



# Reimagine Services

Business Case: Naturalization  
and Joint Use Agreements

CITY OF EDMONTON

MAY, 2021



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# Opportunity Summary

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Analysis was completed on options to reduce the number of parks and open space areas that the City actively maintains as turf and shrub beds. In addition, opportunities were considered for how the City could receive compensation for maintaining open spaces adjacent to schools.

On a per capita basis, the City maintains more parks and open space area as turf and shrub beds than some other comparable jurisdictions. While the City typically naturalizes, on average, between 35 to 50 hectares each year, it could potentially save operating costs by increasing the rate at which it naturalizes parks and open spaces that are not actively used by citizens.

The City also incurs the cost of maintaining turf and playgrounds adjacent to schools as part of its Joint Use Agreements with Edmonton Public Schools, Edmonton Catholic Schools, and the North Central Francophone Education Regions. The City's Joint Use Agreements state that the City is responsible for maintaining sports fields and playgrounds on school sites. In addition, the agreements require the City to assemble and maintain open spaces for future school sites, and many of these sites go unused by schools, or sit vacant for years.

The agreements have a review period, which presents an opportunity for the City to negotiate a cost recovery for operating and maintaining sports fields and playgrounds. Comparable municipalities have varying degrees of cost sharing with school boards. Schools are the predominant users of these spaces, but they do not share in the cost of their operation and maintenance.

While the City receives some revenue for booking these sites, the revenue received is primarily from adult sports leagues using the spaces and covers a small fraction of the cost to operate and maintain. There may be an opportunity for the City to renegotiate the Joint Use Agreements with school boards to better align the costs and usage of turf and playgrounds adjacent to schools.

Important context for this opportunity is that community preferences and expectations with regards to outdoor activities are changing. People are less likely to engage in formal, organized activities such as sports leagues, and more likely to go for a bicycle ride, or walk with a friend. This may have consequences in terms of the type of parks and open space infrastructure that are desired and used, and may result in opportunities to change park spaces to accommodate these preferences.

Three options were considered related to naturalizing parks and open spaces, and recovering costs associated with school playgrounds and playing fields:

- Increase passive naturalization targets to 80 hectares per year.
- Increase active naturalization targets to 80 hectares per year.
- Increase passive naturalization targets to 80 hectares per year and renegotiate Joint Use Agreements to achieve a phased cost recovery goal of 25% by 2026 on turf and playground maintenance.

This opportunity has the potential to generate cost savings for the City and would accelerate work already being done by the City that aligns the provision of parks with citizen preferences in a strategic and planned way. While there is generally increasing public support for naturalization and an understanding of the importance of biodiversity, some Edmontonians may still view naturalization as a decrease in service.

Existing City strategies (i.e. Urban Forest Management Plan, City Plan, Breathe Strategic Plan) highlight the importance of naturalization, however the City has not updated its naturalization plan since the 1994 Roadways and Parks Naturalization Master Plan. All targeted areas in that master plan have since been naturalized.

As part of this opportunity, the City could consider investing in an updated naturalization implementation plan that would maximize cost savings while coordinating naturalization activities across key City departments (e.g., Urban Form and Corporate Strategic Development, and Parks and Road Services) and City strategies (e.g. Urban Forest Management Plan, neighbourhood renewal or district planning). In addition, the naturalization implementation plan may offer the City an opportunity to establish an approach to managing additions to their open space inventory as a result of future City development.



**Recommendation: Naturalization of Park Space and Joint Use Agreement Cost-Recovery**

Based on the analysis completed for this opportunity, **the City should consider pursuing passive naturalization of 80 hectares per year, and negotiating a phased cost recovery for operating and maintaining school playgrounds and sports fields.**

Passive naturalization is likely to incur a net loss to the City in the first year due to the one-time costs of developing a naturalization plan for the City and the costs to establish a naturalized area.

It is estimated that this opportunity could deliver potential cumulative savings between \$(0.3) to \$1.3 million over five years and potential annual savings of approximately \$0.3 to \$0.8 million by year 5.

# Opportunity Background & Context

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## OPPORTUNITY AND CURRENT SITUATION

Turf maintenance, horticulture and pruning account for over one-half of the City's annual expenses incurred for Parks and Road Services operations and maintenance. The City also maintains a higher number of sports fields per capita relative to some other municipalities.<sup>1</sup> There may be an opportunity for the City to save costs by increasing passive naturalization targets and renegotiating Joint Use Agreements with Edmonton Public Schools, Edmonton Catholic Schools, and the North Central Francophone Education Regions to share more of the maintenance costs.

Naturalization is a type of habitat restoration that deliberately reintroduces species that are native to a given area or are well adapted to the climate circumstance.<sup>2</sup> Naturalization activities are intended to improve and enhance the natural environment.

The City does not have a current plan that underpins its naturalization efforts, and this may contribute to resource constraints in seeking to increase naturalization efforts, potential lack of public understanding of and support for naturalization efforts, and some strategic misalignment with other City initiatives that identify the importance of naturalization.

To increase the City's rate of naturalization over a five-year period, a plan is likely required that identifies target areas to naturalize, as well as additional landscaping technicians to plan and organize the work. Based on its experience, the City expects a naturalization plan could take approximately 12 to 18 months to develop. However, in the meantime, City stakeholders have suggested it would be possible to identify some areas suitable for naturalization while the longer-term plan is being developed.

The following criteria for identifying suitable and priority areas for naturalization were developed through stakeholder engagement and review of the previous naturalization master plan:<sup>3</sup>

- **City Strategy Alignment.** The location is in alignment with other City strategies that support naturalization (e.g., Urban Forest Management Plan, Climate Action Plan, or neighborhood renewal).
- **Community Support.** The location is more likely to have positive community support for naturalization, or to have less opposition (e.g., the area to be naturalized is not in close proximity to private backyards).
- **Safety Concerns.** There are significant safety concerns for workers to consider in maintaining a location, such as a steep slope or proximity to high speed roadways. If a location has been identified with safety concerns, it is perceived as more desirable to naturalize, as it may help to reduce operational risks for City staff.
- **Ease of Conversion.** There are few barriers (e.g., weed control, soil condition) to prepare for naturalization in a location.
- **Environmental Suitability.** The existing environment in a location would support naturalization, as determined based on proximity to native vegetation, existing planted vegetation or the size of the area.

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<sup>1</sup> Yardstick Report (2018).

<sup>2</sup> City of Edmonton. Design and Construction Standards. Volume 5 Landscaping (2017).

<sup>3</sup> Stakeholder engagement with representatives from UFCSD and PARS at the City of Edmonton

- **Cost Savings Potential.** Areas could be prioritized if they have higher potential operational savings by reducing maintenance activities through naturalization (e.g., this could include areas requiring small equipment, a higher ratio of mobilization time to production time, mechanical weeding, and trimming).

To better qualify the optimal locations for targeting naturalization efforts, the previously described criteria have been mapped against specific locations. The City developed the following rating levels, and the scoring of locations was completed through a facilitated process involving subject matter experts from Urban Form and Corporate Strategic Development (UFCSD) and Parks and Road Services (PARS).<sup>4</sup>

- **Desirable.** Where a location has four or more of the six criteria met, the location is considered desirable for naturalization.
- **Feasible.** Where a location has two or three of the six criteria met, the location is considered feasible for naturalization.
- **Undesirable.** Where a location meets one or zero of the six criteria, the location is considered undesirable for naturalization.

The matrix below assesses general locations that may be suitable for naturalization. It is important to note that naturalization could only occur in specific areas within each of the general locations, not across the entire location. For example, in the Active Use Parks and Open Spaces category, many areas are used by citizens and would not support naturalization however, there may be select areas that are favourable to naturalization such as among tree stands. The naturalization implementation plan would give the City the opportunity to assess locations in more detail and identify the specific areas that would be suitable for naturalization.

**Table 1: Criteria Assessment Against General Locations**

Specific Location	City Strategic Alignment	Community Support	Safety Concerns	Ease of Conversion	Environmental Suitability	Financial Suitability	Result
<b>Storm Water Management Facilities</b>							
Dry ponds	X				X		Feasible
Constructed or natural wetland areas	X	X		X	X		Desirable
River valley outfalls	X	X		X	X		Desirable
Swales	X	X		X	X		Desirable
Storm water management facilities wet ponds	X	X		X	X	X	Desirable
<b>Areas Near Roadways</b>							
Residential roadways							Undesirable

<sup>4</sup> Stakeholder engagement with representatives from UFCSD and PARS at the City of Edmonton

Specific Location	City Strategic Alignment	Community Support	Safety Concerns	Ease of Conversion	Environmental Suitability	Financial Suitability	Result
Medians (speeds below 60 km/ hour)	X	X		X	X	X	Desirable
Verges	X	X		X	X	X	Desirable
Boulevards					X	X	Feasible
Roadway islands	X	X	X	X			Desirable
Other rights-of-way	X	X		X	X	X	Desirable
Industrial roadways	X	X		X	X	X	Desirable
Snow dump sites	X	X		X	X	X	Desirable
<b>Unprogrammable Parks and Open Spaces</b>							
Low-use parks	X			X	X		Feasible
Walkways	X				X		Feasible
Greenways	X	X		X	X		Desirable
Buffers / berms (other than 3:1 to slopes)	X	X		X	X		Desirable
<b>Active Use Parks and Open Spaces</b>							
River valley parks / lands	X	X		X	X	X	Desirable
District parks	X				X		Feasible
Neighbourhood parks	X				X		Feasible
Citywide parks	X				X		Feasible
School building envelopes							Undesirable
Recreation facility area							Undesirable
Other city facilities							Undesirable



Specific Location	City Strategic Alignment	Community Support	Safety Concerns	Ease of Conversion	Environmental Suitability	Financial Suitability	Result
Dogs off leash areas	X				X		Feasible
Cemeteries		X		X	X		Feasible
<b>Environmental Restoration</b>							
Designated natural areas	X	X		X	X		Desirable
<b>Other</b>							
Toboggan hills			X				Undesirable
Buffers / berms (3:1 slopes)	X	X	X		X	X	Desirable
Medians (speeds above 60 km per hour)	X	X	X		X	X	Desirable
Arterial roadway sides	X	X	X		X	X	Desirable

Source: Based on information from the City.

## CITY CONTEXT

This opportunity is consistent with the commitments in the City Plan to improve climate resilience and strengthen our natural habitat systems, to be “Greener as we Grow”, and to enhance our land, air water and biodiversity. Naturalization of open spaces contributes to these goals by promoting a more bio-diverse natural environment that supports greater habitat resilience and health,<sup>5</sup> and by reducing the amount of fossil fuels and other chemicals (fertilizers and pesticides) that are used in managing the natural environment.<sup>6</sup>

Table 2 outlines the key City strategies that have alignment to this naturalization opportunity.

**Table 2: Alignment to City Strategies**

City Strategy	Objectives
<b>Breathe Strategic Plan</b>	<ul style="list-style-type: none"> <li>– Make open spaces vibrant, sustainable and functional to support community identity and needs</li> <li>– Improve awareness of open space opportunities and appropriate use</li> <li>– Preserve and enhance the ecological quality and connectivity of the green network</li> </ul>

<sup>5</sup> Canadian Wildlife Federation, ‘Rights of Way Habitat Restoration Program’. Accessed April 2021 at <https://cwf-fcf.org/en/explore/pollinators/habitat-restoration.html>

<sup>6</sup> City of Calgary. Naturalization Guidelines (2017).

City Strategy	Objectives
<b>City Plan</b>	<ul style="list-style-type: none"> <li>– Protect, restore, maintain and enhance a system of conserved natural areas within a functioning and interconnected ecological network (1.4.2.1)</li> <li>– Incorporate nature and natural systems into the built environment (2.1.2.4)</li> <li>– Expand and diversify Edmonton’s urban tree canopy and native vegetation (5.1.2.2)</li> </ul>
<b>Urban Forest Management Plan</b>	<ul style="list-style-type: none"> <li>– Effectively preserve, enhance, manage, sustain and ensure the growth of Edmonton’s urban forest</li> <li>– Education the public, other agencies, neighboring communities and community partners on the importance of the urban forest, relevant forestry issues and best management practices</li> </ul>

Sources: City of Edmonton. Breathe Strategic Plan 2017, The City Plan 2020, and Urban Forest Management Plan 2012.

## LEADING AND COMPARATIVE PRACTICES

### MAINTAINED PARK AREA

Edmonton has a high number of hectares per capita of maintained open space compared to some other jurisdictions. On average, maintained open spaces in Edmonton are estimated to cost up to three times more per hectare to operate than natural parkland.<sup>7</sup> The table below highlights some of the comparisons to a selection of other Canadian jurisdictions.

Table 3: Jurisdictional Comparisons

City	Total Maintained Area	Total Natural Area	Total Maintained and Natural Hectares per 1,000 Residents	Maintained Areas as a Proportion of Land Area
<b>Calgary</b>	8,412 ha	4,630 ha	6.54 ha	9.92%
<b>Ottawa</b>	4,466 ha	1,510 ha	4.44 ha	1.60%
<b>Winnipeg</b>	2,994 ha	1,084 ha	3.92 ha	6.45%
<b>Edmonton</b>	6,177 ha	1,856 ha	6.35 ha	7.89%

Source: Canadian Cities Parks Report 2020.

<sup>7</sup> Calculated by KPMG using City of Edmonton data.

## MAINTAINED SCHOOL SITES

In some other Canadian municipalities, the cost to operate and maintain playgrounds and sports fields adjacent to schools are shared with school boards, or schools maintain their own sites. These examples highlight one component of the agreements and a more thorough comparison of the full agreement to the City's may be beneficial for future negotiations. Other jurisdictions reviewed include:

- **City of Calgary.** Individual school boards are responsible for maintaining school sites.
- **Halifax Regional Municipality.** The Halifax Regional School Board is responsible for all exterior operating and maintenance costs on school sites. However, Halifax Regional Municipality reimburses the Halifax Regional School Board for 13.4% of costs incurred to reflect community use of the space.
- **City of Lethbridge.** Expenses incurred from maintaining school grounds in jointly developed sites are shared through a formula agreed to by all parties in a joint use agreement.

## ENVIRONMENTAL CONSIDERATIONS

Recent years have seen changes in the way that we use parks and natural open spaces. There has been a trend towards increasing participation in individual and informal outdoor activities, such as walking and bicycling, and a slight decline in participation in team activities outdoors.<sup>8,9,10</sup> This gives rise to questions regarding the types of open space that best support current preferences, especially where the type of fields that have been maintained to support activities with declining popularity, such as sports fields, are expensive for the community.

At the same time, there has been an increased recognition of the ecological and environmental importance of naturalized open spaces. It has been suggested that “nature experiences are in demand as 70% of cities reported increasing demand for park naturalization projects and 56% of cities reporting [sic] increasing demand for volunteer stewardship opportunities”.<sup>11</sup> The Canadian Wildlife Federation has also called on those with the responsibility for land patches such as rights-of-ways (e.g., roadsides, utility corridors, or solar farms) to reduce the maintenance of these spaces, as they represent an important habitat for the pollinator populations (e.g., bees and butterflies) that support the whole biosphere.<sup>12</sup>

Such considerations have increasingly given rise to policies like “Don't Mow, Let it Grow”. The City of Brampton adopted this policy to increase the environmental health of the natural surroundings, while also noting that avoiding unnecessary mowing reduced the cost of sports field maintenance as well as carbon emissions caused by the mowing machinery.<sup>13</sup> In a similar vein, the City of Calgary's Naturalization Guidelines lay out environmental advantages (such as greater biodiversity, improved air and water quality, and reduced need for pesticides), social benefits such as greater noise buffers and the promotion of mental health and relaxation, as well as economic benefits from reduced energy consumption and reduced maintenance costs.<sup>14</sup>

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<sup>8</sup> Australian Government (2017). Accessed April 2021 at [https://www.sportaus.gov.au/\\_\\_data/assets/pdf\\_file/0006/678687/34896\\_Youth\\_participation\\_project-full\\_report\\_acc2.pdf](https://www.sportaus.gov.au/__data/assets/pdf_file/0006/678687/34896_Youth_participation_project-full_report_acc2.pdf)

<sup>9</sup> BBC News (2017). Accessed April 2021 at <https://www.bbc.com/news/world-us-canada-42329564>

<sup>10</sup> City of Edmonton. Live Active Strategy (2016).

<sup>11</sup> Canadian Cities Park People. Accessed April 2021 at <https://cityparksreport.parkpeople.ca/themes/nature>

<sup>12</sup> Canadian Wildlife Federation 'Rights of Way Habitat Restoration Program'. Accessed April 2021 at <https://cwf-fcf.org/en/explore/pollinators/habitat-restoration.html>

<sup>13</sup> City of Brampton, Don't Mow, Let it Grow. Accessed April 2021 at <https://www.brampton.ca/EN/residents/GrowGreen/Pages/Dont-Mow-Let-It-Grow.aspx#:~:text=In%202018%2C%20the%20City%20of,resilient%20and%20environmentally%20sustainable%20City>

<sup>14</sup> City of Calgary. Naturalization Guidelines (2017).

# Options

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This opportunity identified different approaches as to how the City could realize savings in maintaining parks and open spaces through naturalization. Savings could be achieved as a result of reducing the overall portfolio of maintained land, either through passive or active naturalization, or by sharing some of the school site maintenance costs with school boards.

For the purposes of outlining the options, the following definitions were used to distinguish between the types of naturalization:<sup>15</sup>

- **Passive Naturalization.** This type of naturalization occurs when the City stops regular maintenance in area and supports the growth of native species. It is most appropriate in areas where native vegetation currently exists and can be spread into unmown areas through seed dispersion or sucker growth.
- **Active Naturalization.** This type of naturalization involves the planting of trees and shrub seedlings, wildflowers and native grasses, after a short period (up to three years) of no regular maintenance.

Each of the options presented below **assumes the need for a naturalization implementation plan** early on with supporting public education and communications in order to support the long-term success of naturalization in the City. A naturalization implementation plan could be developed over the course of a 12 to 18-month period and seek to coordinate naturalization activities that also support of other City strategies where naturalization has been identified (e.g., the Urban Forest Management Plan). In addition to an implementation plan, the City would likely need to prepare communications and public education materials for citizens to explain the increased naturalization efforts and provide insights on the process for and benefits to the City.

While preparing the plan, the City could aim to complete passive naturalization through the City assessment outlined earlier on page 4.

**Table 4: Comparative Assessment of Options**

Option	Description
<b>Option 1: Passive Naturalization</b>	<p>The City would increase its current naturalization targets to 80 hectares per year through passive naturalization.</p> <p>In year one, the City would need to hire one permanent Landscape Technician II and one permanent Landscape Technician I to support the increase in effort.</p>
<b>Option 2: Active Naturalization</b>	<p>This option is the same as Option 1, with the sole difference being that the City would focus on active naturalization, which includes a cost to plant trees, shrubs or other native species. The City could consider coordinating planting efforts with other City initiatives such as the Roots for Trees volunteer program or the two million trees target.</p>

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<sup>15</sup> City of Edmonton. 1994 Naturalization Master Plan.

Option	Description
<b>Option 3a: Phased Joint Use Agreements Cost Recovery</b>	<p>This option looks at renegotiating the current Joint Use Agreements to recover a portion of the turf and playground maintenance costs from the school boards. A phased approach has been assumed to reach a 25% cost recovery by year five (2026). The approach by year would be as follows:</p> <ul style="list-style-type: none"> <li>– 0% in 2022 as this would be the negotiating year.</li> <li>– 10% starting in 2023.</li> <li>– 15% in 2024.</li> <li>– 20% in 2025.</li> <li>– 25% in 2026.</li> </ul> <p>A cost recovery goal of 25% is used for illustrative purposes to show the opportunity and would need to be assessed in more detail through an assessment of the total value delivered and received by each party under the agreements.</p>
<b>Option 3b: Phased Joint Use Agreements Cost Recovery and Passive Naturalization</b>	<p>This option combines the passive naturalization targets from Option 1 with renegotiating the Joint Use Agreements through a phased cost recovery outlined in Option 3a.</p>

Source: Based on information from the City and assumptions outlined in Appendix B.

# Impact Assessment

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## SERVICE IMPACT

While there may be increased preference for and awareness of naturalizing parks and open spaces, there may be localized impacts to service levels for Edmontonians who desire more maintained spaces. In addition, changes to the maintenance terms in the Joint Use Agreements with school boards would not result in a change to service levels, but there would be a change to the cost of service delivered.

## DELIVERY IMPACT

The City is already looking for opportunities to decrease mowing, having recently extended mowing cycles to ten to fourteen-day cycles; this opportunity is consistent with those efforts.<sup>16</sup> This opportunity likely requires more resources dedicated to naturalization to meet a higher naturalization target on an on-going basis. In particular, the City would require one additional permanent Landscape Technician II and one additional permanent Landscape Technician I to support this.

As naturalization efforts increase over the five-year period, there may be a gradual reduction in the City's seasonal workforce or a transition in the activities completed by City employees (e.g., less turf mowing or trimming and increased weed control). This opportunity would not be expected to lead to a reduction in the City's workforce as the City expects that it would be able to reallocate staff proportionately to the maintenance of inventory additions to the City's parks and open spaces.

The City would require a naturalization implementation plan with an estimated cost ranging from \$250,000 to \$400,000 to complete within a 12 to 18-month period.

In addition, by recovering a portion of maintenance costs under the Joint Use Agreements with school boards, the City may be able to repurpose some seasonal turf and open space maintenance staff to support growth in the City's maintained parkland portfolio or to address other resource constrained areas.

Where the City has decreased maintenance and service levels in parks and open spaces to date, there has been an increase in complaints, according to City stakeholders.<sup>17</sup> To combat the potential for citizen resistance to naturalization, the City may need to prepare proactive public education and communication materials that highlight the naturalization process, biodiversity benefits and alignment with City initiatives. As a result of potential localized impacts to some maintained areas, the City may experience an increase in citizen complaints and 311 calls. However, it is important to note that previous experience with increases in 311 calls were primarily related to reduced mowing on sports fields; therefore, there may only be a small increase as a result of naturalization.

## VIABILITY

The City currently has the capacity to naturalize between 35 and 50 hectares per year, and with increased staffing, City stakeholders suggest they would be able to naturalize more. In selecting areas for naturalization, it is important that the City evaluate the likelihood of attracting ground nesting birds in the area. An increased risk of ground nesting birds may lead to increased costs of bird nest sweeps prior to weed control.

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<sup>16</sup> Edmonton Journal (2021). Accessed April 2021 at <https://edmontonjournal.com/news/local-news/parks-and-open-spaces-plan-released-by-city>

<sup>17</sup> Edmonton Journal (2020). Accessed April 2021 at <https://edmontonjournal.com/news/local-news/city-mowing-parking>

The term of the Joint Use Agreements have entered their 10-year review period and are currently open for renegotiation. However, the current maintenance agreement between the City and the school boards has been long-standing, and there may be resistance to change and a new cost-sharing arrangement.

## GBA+ IMPACTS AND MITIGATIONS

The impact on vulnerable groups from naturalizing some open space areas would likely be negligible. An analysis against the established GBA+ criteria can be found in **Appendix A: GBA+ Assessment**.

## FINANCIAL IMPACTS

The financial analysis completed for this opportunity demonstrated that the City may be able to generate potential net savings of up to approximately \$0.6 million over five years under Option 3b: Phased Joint Use Agreement Cost Recovery and Passive Naturalization.

These calculations would be net of the maintenance costs associated with naturalization, which are estimated to be higher than in prior phases of this review, based on cost data provided by the City. The cost to develop the naturalization implementation plan, and the costs of naturalization over the first three years of a naturalized area would be greater than the savings during the first three years of naturalization. However, annual estimated savings from naturalization are projected to be positive by year 4. By year 5, the City could realize potential estimated annual savings of \$0.4 million from naturalization, and this amount could increase to a potential estimated \$0.8 million annually by 2029.

In the illustrative example provided with respect to negotiating a cost-sharing agreement with the school boards, the annual cost recoveries could reach \$0.4 million by year 5. In total, Option 3b could deliver estimated potential cumulative savings of \$0.2 - \$1.3 million over the first five years.

Further information on the financial estimates, a notice to reader and significant assumptions are provided in **Appendix B: Financial Projections**. “High” and “low” scenarios are presented in Table 5; these scenarios demonstrate the impact of different assumptions about the number of hectares naturalized over and above the City’s current 35 hectares per year, and the percent of maintenance costs recovered from school boards.

**Table 5: Potential High and Low Scenarios**

Option	Scenario Type	2022	2023	2024	2025	2026	Potential Estimated Five-Year Net Savings (Loss)
Option 1: Passive Naturalization	High	\$(392,000)	\$(47,000)	\$48,000	\$201,000	\$362,000	<b>\$172,000</b>
	Low	\$(600,000)	\$(161,000)	\$(127,000)	\$(71,000)	\$(13,000)	<b>\$(972,000)</b>
Option 2: Active Naturalization	High	\$(392,000)	\$(47,000)	\$48,000	\$(354,000)	\$(206,000)	<b>\$(951,000)</b>
	Low	\$(600,000)	\$(161,000)	\$(127,000)	\$(627,000)	\$(581,000)	<b>\$(2,096,000)</b>
Option 3a: Phased JUA Cost Recovery	High	-	\$147,000	\$225,000	\$385,000	\$393,000	<b>\$1,150,000</b>
	Low	-	\$68,000	\$140,000	\$215,000	\$293,000	<b>\$716,000</b>
Option 3b: Phased JUA Cost Recovery and Passive Naturalization	High	\$(392,000)	\$100,000	\$273,000	\$586,000	\$755,000	<b>\$1,322,000</b>
	Low	\$(600,000)	\$(93,000)	\$13,000	\$144,000	\$280,000	<b>\$(256,000)</b>

Source: Based on City data and “high” and “low” scenario assumptions outlined in Appendix B.

## RISKS

Key risks associated with this opportunity relate to the potential for negative backlash from citizens and both school boards. The most salient risks are summarized in Table 6. Additional risks and mitigations, and a more detailed risk assessment can be found in **Appendix C: Risk Analysis**.

**Table 6: Key Risks and Mitigations**

Potential Risk	Potential Mitigation
<p><b>Negative Citizen Response</b></p> <p>There is a reputational risk that citizens may object to naturalization, especially those located near areas identified for naturalization. Limited understanding of the benefits of naturalization and the positive impacts to biodiversity in the City may increase the risk of negative response.</p>	<p>The City may reduce the impact of this risk through communication and education activities. A naturalization implementation plan could include information materials that illustrate the process of and benefits from naturalization.</p>
<p><b>School Boards Oppose Cost Sharing</b></p> <p>There is a risk that both the public and catholic school boards may negatively respond to the City's request to share some of the turf and playground maintenance costs. Recent provincial budget reductions have impacted both school boards and may contribute to challenges with negotiating cost sharing as part of the Joint Use Agreements.</p>	<p>This risk may be countered by full cost accounting of the value of services received and delivered to determine the degree to which the Joint Use Agreements are still equitable.</p> <p>The City may consider using a proactive communications strategy to publicize the current situation and their proposed approach moving forward.</p> <p>In the event that the school boards do not agree to a cost sharing arrangement, the City may consider reducing service levels as an alternative.</p>

Source: Prepared by KPMG



# Opportunity Assessment

## OVERALL ASSESSMENT OF OPPORTUNITY AGAINST CRITERIA

The opportunity assessment of the option against the impact and implementation criteria is summarized in the table below, where green, grey, and red represent a positive, neutral, and negative impact respectively.

Table 7: Opportunity Assessment

Options	Impact						Implementation			
	Service	Delivery	GBA+	Financial	Risk	Estimated Potential Five-Year Benefit (millions)	Time	Cost	Risk	Estimated Potential Implementation Cost (millions)
Option 1: Passive Naturalization	●	●	●	●	●	\$(0.4)	●	●	●	\$0.5
Option 2: Active Naturalization	●	●	●	●	●	\$(1.5)	●	●	●	\$0.5
Option 3a: Phased JUA Cost Recovery	●	●	●	●	●	\$1.0	●	●	●	-
Option 3b: Phased JUA Cost Recovery and Passive Naturalization	●	●	●	●	●	\$0.6	●	●	●	\$0.5

Source: Prepared by KPMG using City of Edmonton data and outlined assumptions.

## CONCLUSION AND RECOMMENDATION

The should City consider proceeding with **Option 3b and pursue passive naturalization of 80 hectares per year and seek to recover a portion of maintenance costs through renegotiating the Joint Use Agreements with school boards.**

### Recommended Action 1

**Develop a naturalization implementation plan and communication materials, hire additional resources, and target the most desirable locations for passive naturalization of 80 hectares per year.**

The naturalization implementation plan should highlight the following:

- Key areas to target over the long term and corresponding costs savings.
- Current resource constraints (e.g., temporary vs. permanent) and requirements for future to achieve higher targets.
- Importance of communication and education in the community.

To achieve a target of 80 hectares in the first year, the City would require the following:

- Hire on one additional permanent Landscape Technician II and one additional permanent Landscape Technician I.

While the implementation plan is being developed, the City can target the desirable and financially suitable locations as a result of the assessment in Table 1. All locations would support passive naturalization and are listed below:

- Medians (speeds below 60 km per hour)
- Verges
- Other rights-of-way
- Industrial roadways
- Snow dump sites
- Buffers / berms (3:1 slopes)
- Roadway medians
- Arterial roadway sides

## Recommended Action 2

**Complete a thorough assessment of the total value of the Joint Use Agreements in order to renegotiate with the school boards to recover a portion of maintenance costs for playgrounds and turf.**

A phased cost recovery goal of 25% by 2026 is illustrative and the City would need to do a thorough assessment of the total value delivered and received by each party under the agreements. A detailed assessment of the total value (e.g., costs or services governed by the agreement, or community impacts as a result of changes) may help to inform the negotiation process.

# Appendix A: GBA+ Assessment

## EVALUATION SUMMARY

### What is the overall GBA+ assessment?

The level of impact on vulnerable groups from naturalizing some open space areas is considered to be negligible. Service levels are expected to be unchanged.

### What are the main groups that could be affected (including those with no vulnerabilities), and what impacts are noted?

None identified.

### What do we know about the people who would be affected by this change?

-2. Very little known about them or their characteristics	-1. Some general idea of numbers or types of people affected	<b>0. Good idea of overall numbers and some other aspects (e.g., time / nature of needs)</b>	+1. Good information on the numbers of people affected and some key characteristics	+2. Good information on numbers, demographics groups, and contact lists (e.g., email / phone lists)
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### What impact would there be from this change on the staff members of the City or other agencies who may be from these groups?

The City will need to hire one permanent Landscape Technician II and one permanent Landscape Technician I to support the increase in naturalization.

### What equity measures could we use or implement to improve or positively mitigate impact for one or more of the groups identified?

None required.

### How confident are we in the information we are basing our decisions on? What could we do to check or confirm our assumptions?

The analysis is generally informed by information from the City and experiences in other select municipalities. In future, more information and research could be done to understand who in particular would be impacted if naturalization is occurring in specific neighbourhood parks or open spaces.

## IMPACT OF THIS CHANGE ON PEOPLE BY KEY IDENTIFIED VULNERABILITIES

Consider how you would expect this change to affect people with various types of characteristics that may give rise to vulnerabilities:

Personal Characteristics	-2 Could create new barriers	-1 Could exacerbate existing barriers	0 Limited effect or impact unknown	+1 Could reduce existing barriers	+2 Substantially improved access
People who are not physically strong or confident in their movements			0		
People with vulnerable people with them			0		
People who currently have very limited or no income			0		
People who may experience fear or distress due to threats or violence			0		
People with additional language or communication needs			0		
People who may find mainstream activities unwelcoming or not appropriate for their needs			0		
<b>Total Score</b>	<b>0 Limited effect</b>				

# Appendix B: Financial Projections

## NOTICE

The financial projections contained in this document provide future-oriented financial information. The projections are based on a set of circumstances and the City’s assumptions as of April 2021. Significant assumptions are included in the document and must be read to interpret the information presented. Should events differ from the stated assumptions, actual results will differ from the financial projections and such differences may be material.

The financial information and assumptions contained herein has been prepared to assist readers in deciding whether or not to proceed with their own in-depth investigation and evaluation of the options presented, and does not purport to contain all the information readers may require. Readers should conduct their own investigation and analysis of the options.

KPMG accepts no responsibility or liability for loss or damages to any party as a result of decisions based on the information presented. Parties using this information assume all responsibility for any decisions made based on the information.

## FIVE-YEAR PROJECTIONS

The following table shows the five-year projections for each option, broken down by year and with the projected total savings indicated.

**Table 8: Five-Year Potential Estimated Net Savings (Loss)**

	2022	2023	2024	2025	2026	Potential Estimated Total Net Savings (Loss)
<b>Option 1: Passive Naturalization</b>	\$(496,000)	\$(104,000)	\$(40,000)	\$65,000	\$174,000	<b>\$(401,000)</b>
<b>Option 2: Active Naturalization</b>	\$(496,000)	\$(104,000)	\$(40,000)	\$(490,000)	\$(394,000)	<b>\$(1,524,000)</b>
<b>Option 3a: Phased JUA Cost Recovery</b>	-	\$142,000	\$217,000	\$297,000	\$380,000	<b>\$1,036,000</b>
<b>Option 3b: Phased JUA Cost Recovery and Passive Naturalization</b>	\$(496,000)	\$38,000	\$177,000	\$362,000	\$554,000	<b>\$635,000</b>

Source: Based on City data and assumptions outlined in Appendix B.

## HIGH AND LOW SCENARIOS

“High” and “low” scenarios are presented; these scenarios demonstrate the impact of different assumptions about the number of hectares naturalized over and above the City’s current 35 hectares per year, and the percent of maintenance costs recovered from school boards.

## OPTION 1 – HIGH

To model a high scenario, the naturalization targets were calculated based on an additional 65 hectares naturalized in a year, beyond the City’s current 35 hectare a year target. In addition, the cost of the naturalization implementation plan is assumed to be \$250,000 in year one.

Table 9: Option 1 Potential High Scenario

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Potential Estimated Total Net Savings (Loss)</b>	\$(392,000)	\$(47,000)	\$48,000	\$201,000	\$362,000	<b>\$172,000</b>

Source: Based on City data and assumptions outlined in Appendix B.

## OPTION 1 – LOW

To model a low scenario, the naturalization targets were calculated based on an additional 25 hectares naturalized in a year, beyond the City’s current 35 hectare a year target. In addition, the cost of the naturalization implementation plan is assumed to be \$400,000 in year one.

Table 10: Option 1 Potential Low Scenario

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Potential Estimated Total Net Savings (Loss)</b>	\$(600,000)	\$(161,000)	\$(127,000)	\$(71,000)	\$(13,000)	<b>\$(972,000)</b>

Source: Based on City data and assumptions outlined in Appendix B.

## OPTION 2 – HIGH

To model a high scenario, the naturalization targets were calculated based on an additional 65 hectares naturalized in a year, beyond the City’s current 35 hectare a year target. In addition, the cost of the naturalization implementation plan is assumed to be \$250,000 in year one.

Table 11: Option 2 Potential High Scenario

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Potential Estimated Total Net Savings (Loss)</b>	\$(392,000)	\$(47,000)	\$48,000	\$(354,000)	\$(206,000)	<b>\$(951,000)</b>

Source: Based on City data and assumptions outlined in Appendix B.

## OPTION 2 – LOW

To model a low scenario, the naturalization targets were calculated based on an additional 25 hectares naturalized in a year, beyond the City’s current 35 hectare a year target. In addition, the cost of the naturalization implementation plan is assumed to be \$400,000 in year one.

Table 12: Option 2 Potential Low Scenario

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Potential Estimated Total Net Savings (Loss)</b>	\$(600,000)	\$(161,000)	\$(127,000)	\$(627,000)	\$(581,000)	<b>\$(2,096,000)</b>

Source: Based on City data and assumptions outlined in Appendix B.

## OPTION 3A – HIGH

To model a high scenario, the cost recovery on the Joint Use Agreements maintenance will reach 25% starting in 2025 (year four) and the City will receive annual booking revenue of \$100,000 for non-staffed fields and ball diamonds.

Table 13: Option 3a Potential High Scenario

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Cost Recovery (%)</b>	0%	10%	15%	25%	25%	<b>N/A</b>
<b>Potential Estimated Total Net Savings (Loss)</b>	-	\$147,000	\$225,000	\$385,000	\$393,000	<b>\$1,150,000</b>

Source: Based on City data and assumptions outlined in Appendix B.

## OPTION 3A – LOW

To model a low scenario, the cost recovery on the Joint Use Agreements maintenance will only reach 20% in year five and the City will receive annual booking revenue of \$200,000 for non-staffed fields and ball diamonds.

Table 14: Option 3a Potential Low Scenario

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Cost Recovery (%)</b>	0%	5%	10%	15%	20%	<b>N/A</b>
<b>Potential Estimated Total Net Savings (Loss)</b>	-	\$68,000	\$140,000	\$215,000	\$293,000	<b>\$716,000</b>

Source: Based on City data and assumptions outlined in Appendix B.

## OPTION 3B – HIGH

To model a high scenario, the naturalization targets were calculated based on an additional 65 hectares naturalized in a year, beyond the City’s current 35 hectare a year target. In addition, the cost of the naturalization implementation plan is assumed to be \$250,000 in year one.

The cost recovery on the Joint Use Agreements maintenance will reach 25% starting in 2025 (year four) and the City will receive annual booking revenue of \$100,000 for non-staffed fields and ball diamonds.

**Table 15: Option 3b Potential High Scenario**

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Potential Estimated Total Net Savings (Loss)</b>	\$(392,000)	\$100,000	\$273,000	\$586,000	\$755,000	\$1,322,000

*Source: Based on City data and assumptions outlined in Appendix B.*

## OPTION 3B – LOW

To model a low scenario, the naturalization targets were calculated based on an additional 25 hectares naturalized in a year, beyond the City’s current 35 hectare a year target. In addition, the cost of the naturalization implementation plan is assumed to be \$400,000 in year one.

The cost recovery on the Joint Use Agreements maintenance will only reach 20% in year five and the City will receive annual booking revenue of \$200,000 for non-staffed fields and ball diamonds.

**Table 16: Option 3b Potential Low Scenario**

	2022	2023	2024	2025	2026	Potential Estimated Total
<b>Potential Estimated Total Net Savings (Loss)</b>	\$(600,000)	\$(93,000)	\$13,000	\$144,000	\$280,000	\$(256,000)

*Source: Based on City data and assumptions outlined in Appendix B.*

## SIGNIFICANT ASSUMPTIONS

### COMMON ASSUMPTIONS

1. Turf calculations based on an incremental increase of 45 hectares per year above the current 35 hectare per year target.
2. Shrub bed calculations based on the City’s inventory of shrub beds as a percent of the City’s whole parkland portfolio. It is assumed that shrub bed naturalization would only happen in turf areas where shrub beds exist, and they would be naturalized as a package deal.
3. The cost of a naturalization implementation plan in year 1 is \$325,000 based on the midpoint between the range of \$250,000 and \$400,000 given by the City.
4. The yearly cost of communications and public education as a result of naturalization efforts is \$20,000.



5. The Landscape Technician II salary of \$85,194 is based on step six of the wage schedule.
6. The Landscape Technician I salary of \$71,381 is based on step six of the wage schedule.
7. In addition to the yearly salary, training and benefits expenses of 30% of salary have been calculated.
8. Inflation is adjusted for in each year at the following rates:

	2022	2023	2024	2025	2026
<b>Inflation Rate (%)</b>	1.7%	1.9%	2.1%	2.5%	2.5%

## FTE ASSUMPTIONS

9. As a result of this opportunity, the City may see the following changes to FTEs:

	Estimated Changes in Regular Employees (FTEs)	Estimated Changes in Temporary Employees (FTEs)	Potential Estimated Reductions in Employees (FTEs)
<b>Estimated Reductions</b>	N/A	N/A	N/A
<b>Estimated Additions</b>	2.0 FTE	N/A	N/A
<b>Potential Estimated Net Impact</b>	+2.0 FTE	N/A	N/A

*Source: Based on analysis of information and assumptions provided by the City of Edmonton*

## OPTION 2: ACTIVE NATURALIZATION

10. Starting in year four there will be planting costs per hectare for the following activities:
  - a) Preparing the plan for planting is estimated to cost \$5,803 per hectare.
  - b) The initial tree planting is estimated to cost \$41,190 per hectare.
  - c) Watering the planted area is estimated to cost \$17,873 per hectare.
11. The above planting costs are based on a yearly target of 8 hectares planted, based on the City's current plan, not the incremental 45 hectares being planted.

## OPTION 3A: PHASED JOINT USE AGREEMENTS COST RECOVERY

12. Calculations for the annual maintenance cost of turf is based on the total known hectares of turf area on school joint use areas.
13. The maintenance cost per hectare of turf is based on the average of the 2017 to 2019 actual costs per hectare of turf mowing from the PARS Service Level Agreement matrix and an A2 mowing cycle of 12 times per year based on the 2021 mowing cycles.
14. Calculations for the annual maintenance cost of playgrounds is on a per playground basis and provided by the PARS Infrastructure Maintenance team.
15. The cost recovery for the Joint Use Agreements is assumed based on a phased approach using the following progression:

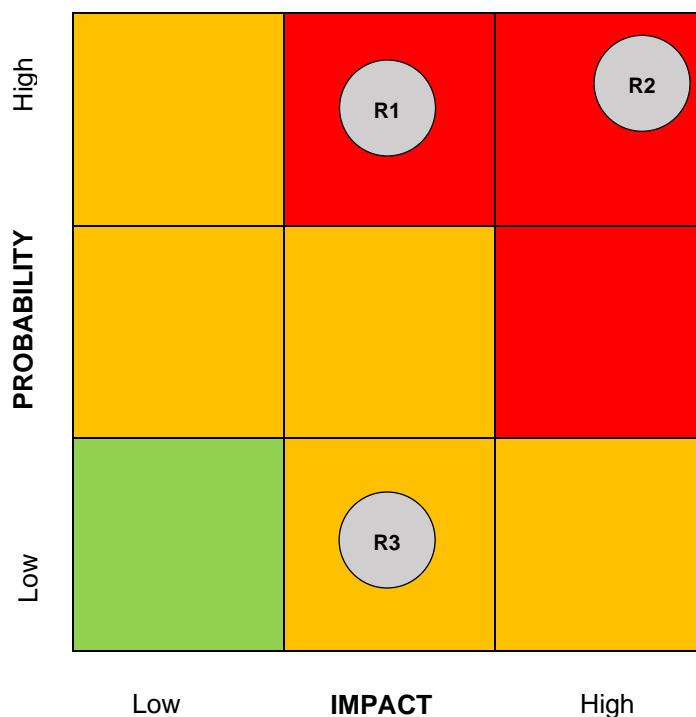
	2022	2023	2024	2025	2026
<b>Joint Use Agreements Cost Recovery (%)</b>	0%	10%	15%	20%	25%

# Appendix C: Risk Analysis

## RISK ASSESSMENT

Pursuing passive naturalization and renegotiating the joint use agreements to see a cost recovery on turf and playground maintenance costs comes with a medium to high degree of strategic, reputation and financial risk.

Figure 1: Risk Matrix



## RISK ASSESSMENT AND MITIGATIONS

The table below outlines the risks and mitigation strategies that have been identified for this opportunity.

Table 17: Risk Register

Risk	Relevant Categories	Highest Rating	Mitigation	Residual Risk
<b>R1. Negative Citizen Response</b>  There is a reputational risk that citizens may object to naturalization, especially those located near areas identified for naturalization. Limited understanding of the benefits of naturalization and	Reputation	<b>Reputation</b>  Impact: Medium  Probability: High  Overall: High	The City may reduce the impact of this risk through communication and education activities. A naturalization implementation plan could include information materials that illustrate the process of and benefits from naturalization.	<b>Reputation</b>  Impact: Low  Probability: Medium  Overall: Medium

Risk	Relevant Categories	Highest Rating	Mitigation	Residual Risk
<p>the positive impacts to biodiversity in the City may increase the risk of negative response.</p>				
<p><b>R2. School Boards Oppose Cost Sharing</b></p> <p>There is a risk that both the public and catholic school boards may negatively respond to the City’s request to share some of the turf and playground maintenance costs. Recent provincial budget reductions have impacted both school boards and may contribute to challenges with negotiating cost sharing as part of the Joint Use Agreements.</p>	<p>Reputation</p> <p>Financial</p>	<p><b>Reputation</b></p> <p>Impact: High</p> <p>Probability: High</p> <p>Overall: High</p>	<p>This risk may be countered by full cost accounting of the value of services received and delivered to determine the degree to which the Joint Use Agreements are still equitable.</p> <p>The City may consider using a proactive communications strategy to publicize the current situation and their proposed approach moving forward.</p> <p>In the event that the school boards do not agree to a cost sharing arrangement, the City may consider reducing service levels as an alternative.</p>	<p><b>Financial</b></p> <p>Impact: Medium</p> <p>Probability: High</p> <p>Overall: High</p>
<p><b>R3. Alignment with City Initiatives</b></p> <p>The importance of naturalization is acknowledged in a number of city strategies but without clear direction for how that would be implemented over the long term.</p>	<p>Strategy</p>	<p><b>Strategy</b></p> <p>Impact: Low</p> <p>Probability: Medium</p> <p>Overall: Medium</p>	<p>The City may reduce the impact of this risk by developing a formal naturalization implementation plan that would align efforts across the relevant City departments (e.g., UFCSD and PARS).</p>	<p><b>Strategy</b></p> <p>Impact: Low</p> <p>Probability: Low</p> <p>Overall: Low</p>

Source: Prepared by KPMG.



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Analysis contained in this document includes financial projections. The projections are based on assumptions and data provided by the City. Significant assumptions are included in the document and must be read to interpret the information presented. As with any future-oriented financial information, projections will differ from actual results and such differences may be material. No responsibility is accepted for loss or damages to any party as a result of decisions based on the information presented. Parties using this information assume all responsibility for any decisions made based on the information.

Actual results achieved as a result of implementing recommendations in this report are dependent upon, in part, on the City decisions and actions. The City is solely responsible for its decisions to implement any recommendations and for considering their impacts and risks. Implementation will require the City to plan and test any changes to ensure that the City will realize satisfactory results.

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