inventories of natural areas and identifying opportunities for retaining wetlands and integrating them into the city's drainage system to ensure their long-term sustainability. In addition, Edmonton had technical experts within their own staff and had identified a number of projects that they felt could serve as a pilot to test the policy instruments and directives that were actively being developed by the provincial government. While The City of Edmonton established quarterly working group meetings with the GOA to discuss development applications, *Water Act* approvals, and opportunities to partner on wetland restoration and enhancement projects, as time progressed and the new Policy and supporting Directives were released, there seemed to be less interest on the part of the provincial government to engage with The City of Edmonton. From The City's perspective, this outcome was somewhat surprising because "there was no downside to working with [The City of Edmonton]" and the person that we interviewed wasn't sure why they "couldn't get over the finish line – or even to the start line – around the negotiations, because any improvement in terms of wetland loss would have been progress. To this day, I'm still not sure why they [the GOA] weren't interested."[46]

While everyone we spoke to was enthusiastic about the role of municipalities in wetland management, this enthusiasm was tempered for some who worked for the GOA with respect to sensitivities around the

[43] Interview with Government of Alberta employee, January 2019.
[44] Interview with City of Calgary employee, December 2018.
[45] Interview with City of Edmonton employee, November 2018.
[46] Ibid.

optics of the provincial government "downloading" responsibility onto municipalities.[47] While the provincial government acknowledges that there are significant opportunities to enable municipal participation in wetland management, they are also conscious that not all municipalities are interested, or they may not have the resources or capacity to participate. In light of this, one person that we spoke to felt that the job of the provincial government is to maximize the opportunities for municipalities to engage to the extent that they are interested, and provide a framework for municipalities to achieve their own local goals and priorities related to wetlands. For example, within the provincial environmental management framework, which includes not just the Wetland Policy but other pieces of legislation such as the *Alberta Land Stewardship Act*, there are opportunities for municipalities to undertake planning that would allow them to prioritize general area or specific wetlands for restoration projects that are consistent with local priorities for risk management (e.g., flooding) or supply of ecosystem services.

There are also opportunities for municipalities to engage in the delivery of restoration projects to achieve their local priorities; however, on this point there were divergent views. We heard from several GOA employees that while they felt municipalities had a strong role to play in planning and prioritization of areas for conservation and restoration, they thought there may be organizations that were better suited to actually deliver the wetland restoration activities on the ground, such as Ducks Unlimited, land trusts, or consulting firms.[48] In particular, the issue of accreditation and the requirement to be an "Authenticating Professional" to sign off on restoration plans was raised as potentially being an issue for municipalities going forward, who many not have this expertise in-house. In contrast, however, we heard from another GOA employee that "Municipalities should be engaged as the primary delivery agents for wetland replacement, restoration, or construction."[49]

Whether municipalities are the primary delivery agent, or participate in this work alongside another delivery agent, municipalities (and in particular rural municipalities) are uniquely positioned to provide construction services through their public works department. This is seen as an advantage, as articulated by someone from the County of Vermilion River who said, "that's one of our strengths; we have our own equipment and we can do these things [wetland restoration and earthworks] a lot cheaper."[50] However, as noted by someone who was a member of the CVR Wetland Technical Committee, "If you're going to allow municipalities to be wetland restoration agents, there needs to be technical and financial support in order for them to succeed", because as this person noted, municipalities are tasked with a wide range of responsibilities and may not have the budgetary resources to direct towards wetland management efforts.[51] We discuss issues related to human and resource capacity further in Section 4.2.3.

4.1.2. Strengths of Municipalities as Wetland Managers

> *"If the goal of the policy is to encourage wetland stewardship through conservation or preservation of wetlands, while offering the ability to replace or restore wetlands, then the local landscape intelligence offered by municipalities should be considered an asset."*
>
> – Government of Alberta Employee

With respect to key advantages and strengths, most people we spoke to agreed that municipalities have unique and intimate knowledge about their land base, as well as the local interests and attitudes related to environmental issues and risk. Additionally, municipalities are uniquely positioned to leverage partnerships with neighbouring municipalities, as well as with local or regional watershed groups, land trusts, or other environmental or land management organizations to identify priority management areas and deliver environmental programs. Perhaps most importantly, municipalities have existing relationships

[47] Interview with Government of Alberta employee, January 2019.
[48] Interview with Government of Alberta employee, December 2018.
[49] Written response to questions posed via email, Government of Alberta employee, February 2019.
[50] Interview with County of Vermilion River employee, November 2018.
[51] Interview with member of County of Vermilion River Wetland Technical Committee, November 2018.

with landowners and diverse opportunities to communicate with their citizens. This is particularly true of rural municipalities, who routinely communicate with landowners through personnel in their Agricultural Departments, at annual division and hamlet meetings, as well as through newsletters and other community events, which presents unique opportunities for program extension and delivery.[52]

Additionally, municipalities are uniquely positioned to act quickly, as their administrative staff are often given the latitude to try new things in response to a clearly defined endpoint. As was articulated by someone from The City of Calgary, "There are times when you just need to say 'that's where we need to go' and we will figure it out as we work through it. As a local government, we have more freedom to that."[53] The direct contact and communication that municipal staff have with their Council also builds trust, which ultimately enables innovation and risk taking. This ability of municipalities to respond creatively to issues or problems is a major strength, and at least one person we spoke to felt that wetland management outcomes would be much better if the provincial government did not work in isolation of municipalities, but instead focused on providing a common expectation around goals and targets that build trust with and capacity within municipalities[54].

4.2. Challenges for Municipalities Working as WRAs

4.2.1. Lack of Clarity Around Expectations

> *"If we could have known, and known in advance, we would have made different choices"*
>
> – County of Vermilion River Employee

The province of Alberta began contemplating a new wetland policy in 2005, when the Alberta Water Council struck the Wetland Policy Project Team, and since this time there has been a great deal of change with respect to expectations around wetland management in the province. In particular, the release of the new Wetland Policy in 2013, and the subsequent phased implementation of the Policy over a period of approximately five years, created an environment of uncertainty that often frustrated decision making and action for municipalities acting as WRAs.

For the County of Vermilion River, the slow release of Directives created a "wait and see" environment where the "rules" around what was an acceptable wetland restoration project were opaque and appeared to change through time, particularly with respect to the GOA's position on wetland enhancement. In the County's 2012 Business Plan and the subsequent MOA that was signed in 2013 by the County and the GOA, wetland enhancements were articulated as a component of CVR's wetland restoration program. While enhancement was also outlined in the provincial Wetland Policy as an acceptable form of restorative replacement, as the implementation of the Policy advanced, it became clear that the preferred approach to wetland replacement was the restoration of ditch drained wetlands; however, County representatives have said that this was never directly or clearly communicated to them. Further, the understanding by the County that only completely drained wetland basins would be considered as acceptable restoration projects placed additional constraints on CVR's ability to deliver projects on the ground.

The continuously evolving Policy implementation process also created a situation where the County was receiving conflicting or inconsistent information from different departments within the provincial government.[55] For example, regional Approvals staff participated in the development of the County's

[52] Interview with County of Vermilion River employee, December 2018.
[53] Interview with City of Calgary employee, December 2018.
[54] Ibid.
[55] Written response to questions posed via email, Government of Alberta employee, February 2019.

WRA program and subsequently maintained regulatory oversight of the restoration projects being proposed, while personnel in the Water Quality branch provided financial and program oversight, and personnel in the Operations branch participated in the County's Wetland Technical Committee and provided subject matter opinion within the internal GOA project review process. The involvement of these various groups, as well as turnover in provincial government staff over the course of the five-year pilot, often lead to inconsistent information and messaging to the County.[56] These circumstances did little to foster a collaborative partnership between the County and the GOA, and instead created an environment where both communication and trust were strained.

Not only was there a lack of information from the provincial government to municipalities during the implementation of the wetland policy, the CVR and The City both noted a lack of engagement by the GOA during the development of the new wetland policy and associated directives. Given that The City and CVR had experience acting as WRAs, and thus, understood both the practical and regulatory challenges of effectively delivering restoration, there would have been clear advantages for the GOA to engage with these municipalities during the development of the Directives and associated guidance documents; however, no invitation was extended to either municipality. In fact, "The City had no idea [the GOA] was working on the Wetland Restoration Directive until it was rolled out. That's not much of a partnership. In addition, The City was never invited to the table for development of the policy and our concerns around alignment of the Municipal Government Act and Water Act were never addressed."[57] This lack of engagement not only made it more difficult for CVR and The City to navigate the continually changing regulatory landscape, but also made municipal personnel feel that the GOA did not take seriously the partnership that was required to enable municipalities to be successful as a WRA.

4.2.2. Lack of Communication & Trust

> *"Part of communication is trust ... if there is someone who is willing to be a leader and can get people together, this can enable communication to start to build trust … if people see opportunity and everyone is trying to achieve the same end, and we do have each other's back, that would go a long way towards achieving more"*
>
> – City of Calgary Employee

A very strong and consistent theme that was heard across all of the interviews was that there was a lack of communication between the municipalities and the provincial government, and this lack of communication led to confusion, frustration, and in some cases, mistrust. For example, a County of Vermilion River employee articulated, "I think because of the frustration, probably at both ends, I think maybe opinions started to form that, oh they're not trying to help us, so we'd better get all this in writing."[58] Consequently, rather than having a relationship where individuals felt that they could pick up the phone to ask questions or check in more frequently, communication between CVR and the GOA tended more towards written correspondence that created a "record", particularly as the pilot progressed through time. As a result, the communication became more sporadic and primarily occurred in response to an issue or problem, rather than being collaborative and proactive. This led to the impression that the GOA was not interested in working with the CVR to help them be successful: "we couldn't get anyone to sit down and give us facts; there was no information being provided."[59] Several employees from the County also noted that they typically heard more from representatives of Ducks Unlimited about the new Policy developments than they did from GOA staff, which further strained trust.

For The City of Calgary, productive communication was also illusive. Staff from The City noted that "just getting a meeting with regulators was nearly impossible" and that when they did get a meeting, the

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[56] Ibid.
[57] Email correspondence with City of Calgary employee, March 2019.
[58] Interview with County of Vermilion River employee, December 2018.
[59] Interview with County of Vermilion River employee, November 2018.

decision making authority did not sit with the people at the table, and so often little could be achieved in these meetings.[60] When power, discretion, and decision making authority is higher up the chain, this constrains decision making on the front lines, and there was a strong feeling that the GOA needs to trust their own staff to make decisions, or alternatively, develop clear standards to allow more decisions to be made at the local level by municipalities.[61] In addition, The City found that much of the communication, particularly after the 2013 flood, tended to be crisis communication because regulators had too much on their plate and could not direct attention to an issue until it was an emergency.

A notable example of an instance where a lack of communication damaged trust between personnel in The City and the GOA was in the lead up to and following the 2015 Auditor General's report. One of the major findings of the 2015 report was that "Between 2007 and 2014, the City of Calgary collected $25 million from approval holders but has not done any wetland restoration" (Auditor General of Alberta 2015, pg. 45). This assertion that no restoration work had been done by The City was, however, incorrect and resulted from the Auditor General being provided with incomplete information about The City's program.[62] In 2014, during the lead-up to the release of the Auditor General's report, representatives from the GOA contacted personnel at The City to request: 1) an accounting of the funds that had been collected between 2004 and 2014; 2) an accounting of wetland replacement expenditures between 2004 and 2014, and; 3) a wetland restoration plan outlining an approach to extinguishing outstanding wetland replacement obligations going forward. Given that the City had not provided this type of information previously, both the GOA and The City agreed that initial reporting efforts should focus on an accounting of the total wetland area impacted and the associated compensation monies collected between 2004 and 2014, with subsequent reporting efforts focused on summarizing past and future restoration work. Thus, as requested and agreed upon, The City provided the GOA with a report that outlined the status of the restoration funds collected between 2004 and 2014, with the caveat that the report did not include any details regarding the restoration work that had been completed or was planned. Nevertheless, the GOA passed The City's report along to the Auditor General without communicating that the report was incomplete, and as a result, "The Auditor General's report cited that The City had nothing on wetland restoration, because the Auditor didn't have any information on The City's restoration efforts. What was provided to the Auditor was only an accounting of the money that was collected over time."[63] This misrepresentation of the outcomes of The City's wetland restoration program is concerning to City staff and has damaged trust between The City and the GOA.

4.2.3. Capacity & Resources

> *"If you're going to allow municipalities to be wetland restoration agents, there needs to be technical and financial support in order for them to succeed."*
>
> – Member of the CVR Wetland Technical Committee

In any conversation regarding regulation and government resources, inevitably the topic of capacity comes to the forefront, and all government personnel, whether municipal or provincial, feel that "they could always use more resources". With that said, capacity consistently came up in discussions as an issue in reference to human and financial resources, as well as in relation to information and technical capacity and resources.

Municipal Governments

For both The City of Calgary and the County of Vermilion River, several people indicated that they thought that their municipalities were somewhat naïve with respect to understanding the amount of work

[60] Interview with City of Calgary employee, December 2018.
[61] Ibid.
[62] Ibid.
[63] Email correspondence with City of Calgary employee, March 2019.

that would be involved in acting as a WRA. Neither municipality had staff that were dedicated 100% to the program, but instead, staff had other obligations that often took priority. As a result, the wetland restoration program was sometimes a “side-of-desk” project that may not have gotten the level of resourcing that was required to achieve the best outcomes. For example, CVR committed in their Business Plan to complete an air photo review of the County to identify potential restoration sites (County of Vermilion River 2012), but this inventory was never completed. The lack of a drained inventory or other types of information that could be used to identify potential restoration sites was raised in one interview as being something that likely could have improved outcomes.[64] A lack of information and data was also raised by one County employee as perhaps being an oversight at the initiation of the program.[65] In the case of The City of Calgary, they too felt that they “lurched” into the role of a WRA and had to figure it out along the way, and while they don’t regret having done it, knowing what they know now, they don’t know if they would do it again.[66] Importantly, The City still feels that there is a critical role for municipalities to play in wetland management, but they acknowledge that perhaps their efforts are best spent planning and directing wetland conservation and restoration activities, rather than acting as the delivery agent for the restoration activities themselves.

In terms of human resources, there was an acknowledgement by most of those who were interviewed that the level of technical wetland expertise within municipalities can vary widely. As articulated by one GOA employee, “wealthier municipalities are often better resourced and can more effectively engage in the conversation and operate in a way that supports meaningful participation in the program, and then there are others that are well intentioned but don't have the resources on hand to support deployment in a meaningful way.”[67] This person went on to say that, “some of the challenge we have had historically in terms of engaging with municipal partners is that they don’t have that on the ground scientific wetland expertise to participate or contribute in a meaningful way. There are perhaps limitations in the understanding of what constitutes an acceptable wetland restoration project – we have received unusual suggestions in terms of what could be done to create a wetland on the ground that is not aligned with wetland policy and legislation. This will change over time, there is a learning curve, and so this should improve over time, but this is a major stumbling block for some municipalities.”[68]

When the County of Vermilion River wrote their Business Plan in 2012, they acknowledged that as a medium-sized municipality they had limited financial and technical resources, and so they assembled a Wetland Technical Committee to oversee site selection and review restoration proposals. With representation from a variety of organizations, including not-for-profit environmental organizations such as Cows and Fish and Delta Waterfowl, as well as various departments within the provincial government, the Technical Committee helped develop processes and provided guidance with respect to project design. While this Committee brought important skills and experience to the County’s wetland program, one Committee member we spoke to felt that there were gaps in expertise related to practical on-the-ground wetland habitat restoration experience, although they felt that this could have been addressed by retaining consultants on a project-specific basis.[69] Additionally, while the Technical Committee was engaged extensively at the beginning of the CVR pilot project – having three in-person meetings and reviewing a number of potential restoration projects within the first year – the Committee only met one more time in-person between 2015 and 2018.[70] When asked why the Technical Committee was not engaged throughout the five-year term of the project, a CVR employee indicated that there were often scheduling challenges trying to get the group together, but primarily, the County stopped convening the Committee because of the challenges they were experiencing identifying projects that they felt would be

[64] Interview with Government of Alberta employee, December 2018.
[65] Interview with County of Vermilion River employee, December 2018.
[66] Interview with City of Calgary employee, December 2018.
[67] Interview with Government of Alberta employee, January 2019.
[68] Ibid.
[69] Interview with member of County of Vermilion River Wetland Technical Committee, November 2018.
[70] Ibid and County of Vermilion River Technical Committee Meeting Minutes.

approved by the GOA.[71] As such, the County may not have benefitted as much from the oversight provided by the Technical Committee as perhaps they could have.

While technical expertise helps to create the conditions for success, having this expertise on its own is not sufficient, as was articulated by representatives from both The City of Calgary and The City of Edmonton. For example, at the time that The City of Edmonton was pursuing WRA status, a representative indicated that "we had a wildlife biologist, a wetland biologist, a forester, and we were very well aligned with the Drainage Services folks. We had a lot of technical expertise and we were tied into the development process. So there were opportunities to partner both through the development process but also on our own [City] lands with the technical experts that we had."[72] Similarly, The City of Calgary had highly trained staff within their Parks department that were involved in their wetland restoration program. What was missing were opportunities for these technical experts to partner with the provincial government and engage in pilot projects that would have allowed these municipalities to try new approaches and test outcomes, which could have been fed back into the policy implementation process to inform the development of provincial wetland enhancement and construction Directives. It should also be noted that while capacity varies between municipalities with respect to technical wetland expertise, municipalities are well positioned from a financial accountability perspective, an issue that has been previously raised by the Auditor General. For example, municipalities have their own audit process, and the finance and budgeting processes that creates both transparency and oversight.

Provincial Government

According to many of the people we spoke to, limited human resource capacity was also an issue for the provincial government in their interactions with The City of Calgary and the County of Vermilion River. This capacity issue was not seen as something that was new, but rather, has been a pervasive issue within the provincial government for some time, as articulated by someone from The City of Calgary who said, "I don't see it [wetland management] as being a priority for the provincial government, and I've been seeing that for years – it has always been a capacity issue. We had some success implementing our policy because the perception of the [Water Act] approval writers was that it was saving them time."[73] Especially after the 2013 flood in Calgary, provincial government staff in the Southern Region Office had to contend with a large number of *Water Act* approval requests, and the capacity of the office to meet with The City to discuss issues around their wetland restoration program was greatly reduced.

One of the GOA employees that we talked to acknowledged that the lack of communication with The City of Calgary and the County of Vermilion River in regards to their restoration programs was likely perpetuated by a lack of internal government capacity.[74] The employee felt like they could not direct any additional attention towards WRAs in a proactive manner because they were too busy with other tasks that were seen as being higher priority. Further, there was a sense that because the provincial wetland specialists that were in place at the time were centrally located in Edmonton, and not in the regional offices, that the distance may have created additional barriers to effective communication with Calgary and CVR personnel. Interestingly, in conversations with several GOA representatives, we learned that the provincial government recently hired five Wetland Specialist Environmental Protection Officers (EPOs) to support wetland policy implementation in each regional office. We were told "A big part of the job description of the new Wetland Specialist EPOs is education of stakeholders, and in particular municipalities. They are trying to start to broaden that reach in terms of educating and informing about Wetland Policy updates and the *Water Act* in general."[75] Notably, neither The City of Calgary nor the Vermilion County representatives that we spoke to were aware that these new resources existed, and

[71] Interview with County of Vermilion River employee, November 2018.
[72] Interview with City of Edmonton Employee, November 2018.
[73] Interview with City of Calgary Employee, December 2018.
[74] Interview with Government of Alberta employee, December 2018.
[75] Ibid.

another provincial government employee that we spoke to indicated that the Wetland Specialist EPO in their region is too busy with compliance issues to engage in outreach activities with municipalities.[76]

4.2.4. Regulatory Concordance

> "*There isn't actually a "government view" on very much. There are department or individual perspectives, and they have the authority to speak or act on behalf of the government … that's just the way it is. This is a common source of frustration*."
>
> – Independent Consultant specializing in wetland restoration

Related to the lack of clarity around expectations that CVR and Calgary experienced, are issues related to concordance between different provincial government laws and policies. Specifically, there appears to be serious misalignment between the provincial Wetland Policy and the South Saskatchewan Basin closure order. Additionally, there appear to be issues around how the Wetland Policy and approvals under the *Water Act* align with intermunicipal, sub-regional, and regional plans required by the *Alberta Land Stewardship Act,* and municipal obligations for environmental management under the *Municipal Government Act*.

The most serious barrier to The City of Calgary's success in terms of delivering on-site permittee-responsible habitat replacement and off-site wetland restoration was the South Saskatchewan Basin closure order. While the closure order was issued in 2006, The City did not begin to receive any indication that the order would impact their approach to on-site wetland compensation until approximately 2010. Prior to that date, Calgary had very much relied on an approach of either maintaining retained wetlands hydrologically by supplying them with treated water from stormwater facilities, or constructing new stormwater facilities that were designed to provide some form of wetland habitat (e.g., shallow areas along the margin). Between approximately 2010 and 2014, The City was receiving mixed messages regarding the need for a water licence for these types of on-site wetland compensation projects, and this often led to long negotiations between The City, the land development proponent, and personnel in the Southern Region Office. For Calgary, the position being taken by the provincial government regarding the need for a water licence was a major issue: "We had tied the majority of our wetland restoration activities to stormwater, because the reality is, that's about all you can do in a City; you are very limited otherwise. So when the stormwater option was taken from us, our ability to find compensation projects that didn't require a licence was pretty limited."[77] As a result, it became a faster and easier option for most development proponents to pay a restoration fee to The City in-lieu of on-site compensation.

The increasing tendency for land developers to opt for the payment of a replacement fee because they could not get a water licence to undertake on-site compensation, led to The City amassing a large compensatory habitat obligation that was in excess of 100 ha by 2015. Further, in accepting the payments, The City was faced with the requirement of having to identify a wetland restoration site that would be acceptable to the GOA under their increasingly narrow definition of what constituted "restoration", while also having to contend with the basin closure order. In an effort to overcome these challenges, The City partnered with the University of Alberta in 2013 on an academic research project that aimed to restore ditch drained wetlands in Rocky View County, a municipality located upstream of Calgary. This research project also faced major challenges with respect to the GOA's position that wetland restoration could only include a completely drained wetland basin (otherwise it was considered enhancement). In addition, the government indicated that a water licence was required to detain water within the restored basins. While the South Saskatchewan Regional Office eventually walked back both of these requirements, they did so only after several years of meetings and negotiations, which highlighted the fact that in Alberta, the process of draining a wetland is often much simpler from a regulatory perspective than is wetland restoration.

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[76] Interview with Government of Alberta employee, January 2019.
[77] Interview with City of Calgary employee, December 2018.

When we asked GOA personnel to discuss the basin closure order and the apparent disconnect between the goal of the Wetland Policy to restore habitat in areas of high loss (e.g., the South Saskatchewan River basin) and the government's position that a water licence is required to restore those wetlands (despite the fact that a new licence can not be acquired), there was a great deal of reluctance to talk about the issue. We were told that the issue is "loaded" from a number of perspectives: "In terms of wetland restoration, there are those that would argue that if you are restoring a wetland, its retaining more water, therefore you are altering the hydrology in the basin and limiting the flow back to a river. Hence, you need a water licence to restore, and since there are no licences available, it's a non-starter. It is an interesting dichotomy and I'm not sure how we resolve it. There has been some thinking around it relative to acknowledging that it's a restoration project that is bringing the wetland back to a former state; maybe that's ok, maybe that doesn't require a licence. I think that's where the thinking is at right now, whereas wetland construction is a very different conversation. We are retaining water where we weren't retaining it previously, so maybe it does require a licence. It is an on-going conversation and it has been a significant challenge for us."[78]

To add to the complexity of the closure order, there is no consensus across Regional Offices regarding whether a water licence is required for a wetland restoration projects. For example, we were told that the Red Deer-North Saskatchewan Regional Office takes a "bigger picture view" of wetland restoration in the context of the closure order, and evaluates the impacts of the restoration on water use at a watershed scale, rather than looking at site-specific impacts.[79] This is in contrast to the view taken by the South Saskatchewan Regional Office that only considers restored wetlands as contributing to evaporative water loss and does not consider the positive ecological benefits, such as biodiversity, or the positive hydrological benefits, such as creating a more stable supply of water through groundwater recharge. Without considering the larger ecological, hydrological, and economic benefits of wetlands, the basin closure order effectively shuts down any wetland restoration efforts in the region. This is not consistent with the provincial Wetland Policy, nor is it consistent with Regional Planning goals for biodiversity, and it is arguably incongruent with the basin closure order itself, which has a provision for a conservation licence to be issued.

Without reconciling the closure order with other policy and regulatory requirements, the goals of the provincial Wetland Policy can not be met within the South Saskatchewan River basin, and the GOA will have effectively excluded municipalities in southern Alberta from actively and meaningfully engaging in wetland management activities. At present, the way in which the closure order is being interpreted and enforced is preventing the GOA from meeting the wetland management and restoration goals set forth in the South Saskatchewan Regional Plan. Given that the *Alberta Land Stewardship Act* is the senior legislation in the province, wetland management goals articulated in the South Saskatchewan Regional Plan should ostensibly take precedent over other surface water management objectives, including the basin closure order. The allowance in the closure order for a conservation licence presents a range of opportunities for wetland restoration in the South Saskatchewan basin; however, a much less rigid approach to decision making will have to be applied by the GOA in order to support wetland restoration in the region. Further, in order to successfully navigate the complexity of the closure order, the provincial government will need to be more open to creative solutions brought forward by municipalities. For example, The City previously approached the GOA with a potential solution to the water licence issue, which included: 1) issuing a conservation licence for the total area of compensatory wetland owed by The City (135 ha), and 2) issuing a temporary diversion license with each new *Water Act* approval that is issued for a wetland loss within Calgary, with the temporary license being retired at the time the wetland is replaced elsewhere. While this proposal has merit, the limited discussion that followed left The City with the impression that GOA was not interested in exploring this option any further.[80]

[78] Interview with Government of Alberta employee, January 2019.
[79] Interview with Government of Alberta employee, January 2019.
[80] Email correspondence with City of Calgary employee, March 2019.

There also appears to be incongruence between the wetland Restoration and Mitigation Directives and the *Municipal Government Act* (MGA). Under the MGA, municipalities have an obligation to make local land use planning decisions that "foster the well-being of the environment."[81] Specifically, many urban and rural municipalities in Alberta have recognized the critical importance of conserving and restoring wetlands within their municipal boundaries in order to meet local and regional priorities for surface water management and climate change adaptation planning. Despite having the power to plan for and designate land use at subdivision, municipalities must cooperatively work with the provincial government to manage surface waters, including wetlands. While the provincial government makes an effort to coordinate and align *Water Act* approvals that are issued for wetland *loss* with municipal statutory land use plans, more needs to be done to empower municipalities to be full participants in decisions and activities related to wetland *replacement.* While the provincial Wetland Policy and the supporting Directives are very clear in the need for place-based decision making and in considering local economic, social, and environmentally priorities, to date, the experience of municipalities suggests that the mechanisms for meaningfully enabling participation in the planning and delivery of restoration projects are not in place. In addition, more could be done on the municipal side to align local policies and decision making with provincial government policies, which would ultimately increase clarity and reduce conflict during the land development process.[82]

Finally, there is some concern that the focus of the provincial government on restoring previously drained wetlands in rural landscapes is in conflict with regional planning objectives that aim to limit or reduce the fragmentation and conversion of agricultural land.[83] The goal of preserving prime agricultural land and protecting it from conversion or fragmentation is explicitly stated in the South Saskatchewan and Lower Athabasca Regional Plans, and is also included in the North Saskatchewan Regional Advisory Council's Recommendations Document. Restoring wetlands in agricultural fields that have been completely drained for decades and are now producing agricultural crops is considered by some to be contributing to the fragmentation of agricultural lands, and therefore, restoring poorly or ineffectively drained wetlands in agricultural landscapes should be the first priority.[84] In order to do this, however, there needs to be additional clarity provided by the GOA regarding what constitutes wetland restoration versus wetland enhancement, because as stated previously, many of the people we spoke to understand that incompletely drained wetlands are *not* considered by the GOA to be restoration.

4.3. WRA Program Successes

While both The City of Calgary and the County of Vermilion River faced challenges during their time acting as Wetland Restoration Agents, there were also important successes that should be recognized. Although the total amount of wetland habitat that was restored may not have been as large as either municipality would have liked, both municipalities did ultimately deliver wetland restoration projects. This achievement on its own should be celebrated, given the challenges that each municipality faced during their time as a WRA. Importantly, Calgary and CVR acted as an example for other municipalities interested in pursuing their own wetland management goals, and the significance of this type of leadership should not be understated.

In particular, City of Calgary's municipal wetland policy has served as an important example for other municipalities who have in-turn adopted their own policies that articulate local wetland management goals and objectives. While some may question whether there is value in having a municipal wetland policy, at least one GOA employee that we spoke to indicated that they think municipal wetland polices are important for aligning municipal and provincial wetland management goals, and for ensuring that wetlands are factored into municipal planning decisions: "The best way to fill the gap [between municipal and

[81] *Municipal Government Act*, RSA 2000, c M-26, s. 3(a.1)
[82] Email correspondence with City of Calgary employee, March 2019.
[83] Email correspondence with County of Vermilion River employee, March 2019.
[84] Ibid.

provincial wetland management outcomes] is for municipalities to develop their own wetland policies that are aligned with the provincial policy, so that they can incorporate the needs and requirements of the provincial policy into their early planning processes."[85] A second GOA employee echoed this sentiment, indicating that the provincial Wetland Policy and the associated Mitigation Directive give clear direction to *Water Act* approval writers that wetland management objectives articulated in municipal plans or bylaws must be considered, particularly when considering requirements for wetland avoidance and minimization. A more detailed discussion regarding opportunities for municipalities to influence wetland management decisions and outcomes through municipal plans and bylaws is provided in Section 5.1.1.

Another key success that was highlighted by a number of individuals that we interviewed was that municipal participation in wetland restoration created a greater degree of awareness around the value and importance of wetlands, both within the municipal government and within their community. In particular, one individual we spoke to from the County of Vermilion River articulated how the program influenced their thinking around how municipalities can make an important difference by empowering local action: "It's changed my view of how we should be looking at things as an organization, and the things we actually can do one person and one place at a time. We can make a difference even with little steps; if everyone took just one little step we would have a much different perspective and a much different municipality. That's what we were trying to do, we were trying to do things at the scale that we could."[86] An example of a step that the County took to increase community awareness around the value and importance of wetlands was the development of a "Wetland Explorer Day", which is an information series that targets families. Initially conceived to promote the County's reverse auction, interest and participation in this event has been steadily growing, and CVR is now planning for its third annual event. This type of outreach and awareness building builds important social capital within communities, which will likely help CVR in achieving positive environmental management outcomes into the future.

In addition to increasing awareness within their own communities, acting as a WRA has provided positive opportunities for both The City of Calgary and the County of Vermilion River to form important relationships and partnerships with neighbouring municipalities, as well as municipalities across the province. For example, when CVR was advertising their reverse auction, they received some interest from land owners in neighbouring municipalities, and while these people were not ultimately recruited into the auction, this does highlight the opportunities that exist with respect to establishing partnerships that can leverage the resources of a greater number of municipalities to achieve wetland management goals at a regional or watershed scale. This watershed scale approach to managing wetlands became a much larger component of how The City of Calgary conceptualized their wetland restoration obligations in the last several years that they acted as a WRA because they had very limited opportunities for restoration projects within the city limits. As a result, they began to look for opportunities for wetland restoration in municipalities that were upstream of Calgary, such that while a restoration may have occurred in another municipality, ultimately, the ecosystem services and benefits of that restoration would still flow to the citizens of Calgary. Moving forward, larger partnerships that can leverage resources from a number of neighbouring municipalities to achieve a common goal will likely form some component of wetland management in the province, given that the GOA conceptualizes wetland loss within Relative Wetland Value Units that are larger than a single municipality. Thus, the partnerships that The City and the County have already begun to foster with other municipalities will likely continue to serve them well into the future.

In addition to establishing partnerships with other municipalities, The City and the County have formed relationships with other organizations that offer additional resources and capacity for wetland restoration and enhancement moving forward. For example, the County of Vermilion River has been working in collaboration with ALUS Canada since 2010, and The City of Calgary has relationships with land trusts and ENGOs that expand The City's capacity in terms of wetland restoration, enhancement, and monitoring expertise. From the perspective of the GOA, these relationships are critical to evolving the way

[85] Interview with Government of Alberta employee, December 2018.
[86] Interview with County of Vermilion River employee, November 2018.

that wetland restoration has historically been conceived, and enable larger-scale and more comprehensive wetland restoration projects that leverage multiple sources of funding and expertise. This was articulated by one GOA employee who said “there is no reason why we can’t be pursuing those basin conversations with other delivery opportunities, entities, or organizations, and that's where I see huge opportunities to advance the policy and wetland management beyond what we are currently doing. But this requires a certain level of alignment with other organizations to make it happen, such as Cows and Fish, ALUS, or whoever, where we could be looking at value added scenarios. So, rather than offsetting a wetland loss with an upland planting, why can’t we offset a wetland loss with a wetland restoration project that is supplemented by a planting project, as enabled through a funding source other than the [provincial wetland] policy and regulatory process itself.”[87] We discuss the idea of formulating intermunicipal partnerships to plan for wetland conservation and restoration at larger spatial extents further in the next chapter.

[87] Interview with Government of Alberta employee, January 2019.



5.0 Moving Forward

5.1. Opportunities

5.1.1. Adopt Municipal Plans and Policies that Enable Local Control

"The regulatory environment doesn't respond to the local context"

– City of Calgary Employee

One of the greatest frustrations expressed by both The City of Calgary and the County of Vermilion River was a lack of local control and influence over wetland management decisions in their jurisdictions, particularly related to wetland restoration and enhancement. Interestingly, in interviews with GOA personnel, all of whom worked in different capacities for the provincial government (e.g., water policy, operations, and approvals), there was overwhelming consensus that existing provincial legislation enables a large degree of local control over wetland management. As discussed previously, the Wetland Policy itself articulates the importance of place-based local planning and decision making, and this concept is reinforced in the Mitigation Directive (GOA 2018). Specifically, we were told that the Mitigation Directive gives very clear direction to Approvals staff that when a *Water Act* application is received, consideration for avoidance and minimization must be consistent with (amongst other things):

- Wetland management objectives established under the *Alberta Land Stewardship Act's* Regional Plans;
- Wetland management objectives within any other statutory plan or legislation;
- Municipal plans and bylaws under the Municipal Government Act.

As such, Approvals staff must consider any municipal or intermunicipal plan or policy approved by Council that outlines priorities and objectives for wetland management when making a decision under the *Water Act*.[88] For example, if a municipality adopts a wetland policy that identifies wetlands within their jurisdiction that are critical for flood protection, and therefore, are high priority for retention, this must be considered in provincial decisions regarding a *Water Act* application that proposes an impact or removal of those wetlands. Similarly, if an intermunicipal or watershed plan endorsed by a municipality identifies environmentally significant wetland areas, this must be taken into consideration by Approvals staff.

Additionally, personnel from the GOA articulated that municipalities have a large and important role to play in the identification of priority areas for wetland restoration. As we were told, "Municipalities are asking for either the dollars or the wetland ecosystem services to stay within their jurisdictions, and a demand that we make that happen, but we don't have a clear line of sight to where wetland restoration

[88] Interview with Government of Alberta employee, January 2019.

can be delivered on the ground."[89] As such, the GOA sees an important role for municipalities to prioritize areas for restoration, "based on their on-the-ground awareness of their jurisdiction, their interests, their needs, as well as their mechanisms for engaging landowners" and further, "if we [the GOA] are not able to support those municipalities that have taken the initiative, that have advanced their own internal conversations, and have identified what they want to do, then I think the wetland restoration system has failed."[90]

These sentiments articulate an opportunity for municipalities to not only specify locations where wetland conservation is a priority, but also, locations where wetland restoration should be directed to help achieve local objectives for the management of wetland function and associated ecosystem services. Further, the role of municipalities in the new provincial wetland restoration program is not restricted to being a restoration delivery agent; rather, the GOA sees a larger role for municipalities in the identification and prioritization of wetlands for restoration. If the municipality is interested in delivering the restoration project themselves, this can be facilitated through the restoration program; however, if the municipality prefers to "give us a list and trust that they [the restoration work] will get done" then the GOA is "committed to working with municipalities that have undertaken this kind of effort."[91] Further, the identification of wetland conservation and restoration opportunities need not be restricted to a single municipal boundary; rather, if a larger-scale watershed approach is preferred or required, the GOA is supportive of this approach.

Ultimately, the GOA is looking to municipalities to provide direction by undertaking some level of planning to identify priority areas for conservation and restoration that meet local municipal needs, and this information will be used to help guide the approvals process as well as wetland restoration. As articulated by one GOA employee that we spoke to, this local planning should be nested within the regional planning process, given that both the GOA and municipalities "must abide by the *Alberta Land Stewardship Act* Regional Plans."[92] As an example, "if there are wetland management objectives within the South Saskatchewan Regional Plan, the province and the municipalities have to abide by it. So, if The City of Calgary has a sub-regional plan for one of their watersheds, such as the Nose Creek or the Elbow River watershed, they could set wetland management objectives and identify environmentally significant areas within that watershed plan"[93] and these objectives would have to be considered by the provincial government when granting *Water Act* approvals and in making decisions about wetland restoration. In absence of a Regional Plan, municipalities still have an opportunity to participate in sub-regional or intermunicipal planning processes to set wetland management priorities. An example of such an initiative is the Sylvan Lake Cumulative Effects Management Plan, which was a multi-stakeholder process that included eight different municipalities, as well as representatives from the GOA and Fisheries and Oceans Canada. Ultimately, there are a number of mechanisms available to municipalities to actively participate in priority setting to provide direction to the provincial government to enable a greater degree of local control.

Given the direction provided in the provincial Wetland Policy and the associated Mitigation Directive, there are multiple opportunities for municipalities to influence wetland management priorities; however, there still needs to be coordination and alignment of policies and programs to achieve the desired outcomes. This will require the GOA to take an active role in engaging with municipalities and improving communication. While the Wetland Policy and the Mitigation Directive give clear direction to Approvals staff to integrate local, sub-regional, or watershed planning into decision making, provincial staff must be aware that these policies, plans, and bylaws exist, and further, need to make decisions that are consistent with the spirit and intent of these documents. The Red Deer district approvals office can perhaps serve as a model for how this type of municipal outreach and engagement can proceed. We were told by numerous people who interact with this office that the Approvals staff make communication with

[89] Interview with Government of Alberta employee, January 2019.
[90] Ibid.
[91] Ibid.
[92] Interview with Government of Alberta employee, January 2019.
[93] Ibid.

municipalities in their region a high priority, and this culture of working collaboratively with municipalities as partners has cultivated good communication and a high degree of trust, which has in-turn resulted in innovative projects. Further, we were told that the driver for decisions in this office is not exclusively wetlands, but biodiversity more generally, and that the *Alberta Land Stewardship Act* and associated regional, sub-regional, and intermunicipal plans are paramount to how decisions are made, thereby enabling a much higher degree of local control over environmental management in the region. Importantly, sub-regional or intermunicipal planning gives municipalities the authority to engage in priority setting and decision making that allows them to integrate local water and biodiversity management objectives into larger landscape-level planning processes. For example, source water protection for The City of Calgary is a high priority, and by engaging in sub-regional or intermunicipal planning, The City is better able to integrate this priority into planning at a meaningful scale. In order for this to be successful, however, both municipalities and the GOA must be willing to engage and collaborate.

5.1.2. Enable a Larger Set of Tools for Municipalities to Access

> "*Flexibility lies with the provincial regulator but the current trend seems to be that they are only willing to say yes to a very narrow range of restoration activities and players - they could be much more expansive than that. There is a big sphere for creativity, but it lies with the people [in the provincial government] that are not likely to embrace it.*"
>
> – Independent Consultant specializing in wetland restoration

While the provincial government employees that we spoke to implied that they are interested and willing to work with municipalities on issues related to wetland management, to date, the GOA's track record regarding collaboration with municipalities on issues regarding wetland management has been somewhat lackluster. Many of the people that we spoke to articulated that they felt the GOA has been very risk averse with respect to entering into new partnerships with municipalities to test policy mechanisms or tools, or in their approach to dealing with more formal pilot projects, such as with the County of Vermilion River. Some people have pointed to the 2013 flood as a seminal event that has contributed to more rigid decision making environment within Regional Offices, but also that "the wetland policy has added a new layer of risk aversion"[94], with Approval writers and other GOA staff who are reluctant to make decisions that are not specifically articulated in a Directive.

In particular, municipalities feel that the GOA has been increasingly rigid in the way that they view wetland restoration and enhancement, and how these activities are being tied back to the *Water Act* and approvals for wetland impacts and habitat replacement under the *Act*. In many conversations that we have had with regulators, both as part of this project and in our other dealings with the provincial government on wetland regulatory matters, the view that the *Water Act* only regulates activities within a water body has very much informed the view of some in the GOA as it relates to wetland enhancements. In the opinion of some regulators, the *Water Act* is seen as being strictly related to regulating activities within a water body, and because wetland enhancements often include lands outside the boundary of a wetland (e.g., riparian habitat restoration), these activities cannot be regulated under the *Act.* This perspective, however, is incongruent with the Wetland Policy itself, which aims to sustain the benefits of wetlands, which is primary measured as a "relative wetland value" that is ultimately tied to wetland function. Given that wetland function is heavily influenced by land management activities outside the wetland boundary, it is entirely within the regulatory discretion of the GOA under the *Water Act* to regulate activities within the catchment of a water body that may impair wetland value or function. Importantly, the *Water Act* is a very broad legislation that does not specifically regulate wetlands, but regulates water; thus, the *Act* could be more broadly interpreted to manage hydrological systems, rather than individual components of the hydrologic system, such as wetlands. Taking a wider view of wetland management, and considering how land use activities adjacent to a wetland might both impact and improve wetland

[94] Interview with Government of Alberta employee, January 2019.

function, would enable a much larger suite of tools that could be used by municipalities to achieve local management objectives, as discussed further below.

Wetland Enhancement

In other jurisdictions throughout North America, wetland enhancement is a common approach to achieving wetland management objectives (Poulton and Bell, 2017). In Alberta, the provincial Wetland Policy and supporting Restoration Directive clearly articulate a requirement for habitat replacement when wetlands are lost to land development activities. As per the Restoration Directive, the types of habitat replacement recognized by the Wetland Policy include restoration, construction, or enhancement, where enhancement is defined as "actions taken to increase the function and/or health of an existing, albeit degraded, wetland" (GOA 2016, p. 6). Given the large number of degraded wetlands that exist throughout the province, both rural and urban municipalities have identified wetland enhancement as an activity that allows them to meet local planning objectives, while also participating as full and effective partners in the implementation of the provincial Wetland Policy. In particular, enabling municipalities to engage in wetland enhancement as part of a larger habitat replacement program will help to achieve local planning objectives, while also meeting the stated Wetland Policy goal of replacing lost habitat in the same area of the original loss.

For urban municipalities, wetland enhancement is a critical component of managing wetland loss because the opportunities for restoring ditch-drained wetlands within a city are either very limited or non-existent. Thus, for most urban municipalities, wetland habitat replacement opportunities take the form of enhancement of degraded wetlands or previously constructed stormwater facilities that could be retrofitted to improve habitat and function; however, neither of these approaches appears to be palatable to the provincial government. As one individual from The City of Edmonton articulated: "There is no focus on dense urban centres; the focus is the north and unsettled portions of the province. Until there is a recognition that most of the population lives in urban centres, and that will continue to be the case, and wetlands have a function that is greater than just area on its own, then we are at a bit of an impasse."[95] There are also clear benefits to engaging with municipalities as it relates to wetland enhancements, because as one GOA regulator articulated, enhancement work done within an urban municipality will typically be associated with lands that have been designated as Environmental Reserve (ER) or Municipal Reserve (MR), and as such, there is a municipal obligation to maintain these areas over the long-term: "When [an urban municipality] designates ER or undertakes a wetland enhancement they do it in perpetuity. The GOA doesn't consider this in their thinking."[96] The security that working with municipalities affords to wetland enhancement projects should be seen as a distinct advantage, and should be more carefully considered by the GOA when conceiving of wetland replacement objectives.

For rural municipalities, there is a similar frustration that the GOA is not recognizing wetland enhancements as an acceptable form of restorative replacement. While there is recognition that there are a large number of opportunities to restore drained wetlands in the settled region of the province, most of the representatives from rural municipalities that we spoke to told us that there is a great deal of resistance from private landowners regarding their willingness to restore drained wetlands. In contrast, wetland enhancement is an "easy sell to most farmers because it is seen as a win-win."[97] Most farmers, and in particular ranchers, will consider undertaking wetland enhancement activities, such as excluding livestock from wetlands and/or restoring or establishing riparian buffers around wetlands. In fact, as part of their permittee-responsible approach to wetland compensation, Red Deer County experienced success with this approach, and were able to meet much of their habitat compensation obligations related to their roadway maintenance and construction programs through working with private landowners on wetland enhancements activities, such as the establishment of riparian buffers on wetlands[98].

[95] Interview with City of Edmonton employee, November 2018.
[96] Interview with Government of Alberta employee, January 2019.
[97] Interview with County of Vermilion River employee, November 2018.
[98] Written correspondence with Red Deer County Employee, January 2019.

While enhancement has been identified in both the provincial Wetland Policy and the Restoration Directive as an acceptable replacement activity, currently, the provincial government is not accepting enhancement projects as part of a wetland restoration plan. The reason given by provincial regulators for this position is that there is currently no formal directive that provides a framework for conceiving, undertaking, and measuring enhancement activities. Specifically, representatives from the GOA have stated, "the challenge with enhancement is there is no common currency that allows us to translate loss of a functioning wetland into enhancement of a previously existing wetland. There is no mechanism to enable a calculation that says I've lost 'X' hectares of 'Y' value wetlands, and I've enhanced this existing wetland from this value to this value, and hence, this is the differential."[99] In other words, the GOA feels that there is no "science based evidence" to show how much enhancement (and of what type) needs to be completed to be equivalent to the loss of one hectare of wetland[100]. Further, we were told, "no one has provided a compelling case for what might constitute wetland enhancement. What most people propose is to add more water: make it bigger and deeper and therefore it is enhanced, but more water doesn't necessarily mean higher value or greater functionality of the wetland."[101]

Ultimately, the GOA intends to focus their efforts on wetland restoration until there has been an opportunity to conduct policy monitoring and evaluation to ensure that the goals of the wetland policy are being met from a value and ratio-based perspective, and this evaluation period is expected to span a period of at least five years[102]. Following the evaluation period, the GOA may consider other alternatives to wetland restoration, including wetland enhancement. In response to questions related to concerns that this approach is too restrictive for municipalities, we were told that "We [the GOA] are hearing municipalities loud and clear, but we are also very concerned about the unintended outcomes of pursuing enhancement in the sense that we may end up putting all of our eggs into the enhancement bucket, whereby we are going to lose more wetland ecosystem services, we are going to lose more wetland area off the landscape. I don't think we will be able to meet the policy objectives if we move too far to that side of the equation, recognizing that in most instances, as far as I can tell, it will be easier to pursue enhancement than wetland restoration."[103]

Interestingly, we were told by a number of GOA employee who do not deal with the *Water Act* directly, that the *Act* can not be used to regulate enhancement activities that are undertaken in response to wetland loss because "many enhancement activities are not proposed within the wetland boundary and so replacement dollars can't be directed towards activities that can not be directly regulated under the *Water Act.*"[104] This interpretation of what can and can not be regulated under the *Water Act*, however, is not universally shared by all GOA employees, and we were told by another GOA employee who interacts with the *Water Act* on a daily basis that the provincial government is "too risk averse with respect to enhancement", and that "the *Water Act* is an inherently dynamic legislation and should be administered as such."[105] Thus, it appears that even within the GOA, there are opportunities for further discussion regarding how wetland enhancement and the *Water Act* can be utilized to meet the objectives of the Wetland Policy, as well as the objectives of regional, sub-regional, or intermunicipal plans related to the management of wetlands and ecosystem services.

In order for wetland enhancement to be a viable option for municipalities and others interested in pursuing permittee-responsible restoration or accessing wetland replacement fees, a provincial Directive that addresses wetland enhancement needs to be developed in a timely fashion. The development of such a directive would satisfy the provincial government's commitment outlined in the Wetland Policy that states, "the Government of Alberta will work with partners to undertake research, fill information gaps, and

[99] Interview with Government of Alberta employee, January 2019.
[100] Interview with Government of Alberta employee, December 2018.
[101] Interview with Government of Alberta employee, January 2019.
[102] Ibid.
[103] Ibid.
[104] Interview with Government of Alberta employee, December 2018.
[105] Interview and email correspondence with Government of Alberta employee, January and February 2019.

develop the tools and capacity required to ensure a sustainable wetland resource is available to Albertans, now and in the future" (GOA 2013, p. 8).

Recognizing the complexity that may be involved in developing an enhancement Directive, there appears to be an opportunity for the provincial government to partner with municipalities who are interested in testing various approaches to wetland enhancement, such that science-based outcomes can be measured and used to inform policy implementation. Establishing a pilot project with municipal partners will allow for the identification of enhancement activities that are commonly used or are most accessible to municipalities in both urban and rural landscapes across the province. The outcomes of a pilot project such as this could include (but may not be limited to):

- Clear guidance on the type of enhancement activities that will be accepted for restorative replacement credit. Ideally, this would include some description of and reference to the wetland functions that can be targeted for enhancement (e.g., increase in water storage volume, ground water recharge, increase in plant diversity, etc.).
- A standardized method for assessing wetland function before and after enhancement activities, such that credit for the "ecological lift" achieved through the enhancement activity can be measured consistently and applied to the calculation of replacement ratios.

Additionally, an enhancement pilot project has the potential to create better processes for communication between the GOA and municipal governments, which in turn will help to build trust, and ultimately, will identify areas of common interest where collaboration could result in improved wetland management outcomes both locally and provincially. Most critically, engaging in a pilot project will contribute towards creating better and more productive relationships between the municipalities and the provincial government. As was noted by someone from The City of Edmonton, policy directives are important, but they are not as important as cultivating relationships and a willingness to work together: "You can never separate the people from the outcome."[106]

In absence of, or in addition to, establishing a pilot project that engages municipalities in testing enhancement outcomes, the provincial government needs to provide additional clarity and guidance regarding their existing Mitigation and Restoration Directives. Specifically, clear definition of what constitutes wetland enhancement versus wetland restoration is required. At present, there appears to be a great deal of confusion amongst proponents and regulators regarding how restoration and enhancement differ. Thus, providing clear direction on how to differentiate a wetland that is being "restored" versus one that is being "enhanced" will be critical to removing regulatory uncertainty. For example, there appears to be some question around whether an incompletely drained marsh wetland basin is an enhancement or a restoration, and clearly defining this will be critically important if municipalities take the initiative to create a drained wetland inventory for the purpose of identifying potential restoration sites.

Mitigation Banking

> "*If [Alberta] had a [wetland] banking system - an open third party banking system - municipalities could enter into it like any other party, and presumably they would have much greater knowledge of and access to the land base, and that would give them a leg-up on others."*
>
> – Independent Consultant specializing in wetland restoration

Related to the issue of a lack of a wetland enhancement Directive is the absence of any direction from the GOA regarding a wetland mitigation banking system. The provincial Restoration Directive lists "Purchase of credits from a third party wetland bank, or trade in available first-party credits" as a restorative

[106] Interview with City of Edmonton employee, November 2018.

restoration option (GOA 2016a, pg. 5). While the option for mitigation banking was listed in each version of the Mitigation Directive released between 2015 and 2017 (GOA 2015, 2016b, 2017), this option is conspicuously absent from the most recently released version of the Directive (GOA 2018c). Like enhancement, this option for wetland replacement appears to have been removed from the set of tools available to municipalities, and while permittee-responsible replacement options are still available, these are limited to either the restoration of a ditch drained wetland or the construction of new wetland habitat as per the recently released *Directive for Permittee-Responsible Wetland Construction* (GOA 2018a) and *Guide to Wetland Construction* (GOA 2018b). Historically, the vast majority of wetland compensation in Alberta has taken the form of a compensation payment to a third party (Clare and Krogman 2013); thus, in absence of the option to use a mitigation bank, it seems likely that this trend will continue, with the payments being directed into the newly established Wetland Restoration Program fund that is being administered by the provincial government.

We were told by GOA staff that banking is still seen as a "key component" to wetland habitat replacement in Alberta, and that this option is "still on the table", but that it has been a lower priority for those personnel working on wetland policy implementation tools than getting the centralized wetland replacement fee program up and running.[107] The potential benefits of mitigation banking over in-lieu fee payments are numerous, and include more certain restoration outcomes (because compensation occurs prior to the impact), improved scrutiny over performance outcomes, reduced transaction costs, unambiguous transfer of liability, and easier monitoring and oversight by authorities (Poulton and Bell 2017). While identifying and constructing banking sites may be an attractive option for municipalities, GOA has identified that mitigation banking guidance is at least two years out, due to limited capacity available to develop the required data systems and tracking mechanisms.[108]

Publicly and Freely Available Information and Data

> *"I'm a big believer in collection of baseline data. You can't really go forward until you know where you've been."*
>
> - County of Vermilion River Employee

The provincial Wetland Policy states a clear preference for wetland replacement to occur in the "area of original wetland loss" (GOA 2013, p. 15). Historically, wetland losses and the associated compensatory wetland habitat have typically been located in different watersheds (Clare & Krogman 2013), resulting in a relocation of ecological benefits and ecosystem services. Increasingly, municipalities are recognizing the value of having wetlands located within their municipalities, or within the larger watershed where their municipality is located; thus, there is an expectation that the provincial government will ensure that wetland replacement fees are allocated equitably as it relates to the location of loss and the amount of restoration funds being made available for restorative replacement activities.

In order to ensure that wetland replacement fees are concomitant with wetland losses, and that habitat is being replaced in the same area as the loss, the provincial government must have sufficient information systems to track the location, area, and relative score of lost wetlands. This will require the provincial government to deliver on commitments made in the provincial Wetland Policy to develop information systems that can be used to accurately track wetland loss and habitat replacement. Specifically, the Wetland Policy states that: "A comprehensive record-keeping system will be developed and used to maintain an administrative link between a development activity, the management decision, wetland impacts or losses incurred, and any resulting mitigation activities" (GOA 2013, p. 15). As part of this, the policy identifies a "Wetland Database and Reporting Tool" and an "Inventory of Wetland Restoration Opportunities" as key information system needs to support policy implementation. Such information tracking systems and tools would be invaluable resources for municipalities, allowing them to more

[107] Interview with Government of Alberta employee, December 2018.
[108] Ibid.

meaningfully engage with the provincial government as well as surrounding municipalities using publicly available, consistent, and transparent information for planning and decision making.

In absence of a province-lead initiative to create the knowledge and information systems that are required for effective policy implementation, the provincial government should allocate restoration funds towards the creation of required data and information, and make these funds available to municipalities to administer. Specifically, the provincial Wetland Policy defines the following as acceptable non-restorative replacement measures (GOA 2013, p. 18):

- Specified wetland inventory work and data acquisition
- Specified landscape level wetland health assessment or modelling

Making non-restorative funds available to municipalities for the purpose of creating the information and data outlined above would provide much-needed resources for municipalities to actively participate in wetland management. Such resources would allow for better and more informed planning decisions, with the aim of strengthening wetland avoidance of key wetlands, as well as creating local and regional capacity for surface water management and adaptation planning by identifying suitable wetland restoration and enhancement opportunities. This will allow municipalities to undertake local planning that can more effectively feed into larger regional or watershed initiatives, thereby aligning priorities across planning scales. Additionally, the provincial government should create a comprehensive and transparent wetland research strategy and decision-making framework to guide the allocation of non-restorative funds, and municipalities should be key stakeholders in the development of such a framework.

5.2. Constraints

While many opportunities exist to involve municipalities in wetland management, there are a number of key constraints that must be addressed before municipalities can be full and effective partners.

5.2.1. Financial Resources

> "*We are acutely aware of the limited resources within municipalities*."
>
> – Government of Alberta Employee

As we have articulated in this report, there are opportunities for municipalities to identify areas within their jurisdictions that they consider high priority for wetland conservation and restoration. Further, representatives from the GOA have articulated "having a drained wetland inventory is critical to understanding where your opportunities are, especially because the [provincial restoration] program will be focused on restoration of ditch drained wetlands for the first number of years."[109] While many municipalities are interested in participating as partners in wetland management, many municipal governments do not have the financial resources that are required to create the type of data products or information that the provincial government has identified as being necessary for integrating local priorities into the provincial Wetland Restoration Program. Because of this, municipalities are interested in accessing provincial wetland restoration funds to help support such work.

Access to wetland replacement funds to support activities that advance the "state of wetland science and wetland management", such as wetland inventories, landscape level wetland health assessments or modeling, and public education and outreach, amongst other things, has been enabled in the provincial Wetland Policy through the "non-restorative" wetland replacement mechanism (GOA 2013, pg. 18). According to one of the GOA representatives we spoke to, however, there are currently no plans to create a process for municipalities to access restoration funds to support non-restorative wetland replacement

[109] Interview with Government of Alberta employee, December 2018.

activities.[110] Specifically, we were told "the non-restorative components are acknowledged and were written into the policy as a mechanism for continuous improvement" but that the GOA needs to "ensure that we are achieving on the ground outcomes in terms of delivery of wetland ecosystem services to Albertans before money can be routed to other initiatives. We have received very clear direction in terms of focusing on restoration as the priority - period, full stop - for the time being, until such a time as we can demonstrate that we are achieving those on the ground objectives and outcomes, and then we can start moving toward these subsequent conversations, which focus on science, research, education, outreach, and enabling other mechanisms. The risk is that the dollars are directed to the lower hanging fruit at the expense of wetlands on the ground, in which case we haven't achieved the outcomes we are seeking to achieve through the policy."[111] Given this, there are outstanding questions regarding how municipalities will fund the creation of the types of information that the GOA has indicated are required in order for them to be meaningfully involved in wetland conservation and restoration decisions moving forward.

5.2.2. Access to and Selection of Restoration Sites

> "*The province seems to put little effort into protecting what they have, and then are putting all of their efforts into trying to restore, which is more expensive and more difficult."*
>
> – County of Vermilion River Employee

The use of the mitigation hierarchy to manage wetlands implies that impact avoidance and minimization should be the most preferred management options, and that replacement of lost habitat should be the least preferred and last management alternative. As has been articulated by previous studies of wetland programs, however, avoidance of impacts is rarely considered in decision-making (Clare et. al 2011). While the new provincial Wetland Policy puts a stronger emphasis on impact avoidance than the previous version of the policy, the perception of many of the people we interviewed is the provincial government is still not putting enough emphasis on wetland avoidance: "The focus is in the wrong place – they say the goal is avoidance and mitigation, but don't do anything to encourage avoidance. You avoid things by making them too valuable to disturb, not by telling people what it will cost to disturb it."[112] The result is an over-reliance on wetland restoration, and the current focus of the provincial Wetland Restoration Program on restoring ditch drained marsh wetlands creates challenges for municipalities that are interested in being wetland restoration delivery agents. It also creates a bias towards restoration of wetlands in more rural settings, thereby creating a disparity between urban and rural municipalities with respect to the location of contemporary and historic loss, versus the location of replacement.

Within urban municipalities, land value prices have been cited as a major issue in securing wetlands for restoration or enhancement. As articulated by a City of Edmonton employee, the biggest constraint for them is around land securement, particularly given that the replacement rates currently being charged are "at 1997 levels,"[113] and as a result, lands can't be purchased within the city limits to replace the wetland area that has been lost. Land value costs are also an issue for The City of Calgary, who despite charging much higher wetland compensation fees still had difficulty securing lands within or near The City for restoration. Outside of urban municipalities, land value prices may be lower, but securing access to drained wetlands on private land is a concern for many of the municipal representatives that we spoke to. As articulated earlier, there is some scepticism that there will be enough landowners interested in restoring drained wetlands, and that the wetland replacement fees available will be sufficient to cover the cost of land securement, restoration costs, and other costs associated with identifying suitable sites, administering agreements or contracts with landowners, and paying for the services of qualified professionals to sign-off on wetland restoration plans and complete the required site validation and monitoring.

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[110] Interview with Government of Alberta employee, December 2018 and January 2019.
[111] Interview with Government of Alberta employee, January 2019.
[112] Interview with County of Vermilion River employee, November 2018.
[113] Interview with City of Edmonton employee, November 2018.

Despite these concerns, GOA representatives have indicated that the focus on wetland restoration is necessary to fully test the implementation tools that have been developed to-date, in order for the provincial government to get a sense for whether these tools will be sustainable over the long-term. According to one GOA employee, historically, the approach to delivering wetland restoration on private lands has been somewhat hampered because "our main delivery agent [DUC] has had two challenges in terms of delivering wetland restoration. Challenge number one is that they have been historically focused on their own priority areas, and so spatially the sample size is relatively small. Challenge number two is that they are variously received by municipalities and landowners ... we need to move beyond this to get a better understanding of what the appetite is for landowners to participate [in wetland restoration]. I think it is greater that we realize, but maybe not as great as I am hoping, but it will be a stress test and will give us a good indication of whether the policy direction is sustainable over the longer term."[114]

Given that the GOA has indicated that the provincial Wetland Restoration Program will be focused on restoration of previously drained marsh wetlands for at least the next five years,[115] questions have been raised around how projects submitted in response to a solicitation for proposals will be prioritized, and what criteria will be used to ensure that the selected projects are concomitant with wetland losses, both in terms of the geography of the loss and the area or function of the lost versus restored wetlands. For example, how will the GOA evaluate proposals in the same Relative Wetland Assessment Unit that include wetland restoration in an urban municipality, versus one that includes restoration in a rural municipality? More transparency around the criteria that will be used to select projects is needed and municipalities should be involved in the development of such criteria.

This need for increased transparency has been acknowledged by one of the GOA representatives we spoke to: "We've come to the point where we have a dedicated revenue initiative and we are structuring an expenditure program that is contract based, that allows us to support wetland restoration projects. The question for us now is how do we ensure that we are pursuing the 'right' projects, what does that look like? I think it comes down to a criteria-based approach that we have yet to design that takes into account a relationship with a municipality, and it's going to vary significantly across the province in terms of what those relationships look like. In some cases, a municipality won't be in the least bit interested in participating, but there may be other municipalities who will want to be more involved and do the restoration work themselves, and will want that level of influence within the decision making process. This is something we need to explore further within an engagement context."[116] Given the shift away from policy development and towards policy implementation, these conversations will need to be lead by personnel in the Operations Branch. Further, given that the centralized restoration fund was established as of December 1, 2018, these conversations will need to occur quickly if the provincial government is serious about integrating municipal views, perspectives, and priorities into the criteria for project selection.

5.2.3. Provincial Government Capacity

> "*We need more dedicated Wetland Specialists. An Approvals writer or a local Fish and Wildlife contact isn't going to have the expertise or time to help with the new program - they are not closely connected to the Wetland Policy*."
>
> - Government of Alberta Employee

In this report, we have made recommendations for the GOA to engage more frequently with municipalities, specifically on issues related to the criteria that the provincial government will use to evaluate restoration proposals, as well as in relation to the development of pilot projects that can be used to help inform policy implementation going forward; however, based on what we have heard regarding the resources currently

[114] Interview with Government of Alberta employee, January 2019.
[115] Ibid.
[116] Interview with Government of Alberta employee, January 2019.

available, we have concerns that these recommendations will not be seriously considered or implemented. For example, when we asked GOA staff about the value of engaging with municipalities on pilot projects to help inform policy implementation, we were told: “With the number of resources we have, pilot projects aren’t ideal, because that means we have to track them and be involved in them – we don’t have those resources.”[117]

Further, with the administration of the new centralized restoration fund, the GOA has taken on additional work that was previously conducted by third party WRAs. As a result, there is additional pressure on existing staff, and we were told that the provincial government needs more dedicated Wetland Specialists, both in Regional Offices and in the central office, to assist with a variety of tasks ranging from the review of *Water Act* approvals and restoration proposals, to overseeing contract deliverables, to conducting inspections of wetland restoration sites. Notably, provincial government capacity issues could, in part, be addressed through increased empowerment of municipalities. If the GOA created clear objectives, provided better and more workable tools, and created standards for evaluating and reporting results, municipalities may choose to engage in wetland management in a way that improves outcomes and reduces the personnel requirements of the provincial government.[118]

[117] Interview with Government of Alberta employee, December 2018.
[118] Interview with City of Calgary employee, December 2018.



6.0 Conclusions

Both The City of Calgary and the County of Vermilion River faced a variety of constraints that limited their success as Wetland Restoration Agents. This included a lack of clarity around goals, objective, and expectations for restoration, which was exacerbated by a lack of communication and trust. Further, both the municipalities and the provincial government were challenged by limited resources, both in terms of the number and expertise of the people committed to the programs, as well as the amount and quality of the data and information available to execute the work. Finally, there were challenges related to policy and legislative concordance, which created regulatory confusion and goal ambiguity for personnel in the provincial government, as well as those municipal staff tasked with delivering the restoration projects.

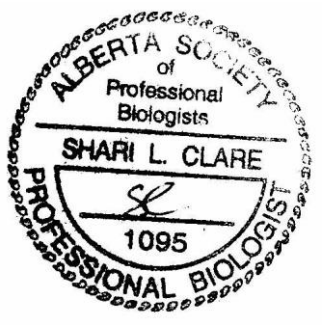
Moving forward, there appears to be a great deal of opportunity for municipalities to adopt local, sub-region, or intermunicipal policies or plans that articulate local goals and priorities for both wetland conservation and restoration. In order for municipalities to be effective wetland managers and delivery agents for restoration projects, however, additional tools need to be enabled by the GOA. In particular, wetland enhancement is a critical tool for achieving wetland management goals for many municipalities, and thus, an enhancement Directive needs to be developed by the provincial government in a timely fashion. Notably, there appears to be interest from a number of municipalities to partner with the provincial government to assist with the development of an enhancement Directive. Additionally, municipalities need access to data and information that can be used to help track wetland losses and identify potential restoration sites within their jurisdictions. In absence of the provincial government providing this information to municipalities, the GOA needs to consider how to enable municipal access to wetland restoration funds for the purpose of non-restorative replacement activities that would include creating drained wetland inventories and/or spatially targeting and prioritizing wetlands for conservation or restoration that can subsequently feed into the Wetland Restoration Program.

While there appears to be new and exciting opportunities for municipalities to partner with the provincial government in the context of the new Wetland Restoration Program, more needs to be done to clarify the criteria that will be used to award the restoration funds. This should include engagement with municipalities from across Alberta to ensure that local priorities and perspectives are considered and integrated into the selection criteria. Ultimately, more meaningful partnerships between municipalities and the provincial government will require an effort from both sides. Specifically, the focus should be on creating productive and meaningful communication, as well as engaging in partnerships that aim to achieve provincial policy goals, while also providing municipalities with tools that they can use to effectively manage wetland resources within their jurisdictions.

6.1. Closure

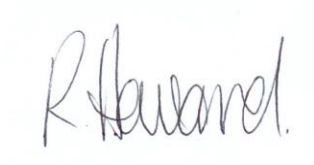
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