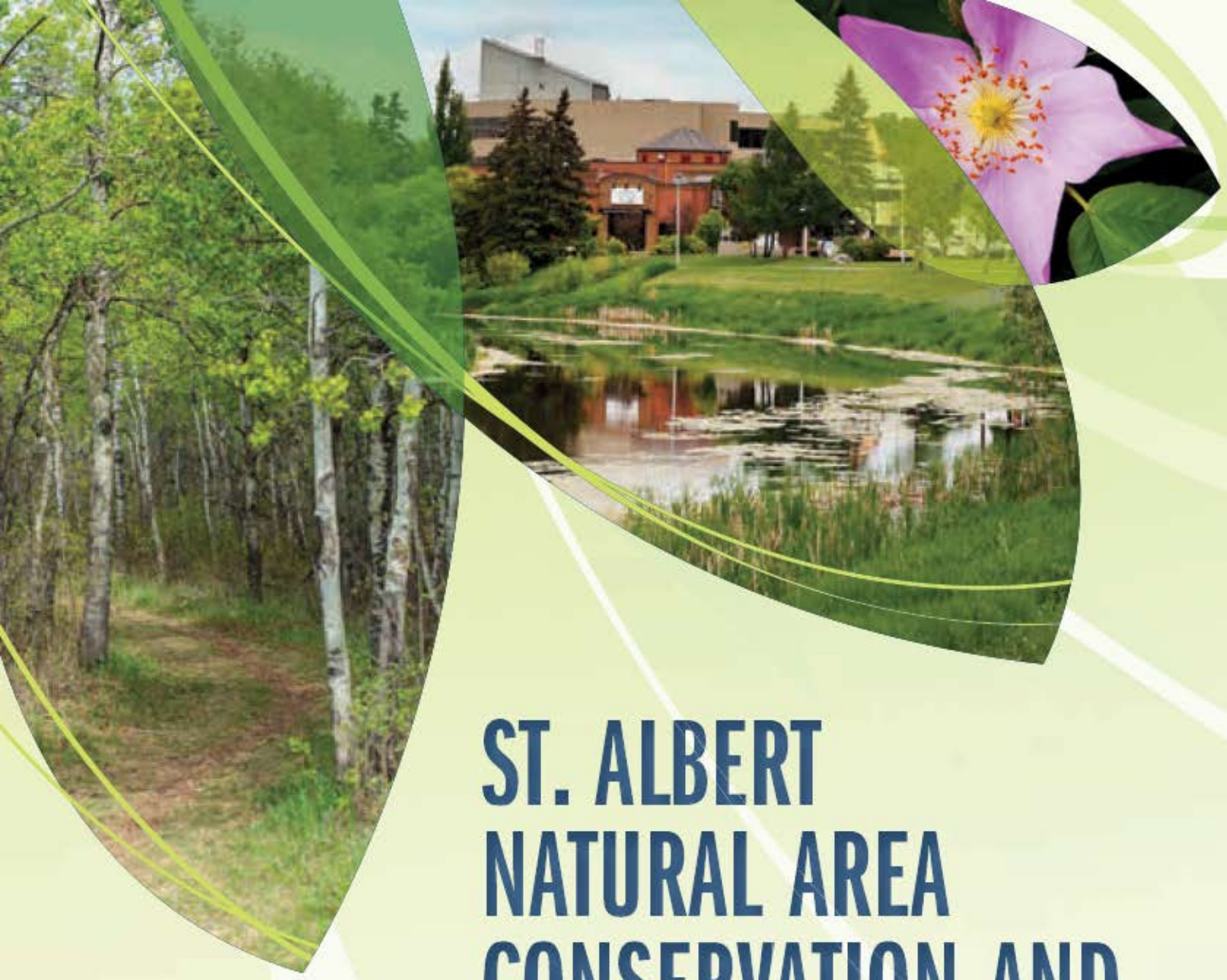


ST. ALBERT NATURAL AREA CONSERVATION AND MANAGEMENT PLAN

Prepared for:

City of St. Albert

Prepared by:

Spencer Environmental Management Services Ltd.

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INTRODUCTION



NATURAL AREAS: OUR HERITAGE, OUR FUTURE

The City of St. Albert has always been closely connected to its natural setting. The Sturgeon River valley, where settlement began, remains the city's iconic and natural center and a focal area for recreation. Carrot Creek, an important future park, forms our newest western boundary. Numerous other, smaller natural areas are scattered throughout the city, forming key neighbourhood amenities. Many residents regularly benefit from our direct connection to Lois Hole Centennial Provincial Park and Riverlot 56, our natural neighbours to the east and west. This natural framework is part of our community identity. Survey after survey shows the high regard residents hold for the presence, proximity and accessibility of the City's green spaces and natural areas, and the desire to see this perpetuated.

These values have been embedded in many of St. Albert's guiding plans, bylaws and policies. The City's foundational plan, the Municipal Development Plan (MDP) 2007, Updated 2013), explicitly addresses the value of our natural assets in this vision statement:

> *"St. Albert is an inclusive, family-oriented community that values its natural, cultural, historical and recreational amenities. Our community secures the safety and well-being of its people through controlled growth, innovation and dynamic leadership."*

This sentiment is emphasized in the recent Environmental Master Plan (2014), which includes a goal to:

> *"preserve and manage trees, parks and natural areas, and a commitment to maintaining a healthy natural environment and ensuring its sustainability for future generations."*

These values are reflected in the fact that of the 193 natural areas within the city limits (Map 1), 107 are conserved natural areas situated within St. Albert's developed limits. Moreover, these areas account for approximately one third of our city's total park area. Our natural areas are diverse and include wetlands, watercourses, remnant tributary ravines, deciduous, coniferous and mixedwood forests, marshes, riparian meadows and shrublands and semi-natural grasslands that support a wide variety of native flora and fauna. Most of our natural areas are small (the vast majority measuring under 1 ha), but some, especially those in the Sturgeon River valley, are much larger (greater than 10 ha). In particular, our city's watercourse corridors support high habitat and species diversity. For example, in the Sturgeon River valley one can encounter historic spruce trees, wild flowers, forest floor mosses, moose, shrews, pelicans, hummingbirds, toads and northern pike.

A natural area is an area of naturally occurring surface water and/or land that is dominated by native plant species and subject to natural processes that result in naturally occurring vegetation patterns.

While many of our natural areas are currently integrated into urban areas, approximately 39 others are situated on undeveloped tablelands. Most if not all of those are on privately-owned lands. These areas hold promise as future natural amenities for our city and will be a focus of conservation planning, so that future city neighbourhoods may also benefit from proximity to urban natural areas.

Our publicly-owned natural area parks are actively enjoyed by a broad spectrum of recreational users including those pursuing classic nature appreciation activities such as bird watching, meditation and photography, and those seeking natural settings for walking, cycling, picnicking, geo-caching and more. As important, frequently used city assets, these areas require an appropriate level of management to ensure they remain ecologically and recreationally sustainable.



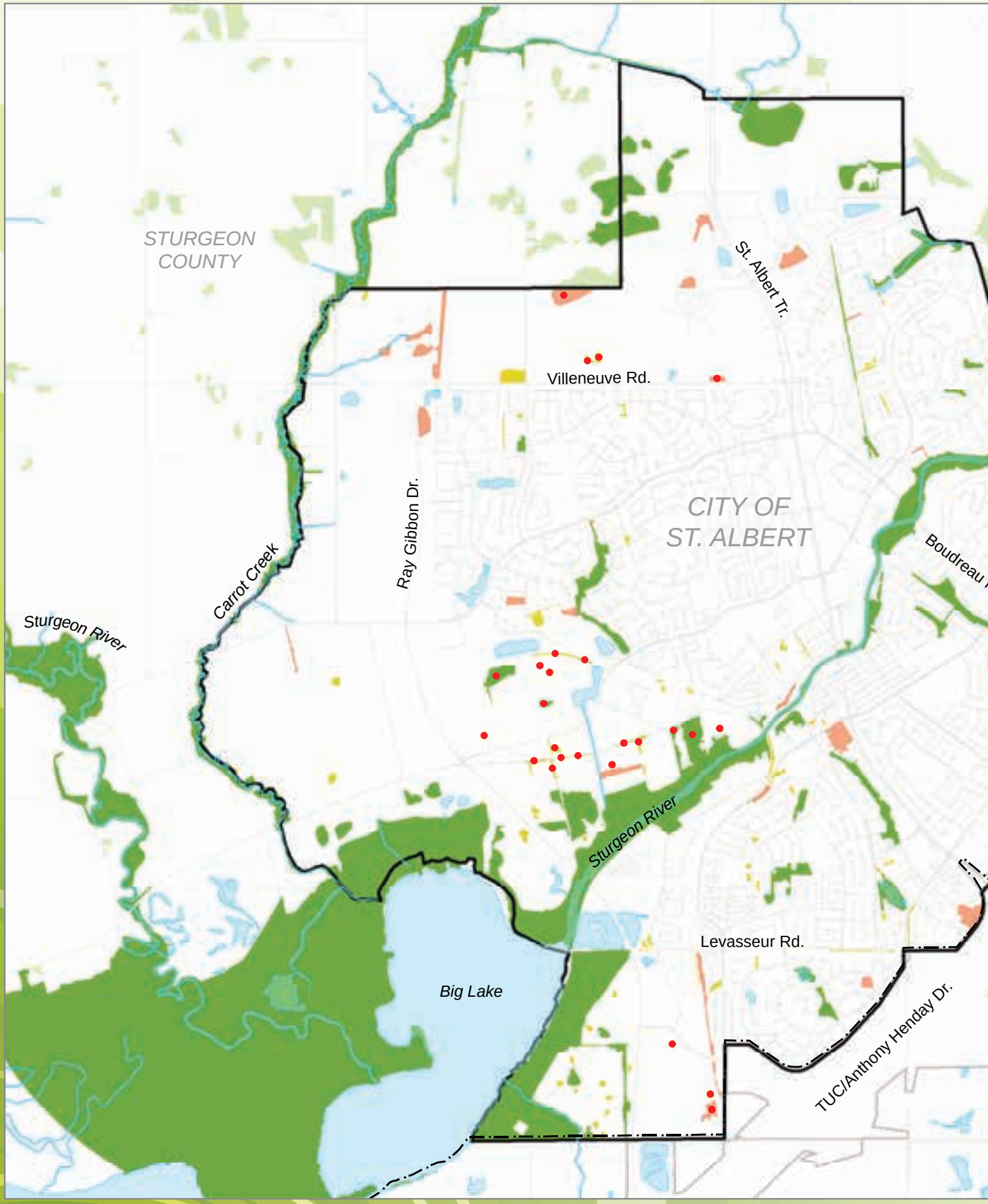
PLAN PURPOSE

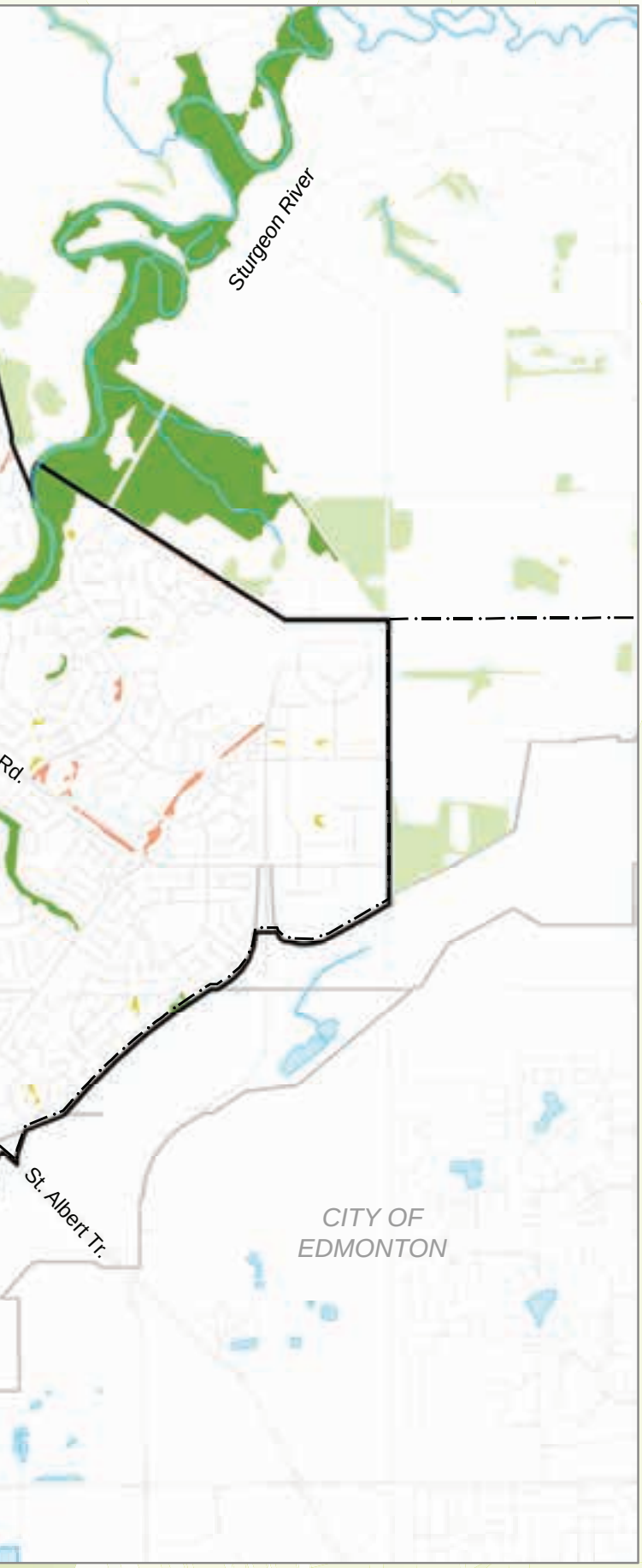
This document is part of the City's ongoing efforts to strengthen their commitment to conserving and managing St. Albert's natural areas. It is intended to serve two purposes:

1. Collate, describe and build upon the means and methods available to the City to achieve future natural area conservation in advance of, or as part of, the urban development planning process.

2. Serve as a city-wide natural area management plan that includes management actions to be implemented within and surrounding City-owned natural areas, to maximize their sustainability.

Natural area sustainability is defined as the persistence of a natural area's capacity to perform ecological functions, while providing for appropriate human use without compromising ecosystem health.


STURGEON COUNTY
St. Albert Tr.
Villeneuve Rd.
Ray Gibbon Dr.
CITY OF ST. ALBERT
Carrot Creek
Sturgeon River
Sturgeon River
Levasseur Rd.
Big Lake
TUC/Anthony Henday Dr.



Map 1:

CITY OF ST. ALBERT NATURAL AREAS INVENTORY 2016

Legend

2015 Natural Area Inventory

- Natural Area (NA)
- Significant Natural Area (SNA)
- Environmentally Sensitive Area (ESA)
- Uncategorized NA
- City of St. Albert
- City of Edmonton
- Hydrology
- Road
- Planned (Future) Loss of Site

N

0 500 1,000 2,000 Meters

1:40,000

Projection: 3TM 114 NAD83
Date: 13 November 2015

SPENCER ENVIRONMENTAL
MANAGEMENT SERVICES LTD.



DOCUMENT ORGANIZATION

This document begins with this introduction, which outlines the City's natural area vision and values, the purpose of this natural area conservation and management plan and the document structure. The next section provides brief descriptions of relevant provincial and federal legislation that influence municipal natural area conservation and management. The remainder of the document is divided into two components: Part A - Natural Area Conservation Plan, and, Part B - Natural Area Management Plan.





Part A describes the City's conservation record using the available tools for conserving natural areas in advance of, or as part of, the urban development process and additional means of maximizing these tools and others moving forward. Part A also considers effective integration of retained natural areas into development, natural area protection during adjacent construction, and the concept of natural area conservation performance monitoring.

Part B consists of a city-wide natural area management plan to provide for long-term natural area sustainability. The management plan is directed by the guiding principle of minimal intervention, such that natural areas remain as natural as possible. Natural area sustainability objectives and management actions are provided for vegetation, wildlife and habitat, hydrology, naturalized stormwater management facilities, and human use and safety. The management plan is a living document that will be updated in the future in response to observed successes and ongoing challenges associated with St. Albert's natural area management.

LEGISLATIVE CONTEXT

As with all matters, the City's actions with respect to natural area conservation and management must be consistent not only with city plans, bylaws, and policies but also with the laws, regulations and jurisdictions of other levels of government. The following sections briefly describe provincial and federal legislation that has potential to influence conservation and management of St. Albert's natural areas.

PROVINCIAL - GOVERNMENT OF ALBERTA

MUNICIPAL GOVERNMENT ACT

The Municipal Government Act (MGA) is the statute that creates Alberta municipalities, assigns their main powers, and enables them to adopt statutory plans and bylaws. The MGA requires municipalities to prepare a guiding Municipal Development Plan and grants municipalities considerable mandate to regulate private land use in the context of subdivision. The Act also grants a limited right to take reserves when a landowner applies to subdivide land. Three types of reserve are available. All have relevance to natural area conservation.

Environmental Reserve (ER)

Land may be taken as environmental reserve (ER) if it consists of a swamp, gully, ravine, coulee or natural drainage course; is subject to flooding or deemed unstable; or is a strip of land *not less* than 6 metres in width abutting the bed and shore of any lake, river, stream, or other body of water to prevent water pollution or to provide public access. ER lands are expected to remain in a natural state. Beyond these criteria, the MGA provides no guidance as to the character of the land that can and cannot be taken as ER. Because undevelopable lands tend to remain in a natural state, ER has long been used as a means of securing some types of natural areas, most often floodplain habitats, very large permanent wetlands and some ravines. There is no specified maximum amount of land that may be taken as ER.



Environmental Reserve (ER) Easement

Where the municipality and the landowner agree, ER may be taken as ER easement. Serving the same purpose as ER, an ER easement differs in that title to the reserve land remains in the name of the landowner. ER easements are registered on title by caveat in favour of the municipality. Land subject to an ER easement must remain in a natural state.

Municipal Reserve

Land may be taken as Municipal Reserve (MR) to serve the following purposes: a public park, a public recreation area, a school, or to separate areas of land that are used for different purposes. Taking land as municipal reserve to achieve protection of a natural area can be appropriate where the reserve land will be used for one or more of the above authorized purposes. The maximum MR dedication is restricted to 10% of developable land within a parcel. Therefore, although available for acquisition of natural areas, this tool has limited use for the full protection of large natural areas. In addition, and perhaps more importantly, the full MR potential is often required to accommodate more conventional open space needs (e.g., school sites, parks, walkways) in new development.

WATER ACT

The Province of Alberta owns all water resources in the province, regardless of ownership of the underlying land and regulates activities affecting surface or ground water by authority of the *Water Act*. Therefore, the *Water Act* can have relevance to conservation and management of all natural areas where surface water is present. Any activity with the potential to affect water resources may require Provincial approval. Examples include proposals to realign/naturalize watercourses, armour riverbanks, withdraw or divert water from natural water bodies and drain or remove (fill) wetlands.

Pursuant to the *Water Act*, the new Alberta Wetland Policy prohibits unauthorized disturbance or manipulation of wetlands. It is the goal of the Alberta Wetland Policy to conserve, restore, protect, and manage Alberta's wetlands. The policy applies to all naturally-occurring wetlands of any type, including those in degraded condition. The wetland policy states that wetlands of the highest value will be protected for the long-term benefit of all Albertans, but does allow for some *authorized* wetland impact and removal to facilitate development. The authorization process involves the proponent demonstrating why the proposed wetland impacts cannot instead be avoided or somehow minimized and requires prescribed supporting information. Using proponent collected information, Alberta Environment and Parks (AEP) determines the value of individual wetlands to be affected, which then

dictates replacement ratios to ensure no net loss of wetland function. Importantly, the approval process does not expressly require the Province or the wetland removal proponent to consult with the municipality in which the affected wetlands are located. When AEP approves impacts to wetlands, replacement is required for the permanent loss of wetland area. Replacement can take the form of direct permittee-responsible wetland replacement (e.g., wetland restoration, construction of a naturalized SWMF), an in-lieu fee payment or, in the future, the purchase of credits from a wetland offset registry. The Province's Wetland Mitigation Directive (2015) provides further details on the replacement process.

PUBLIC LANDS ACT

Pursuant to Alberta's *Public Lands Act*, the Province of Alberta owns the bed and shore of all permanent and naturally occurring bodies of water, including wetlands. The *Public Lands Act* therefore has relevance to natural area conservation and management of Big Lake, Sturgeon River, Carrot Creek and all permanent and naturally-occurring wetlands. The Province typically expects development to avoid direct impact to Crown lands. Where this is unavoidable, the Crown determines if temporary construction, permanent occupation or select management activities within a Crown-owned body of water must be avoided or will be authorized. Authorized activities involving permanent impacts are likely to be subject to compensation to the Crown. Because in many cases, land titles are silent with respect to ownership of wetlands and watercourses, the Alberta Wetland Policy application process requires that any project with potential to impact a wetland first determine if the wetland is Crown-owned. Crown claims are one available means of protecting portions of natural areas that comprise permanent and naturally occurring bodies of water.

WILDLIFE ACT

Alberta's ***Wildlife Act*** regulates wildlife management and use in the province. The Act prohibits willful molestation, disturbance or destruction of a house, nest or den of prescribed wildlife or a beaver dam in prescribed areas and at prescribed times. Violations may result in fines. The Act is therefore pertinent to natural area management activities with potential to impact active nests, dens, hibernacula, and beaver lodges and dams.

WEED CONTROL ACT

Alberta's *Weed Control Act* aims to regulate prohibited noxious weeds, noxious weeds, and weed seeds. The Act requires that prohibited noxious weeds, currently uncommon in the province, be destroyed when detected. Noxious weeds, species that are more widespread in the province, must be contained or controlled, but not eradicated. The *Weed Control Act* designates municipalities as local authorities responsible for weed control. Additionally, through local bylaws, municipalities are permitted to



add species to the noxious weed list or elevate species from noxious to prohibited noxious, at the level of the municipality. Through these means, this Act has direct relevance to natural area management in the City of St. Albert.



ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT

Alberta's *Environmental Protection and Enhancement Act* (EPEA) was enacted to support and promote the protection, enhancement and wise use of the environment. Accordingly, the Act is wide in scope. Because it includes measures to protect surface and ground water quality, and also authorizes municipalities to be granted conservation easements, this Act is relevant to natural area management and conservation. Of particular relevance to management of natural areas and stormwater facilities is the *Environmental Code of Practice for Pesticides*. The Code provides a standard set of baseline operating practices that, among other things, minimizes the risk of pesticide application to the environment and the general public. The Code specifies that any application must not result in the deposition of pesticides into or onto any open body of water and that pesticides should not be deposited within 30 horizontal meters of an open body of water.

FEDERAL - GOVERNMENT OF CANADA

MIGRATORY BIRDS CONVENTION ACT

The purpose of the *Migratory Birds Convention Act* (MBCA) is to implement the bi-national Migratory Birds Convention by protecting and conserving populations, individuals and nests of migratory birds. The Act applies to nearly all of Canada's migratory bird species. The MBCA is relevant to the management of natural areas because if ill-timed, active vegetation management can result in the disturbance of birds and nests protected by the Act. Environment Canada has created guidelines for best management practices to minimize the risk of harming nesting birds during vegetation management activities. Interpretation of the most recent guidelines (2015) as they apply to this region indicates that clearing and other active vegetation management should be avoided between 20 April and 20 August. Violation of the *MBCA* can result in penalties. In some cases, activities can occur if a search confirms that breeding birds are not present.



FISHERIES ACT

Canada's *Fisheries Act* aims to regulate and protect fisheries and prevent pollution. Section 35 indicates that no person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery. Section 36 prohibits deposit of deleterious substances to water frequented by fish. Accordingly, the *Fisheries Act* is relevant to construction or management activities located within Sturgeon River, Big Lake and Carrot Creek. Proponents must have a Qualified Aquatic Environmental Specialist (QAES) self–assess all proposed activities with potential to harm fish. In cases where potential exists to contravene the Act, a formal request for review must be submitted to Fisheries and Oceans Canada for a formal determination.

PART A: NATURAL AREA CONSERVATION PLAN



OUR CONSERVATION RECORD

Years ago, forward thinking allowed the City to achieve their greatest conservation successes with incorporation of large floodplain natural areas into the expansive Red Willow Park. In 1999, responding to changing societal values and rapid growth, the City adopted a newly-minted natural area inventory that also considered smaller upland natural areas in addition to the Sturgeon River valley and ravine system. That inventory mapped a total of 230 natural areas, having a combined area of just over 400 ha, that became the focus of future conservation efforts.

During the period 2000 to 2014, several other important conservation initiatives occurred. Through the planning process, the City gradually established a pattern of decreased development in the Big Lake and Sturgeon River floodplain and transferred to Lois Hole Centennial Provincial Park significant buffering lands in our southwest, to enhance Big Lake sustainability. On the developing city fringe, several wooded ravines and small tableland forests were conserved and integrated into neighbourhoods. Despite this, during this same period, as the City expanded, most of the identified and unprotected tableland natural areas in developing areas were either lost or reduced in area. Losses were primarily narrow, natural shelterbelts deemed incompatible with planned neighbourhoods and small, isolated woodlands and wetlands, deemed unsustainable in a developed landscape. However, a handful of woodlands and wetlands, more notable in size and value, were also lost, indicating a need to strengthen efforts to retain the highest value natural areas as development proceeds. With annexation in 2009, the City took new, important conservation steps. The natural area inventory was updated to capture new City lands. New planning



tools were created to better protect creek corridor and floodplain lands. Most of the annexed lands remain unplanned today and natural areas on these lands will be the focus of future conservation decisions.

The system of protected natural areas currently embedded within St. Albert's developed lands is the City's legacy of natural area conservation efforts to date. Undeveloped lands within our corporate boundaries hold the remainder of our inventory. Most of these lands are privately-owned. This means that most of our *un*protected natural areas are privately owned, and subject to land use decisions by owners. That natural areas remain on these private lands and contribute to regional ecosystem services is the result of landowner choices. These choices currently generate benefits beyond the limits of those lands, for wider society. The City recognizes this and will work cooperatively with these landowners when planning future development.

Our city is on track to grow to a population of 90,000 by the year 2029. This growth will require a complex series of land use planning decisions and will result in increased pressures on the remaining natural areas. Some of these areas, largely those below flood lines, will be protected as a result of existing guiding City plans and policies. Others, if retained by other means, could become valuable natural assets in a new urban setting. Conservation of the highest value natural areas will be pursued. In 2015, the City took its next conservation step by commissioning a multi-purpose natural areas study. That study updated the City's natural area inventory, including on adjacent buffering lands, identified an ecological network, identified natural areas requiring restoration, and surveyed resources in some areas expected to be subject to urban planning in the near future. That study has provided the City with critical information to pursue proactive and effective conservation of a connected and functional network of sustainable natural areas.

The following sections briefly describe the ways in which existing statutory plans, policies, guidelines, processes and tools have enabled City administrators and citizens to conserve natural areas. In addition, these sections present new approaches and means that the City will further explore and consider employing in an effort to optimize natural area conservation performance and assure sustainability of conserved sites.



HOW DO WE CONSERVE NATURAL AREAS?

For the last 15 years, St. Albert MDPs have prioritized and enabled natural area conservation by including a goal to strengthen the protection of sustainable natural areas and minimize the negative impacts of development on natural areas. To enable this MDPs have consistently included a series of related policies that provide for: updating the natural area inventory, protecting sustainable sites, integration of natural areas into parks and open space networks, and protecting riparian corridors. The current MDP explicitly names the means by which the City will conserve and protect natural areas. As shown below, to date, the City has used these means to varying degrees and with varying success. Moving forward, the City will renew their efforts, modifying their approach where appropriate, by applying the results of their most recent studies and experiences.

ENVIRONMENTAL RESERVE (ER) AND ER EASEMENT

In St. Albert, ER dedication has most often been applied to watercourses and associated floodplains, and steep-sided ravines. ER dedication has protected several key areas along the Sturgeon River and adjacent to Big Lake, one reach of Carrot Creek having an approved Area Structure Plan and several natural tributary ravines. In St. Albert and in much of Alberta, ER has not traditionally been applied to wetlands. This is possibly in part because the term wetland is not expressly used in the MGA, although swamps are acknowledged. Until recently, conventional planning practice typically considered smaller tableland wetlands to be developable lands. The tendency to flood and the flood storage value of smaller wetlands outside of floodplains has generally been underestimated. Moreover, at the time of developer land purchase, wetlands have often already been degraded by previous land uses, suggesting unsustainability. Recently, some municipalities have had success in stretching the definition of ER to include seasonal, semi-permanent and permanent wetlands and associated wetland buffers. Some municipalities have also capitalized on the fact that the MGA explicitly allows for a *minimum* 6m buffer around water bodies, either as ER or ER easement. Some have gone further and developed their own ER dedication policy or guideline related to wetlands including specified buffer widths, clearly setting out expectations.

MOVING FORWARD

A very few sizeable, unprotected wetlands remain in St. Albert. To conserve sustainable wetlands, the City will explore implementing the following approaches:

- As soon as parcels supporting wetlands become the focus of development interest, even prior to submission of ASPs, initiate discussion with developers regarding potential for wetland dedication as ER. That discussion could include establishing a buffer having a width that is

sufficient to provide for effective flood control, public access and pollution prevention, that is greater than 6 m and tailored to the landscape setting.

- For all wetlands greater than 0.5 ha in area, require the developer to undertake a water balance study to determine wetland sustainability in a developed context and inform suggested future scenarios.
- Encourage the integration of natural wetlands with stormwater management facilities (SWMFs). The conservation and integration of natural wetlands into the urban landscape remains a challenge for many municipalities in central and southern Alberta; however, integration into the storm system provides some advantages worth exploring. Integrated wetlands would become ER or a Public Utility Lot, as appropriate.
- Discourage the use of ER easement for wetlands that will be embedded in a developed matrix, as ownership of the wetland and buffer must ultimately transfer to the City.
- Encourage developers to investigate the use of ER Easement for ephemeral Carrot Creek tributary drainages that are unlikely to be claimed by the Crown. Such easements would require the drainage feature to remain on future developed properties. Ephemeral drainages that exhibit wetland vegetation and are classified as a wetland are subject to the Alberta Wetland Policy and associated protocols (see section on the Water Act). The need to seek approval from the Province may strengthen the case to conserve a drainage through an ER easement.

MUNICIPAL RESERVE (MR)

St. Albert has long used MR as a means of securing natural areas. Several natural areas adjacent to the Sturgeon River and several small woodland patches and naturalized shelterbelts have been dedicated MR. However, this tool is limited because of competing demands with conventional open space needs. The tension between the two land uses is explicitly recognized in the City's natural area protection policy: *"The City of St. Albert shall protect not only provincially and regionally significant areas, but also locally significant, sustainable areas except where the protection compromises other necessary parks, trails and open space requirements in a neighbourhood."* There are several documented instances where locally significant natural areas have been removed or reduced in area to allow for development of programmable park space or a multi-use trail.

MOVING FORWARD

The City will continue to use MR as a means of securing natural areas. To strengthen this tool, the following steps will be considered:

- Modify the natural area protection policy such that conventional parks are no longer explicitly prioritized over natural areas conservation. This approach is supported by the MDP policy to "require, wherever possible, that sustainable natural areas be integrated into the design of new development areas to form part of linked and integrated parks and open space systems, including the retention of natural corridors and ponding areas".
- Consider setting a goal of a specified proportion of future MR as natural area.



CARROT CREEK GREENWAY AND FLOOD LINE DEVELOPMENT RESTRICTION

St. Albert's MDP includes a policy that requires lot boundaries to maintain a minimum 50 m setback from the Carrot Creek top of bank. This setback is intended for the preservation and protection of a Carrot Creek Greenway. The MDP describes the Carrot Creek Greenway as a recreational initiative and an environmental management and protection measure. Currently, the area envisioned as the Carrot Creek Greenway is dominated by a narrow ribbon of connected natural areas enveloping the creek, but also includes many small areas of naturalized and non-natural character, including farmed land. As urban development expands west towards Carrot Creek, the Greenway will form an integral extension of Red Willow Park. Recreation development will include some park amenities (e.g., trails, benches, picnic shelters) in the Greenway. There will be an opportunity to plan the park to sensitively locate facilities so as to protect the focal, natural resources along Carrot Creek. During this process, there will also be opportunity to restore and enhance the ecological values of the creek. Importantly, lands west of Carrot Creek lie within Sturgeon County and thus are not currently included in the Greenway. It is the City's vision that the Greenway ultimately becomes an inter-municipal feature.

Complementary to the Carrot Creek Greenway, to protect areas along the Sturgeon River and near Big Lake the City's Land Use Bylaw (LUB) prohibits new development below the recently refined 1:100 year flood elevation known as the "designated flood line". Section 6.10 of the LUB clearly outlines that developments including, but not limited to new construction and substantial improvements (including filling of land), are prohibited below the designated flood line. Because many of the City's natural areas along the Sturgeon River, near Big Lake and along Carrot Creek lie within the boundaries of the flood line, this development restriction provides a level of protection for those natural areas. The LUB, however, permits certain forms of development within the flood line if approved by the Development Officer in consultation with the City Engineer. In particular, allowable developments may include flood control infrastructure, public utility buildings, bridges or public roadways, walkways and trails, and naturalized stormwater management facilities. Much of these allowable forms of development generally occur at relatively small scales (e.g., narrow trails) and, therefore, present a relatively small potential to conflict with the natural area protection abilities of this restriction. Others, such as stormwater management facilities, roadways and public utility buildings can be relatively large and, as an allowable form of development, present more potential to impact natural areas. Stormwater facilities may hold the greatest potential as they are the most likely and largest of these facilities and may also require construction of an outfall or outfall channel on the creek bank, bringing development to the centre of the greenway. Thus, the Carrot Creek setback and the flood line development restriction both allow for the development of some facilities within

their boundaries, if approved by the City Engineer. If deemed allowable, there are no other identified criteria to guide the location, design and construction of these facilities.

Stormwater ponds are interesting in that they can both adversely impact natural areas and serve as a habitat enhancement opportunity, depending on where they are located and how they are designed. Recent years have seen examples of both outcomes in St. Albert. Stormwater ponds do not, therefore, without exception need to be restricted to the non-sensitive areas within the top of bank setback and flood line, but guidance is required to ensure that such facilities function only as habitat enhancement opportunities and do not have a net adverse effect on natural areas.

MOVING FORWARD

Recognizing the limitations of the Carrot Creek Greenway and flood line development restriction, the City will evaluate strengthening these two existing protection mechanisms by considering the incorporation of the following conditions into planning decision-making:

- Where a stormwater pond is approved within or straddling the boundary of the Carrot Creek Greenway, or below or straddling the designated flood line, the stormwater pond will be located, designed and constructed in a manner that does not adversely affect natural area resources including clearing of natural vegetation.
- Where a stormwater pond is approved within or straddling the 50 m Carrot Creek top of bank setback, or below or straddling the designated flood line, the facility will be landscaped in such a way that provides self-sustaining naturalized habitat that is complementary to the adjacent natural area.
- Prohibit locating stormwater ponds on poorly-drained, flood prone soils (i.e., Haight soil units).
- Where a road or other allowable development is approved within the Carrot Creek Greenway or below the designated flood line, the process of locating that allowable development will follow a sensitivity hierarchy: locate outside of natural areas; locate on disturbed natural areas; if natural areas are disturbed, ensure an equal area of non-natural land is naturalized; ensure all structures crossing the creek or situated on a creek bank provide adequately for wildlife movement of animals as large as moose. Considerations include the quality of substrate and provision of security cover.
- Continue to work cooperatively with Sturgeon County to promote a Carrot Creek Greenway that effectively straddles the creek.

SUPPORTING TECHNICAL STUDY REQUIREMENTS

The MDP natural area policies include the requirement for development proponents to undertake natural area assessments for any development that may adversely affect a natural area. Brief terms of reference are provided. While this requirement has proven to be an effective decision-making tool, experience has shown inconsistency among assessments with respect to content and standard. At times, this has rendered the City's evaluation of site sustainability challenging and has slowed development decisions.

MOVING FORWARD

The City will evaluate strengthening their information requirements for natural area assessments, as follows:

- Natural Areas, including mapped natural area shelterbelts, will be assumed to be sustainable, with the burden of proof being on the proponent to demonstrate otherwise, when removal is proposed. Since the protected natural areas

inventory includes numerous sites measuring less than one hectare in size, small size will not alone be considered proof that a site is unsustainable in a developed context.

- The City will not accept supporting biological fieldwork that is undertaken at seasonally inappropriate times.
- The City will require a rare-plant survey for all proposed developments with the potential to impact natural habitats.
- Assessments will be required to include an analysis of the role of the subject natural areas in local and regional connectivity.
- ASPs will be required to include recent aerial photographs of existing natural areas. Proposed future land use must be underlain by the most recent available aerial photograph and must clearly identify which proposed development features would encroach on natural areas.



- The City will make available to proponents resource information it may possess about subject natural areas.

NATURAL AREA PURCHASE OR LAND TRANSFER

Most natural area conservation tools rely on the development process to realize conservation objectives. Outside of the development and planning process, the City's ability to achieve natural area conservation is more limited. One mechanism that is available is the purchase of land. Dedicated funds are typically required for this. The MDP encourages establishment of such a fund: "*The City of St. Albert should support the establishment of a Conservation Fund capitalized through public and private sources for the acquisition of significant natural areas that cannot be preserved through other means.*" As of October 2015, no such fund had been established. Other local municipalities have recently taken similar steps that have allowed them to purchase several sites, including sites much larger than would have been possible through taking of ER or MR. If identified far enough ahead of development, lands may be available for purchase at a more reasonable cost.

Land trades are another effective planning and conservation tool used by many municipalities, including St. Albert. Considering the disposition of undeveloped lands in St. Albert and the location of unprotected natural areas, this tool may have limited utility in the foreseeable future.

MOVING FORWARD

The City will renew efforts to establish a Natural Area or Conservation Fund. As part of this, the City will examine internally identifying priority purchase sites, having regard for site type, site location, the role of the site in regional connectivity and potential as a future neighbourhood amenity. This process could have the added benefit of providing natural areas for neighbourhoods more distant from Red Willow Park.

CONSERVATION EASEMENTS AND DONATIONS

The Alberta Environmental Protection and Enhancement Act (EPEA) gives landowners an option to enter into a legal conservation easement with a land conservation organization, municipality or other public body to protect the natural character and ecological value of their land in perpetuity. In conservation easements, the landowner retains ownership of the property, but specifies certain rights to a land conservation organization, municipality or other public body to protect the natural values of all, or part of their land. A conservation easement binds these rights, as well as a list of allowable and restricted uses for the land, and becomes registered on the title of the land. In that way, the landowners, or future owners, are required not to make changes to the property that would negatively affect the natural features of the site. The organization holding the conservation easement is responsible for monitoring compliance with the terms of easement and has the right to require restoration, should the terms be broken.

Donations of land to a municipality for the purpose of natural area conservation are most likely to be realized by way of a conservation easement or through an ecological gift. In Canada, the Ecological Gifts program is a federal program for landowners to make donations of land, or interests in these lands, and to receive tax benefits in doing so. To be acknowledged as an ecological gift in this program, the land involved must be certified by the federal Minister of the Environment to be ecologically sensitive. This process can be lengthy. Lands exchanged through ecological gifts are subject to long-term restrictions on future sale and land use changes. Conservation easements can qualify as ecological gifts.

As voluntary acts on the part of private landowners, entering into conservation easements and ecological gifting do not necessarily represent tools a municipality such as St. Albert can actively pursue for application to natural area conservation. However, they remain available as landowner initiatives.

MOVING FORWARD

The City will consider investigating opportunities for conservation easements and land donations within, and immediately adjacent to City boundaries. Opportunities for the application of these conservation tools are expected to be strongest within and adjacent to the floodplain of Big Lake, the Sturgeon River and Carrot Creek, where a conservation easement or land donation could strengthen the protection of lands subject to other mechanisms (e.g., designated floodplain restriction) by applying additional development restrictions or protecting entire land parcels, including lands beyond the jurisdiction of existing protection mechanisms. These voluntary protection mechanisms could, however, just as easily apply to natural areas removed from local floodplains, should a landowner be interested. The City will evaluate all opportunities as they arise.

Following investigations, and as warranted, the City will encourage land donations and conservation easements as a conservation tool by communicating our long-term conservation goals with residents and conservation-oriented landowners within and beyond the City's boundaries.

WORKING WITH OTHERS

Conservation initiatives typically involve many parties and are most effective as collaborative efforts. Decision-making can involve several city departments, stewardship groups, and other municipalities and can also be influenced by other levels of government. As with all matters, strong relationships increase chances of a successful outcome. The City is a leader in this regard and the Environment Office has a history of successful partnerships with many groups including the Sturgeon River Watershed Alliance, several stewardship groups and research institutes.

There are, however, several additional relationships that could be strengthened to increase performance. For example, the Province of Alberta has sole authority to



approve wetland removal and is not required to consult the municipality in which a wetland subject to application is located. Because of this, it is possible for a developer or landowner to secure an approval from the Province to fill wetlands even before the municipality is aware of the proposed development. As part of implementation of the new wetland policy, Alberta Environment and Parks (AEP) has indicated a willingness to work with municipalities to address urban wetland issues. In fact, several municipalities have achieved this as a result of discussions around new approaches to wetland conservation.

MOVING FORWARD

The City will continue to work collaboratively on conservation initiatives and will consider taking the following steps, intended to strengthen both relationships and success:

- Continue to develop relationships with personnel in approvals branches of AEP, with the objective to increase information sharing and allow for City input into wetland removal application decisions. If, in future, the number of wetland natural areas increases, consider adopting a municipal wetland policy that mirrors the Albert Wetland Policy, to facilitate provincial cooperation.
- Continue to develop relationships with Public Lands personnel at AEP, with the objective of increasing information sharing and setting common goals for Crown wetlands and Crown lands along Carrot Creek.
- Continue to work with Sturgeon County to achieve an intermunicipal Carrot Creek Greenway, to harmonize decision-making around conservation of upland natural areas that straddle the City/County boundary and to enable Carrot Creek restoration initiatives. Encourage the County to consider the regional ecological network in its planning activities.
- Following resolution of each planning effort, hold St. Albert multi-departmental lessons learned sessions to increase the chance of efficient and successful conservation with the next application.
- Continue to work with non-governmental organizations with respect to land acquisition and stewardship. Investigate participating in the Edmonton and Area Land Trust (EALT), to benefit from their regional perspective and recent experience on these matters.
- Continue to work with other local municipalities.
- Continue to work cooperatively with landowners and the development community in the application of the natural area conservation tools outlined in this document.

NEW APPROACHES TO CONSERVATION

ECOLOGICAL NETWORK PLANNING FRAMEWORK

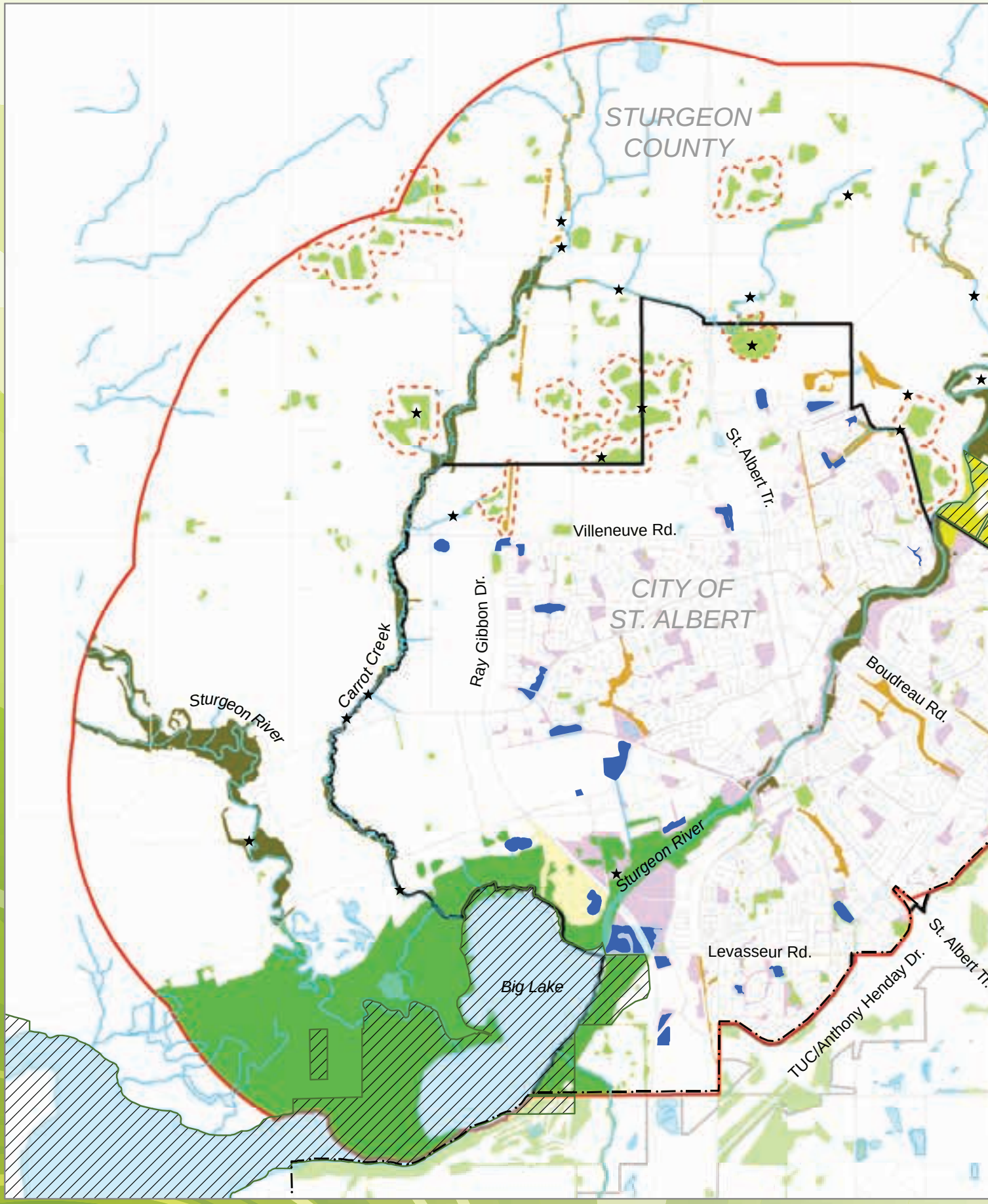
The City currently has policy requiring *"wherever possible, that sustainable natural areas be integrated into the design of new development areas to form part of linked and integrated parks and open space systems, including the retention of natural corridors and ponding areas."* As a result of the 2015 natural areas study, the City now has new data that can support this policy in new ways. The 2015 study identified and mapped the city's ecological network (Map 2), which includes ecologically important concentrations of natural areas, and areas that would most benefit from ecological restoration. Importantly, that study revealed that the City has all the necessary components of a functional ecological network: large core natural areas; naturally vegetated riparian corridors connecting those core areas, and a diversity of smaller habitat patches scattered throughout the city, promoting ecological connectivity across the landscape.

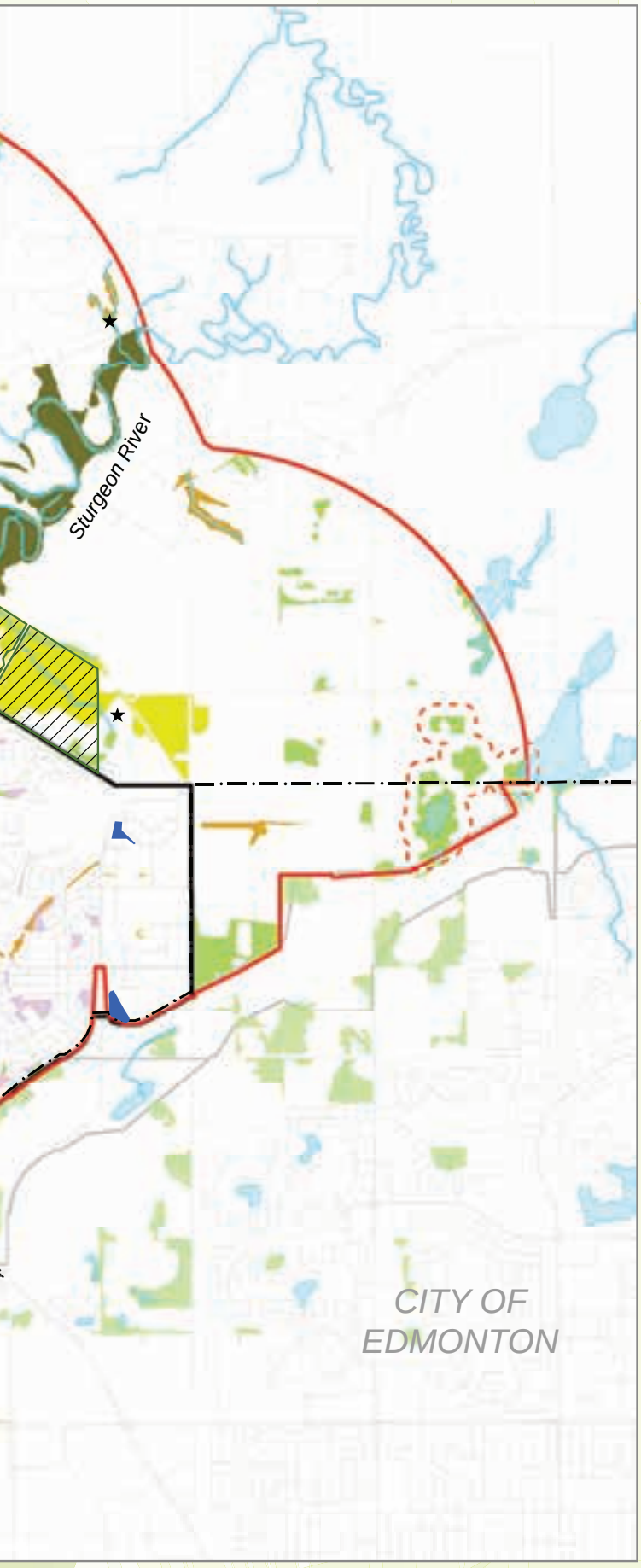
The majority of the larger unprotected natural areas in the undeveloped and currently unplanned areas of the city are generally located near the northern limits of the city. Together these features loosely arc around the northern developed city limits, stretching from the city's northeast at the Sturgeon River and Riverlot 56 to Carrot Creek in the city's northwest. This arc comprises clusters of important stepping stone habitat patches and local ecological corridors that, although not contiguous, are thought to currently assist with regional ecological connectivity between the two watercourses. In a developed landscape this perceived arc, if retained and strengthened using other forms of open space, would play a key ecological function. Such a link would provide an alternate upland route between Carrot Creek and Sturgeon River and ultimately complete a full loop that includes the core area of Lois Hole Centennial Provincial Park. This new link would contribute to regional ecological network resiliency.

MOVING FORWARD

The City will pursue ways to strengthen their ecological approach to planning and endeavor to use the identified ecological network as a basis for long-term conservation planning and management. In addition, the following specific steps will be considered:

- The City will identify priority retention natural areas. This will involve use of all information at hand, including information and maps provided by the 2015 study. One factor to be given heavy weight is a site's contribution to ecological network function.
- The City will develop conservation action priorities using the strategies and tools outlined in this plan.
- The City will encourage use of the ecological network framework by all parties throughout the planning process.
- As a leader in this, the City will assist developers with ecological planning by developing reference ecological connectivity maps, using developed or planned neighbourhoods, that illustrate important principles such as neighbourhood level connectivity, ecological function within the network, and successful integration of small, tableland natural areas into more conventional City parks. Such materials would be useful in discussions with developers.
- The City will require proponents to prepare pre- and post-development ecological connectivity mapping as part of natural area assessments and ASP submissions.


STURGEON COUNTY
CITY OF ST. ALBERT
Villeneuve Rd.
St. Albert Tr.
Ray Gibbon Dr.
Carrot Creek
Sturgeon River
Boudreau Rd.
Sturgeon River
Levasseur Rd.
Big Lake
St. Albert Tr.
TUC/Anthony Henday Dr.



Map 2:

ECOLOGICAL NETWORK IN ST. ALBERT AND SURROUNDING LANDS

Legend

Ecological Connectivity Function

- Regional Core Area (RCA)
- Regional Ecological Corridor (REC)
- Local Core Area (LCA)
- Local Ecological Corridor (LEC)
- Stepping Stone (SS)*
- Important Concentration of Stepping Stones
- ★ Potential Priority Restoration Area
- Parks and Protected Areas Alberta
- Park
- Grassland/Future Red Willow Park
- Municipal Storm Water Management Facility (SWMF)
- Overall Study Area (OSA)
- City of St. Albert
- City of Edmonton
- Hydrology
- Road

* All stepping stones in Edmonton provided by City of Edmonton

N

0 500 1,000 2,000 Meters

1:54,000

Projection: 3TM 114 NAD83
Date: 13 November 2015

SPENCER ENVIRONMENTAL
MANAGEMENT SERVICES LTD.

NATURAL AREA LAND USE DISTRICT

Currently, all protected natural areas in the City of St. Albert are designated as Public Park. Primary purposes of this land use district are to conserve and enhance the cultural, recreational and natural resources of the Sturgeon River Valley; to protect lands in the Sturgeon River flood risk area from development; and to provide parks and complementary facilities throughout the City for the purpose of public recreation. To achieve this, the Public Park land use district has several identified discretionary uses, which include but are not limited to campgrounds, day care facilities, greenhouses or plant nurserys, and public utility buildings. The dual purpose of providing for natural area protection and public recreation, and the inclusion of several development oriented discretionary uses, presents potential for development within this district to be incompatible with some natural areas or conservation objectives. Under the LUB, the City has the ability to create a land use district having a primary purpose to conserve, preserve and restore identified natural areas, features and ecological processes. Such a district would have few or no discretionary uses. Other municipalities who have adopted this approach report that this zoning afforded an additional layer of protection during later recreational and utility planning.

MOVING FORWARD

The City will consider the benefits of creating a new natural area land use district to be applied in advance of or as part of the development process. While land use districts are typically established during the planning process, it is possible to revise land use districts in advance of development, if it is in pursuit of long-term planning objectives. Thus, application of a natural area land use district could be applied ahead of imminent development pressure to achieve conservation ends. Although feasible, such a process would be potentially difficult for the City without the consent of all affected landowners.

ADDITIONAL CONSERVATION CONSIDERATIONS

INTEGRATING RETAINED NATURAL AREAS

During detailed planning, the City encourages maximizing the sustainability of individual conserved natural areas by requiring careful fine-scale planning. Sensitive planning involves carefully locating and configuring newly proposed infrastructure *around* and *within* conserved natural areas to minimize adverse impacts and maximize post-development ecological connectivity. Doing so increases the ecological and social benefits derived from the City's natural area conservation efforts while making it easier to successfully manage conserved natural areas and maintain their sustainability.

The City's 2013 Municipal Engineering Standards (the Standards) (2013) already include some provisions specifically related to conserved natural area sustainability. For example, the Standards encourage landscaping designs that are contiguous with surrounding natural areas and specifies that ASP technical reports may be required to include details regarding integration of land use with the existing natural environment. In addition, many of the specific rules in the Standards pertain to development *within* natural areas, particularly regarding pathways and trails. For example:

- Pathways, where desirable, should be routed along the edges of environmentally significant areas or into locations with less sensitivity in natural environmental parks in order to minimize the impact on the park or natural areas and reduce future damage and desire lines.
- Align trails around significant [natural] areas and sites; never through.
- Trail design should avoid damage to natural features, vegetation, and wildlife habitat.

Although the Standards specify that the locations of natural areas planned for retention must be identified in



various development planning documents, the Standards provide little guidance on how to plan development *around* natural areas to ensure natural area ecological sustainability and connectivity. In general, semi-natural and open space developments (e.g., naturalized stormwater management facilities, school grounds, manicured green spaces) are better land use choices for lands directly adjacent to retained natural areas than are built structures and residential lots.

MOVING FORWARD

Using the ecological network and identified priority conservation sites as described in the section on *Ecological Network Planning Framework*, the City will consider creating new standards specific to locating and configuring infrastructure adjacent to natural areas so as to maximize ecological sustainability and connectivity of conserved natural areas. For example:

- In keeping with the Standards in place for trails, the City will consider developing standards for other infrastructure, such as outfalls, within natural areas, prioritizing minimal, low-impact infrastructure that minimizes natural area fragmentation. The following standards could be applied to trails, stormwater outfalls and other small-scale recreational or stormwater infrastructure development:
    - Locate small infrastructure in open areas instead of areas supporting native trees and shrubs.
    - Where impacts to native vegetation are unavoidable, consider the abundance of the various habitat types in the general vicinity and locate development within the habitat of greatest abundance (i.e., avoid impacts to rare and uncommon habitat types). Avoid more sensitive habitats subject to flooding such as wetlands and areas of riparian meadow.



- Ensure infrastructure development does not impede ecological connectivity or wildlife movement.
- Where built structures or residential lots must be located immediately adjacent to a retained natural area, the City will consider requiring an open space buffer around the natural area that is at least 3 m wide (wider if warranted by ecological sensitivity or access requirements) to: protect vegetation from physical damage; reduce the risk that natural areas pose to infrastructure and public safety (e.g., from hazard trees or flooding); reduce management action required by the City to ameliorate these risks; reduce unauthorized encroachment into natural areas; and provide space for maintenance and emergency access.

PROTECTION OF NATURAL AREAS DURING CONSTRUCTION

Construction activities will eventually proceed around natural areas that have been identified for retention and integration into developed areas. Poorly planned construction activities and construction access routes have potential to adversely affect ecological function and sustainability of nearby retained natural areas. Potential impacts on nearby natural areas can include damaging vegetation and root systems; mistakenly clearing areas that are marked for retention; disturbing wildlife; contaminating, eroding, and compacting soils; altering hydrology; increasing weed incidence and introducing sediments or chemical contaminants to surface and groundwater. The active construction phase requires careful management by the contractor/landowner to ensure that at handover to the City, the natural area is sustainable and in good condition. During construction, development companies and construction contractors, rather than the City, are typically the managing parties, thus the City must manage the activities of these parties.



An existing example of this kind of leadership is the City-developed *Guidelines for the Protection of Natural Areas in the Timberlea Neighbourhood* (2007), which established a construction set-back buffer around the Grey Nuns White Spruce Forest and direct and indirect measures to avoid disturbing nesting birds.

Several other municipal tools exist to minimize construction damage to natural resources. St. Albert's Municipal Engineering Standards outline steps necessary to protect trees during construction. The Standards also require contractors to submit Environmental Construction Operation (ECO) Plans for water system related construction activities, although guidance regarding ECO Plan content is minimal and natural areas are not explicitly mentioned. Nonetheless, a recent ECO Plan prepared for flood storage works undertaken in Grandin Ravine very successfully minimized disturbance to that natural area.

ECO Plans are now a standard construction industry means of minimizing potential environmental impacts of construction activities. Preparation typically falls to contractors, who are on the ground, ensuring that they demonstrate an understanding of environmental protection needs and find workable solutions. Many contractors use the 2014 ECO Plan Framework developed through a partnership between the City of Edmonton, City of Calgary, and Alberta Transportation.

MOVING FORWARD

To ensure that all retained natural areas are protected from damage during construction, the City will consider requiring development proponents to ensure that contractors prepare an ECO Plan for construction activity planned for within 50 m of a retained natural area. If implemented, the following ECO Plan requirements could be established:

- Submission of ECO Plans to the City for final acceptance.
- Use of one of several existing ECO Plan standards sanctioned by the City.
- Content to be consistent with St. Albert's Municipal Engineering Standards.
- Attachment of all required environmental permits and approvals.
- Involvement of environmental specialists (e.g., Certified Professional in Erosion and Sedimentation Control) as warranted.
- Preparation of ECO Plans for all redevelopment projects situated within 50 m of a protected natural area.
- Preparation of ECO Plans for all construction works to be undertaken within a natural area.

ECOLOGICAL RESTORATION

As our City continues to grow, conserved natural areas will experience increased pressure from natural area use. One approach to enhanced natural area sustainability and improved ecological network function is ecological restoration. The Society for Ecological Restoration defines ecological restoration as an "intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability".

Ecological restoration efforts are already highly valued by our City. For example, since 2005, in partnership with the Big Lake Environment Support Society (BLESS) and the Northern Alberta Institute of Technology (NAIT), our City has been implementing a River Edge Enhancement Project (REEP) enhancing habitat along the Sturgeon River corridor to increase natural biodiversity.

MOVING FORWARD

The City will continue to engage in ecological restoration initiatives and will look for opportunities beyond the Sturgeon River valley. Considering the types of natural areas in our City, appropriate ecological restoration objectives could include enhancing the health of degraded areas of riparian habitats, improving ecological connectivity between natural areas and improving habitat quality within natural areas. In most cases, restoration activities will adopt one of two approaches: 1) establishing native plant communities; and/or 2) enhancing physical ecosystem structure through earthworks.

This first approach is the more easily implemented one and is suitable for various scales, from the planting of a few individual plants to re-forestation efforts. This approach can be easily phased over multiple years in response to resource and funding availability. Although simple, the act of establishing native plant communities can often achieve significant restoration outcomes. St. Albert's REEP initiative is a successful example of this. REEP has established native riparian plant communities along the Sturgeon River in areas that were once mowed turf.

The second approach, enhancing physical ecosystem structure through earthworks, is a more ambitious one and is often a more complex, more costly effort that involves larger areas. Restoration projects following this approach will likely require the involvement of engineers, construction contractors and other specialists. In our city, this approach may be suitable for naturalizing channelized reaches of Carrot Creek or installing erosion protection infrastructure in erosion prone areas along the Sturgeon River.

As our City grows, ecological restoration, at several local scales, will be considered an important tool to maximize the sustainability of natural areas, provide for ecological connectivity in an urban landscape and enhance the functionality of natural areas already within the developed core of the City.



NATURAL AREA CONSERVATION PERFORMANCE MONITORING

This document has reiterated the City's commitment and approaches to strengthening the protection of sustainable natural areas. Just as the City's past conservation record has informed this document, future assessments of the City's record will provide insight for a continued adaptive management approach to natural area conservation. Looking forward, an important element to this process will be to understand if we, as a City, experience improved natural area conservation success.

MOVING FORWARD

The City will review and assess our conservation progress every few years, providing quantitative performance metrics that can be used to communicate with City Council and residents. Such an assessment will also help to identify the strengths and weaknesses of our conservation program. Tracking our performance will support our City's intention to continually strive for strengthened protection and sound management of its natural areas. The City will investigate an established evaluation protocol that tracks established metrics and incorporates them into the City's GIS database on an annual or biannual basis. The following are potential metrics:

- Total number of natural area sites and hectares lost, partially lost, protected and restored.
- Total number of natural area sites and hectares planned to be lost, partially lost, protected or restored, as outlined in approved planning documents.
- Total tree canopy lost and gained.
- Metrics related to special status species and ecological connectivity.

In all cases, the City will consider selecting and defining metrics to align with performance indicators being used by other jurisdictions in the surrounding region (e.g., the Province's North Saskatchewan Regional Plan). The City will include the above metrics in their annual reporting on the state of the environment.

SUMMARY AND ONGOING STAKEHOLDER CONSULTATION

In summary, the City will continue its efforts to conserve natural areas for the benefit of all residents, looking for new approaches, opportunities and means. Conservation decisions will be made using an ecological network framework and having regard for regional connectivity. To optimize conservation outcomes the City will continue to establish strong partnerships and to consult with stakeholders that include landowners, developers, our municipal neighbours, the Province, and working groups such as the North Saskatchewan/Sturgeon River Watershed alliances, research institutes and stewardship groups.

PART B: NATURAL AREA MANAGEMENT PLAN



GUIDING PRINCIPLE FOR NATURAL AREA MANAGEMENT

Natural areas are dynamic features. Left untouched by people, they exhibit subtle and dramatic change, occasionally, seasonally and over the long term. Change occurs in response to natural processes such as succession, climate and natural disturbances like disease, fire and flooding. These ecological processes, the resulting changes, and the ability of these areas to respond to both internal and external influences are critical to natural area sustainability and the biodiversity they support. Moreover, the dynamic nature of these areas is part of their appeal to people. When integrated into an urban environment, natural areas must be managed so as to balance their dual function of existing as inherently natural, dynamic places *and* supporting suitable, non-consumptive human use. Traditional urban parks and open spaces that support intensive human use require directed, regular management to reliably provide suitable conditions such as dry and open gathering spaces, durable sports turf having even terrain and all-accessible multi-use pathways. Management of natural areas demands a different approach, a generally lighter, reactive approach that allows for multiple outcomes. Recognizing this, this city-wide natural area management plan abides by the following simple guiding principle that allows for ecological processes, ecological functions,



and ecological services, such as flood storage and recreational opportunities, to continue to the maximum extent possible:

> *"Adopt a minimum intervention approach that promotes natural areas remaining natural, addresses unintended adverse effects resulting from human use and reduces risk to human safety and property."*

This management plan describes basic management objectives and actions that can be applied to all City-owned natural and naturalized areas. The plan is organized around each of five key topics requiring management: vegetation; wildlife and habitat; hydrology; naturalized stormwater management facilities; and human use and safety. For each topic, the plan articulates how the guiding principle applies and provides a series of central management objectives with specific associated actions. For some topics, the plan identifies some optional enhancement actions that could be applied by the City or in partnership with others, as circumstances allow. This plan acknowledges that *some* City natural areas would also benefit from site-specific management plans that address conditions, pressures or resources that are unique to that area. The City will identify these natural areas as the need arises.

VEGETATION

APPLICATION OF THE GUIDING PRINCIPLE TO VEGETATION MANAGEMENT

Native plant communities comprise much of a natural area's biodiversity and provide much of its ecological functionality. As such, persistence of healthy vegetation is critical for natural area sustainability. Healthy natural vegetation is dependent on patterns of seasonal growth and senescence, nutrient cycling, and natural succession. Plant species composition and structure should therefore be permitted – and expected – to naturally change over time as vegetation matures, experiences natural disturbances, and regenerates. For example, an aspen-dominated forest with a white spruce understory may in time mature into a white spruce-dominated forest. Similarly, an open grassy area surrounding a wetland may develop into a shrubby community with scattered trees. This increase in plant height can obscure views of the central wetland, but because trees and shrubs help control erosion and sedimentation, absorb nutrients in runoff, and provide wildlife habitat, they should be left to establish naturally. Minimal intervention should be applied at all scales of natural area vegetation management, including minimizing the clearing, cutting, pruning and mowing of trees, shrubs, naturalized grasses and emergent wetland plants. Similarly, dead standing trees (i.e., snags), fallen logs, and other woody debris should be left in place because they are important components of wildlife habitat and, as they decompose, they provide substrates for fungi and soil nutrients that feed other plants. Native plant "pests" (including insects and other invasive plants) and diseases are natural disturbances that are integral to succession and renewal of plant communities and in many cases are short-term tolerable events. Outbreaks of plant pests and diseases should therefore not be actively prevented or controlled unless they are caused by non-native species or pose a significant threat of spreading widely.

VEGETATION MANAGEMENT OBJECTIVES AND ACTIONS

The City will manage natural area vegetation to achieve the following specific management objectives:

OBJECTIVE 1:
MAINTAIN AND ENHANCE THE NATIVE PLANT SPECIES COMPOSITION OF NATURAL AREAS

ACTIONS:

- Monitor for concentrations of noxious and prohibited noxious weeds[1] in, and immediately adjacent to, natural areas.
- Improve the City processes in place to collect and investigate reports of noxious and prohibited noxious weed species and invite reports from the public.
- Control weed species in accordance with the provincial Weed Control Act, the City's Integrated Pest Management Plan and the Alberta Environmental Code of Practice for Pesticides.
- Replant areas disturbed by human activity using a diversity of native plant species that are an appropriate match for that natural area. Locally-sourced or salvaged materials are preferred.

1 "Noxious weeds" and "Prohibited noxious weeds" refer to exotic plant species as listed in the Alberta *Weed Control Act*. Noxious weeds require containment/control; prohibited noxious weeds must be destroyed when detected, to assist in efforts to eradicate them from the province.

OBJECTIVE 2:

MAINTAIN CAPACITY OF NATURAL AREA VEGETATION TO DEVELOP AND UNDERGO NATURAL SUCCESSION, INCLUDING EXPERIENCING NATURAL DISTURBANCES (EXCEPT FIRE).

ACTIONS:

- Restrict the active management of natural vegetation (e.g., clearing, cutting, pruning and mowing of trees, shrubs, naturalized grasses, and emergent wetland plants) to the minimum extent necessary to control weeds, maintain permitted recreational access, and reduce risk to human safety and property.
- When required to manage hazard trees (i.e., dead or live trees that pose a risk of falling onto trails, fences or other infrastructure), leave as much of the tree standing as possible; top trees at a height that is less than the distance from the tree base to the margin of the tree stand, at-risk trail, or at-risk infrastructure.
- Retain cut or downed woody debris in natural areas, unless it poses a significant fire risk and/or begins to form excessive piles.
- Control outbreaks of non-native plant pests and plant diseases in natural areas using the best management practices outlined in the City's Integrated Pest Management Plan.
- Control outbreaks of native plant pests and diseases in natural areas if they pose a significant risk of spreading widely, using the best management practices outlined in the City's Integrated Pest Management Plan.

WILDLIFE AND HABITAT

APPLICATION OF THE GUIDING PRINCIPLE TO WILDLIFE AND HABITAT MANAGEMENT

Natural areas support a wide variety of wildlife species. For the most part, if natural areas support healthy native habitats, natural processes will promote a diverse wildlife community and little wildlife management effort will be required. As a general rule, the City will allow natural habitats to persist and cycle according to their own rhythm, responding only to documented problems.

The vast majority of St. Albert's wildlife does not pose any risk to property or human safety, but some species can present special management concerns. There are several wildlife species that may occur in natural areas that have potential to damage nearby property and infrastructure when their influence spreads beyond natural area boundaries. Notably, beaver activity can not only radically change the character of a natural area but also result in adjacent property damage. Beavers can remove trees from adjacent landscaped areas, their dams can flood adjacent private property and nearby roads and beavers can burrow into storm facility banks. Despite this, within natural areas beavers are desirable. They are highly watchable and provide valuable natural history lessons. Beaver channels, dams and the ponds they create have great value in holding surface water, recharging groundwater and creating wetland habitats. Other burrowing/tunneling mammals, such as red-backed vole, northern pocket gopher and Richardson's ground squirrel, all play important roles in many wildlife communities, but can extend their underground burrows from natural areas into adjacent property and cause damage to gardens, lawns and playing fields. As long as wildlife in natural areas is not causing damage to nearby property or infrastructure, no management action is required. The City will not manage wildlife simply because they *may* inflict property damage outside of a natural area. Preventive solutions will

be adopted when feasible but remedial action will likely occasionally be required on a reactive basis. In all cases, wildlife conflict will be handled in a manner consistent with this document and as laid out in the City's *Integrated Pest Management Plan.*

A few of our city's wildlife species can present safety concerns when they interact too closely with humans, either within or outside our natural areas. These are primarily wide-ranging species that can be aggressive if encountered in the wrong circumstances, and include coyote, moose, black bear, and cougar. Currently, coyotes are the most common and likely species to cause a safety concern for natural area users in St. Albert. Coyotes are locally abundant, adaptable, and increasingly human-tolerant. However, observations of coyotes or other potentially dangerous animals within natural areas are not alone sufficient cause to take specific management action. The City's baseline position is to encourage respectful appreciation of these species as the wild species they are. **Note:** Actual wildlife-people *conflicts* both within and beyond natural areas are not covered by this plan; these should be addressed by other protocols and may require trained emergency response personnel.

WILDLIFE AND HABITAT MANAGEMENT OBJECTIVES AND ACTIONS

The City will manage natural area wildlife and natural area habitat to achieve the following specific management objectives:

OBJECTIVE 1:

MAINTAIN WILDLIFE HABITAT VALUE OF NATURAL AREAS

ACTIONS:

- When replanting disturbed areas, use native species that provide food and/or shelter for a variety of wildlife.
- Manage natural area vegetation (including dead standing trees and woody debris), hydrology, and naturalized stormwater management facilities according to the guiding principle, objectives, and actions outlined in this plan, which are designed to maximize wildlife habitat value.

OBJECTIVE 2:

MAINTAIN DOCUMENTED POPULATIONS OF SPECIAL STATUS SPECIES[2]

ACTIONS:

- When the special status species present is resident (i.e., not represented solely as migrating or dispersing individuals) and sensitive to disturbance through human use or management activities, develop species-specific and/or site-specific management plans. Seek specialist advice when developing these plans.
- Partner with Alberta Conservation Association or other agency to monitor populations of special status species, on an annual or biennial basis, beginning with species or sites that have or are likely to require their own management plan.

2 "Special status species" includes all species that are: 1) listed as Endangered, Threatened, and Special Concern in Schedule 1 of the federal *Species At Risk Act*, in Alberta's provincial *Wildlife Act*, or as assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); and 2) ranked as At Risk and May Be At Risk in the Status of Alberta Wild Species

OBJECTIVE 3:
MINIMIZE WILDLIFE MORTALITY AND DISTURBANCE

ACTIONS:

- Perform any necessary active management of vegetation (including trees, shrubs, meadows or naturalized grasses) outside of the bird nesting season (i.e., during the period August 21st to April 20th, as per Environment Canada guidance). If active vegetation management must be performed during the bird nesting season, have trained staff ensure that no wildlife will be affected prior to commencing necessary work.
- Enforce on-leash and non-leash (off-leash) rules and requirements for domestic dogs as per the City's Animal Bylaw within natural areas. Consider not designating new off-leash areas within natural areas.
- Encourage cat owners to keep their cats indoors, especially near natural areas, as free-roaming domestic cats are an unnatural predator that can kill significant numbers of songbirds and small mammals. Refer cat owners to pertinent information regarding cats on the City's website.
- When direct management of wildlife is required because of actual or imminent damage to infrastructure or property, use humane live trapping instead of lethal means and relocate trapped animals to locations, approved by a Professional Biologist, having appropriate habitat, at a distance that accounts for that species typical home range size, thus discouraging a return to the site. The City will consider updating pertinent sections of the Integrated Pest Management Plan to reflect this approach.

OBJECTIVE 4:
REDUCE WILDLIFE MORTALITY IN THE VICINITY OF NATURAL AREAS

ACTIONS:

- Develop a process to collect and investigate reports of wildlife-vehicle collisions.
- Erect wildlife-crossing signs, or consider other mitigation measures, at roadway locations adjacent to natural areas documented to have a high frequency of wildlife crossings and/or wildlife-vehicle collisions.
- Maximize the functionality of installed wildlife crossing structures by ensuring they are properly maintained on an annual basis, beginning with a spring inspection. Look for impediments such as crushed, filled, hanging or undermined culverts/structure, failed or mowed vegetation, and eroded slopes.

OBJECTIVE 5:
REDUCE WILDLIFE-PROPERTY CONFLICT IN THE VICINITY OF NATURAL AREAS

ACTIONS:

- Maintain helpful links to provincial and municipal sanctioned wildlife-property conflict prevention and resolution protocols on the City website.
- In response to complaints of vermin, such as voles, mow an approximate 3 m wide buffer strip along adjacent property lines in early August, and mid to late September to discourage animal dispersal from the site into adjacent lots. The City will consider updating pertinent sections of the Integrated Pest Management Plan to reflect this approach.

- Assist residents with mitigating nuisance wildlife activity on adjacent lots on an as-needed basis as per the Integrated Pest Management Plan.
- Remove beaver dams when flooding poses a risk of damaging private or public infrastructure. Consider and evaluate potential impacts to downstream areas before removing any dams. A provincial license may be required to conduct beaver management. Consult the City's Beaver Management Guidelines in the Integrated Pest Management Plan, the Public Works department and Alberta Fish and Wildlife before acting.

HYDROLOGY

APPLICATION OF THE GUIDING PRINCIPLE TO HYDROLOGY MANAGEMENT

The composition and structure of natural areas are, in large part, determined by hydrological processes and how they influence soil moisture. Pine, aspen and white spruce are typically found on well-drained drier soils, while poplar, birch and black spruce prefer moist soils. The soils of shrubby willow swamps are typically saturated and many marsh wetlands hold surface water for some or all of the growing season. Soil moisture is directly influenced by hydrology, particularly the movement of water across the land and water tables, and naturally fluctuates in response to climate and seasonal events (e.g., snow melt and storms). These natural hydrological events are important and, to the extent possible, should be allowed to occur unhindered within natural areas, provided they do not pose a risk to human safety or property. Examples of hydrological processes include the seasonal inundation of riparian floodplains, seasonal water level fluctuations typical of marsh wetlands and natural flooding caused by beaver dams along creeks and rivers. Accommodating natural hydrology in these ways provides many ecological values such as the moderation of downstream flow volumes and related flooding potential, groundwater recharge, nutrient cycling and habitat for moisture-loving plants and animals.

Urban development can, however, influence natural hydrology in many ways: roads can block surface water flow, paving large areas can decrease water infiltration to the water table. At the most extreme, wetlands can be drained and filled or watercourse channels straightened and re-routed to accommodate development. To the extent possible, the hydrology of natural areas should be only lightly managed so that pre-development conditions and processes persist. However, because of the potential for development to impact hydrology, active intervention or management may be required to help ensure post-development conditions mimic pre-development conditions. When impacts to natural area hydrology are anticipated as a result of development, careful planning, monitoring, and subsequent management will be vital to integrated natural area sustainability.

HYDROLOGY MANAGEMENT OBJECTIVES AND ACTIONS

The City will manage natural area hydrology to achieve the following specific management objectives:

OBJECTIVE 1:
MAINTAIN NATURAL HYDROLOGY OF NATURAL AREAS

ACTIONS:

Monitor for unnatural ponding of water (i.e., not present in natural, pre-development conditions) resulting from development impacts. If ponding has the potential to cause substantial change in the plant community,

consider possible mitigative options in consultation with Public Works.

- Where post-development hydrological change is a concern (e.g., at a retained wetland), monitor post-development hydrology. Consider mitigative measures as required. Such measures may include maintenance of drainage infrastructure (e.g., clearing blocked culvert) or modification of overland flow patterns. Mitigation measures must be developed in response to specific situations. Specialists may need to be consulted regarding development of mitigation measures.

OBJECTIVE 2:
PROMOTE GOOD WATER QUALITY OF NATURAL WATER BODIES

ACTIONS:

- When controlling weeds in close proximity (<30 m) to water bodies, use manual weed removal where possible, in accordance with the provincial *Weed Control Act*, the City's Integrated Pest Management Plan and Alberta's *Environmental Code of Practice for Pesticides*.
- Use only natural methods when controlling blue-green algae within water bodies accessible to the public.
- Restrict the active management of natural vegetation (e.g., clearing, cutting, pruning and mowing) to the minimum extent necessary within 30 m of water bodies. Robust riparian plant communities will help to remove pollutants and excess nutrients from water.
- Discourage or limit use of fertilizer on public lands within 30 m of natural water bodies.
- Educate neighbouring residents regarding the relationship between fertilizer and algae, as well as other potential impacts that residents' activities can have on wetland ecology. Partner with organizations that can provide educational materials and programs (e.g., Nature Alberta's Living by Water program) related to ecologically-minded living near urban water bodies.

POTENTIAL ENHANCEMENT ACTIONS:

- Where naturalized communities do not currently exist adjacent to water bodies, establish a naturalized wetland buffer through planting native riparian species and/or changing land use practices (e.g., stop mowing). Cultivate partnerships with groups such as Tree Canada, Big Lake Environmental Support Society (BLESS) and the River Edge Enhancement Program (REEP).



NATURALIZED STORMWATER MANAGEMENT FACILITIES (NSWMFS)

APPLICATION OF THE GUIDING PRINCIPLE TO NSWMF MANAGEMENT

In addition to managing municipal stormwater runoff, Naturalized Stormwater Management Facilities (NSWMFs) can serve to complement adjacent natural areas, increase ecological connectivity among natural areas, and remove deleterious substances (e.g., sediment, pollutants, and excess nutrients) that might otherwise enter downstream receiving water bodies. NSWMFs can therefore play an important role in maintaining and improving the sustainability of City natural areas. Although they are constructed, in many ways NSWMFs can function like natural wetlands and most aspects of their management should be the same as those established for natural areas. That is, once mature, they should be left to their own devices and allowed to adapt and change over time as long as risks to human safety and property are avoided. However, for management purposes there are four salient differences between NSWMFs and naturally-occurring natural areas:

1. The City's 2013 *Municipal Engineering Standards* specify that "where possible, relatively flat open areas [of stormwater management facilities in parks] should be designed to encourage active recreational use". These sites are, therefore, likely to receive higher levels of human use than other natural areas.

2. These sites are created and during the early years NSWMF vegetation and aquatic health must be actively guided to achieve a self-sustaining naturalized state.

3. NSWMFs are often situated adjacent to manicured parks or private yards where fertilizer and chemical pesticides/herbicides may be applied.

4. NSWMFs often experience more extreme water level fluctuations than natural wetlands, which can result in unnatural vegetation mortality that may require some level of management.

NSMWF MANAGEMENT OBJECTIVES AND ACTIONS

The City will manage NSWMFs to achieve the following specific management objectives:

OBJECTIVE 1:
ACHIEVE NATURALIZATION OF NSWMFS AS SOON AS POSSIBLE.

ACTIONS:

- In early years following construction, monitor vegetation establishment and, if possible, manipulate NSWMF water levels to facilitate establishment of desired vegetation communities, while abiding by facility design and stormwater release policies. Lowering the water level in August/September to mimic natural wetland conditions can foster improved wetland plant community establishment.
- If necessary, re-plant/re-seed native plants and adjust facility water levels. This may be especially pertinent in years following extreme flooding events if die-off occurs and regeneration is not evident.
- Restrict mowing and clearing near the water's edge to promote the establishment and growth of natural wetland riparian communities, but mow one mower width or 3 m along adjacent property lines in early August, and mid to late September to discourage animal dispersal from the site into adjacent lots.

- During the first five years, inspect for and control weeds three times per growing season to allow native species to become dominate.

OBJECTIVE 2:
CREATE AND MAINTAIN NSWMF WATER QUALITY CONDITIONS THAT SUPPORT DIVERSE AQUATIC ECOLOGICAL COMMUNITIES.

ACTIONS:

- Do not use fertilizers in manicured upland zones of NSWMFs and discourage the use of fertilizers on adjacent private lands to minimize nutrient inputs that support algal blooms.
- Manage invasive species (e.g., goldfish) in NSWMFs in consultation with the Province. The City will consider updating pertinent sections of the Integrated Pest Management Plan regarding approaches for managing aquatic pest species, as the need arises.

OBJECTIVE 3:
PREVENT DEGRADATION OF NSWMFS THAT COULD POTENTIALLY RESULT FROM HIGH LEVELS OF HUMAN USE.

ACTIONS:

- Post notices (and information on possible fines) regarding prohibited activities where applicable (e.g., no bicycles, no watercraft, no ATVs), particularly with regard to riparian buffers that are not yet fully established and which may be especially sensitive to disturbance.
- Remove litter each spring and autumn, including litter that accumulates in riparian buffers and emergent vegetation.
- Correct occurrences of encroachment (e.g., mowing naturalized/naturalizing areas and planting non-native species beyond property boundaries) by private landowners adjacent to NSWMFs.
- Where required, revegetate human-disturbed areas within naturalized/naturalizing areas using native plant species (see also Vegetation Management Objectives and Actions).
- Post signage educating residents adjacent to NSWMFs and recreational users regarding the design and ecological function of NSWMFs and the impacts of common human mis-uses.

OBJECTIVE 4:
ENSURE THAT NSWMF ECOLOGICAL FUNCTION AND STORMWATER MANAGEMENT PERFORMANCE ARE COMPLEMENTARY AND SUSTAINABLE OVER THE LONG TERM.

ACTIONS:

- For older facilities, inspect twice annually and control weed concentrations as soon as they are identified, as required by the *Weed Control Act*.
- Monitor sediment accumulation in NSWMFs every five years and remove sediments if storage and performance decreases. When removing sediments, avoid or minimize direct disturbance of emergent vegetation. Physical disturbance to NSWMFs for sediment removal should be conducted between October-March to avoid wildlife disturbance.
- In cases where management actions result in a significant change to the operating water level, monitor vegetation twice per growing season, looking for weed infestations and manipulate water levels to encourage native plant establishment when necessary.

HUMAN USE AND SAFETY

APPLICATION OF THE GUIDING PRINCIPLE TO HUMAN USE AND SAFETY

Sustainability of the City's natural areas is also important to the recreational opportunities and the aesthetic appeal that they afford St. Albert's residents and visitors. While enjoyment of the City's natural areas is encouraged, it must be balanced with management for ecological sustainability. Human activities in natural areas should, therefore, be limited to low impact pursuits that require minimal infrastructure and alteration of natural conditions (e.g., walking, jogging/running, bird watching) and be restricted to designated trails or viewpoints. Where recreational use and sustainability of natural areas conflict, protection of the natural area should have precedence. For example, de-icing salts should be used minimally, if at all, on trails in natural areas. If this makes them unsuitable for recreational use, the trail should be closed in winter rather than salted to maintain for year-round usability. In limited cases, use of non-motorized watercraft may be appropriate within natural areas, but only where explicitly permitted. For the most part, recreational use and appreciation of natural areas should require minimal natural area management. However, some degree of management will occasionally be necessary to prevent and repair damage, as well as to ameliorate the risk that natural area conditions can pose for human safety and property damage.

HUMAN USE AND SAFETY MANAGEMENT OBJECTIVES AND ACTIONS

OBJECTIVE 1:
MAINTAIN NATURAL AREAS IN A MANNER THAT ENSURES PUBLIC SAFETY WHILE MINIMIZING IMPACTS TO NATURAL AREA ECOLOGY

ACTIONS:

- Clear trails, prune encroaching vegetation and manage hazard trees, and downed woody debris as required to achieve desired safety objectives and according to the guiding principle, objectives, and actions for vegetation and wildlife habitat outlined in this plan.
- Leave cut woody material within the natural area, strategically and aesthetically placed in understory or parallel to trail edge.
- Control fire risk as necessary in consultation with the Fire Department.
- Communicate hazards associated with high flood risk areas, thin ice, unstable slopes, etc., to human users with signage or fencing on perimeter of natural area.
- Enforce rules and requirements regarding removal of dog defecation as per the City's Animal Bylaw. Provide dog waste bags and garbage receptacles on the outskirts of natural areas to discourage littering and encourage owners to clean up after their dogs.

OBJECTIVE 2:
RESTRICT HUMAN USE OF NATURAL AREAS TO DESIGNATED AREAS AND APPROPRIATE LOW-IMPACT ACTIVITIES

ACTIONS:

- Clearly identify designated trails and post notices that keeping to trails is required.
- Post notices (and information on possible fines) regarding prohibited activities where applicable (e.g., no bicycles, no dogs off-leash, no watercraft, no ATVs).
- Discourage use of informal trails by blocking/

obscuring trail entry points using boulders, downed woody debris, or plantings.

- Seasonally close trails or other recreational access to natural areas if warranted to protect sensitive wildlife from human disturbance or to protect humans from unsafe conditions (e.g., seasonally flooded areas).

OBJECTIVE 3:
RESTORE NATURAL AREAS DAMAGED BY HUMAN MISUSE

ACTIONS:

- Remove litter, particularly large items such as tires and shopping carts, discarded in natural areas.
- Correct occurrences of private landowners encroaching into natural areas (e.g., mowing naturalized areas and planting non-native species beyond private property boundaries) by instructing landowners to cease the activities causing the encroachment and re-vegetating/ re-naturalizing as necessary.
- Educate landowners regarding the benefits of limited encroachment.
- During inspections, identify human-disturbed areas, such as informal trails, within natural areas and track them as potential restoration projects using native plant species. Where associated damage is warranted, block trailheads with brush piles or boulders.
- Post signage educating residents adjacent to natural areas and recreational users regarding the impacts of common natural area mis-use.
- On an as-needed basis, educate adjacent residents regarding the pros and cons of living next to a natural area.
- Track instances and successes and if warranted, develop and distribute informational brochures.
- Remove unauthorized structures that compromise natural area sustainability and/or that have a potential to impact the safety of residents and/ or recreational users (e.g., fire pits, homeless camps).
- Eliminate compost piles from within natural areas through education of residents and by enforcing bylaws.

OBJECTIVE 4:
RAISE THE PROFILE (AND THEREFORE THE RESPECT FOR) NATURAL AREAS PRONE TO ABUSE.

ACTIONS:

- Officially name natural areas that are prone to abuse.
- Create pamphlets about named natural areas extolling the ecological services and other benefits they provide and the detrimental effects of common mis-uses and abuses.



IMPLEMENTATION PLAN AND FOLLOW-UP

IMPLEMENTATION PLAN

Various City departments will have roles and responsibilities with regard to implementing the Natural Area Management Plan. The majority of the operational actions will be performed by Public Works and Recreation and Parks, although Municipal Enforcement or provincial enforcement agencies (e.g., Alberta Fish and Wildlife) may occasionally have roles. In some cases, management actions will be implemented as part of day-to-day operations, while in others, actions are representative of longer-term efforts. Additionally, volunteer stewardship groups may perform some of the management actions on a regular or ad-hoc basis for certain natural areas. For example, volunteer stewardships groups could be mobilized to remove litter/garbage from natural areas, pull noxious weeds, and collect special status species monitoring data. Assignment of actions to volunteers or City departments may in part be done opportunistically, and in part be done according to staff availability and budget restraints, but the primary factor to consider should be the expertise of the actor and their ability to perform the action effectively and safely. Where volunteers are utilized, their actions should be coordinated with and communicated to the City on an ongoing basis.

Site-specific natural area sustainability should be regularly assessed at each City-owned natural area through annual site inspections performed by City staff. The City should develop a checklist for use during these inspections to assess whether the sustainability objectives outlined in this natural area management plan are being met and to identify instances where management actions are outstanding. Following each site inspection visit, the checklist information should subsequently be entered into an electronic database. The information in the database can be used to direct management actions required at each site in addition to those that are/will be addressed through regular City or volunteer stewardship group activities.

The City should establish a process by which citizens can report observations of special status species, noxious weeds, hazard trees, wildlife-caused damage to infrastructure, and other issues in natural areas that may require management actions to which the City can respond with appropriate management action. The City should also develop protocols for responding to issues in natural areas that are brought to the City's attention via the site inspections or by other reports from residents. These protocols should specify timeframes within which required management actions must be taken following site inspections or receipt of a report.

Natural areas that are particularly ecologically sensitive, inhabited by special status species, and/or in need of restoration may require site-specific management plans that address particular site needs and issues in greater detail than this city-wide natural area management plan.

MONITORING OF THE MANAGEMENT PLAN

Success of the Natural Area Management Plan will ultimately be demonstrated when individual natural areas in St. Albert attain equal or better ecological health in the future than when first secured. To ensure that the management plan is achieving this goal, natural area conditions should be assessed during each annual site inspection, using the site inspection checklist and associated opportunistic notes. Inspection frequency and management actions taken should be tracked in the site inspection database to inform future methods and action frequency. Monitoring will provide indications as to whether management actions performed have been successful at achieving sustainability objectives or whether further action is still necessary. If monitoring results indicate that objectives and desired action outcomes have not been achieved – despite thorough application of the guiding principle and actions recommended in this plan – the plan may need to be revised and adapted accordingly. Thus, this management plan is a living document that should be updated regularly to reflect monitoring results, lessons learned and new natural area management issues that may emerge.



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