Quantifying the Economic Value of the EMRB

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EXECUTIVE SUMMARY

It has long been understood that fragmented planning and servicing approaches are less efficient, more costly, and ultimately result in a less competitive Region.

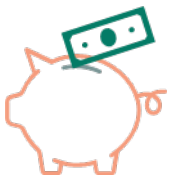
To address this, the Edmonton Metropolitan Region Board (EMRB) was established as a regional growth management board focused on collaboration for the long-term sustainability of the Region, efficient land use planning, and economic well-being and competitiveness. The EMRB is tasked with planning, coordinating, and managing growth and development in the Region.

A regional planning and servicing body has existed in the Edmonton Region, in some form, for nearly 70 years. In its most recent iteration, the EMRB plays a crucial role in re-imagining, planning, and building the future of the region. Over the last seven decades, the question of "Is regional collaboration valuable?" has been frequently explored and has resulted in the same answer – yes. Despite articulating time and again that regional planning and servicing is valuable, prior work has stopped short of answering how to quantify that value. While this may appear to be an academic question, there are practical implications depending on the answer. In recent years the EMRB has experienced a significant reduction in funding from the Government of Alberta, decreasing from $3 million to $1 million. While the member municipalities have increased their contribution over time, the decline in financial resources is presenting significant challenges to the organization's ability to effectively deliver on its mandate of long-term sustainability and competitiveness for the Region.

In seeking to answer the question as to "how valuable is regional collaboration" the EMRB engaged MNP to develop a methodology to approximate the economic value of some of the various initiatives the EMRB has undertaken. **Given the complex and long-term nature of the EMRB's work, the approach is more illustrative in nature than it is comprehensive. The following work is a sampling of the value of the EMRB's work. In no way does this report represent the full value of the EMRB's work in any of the value categories identified.**

Appreciating that the question of the whole being greater than the sum of its parts, as it relates to regional collaboration, has been answered in past reports, this methodology sets out to illustrate the value of some of the component parts. This is done by identifying three main categories that highlight how the EMRB provides value to taxpayers, the province, and its member municipalities. The value categories are further described through case studies and examples that profile and quantify the economic value of the work EMRB does.

The value categories include:



Cost Savings

Cost Efficiency

Value Creation

Cost Savings:

This category seeks to estimate and illustrate in what ways the EMRB has generated cost savings for taxpayers. To do this, the cost savings category considers the regional savings EMRB has contributed to through their regional initiatives and mandate. To estimate the cost savings generated by delivering regional initiatives through the EMRB model, the Alberta Community Partnership ("ACP") Grant was used as the comparable. This methodology only identified the cost savings generated for the Government of Alberta. It is reasonable to assume that across the 13 EMRB initiatives examined in this report that there would be significant additional savings if the resource commitments and financial contributions of the municipalities were also considered, however due to data availability this was excluded.

- The EMRB model has generated approximately **$6.5 million in direct cost savings** for the Government of Alberta, and therefor taxpayers, since 2017.

Cost Efficiency:

In order to estimate the cost efficiencies generated by delivering regional initiatives through the EMRB model a sampling of Intermunicipal Disputes and the Edmonton Region Integrated Transportation Master Plan were used.

- **$12 million** annual incremental savings for every 0.5% efficiency for taxpayers in transportation infrastructure construction and maintenance due to the EMRB's model and prioritization process.
- **Over $350,000 in mediation and arbitration savings** for the Government of Alberta since 2017 due to intermunicipal dispute resolution through the regional evaluation framework process. There are likely substantial additional savings for municipalities in addition to the Government of Alberta's contribution.

Value Creation:

This category considers the economic value of the regional efforts undertaken by the EMRB through the growth and servicing plans. In order to estimate the cost savings generated by delivering regional initiatives through the EMRB model, an analysis of five of EMRB's KPIs related to the growth plan was undertaken. While each of these value categories are not intended to be added together, the findings show that across each area the initiatives undertaken by the EMRB have led to millions of dollars in cost savings, efficiencies, and economic value for taxpayers.

- Economic Diversification and Employment: **$160 million**
  (Annual employment income generated since 2017 through job attraction via Edmonton Global)
- Natural Living Systems - Conserving Wetlands: **$112 million**
  (Value of Wetlands added from 2019-2021)
- Transportation Systems – Commute Times: **$94 million**
  (Annual Savings Per Minute Reduction in Commute Time)
- Agriculture – Conserving Agricultural Land: **$2.4 billion**
  (2023 value of Agricultural Land conserved through the RAMP)
- Integrated Land Use – Densification: **$460 million**
  (Net present value savings from CO_2 emissions reduced through densification)

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1.0 | Project Background

In March 2023, the Edmonton Metropolitan Region Board (EMRB) engaged MNP LLP (MNP) to conduct a Value Quantification project with the goal of demonstrating the economic value that EMRB brings to taxpayers, member municipalities, and the Government of Alberta. An intermunicipal planning and servicing organization has existed in the region, in some form, for nearly 70 years. The most recent iteration, "the Edmonton Metropolitan Region Board," was established in 2018 under a regulation of the *Municipal Government Act*. The EMRB is tasked with planning, coordinating, and managing growth and development in the Region. The EMRB's mandate is to create a sustainable, prosperous, and livable region for residents and businesses. By collaborating with its member municipalities, the EMRB can address common challenges and opportunities and ensure that the Edmonton Region remains a vibrant and thriving place to live.

The EMRB plays a crucial role in re-imagining, planning, and building the future of its region. In recent years the EMRB has experienced a significant reduction in funding from the Government of Alberta, decreasing from $3 million to $1 million. While the member municipalities have increased their contribution over time, the decline in financial resources is presenting significant challenges to the organization's ability to effectively deliver on its mandate of long-term sustainability and competitiveness for the Region. This report is intended to estimate the economic value of the EMRB's mandate and activities to showcase the organization's positive impact.

1.1 Project Approach

In order to conduct this work most efficiently, the quantifications have relied on a variety of publicly available data combined with insights provided by the EMRB team. This methodology does present some technical limitations and a need for some assumptions, the constraints are described within each section. The limitations are countered by the understanding that in the case of the EMRB, the whole is greater than the sum of its parts and the parts themselves are tremendously valuable.

A full, comprehensive valuation of every EMRB activity would be extraordinarily costly and resource intensive. Consequently, the approach is illustrative in nature. Rather than valuing the entirety of the organization, three main value categories are highlighted and described through case studies and examples that profile and quantify the economic value of samples of the work EMRB does. The value categories include:

- **Cost Savings -** this considers the regional savings EMRB has contributed to through their regional initiatives and mandate;
- **Efficiency –** this considers the cost efficiencies created by the collaborative projects undertaken by the EMRB; and,
- **Value Creation –** this considers the value of the regional efforts undertaken by the EMRB through the Growth and Servicing Plans.

1.2 Assumptions and Limitations

This report is provided for information purposes and is intended for general guidance only. It should not be regarded as comprehensive or a substitute for personalized, professional advice.

MNP has relied upon the completeness, accuracy and fair presentation of all information and data obtained from stakeholders and public sources. The accuracy and reliability of the findings expressed in this report are conditional upon the completeness, accuracy and fair presentation of the information underlying them. As a result, we caution readers not to rely upon any findings or opinions for business or investment purposes and disclaim any liability to any party who relies upon them as such.

Given the complex and long-term nature of the EMRB's work, the approach is more illustrative in nature than it is comprehensive. The following work is a sampling of the value of the EMRB's work. In no way does this report represent the full value of the EMRB's work in any of the value categories identified.

1.3 A Long History of Regional Collaboration

Regional land use planning in the province can be traced back to the 1950s when the *Planning Act* was amended to require local plans to conform to regional plans. Regional planning was put aside in 1995 with the replacement of the *Planning Act* with the *Municipal Government Act,* which included provisions for optional inter-municipal collaboration. Where cooperation did not occur between neighbours, the Municipal Government Board was responsible for reviewing complaints and appeals.

As pressures from resource development, population growth, recreation and conservation grew in the early-2000s, the province had to consider the approach to managing land and resources. The adoption of the Land-Use Framework in 2008 and the *Alberta Land Stewardship Act* in 2009 reintroduced the province's commitment to regional planning to address the cumulative impacts on the environment and to manage social, economic, and environmental realities and priorities in an integrated way.

Two Government of Alberta commissioned reports *An Agenda for Action* (Hyndman, 2000)[1] and *Working Together* (Radke, 2007)[2] concur, it has long been understood that fragmented planning and servicing approaches are less efficient, more costly, and ultimately result in a less competitive region. Collaboration in land use planning is key to creating efficiencies.

For nearly seven decades, regional planning and collaboration in the Edmonton region has taken a variety of forms. This has included the Edmonton Region Planning Commission (1963), the Yellowhead Regional Planning Commission and Edmonton Metropolitan Region Planning Commissions (1981), the Capital Region Forum (1995), the Alberta Capital Region Alliance (1997), Capital Region Board (2008), and the Edmonton Metropolitan Region Board (EMRB) (2017-present). Throughout this time there has been little question in reports and studies about whether this regional collaboration is worthwhile. In other words, every time the question "is regional collaboration valuable?" has been asked over the last half-century, the answer has been yes. That being said, prior reports have stopped shy of quantifying that value.

This report aims to build on the understanding that regional planning and servicing is valuable for the Edmonton Region by demonstrating the economic value of the EMRB's activities.

[1] Hyndman, L. 2000. "An Agenda for action: Alberta Capital Region Governance Review: Final Report." https://archive.org/details/agendaforactiona00albe

[2] Radke, CD. 2007. "Working Together: Report of the Capital Region Integrated Growth Management Plan Project Team." https://open.alberta.ca/dataset/1b4bb05f-3ffa-448a-8d1d-e4639767215f/resource/d9101a55-909a-4e48-923e-324b24b5f675/download/2007-working-together-report-of-capital-region-integrated-growth-management-plan.pdf

1.3.1 About the Edmonton Metropolitan Region Board

The Edmonton Metropolitan Region is made up of 13 municipalities that include: City of Beaumont, Town of Devon, City of Edmonton, City of Fort Saskatchewan, City of Leduc, Leduc County, Town of Morinville, Parkland County, City of St Albert, City of Spruce Grove, Town of Stony Plain, Strathcona County, and Sturgeon County. The region has experienced substantial population growth, driven by factors such as economic opportunities, educational institutions, and a desirable quality of life, and is expected to reach over 2 million residents by 2044. The population growth has necessitated strategic planning and collaborative efforts among municipalities to ensure sustainable development, effective infrastructure, and the provision of essential services, all while maintaining cost efficiencies for residents. The region is dedicated to balancing growth with environmental stewardship. Through collaborative efforts and a shared vision, the surrounding municipalities have grown to support the collective Region to improve the overall livability and prosperity of its communities.

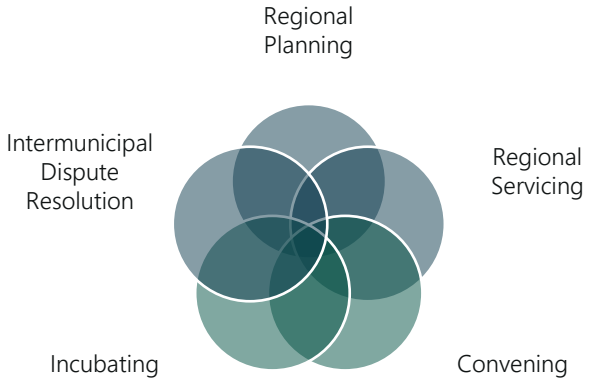
The EMRB was established by the Government of Alberta via the Edmonton Metropolitan Region Board Regulation under the authority of the *Municipal Government Act* in 2017 to oversee the strategic regional planning needed. In short, the regulation compels the 13 members that make up the EMRB to come together with a mandate to develop a long-term plan for managing growth in the Region. Standing on the shoulders of nearly 70 years of historic collaboration models, the EMRB Regulation sets out six specific mandates:

A. Strive towards consensus regarding matters before the Board;
B. Promote the long-term sustainability of the Edmonton Metropolitan Region;
C. Ensure environmentally responsible land-use planning, growth management and efficient use of land;
D. Develop policies regarding the coordination of regional infrastructure investment and service delivery;
E. Promote the economic well-being and competitiveness of the Edmonton Metropolitan Region; and,
F. Develop policies outlining how the Board shall engage the public on the growth plan and the servicing plan.

The EMRB Regulation further directs that the EMRB will:

A. Prepare a growth plan;
B. Prepare a servicing plan;
C. Advise and make recommendations to the Minister regarding the implementation of the growth plan and the servicing plan;
D. Facilitate the resolution of issues arising from the preparation and implementation of the growth plan and the servicing plan; and,
E. Develop and implement policies for the sharing of costs for regional projects of the Edmonton Metropolitan Region.

To deliver on this multifaceted mandate, the EMRB performs five main functions:

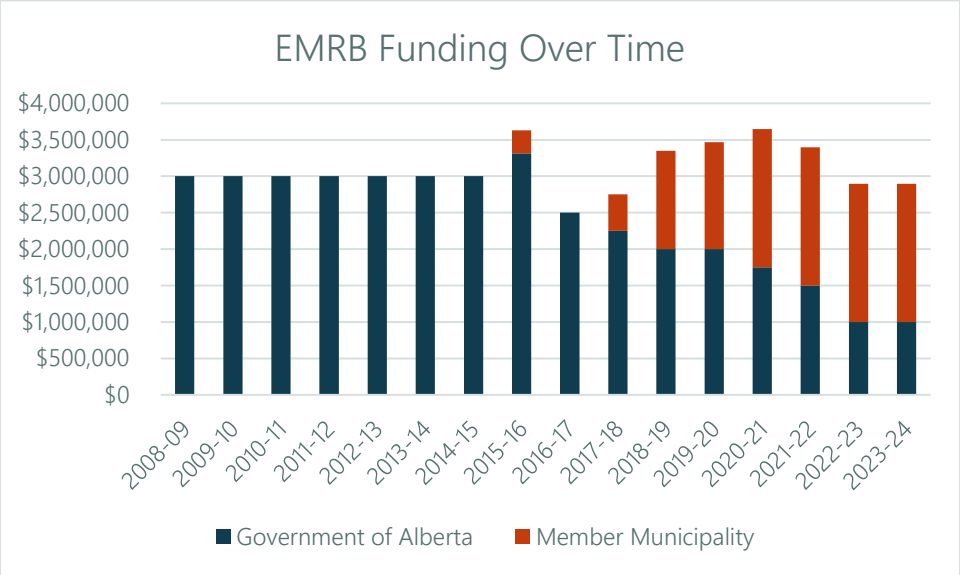


- **Regional Planning:** This is guided by the regional Growth Plan (completed in 2017 and amended in 2020), a statutory document that manages the efficient growth of the region, and the approval of regional statutory plans through the Regional Evaluation Framework (required by the Minister).
- **Regional Servicing:** This is supported by the Metropolitan Region Servicing Plan (MRSP) and the related regional collaboratives on Solid Waste Management, Stormwater Management, Fire and Emergency Medical Services, and Emergency Management. The MRSP supports the implementation of the growth plan to facilitate orderly, economical, and environmentally responsible growth in the Region.
- **Intermunicipal Dispute Resolution:** The EMRB, through the Regional Evaluation Framework process serves as the dispute resolution body for relevant intermunicipal disputes in lieu of instead of the Land and Property Rights Tribunal (formerly the Municipal Government Board).
- **Convening** In addition to the statutory requirements related to planning, servicing, and dispute resolution, the EMRB also serves an important function in bringing together government, industry, and other stakeholders to foster alignment across the region.
- **Incubating:** Through its role as a convener, the EMRB plays an important role in the incubation of regionally significant ideas like Edmonton Global.

1.3.2 Funding the EMRB

While the mandate of the EMRB has grown since 2008 (with the inclusion of the MRSP as a requirement in 2017), the provincial contribution to support their work has declined. During the Capital Region Board era, the province contributed $3 million a year to the organization, representing 100% of the funding. In recent years the province's funding of the EMRB has decreased and member municipalities have made up the difference in organizational funding required. The anticipated provincial funding contribution for the 2023/24 fiscal year is $1 million, which represents only 35% of operating costs.

Table 2: EMRB Funding Over Time

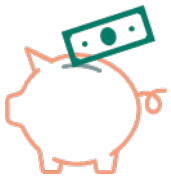


This decline in financial resources has presented significant challenges to the organization's ability to effectively deliver its services and programs that support its mandate. Determining the right mix of provincial and municipal contributions is ultimately a political decision, and out of scope for this project. However, as the benefits of the EMRB's work are felt by the province, additional contributions are requested.

2.0 | Illustrating Economic Value Through Case Studies

Appreciating the complex nature of the EMRB's role and given the inherently long-term nature of the EMRB's mandate, case studies provide a strong way to support the valuation of the EMRB as practical and applied examples of successful initiatives and projects. By highlighting the accomplishments of the EMRB in specific areas, EMRB can demonstrate how it has contributed to positive change in the Region with quantitative and qualitative data. These case studies can also provide an opportunity to showcase the Board's strengths, such as its ability to collaborate with various municipalities and Counties, strategic planning skills, or its capacity to address complex issues.

Rather than assessing the entirety of the organization, three main categories are highlighted and described through case studies and examples that profile and quantify the economic value of the work EMRB does. The value categories are:



Cost Savings

Cost Efficiency

Value Creation

Cost Savings:

- The EMRB model has generated at least approximately **$6.5 million in cost savings** for the Government of Alberta since 2017.

Cost Efficiency:

- **$12 million** potential annual incremental savings for the Government of Alberta.
- **Over $350,000 in mediation and arbitration savings** for the Government of Alberta since 2017.

Value Creation:

- Economic Diversification and Employment: **$160 million**
  (Annual employment income generated since 2017 through job attraction via Edmonton Global)
- Natural Living Systems - Conserving Wetlands: **$112 million**
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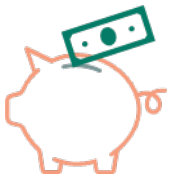


2.1 Cost Savings

This case study considers the provincial cost savings EMRB has contributed to through their regional initiatives and mandate.

To estimate the cost savings generated by delivering regional initiatives through the EMRB model, the Alberta Community Partnership ("ACP") Grant was used as the comparator. While this does not factor in resource and administrative savings of the EMRB's municipal members, it does provide a reasonable proxy for what these initiatives could have cost the province if they were delivered outside of the growth management board.

2.1.1 Methodology

The ACP grant is a provincially administered grant that has the objective to "Improve the viability and long-term sustainability of municipalities," with the outcomes of "new or enhanced regional municipal services; improved municipal capacity to respond to priorities; and effective inter-municipal relations." One of the eligible project categories includes Intermunicipal Collaboration ("IC") projects that result in regional municipal service delivery foundations or frameworks that align with broader regional or municipal priorities and initiatives.

The Government of Alberta discloses the ACP grant recipients list annually. The disclosures were reviewed and analyzed from 2017-2022. The numbers of grants and associated values were limited only to ACP grants from 2017-2022 that mention regional planning (intermunicipal development plans ("IDP") or IC) and other regional studies, assessments, strategies, and reviews that could fall under the mandate of EMRB. Activities such as arbitration, hiring staff, establishing commissions, or any funding to a non-municipal entity were excluded.

The cost of these activities as noted in the ACP grant review was then multiplied by 13 to estimate what the ACP grant requirement would have been for each of the EMRB members to complete the activity. This amount was compared to the cost the EMRB spent on completing the activity, including provincial funding. The difference in these amounts indicates the cost savings to the province.

With the EMRB growth plan and servicing plan as proxies for the otherwise required IDPs and Intermunicipal Collaboration Frameworks (ICFs), the findings indicate that there is an efficiency to using the growth plan as a regional planning tool versus multiple IDPs and ICFs. With the growth plan in place, there is only one document that must be updated every five years versus multiple IDPs and ICFs.

An average ACP grant leveraged for planning, which includes much of the funding for IDPs and ICFs is approximately $97,000 per grant. With 21 intermunicipal boundaries (urban to urban, urban to county, county to county) within the region, this would have otherwise required over $4 million in provincial contribution for IDPs and ICFs. Instead, the Region received a more comprehensive equivalent for approximately 57% of what it would have cost otherwise. This, of course, only

captures part of the cost of IDPs and ICFs related to the provincial funding contributions. The numbers would become even greater if staff time, arbitration costs, municipal cash contributions, and other relevant expenses were factored in as well.

2.1.2 Conclusion

While this methodology has its limitations, it is more likely that it underestimates the value of EMRB in cost savings for regional collaboration. **The EMRB model has generated at least approximately $6.5 million in cost savings for the Government of Alberta since 2017** (Appendix A).

This represents an annualized monetary cost savings of $1.1 million per year for the Government of Alberta.

Looking ahead the growth plan, like IDPs and ICFs must be reviewed every 5 years. In the absence of the growth plan, would be the requirement to complete 21 IDPs and 21 ICFs for the Region. At an average of $97,000 provincial contribution per IDP and ICF, this would represent a cost of approximately $16 million to update these documents every five years over the life of the remaining growth plan (until 2044).

Using this as the high-water mark, any future cost of updating or maintaining the growth and servicing plans under $800,000 a year represents a cost saving through the EMRB model. For context, the most recent 5-year update of the growth plan was only $250,000.

Of course, as discussed, the business of the EMRB cannot be fully valued through a lens of comparison to "what if" through the Alberta Community Partnership Program. This methodology does illustrate the point that, in addition to the indirect and induced value to the EMRB model, the member municipalities, the provincial government, and Alberta taxpayers benefit tremendously from a more comprehensive planning document for less required investment.

2.2 Cost Efficiency

Cost efficiencies are perhaps the most challenging category to quantify. While there are many examples of efficiencies generated by the EMRB, there is a lack of readily available data that can be used in the valuation. Instead, the valuation in this category considers the cost efficiencies that have been created by the collaborative projects undertaken by the EMRB.

Two case studies were identified that illustrate the efficiency value of delivering regional initiatives through the EMRB model: Intermunicipal Disputes and the Integrated Regional Transportation Master Plan.

2.2.1 Transportation Prioritization Model Value

One clear example of the efficiency generated by the EMRB is the Integrated Regional Transportation Master Plan Regional Transportation Prioritization Process. Fundamentally, this prioritization process has, since 2013, generated an annual regional transportation priority list. These lists are provided to Alberta Transportation's capital planning division to inform their recommendations for provincial funding for transportation projects.

Prior to 2013, each municipality could prepare their own priority list and provide their asks to government. In addition to streamlining the process for the Government of Alberta, this prioritization process also serves to align local transportation infrastructure planning with provincial infrastructure planning in such a way that optimizes the investment in service of the targets established by the EMRB and approved by the Minister in the growth plan.

Recently, the EMRB has co-developed a joint planning model with the Government of Alberta Ministry of Transportation. Given the co-developed nature of this joint planning model – which includes the municipalities as the applicants and the province as the funder – there is greater trust and efficiency in the planning process. Instead of reviewing potentially competing applications from 13 separate municipalities, the province and the region are instead able to leverage the model to drive collaborative prioritization that results in better and more efficient decision making.

Alberta Transportation's 3-year capital plan is a substantial budget line; over $693 million is planned in that time for capital maintenance and renewal, and another $7.3 billion is planned for construction, expansion, and other projects.

While there is no control variable to test against, it is clear that at this scale of spending, any optimization can have a substantial impact.

2.2.2 Transportation Prioritization Savings Conclusion

There are obvious administrative savings in the Region collectively deciding on priorities, rather than the Government of Alberta sorting through up to 13 separate and potentially competing capital requests. The administrative time and reduction in time of decision-making would likely already generate a return on the investment in developing the EMRB's Integrated Regional Transportation Master Plan, of which the prioritization model was one component.

That said, the benefit of this efficiency and optimization driven through a regional planning process can be measured in real-money terms. Every half a percent of additional required maintenance for provincial roadways, bridges, and other maintenance or renewal projects would result in an incremental benefit of over $1 million to taxpayers a year. **Further, every 0.5% savings in construction and expansion works out to be over $12 million a year.** This means that smarter transportation infrastructure planning has likely generated substantial savings taxpayers millions of dollars.

2.2.3 Intermunicipal Disputes Value

Section 690 of the *Municipal Government Act* (MGA) outlines the process for intermunicipal disputes when a municipality is of the opinion that a statutory plan or land use bylaw of an adjacent municipality may have a detrimental effect on it. In these circumstances, municipalities submit an appeal to the Land and Property Rights Tribunal (LPRT), formerly the Municipal Government Board (MGB). These disputes can be lengthy, costly, and administratively burdensome.

Since 1995, there have been 107 decisions issued by the MGB or LPRT under Section 690, 10 of which came from EMRB member municipalities before the advent of the Edmonton Metropolitan Region Board. [3]

The *Edmonton Metropolitan Region Board Regulation* (the regulation) Part 3 requires that the EMRB develop a regional evaluation framework (REF) to determine criteria to be used to evaluate statutory plans submitted by member municipalities to ensure that they align with the growth plan and gives the Board the ability to approve or reject a statutory plan. Section 708.08 of the MGA requires a growth management board to establish an appeal mechanism or dispute resolution mechanism. The regulation notes that "Subject to an appeal or dispute resolution mechanism established under section 708.08(1) of the Act or as otherwise provided in the Framework, a participating municipality has no right to a hearing before the Board in respect of its approval or rejection of a statutory plan." The intention is that the member municipalities have collaboratively created the growth plan to guide their growth, so ideally there will be no intermunicipal disputes. All statutory documents will align with it when reviewed under the REF and appeals to the EMRB will be handled without accessing any costlier or more resource intensive alternative, like the LPRT. The board acts as a mediator and facilitator, helping to bring parties together to discuss and resolve contentious issues.[4] This process encourages a spirit of cooperation, mutual respect, and

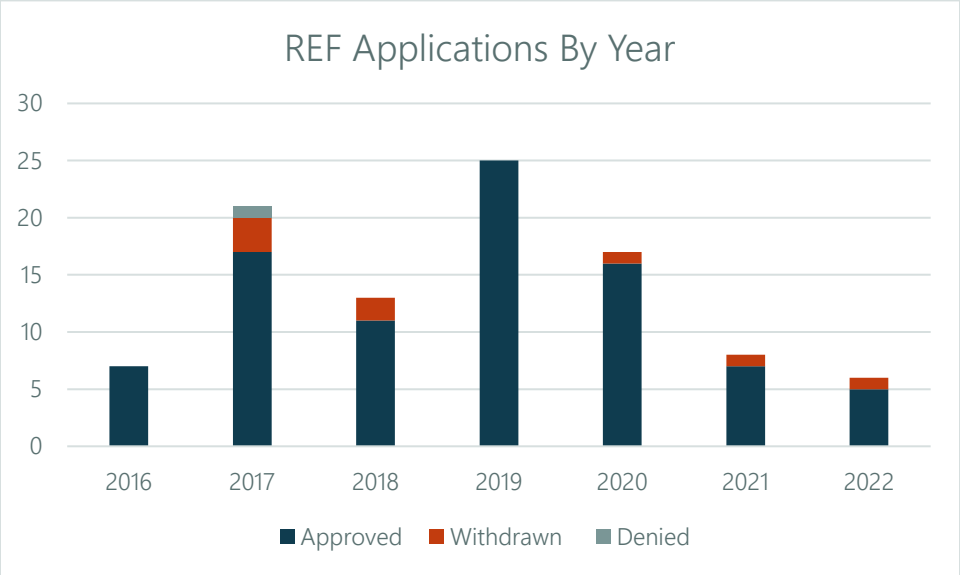
[3] http://municipalaffairs.alberta.ca/abc_MGB_board_order_search?fuseaction=SearchResults
[4] Ministerial Order MSD:044/21 [Municipal Affairs] - Open Government (alberta.ca):

shared responsibility, which has proven instrumental in reducing conflicts and fostering a more collaborative regional approach.

2.2.4 Intermunicipal Disputes Conclusion

Within the growth plan, the EMRB has established the KPI related to implementation, "REF approvals versus denied or withdrawn." The intention of this KPI is to track municipal alignment with the Growth Plan to ensure efficient regional planning. An amendment and change to the REF process in 2020 has led to a reduction in red tape, a decrease in the number of statutory plans the EMRB has been asked to review and has led to increased efficiencies in how the EMRB reviews statutory plans.

Table 3: REF Applications by Year (Source: EMRB)



By improving the intermunicipal disputes process, the EMRB has led to cost efficiencies in several ways:

- Reduced the time, resources, and costs associated with resolving disputes, allowing municipalities to focus their efforts on more productive endeavors;
- Build trust and strengthen relationships among member municipalities and with the development community;
- More efficient decision-making, shared investments; and,
- Joint initiatives that benefit the entire Region.

The EMRB's role in managing intermunicipal disputes has improved the overall governance and functioning of the Region. By providing a unified and coordinated approach, the board has created a more cohesive and effective regional entity. This has enhanced the Region's ability to attract investment, pursue common goals, and address complex challenges that transcend municipal boundaries.

Through its neutral platform, mediation efforts, and collaborative planning initiatives, the board has fostered cooperation, reduced conflicts, and promoted a more unified and effective regional approach. This has resulted in enhanced governance, improved decision-making, and shared benefits for the member municipalities and the Region as a whole.

While the monetary value is difficult to quantify, there has been a tremendous cost efficiency to taxpayers given the 100% elimination of EMRB member municipalities applications through the MGA section 690 challenge process. Moreover, from 2017-2022, **the Government of Alberta has provided over $800,000 in negotiation and arbitration funding through the Alberta Community Partnership fund to support municipalities** across the province in engaging arbitrators and to support negotiations related to intermunicipal disputes, **none of which was required by the members of EMRB.**

In addition to the administrative efficiency generated by the REF related to the time of decision making, fostering collaboration, and diversion from the costly LPRT tribunal etc., there are quantifiable hard costs avoided. Since 2017 there has been 10 rejected or withdrawn REF applications. Had these resulted in intermunicipal negotiation or arbitration – using the average 2017-2022 ACP grant cost for mediation, arbitration, and negotiation support – it would have cost the **Government of Alberta $350,000 in ACP contributions** and even more in municipal resources for the parties involved**.**

2.3 Value Creation

This case study is meant to illustrate the value of "why" the EMRB does what it does. Ultimately the regional efforts undertaken by the EMRB through the growth and servicing plans and other initiatives are not for the sake of the initiatives themselves but for a bolder, more ambitious purpose. In order to estimate the economic value generated by delivering regional initiatives through the EMRB model, an analysis of four of EMRB's Key Performance Indicators (KPIs) related to the growth plan was undertaken.

The EMRB is responsible for planning and managing growth in the Region. The EMRB's growth plan is a statutory plan that was implemented by Ministerial Order in 2017 and was amended in 2020. The growth plan sets out a vision for the region's future and a framework for managing growth and outlines the EMRB's responsibility for facilitating the coordination of land-use and integration plans for the surrounding 13 municipalities. The plan recognizes the interconnected nature of issues related to growth and provides a comprehensive approach to managing growth in the region, ensuring that the region remains a desirable place to live, work, and play for current and future generations. When fully implemented, the growth plan will ensure the Region will be able to support twice the population within the same developed footprint, protect agricultural land, limit infrastructure costs, and develop sustainably.

The growth plan is organized into six interrelated policy areas to support where and how to manage growth. These policy areas are supported by specific objectives to guide the EMRB towards achieving their policy outcome. Further, KPIs have been defined for each policy area – there are 26 in total.

2.3.1 Methodology

For this report, the intention was to select one KPI per policy area and objective that could be best quantified to showcase the value of EMRB's activities (Table). The Implementation KPI has previously been discussed in Section 2.2. It was determined that it would not be feasible within the scope of this project to quantify a value for the "Communities and Housing" policy area. The five KPIs that have been chosen are intended to provide a snapshot of the EMRB's impact on important regional issues, highlighting the progress made and the value created through various initiatives.

Table 4: Growth Plan Policies, Objectives and KPIs

Policy Area	Guiding Principle	Objective	KPIs
Economic Competitiveness and Employment	Foster a diverse and innovative economy that builds upon our existing infrastructure and employment areas to achieve sustained economic growth and prosperity.	1.1 Promote global economic competitiveness and diversification of the regional economy	** Did not use a growth plan KPI but used Statistics Canada Employment Income, due to data availability.
Natural Living Systems	Practice wise environmental stewardship and promote the health of the regional ecosystem, watersheds, airsheds, and environmentally sensitive areas.	2.1 Conserve and restore natural living systems through an ecological network approach	8. Amount of wetland saved and/or restored
Integration of Land Use and Infrastructure	Make the most efficient use of our infrastructure investments by prioritizing growth around existing infrastructure and optimizing the use of new and planned infrastructure.	4.2 Enable growth within built-up urban areas to optimize existing infrastructure and minimize the expansion of the development footprint	**Did not use a Growth Plan KPI. Used a calculation of energy efficiency savings due to data availability.
Transportation Systems	Work towards a multi-modal and integrated regional transportation system.	5.3 Coordinate and integrate land use and transportation facilities and services to support to efficient and safe movement of people, goods and services in both urban and rural areas	20. Commuting Duration
Agriculture	Ensure the wise management of prime agricultural resources to continue a thriving agricultural sector	6.1 Identify and conserve an adequate supply of prime agricultural lands to provide a secure local food source for future generations.	23. Total prime agricultural land consumed
Communities and Housing	N/A	N/A	** Did not use a KPI for this report as per EMRB.

Each of the selected KPIs was analyzed and evaluated to quantify a value. These values are summarized in Table and further explained below.

Table 5: Summary of KPIs and Value Quantification

KPI	Value Quantification
Economic Diversification and Employment	**$160 million** (Annual employment income generated since 2017 through job attraction via Edmonton Global)
Natural Living Systems - Conserving Wetlands	**$112 million** (Value of Wetlands added from 2019-2021)
Transportation Systems – Commute Times	**$94 million** (Annual Savings Per Minute Reduction in Commute Time)
Agriculture – Conserving Agricultural Land	**$2.4 billion** (2023 value of Agricultural Land conserved through the RAMP)
Integrated Land Use - Densification	**$460 million** (Net present value savings from CO2 emissions reduced through densification)

Economic Diversification and Employment

One major benefit of the EMRB is the non-statutory convening and incubation role it plays in the region. Perhaps the best example of the success of this role comes from the development and eventual creation of Edmonton Global as a means of addressing a critical economic development gap in the Region.

The EMRB's mandate includes a requirement to "promote the economic well-being and competitiveness of the Edmonton Metropolitan Region." To address this mandate, the EMRB chose to focus on the foundational elements of regional servicing and planning and spun-out Edmonton Global as a standalone Foreign Direct Investment attraction agency. This allowed both organizations to optimize the delivery of their mandates and complement one another. For example, Edmonton Global is able to use the forward planning and regional cooperation generated at the EMRB table as a key selling feature to investors looking to make significant, long-term investments.

Since 2017, Edmonton Global has been successful in attracting over $2.6 billion in investment to the region and generating over 3,500 jobs.[5]

Using the median total income for the census metropolitan region, those 3,500 jobs translate approximately to **$160 million** in annual employment income to the region (and growing).

[5] Data provided by Edmonton Global

Natural Living Systems – Conserving Wetlands

One of the policy areas of the growth plan is protecting and promoting the health of natural living systems and environmental assets, including watersheds, airsheds, and environmentally sensitive areas. The growth plan recognizes that the natural environment is a critical component of the region's economic, social, and cultural vitality and that it must be conserved and restored for future generations. The ecological network approach outlined in the plan is designed to maintain and enhance the natural systems that support the region's biodiversity and ecological resilience. The plan identifies priority areas for conservation and restoration, such as wetlands, riparian areas, and natural areas that provide critical habitat for wildlife, and support the region's ecosystem services, such as clean air and water.

One of the key ecosystems the growth plan seeks to protect are wetlands. Wetlands are a critical ecosystem and research shows that wetlands provide a real, tangible economic value and benefit to the carbon sequestration, flood mitigation, recreation, and ecological environment.[6] KPI #8 tracks the wetlands saved and restored in the Region.

- **266,500 Ha (2,665 sqkm)** of wetland in the Region including open water, bog, marsh, swamps, and fens.
- **7,750 Ha (775 sqkm)** of additional wetlands were conserved in the Region from 2019-2021.

Several studies have sought to determine the economic value of wetlands and those methodologies and estimations were used in this report to estimate the value of wetlands in the Region.[7,8]

- **$14,465:** the weighted average value of a hectare (0.01 sqkm) of wetland in the Region.
- **$1.9 billion** The economic value of wetlands in the Region due their benefit on climate regulation, flood control, habitat, and recreation.
- **$112 million:** The weighted average economic value of the additional wetlands conserved in the Region from 2019-2021.

[6] Kaumeyer, Larry. (2021). "No one can put a price on nature, but we ignore its value at our peril." Ducks Unlimited Canada. https://www.ducks.ca/stories/policy/wetlands-economic-worth/

[7] David Suzuki Foundation. (2018). "Ontario's wealth Canada's future appreciating the value of the greenbelt's eco-services." https://davidsuzuki.org/wp-content/uploads/2018/02/ontario-wealth-canada-future-value-greenbelt-eco-services.pdf

[8] Smart Prosperity Institute. (2020). "From Rhetoric to Measurement: The Economics of Wetland Conservation in the Canadian Prairies."

Transportation Systems

Another policy and objective area of the EMRB growth plan is to coordinate and integrate land use and transportation facilities and services to support efficient and safe movement of people, goods, and services in both urban and rural areas. By coordinating land use and transportation planning, the plan seeks to create more efficient and sustainable transportation systems. This includes promoting transit-oriented development and creating complete streets that prioritize the safety and comfort of all users, including pedestrians, cyclists, and transit users. The plan also recognizes the importance of integrating transportation services and infrastructure, such as roads, transit, and active transportation, to create a seamless and accessible transportation system. Moreover, the plan emphasizes the need to balance transportation and land use planning in both urban and rural areas. It promotes the development of rural transit services and the integration of active transportation modes, such as cycling and walking, in rural areas to support the efficient and safe movement of people, goods, and services.

The value of reducing travel time expresses three principles:

- First, time saved from travel could be dedicated to production, yielding a monetary benefit to either travelers or their employers.
- Second, it could be spent in recreation or other enjoyable or necessary leisure activities, which individuals value and are thus willing to pay for.
- Third, the conditions of travel during part or all of a trip may be unpleasant and involve tension, fatigue, or discomfort.

This is a simple calculation in order to monetize commute times, additional analysis could include tailpipe emissions from commuter vehicles, health effects, and the relationship between kilometers driven and an associated increase in accidents.

For these purposes, the cost of commuting based on average commute time in the Edmonton CMA was calculated (Appendix C).

- **$94 million** annual population time value savings per one minute reduction in commute times.
    - **47.8 minutes:** The average commute time in the Edmonton CMA in 2021 (Census). This is 4 minutes less than in 2016.
    - **$42 per hour** average income in Edmonton CMA (2021) census.
    - **$33.46 per capita,** time value per commute day.

Agriculture – Conserving Farmland

The EMRB growth plan identifies and conserves an adequate supply of prime agricultural lands to provide a secure local food source for future generations. Recognizing the importance of preserving agricultural land and ensuring food security, the plan takes steps to protect prime agricultural lands from non-agricultural development. By promoting the use of best management practices, the plan aims to maintain the long-term sustainability of the agricultural industry in the region. Additionally, the plan supports the development of local food systems and engages with stakeholders to integrate their perspectives and knowledge into the planning process. By doing so, the plan strives to ensure that the region has access to a secure and sustainable local food source for future generations while preserving its agricultural heritage.

The EMRB's Regional Agricultural Master Plan (RAMP) also prioritizes wise management of prime agricultural resources, including limiting agricultural fragmentation and subdivision, to continue a thriving agricultural sector. The RAMP indicates that, "as the second largest economic sector in the province after oil and gas, the agricultural sector is well positioned to contribute to the provincial goals of economic diversification, growing GDP, creating jobs, and attracting investment. In fact, agriculture production and food processing together generate over $4.5 billion in direct annual revenues."[9] The Economic Imperative for RAMP is that "total direct economic output from the agricultural sector in the Region has the potential to more than double in terms of GDP from a combined farm gate sales and food and beverage to an estimated $27 billion by 2046." [10]

As the conservation of agricultural land is essential to meeting the economic targets estimated in the RAMP, this report considers the value of conserved agricultural land in the Region. To determine the value of conserved agricultural land, the projections of saved agricultural lands as outlined in the growth plan and in RAMP were used, as well as the value per acre of agricultural land in northcentral Alberta.

Value of Conserved Land

- **$4,000 per acre:** 2023 average value of agricultural land in northcentral Alberta.
- **600,000 acres** of agricultural land projected to be lost between 2016-2046 without action from EMR.
- **$2.4 billion** 2023 value of agricultural land saved by 2046.

[9] EMRB. (2021). "Regional Agriculture Master Plan: Policy Framework +Policy Definitions + Policies." https://static1.squarespace.com/static/6091a8036dae4b4781f5d71b/t/6115544dbe6db151c243bbbb/1628787809569/pln+-+Regional+Agriculture+Master+Plan+-Growth+Plan%7B2%7DRegional+Agriculture+Master+Plan+%28RAMP%29%7B2%7DEdmonton+%28ID+72524%29.pdf

[10] EMRB. (2019. "The Economic Imperative for RAMP." https://static1.squarespace.com/static/6091a8036dae4b4781f5d71b/t/617b01d2e70ecb2b7e4125a2/1635451349313/RAMP+Economic+Imperative+%28Dec2019%29.pdf

Integration of Land Use and Infrastructure

A policy objective of the growth plan is to achieve compact growth that optimizes infrastructure investment. By growing and building efficiently, the Region can welcome a larger population in a smaller footprint. This will reduce the need to extend infrastructure and convert primary agricultural land to non-agricultural uses. It will also reduce costs to residents and municipalities related to infrastructure servicing.

While additional variables could be justifiably considered, in order to simplify an estimate of the value of integration of land use and infrastructure, the scope was limited to energy efficiency. This contributes to a reduction in pollution, which can have improvements on population health.

In order to determine a value of Energy Efficiency derived from greater densification, a simple calculation was conducted by using a social cost of carbon calculation. In Canada, the social cost estimate of greenhouse gases (GHG) emissions have been used since 2010 to value expected changes in GHG emissions as part of cost-benefit analysis (CBA) of regulatory proposals.

The social cost of GHG emissions, specifically the social cost of carbon values, are inherently complex values to calculate. The Government of Canada suggests a social cost of carbon of $261 per tonne of CO2 for 2022. Environment and Climate Change Canada has a comprehensive document on how the social cost of GHG emissions has been calculated, and the history of the methodological approaches.[11]

According to research published by University of Alberta researchers, the City of Edmonton emits over 20 tonnes of CO2 equivalent per person annually.[12] In fact, in the study "Variations in direct greenhouse gas emissions across neighbourhoods: A case of Edmonton in Canada" (Welegedara, et al, 2021)[13] researchers conclude "the City of Edmonton has a higher per capita GHG emissions compared to other Canadian cities." It is unclear what the broader regional per capita GHG emissions for the Region are. However, based on data published by the Canada Energy Regulator, Alberta's per capita emissions are 58 tonnes (or over 3x the national average of 17)[14]. Therefore, it would be a reasonable assumption that incorporating the broader Region is not likely to generate an average per capita amount below 20.

There are several factors that contribute to the Region's emissions being above the national average; however, one clear factor is a lack of densification.[15]

Using the government of Canada's social cost of GHG emissions value, the total cost of the Region's emissions is in excess of $7.3 billion.

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[11] Government of Canada. 2023. "Social Cost of Greenhouse Gas Emissions." https://www.canada.ca/en/environment-climate-change/services/climate-change/science-research-data/social-cost-ghg.html#toc2

[12] Welegedara, N., Agrawal, S., Gajjar, S. and Joshi, N. 2021. "Variations in direct greenhouse gas emissions across neighbourhoods: A case study of Edmonton in Canada." *Environmental Challenges*. https://doi.org/10.1016/j.envc.2021.100312

[13] ibid.

[14] Canada Energy Regulator. 2023. "Provincial and Territorial Energy Profiles – Alberta. "https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-alberta.html#:~:text=GHG%20Emissions,-Alberta's%20GHG%20emissions&text=Alberta's%20emissions%20per%20capita%20are,of%2017.68%20tonnes%20per%20capita.

[15] Welegedara, N., Agrawal, S., Gajjar, S. and Joshi, N. 2021. "Variations in direct greenhouse gas emissions across neighbourhoods: A case study of Edmonton in Canada." *Environmental Challenges*. https://doi.org/10.1016/j.envc.2021.100312

As the growth plan seeks to improve density, maintain wetlands and agricultural lands, and foster more efficient growth, any reduction to emissions would scale tremendously from a monetary equivalent perspective and would have a clear benefit to those that live in the region.

The 2021 population of the Region was 1.4 million.[16] The growth plan projects a population increase to 2.2 million people by 2044, this population increase would dramatically increase the social cost of carbon calculation for the region if the per capita amount does not decrease.

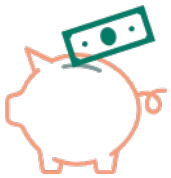
- Using the anticipated population increase, it can be estimated that for every per capita tonne of CO2 equivalent that can be reduced through densification by 2044, there would be a net present value savings of over **$460 million.**

[16] Statistics Canada. 2023. "2021 Census of Population geographic summary – Edmonton Census Metropolitan Area." https://www12.statcan.gc.ca/census-recensement/2021/search-recherche/productresults-resultatsproduits-eng.cfm?Lang=E&GEOCODE=2021S0503835

3.0 | Conclusion

In setting out to build on the understanding that regional collaboration is valuable, the findings are clear, regardless of the variety of perspectives may be applied, when operating at the regional scale the investments made into the region return at massive scale. This may not always be obvious day to day, as the work the EMRB does is complex, multi-variable, and over significant time periods.

As set out in the introduction, a comprehensive valuation of all the EMRB's activities would be overly complex, rather an illustrative approach was undertaken meant to shine a light on several activities of the EMRB in order to describe the value of organization in monetary terms.



Cost Savings

Cost Efficiency

Value Creation

Cost Savings:

- The EMRB model has generated at least approximately **$6.5 million in cost savings** for the Government of Alberta since 2017.

Cost Efficiency:

- **$12 million** potential annual incremental savings for taxpayers in transportation infrastructure construction and maintenance due to the EMRB's model and prioritization process.
- **Over $350,000 in mediation and arbitration savings** for the Government of Alberta since 2017 due to intermunicipal dispute resolution through the regional evaluation framework process. There are likely substantial additional savings for municipalities in addition to the Government of Alberta's contribution.

Value Creation:

- Economic Diversification and Employment: **$160 million**
  (Annual employment income generated since 2017 through job attraction via Edmonton Global)
- Natural Living Systems - Conserving Wetlands: **$112 million**
  (Value of Wetlands added from 2019-2021)
- Transportation Systems – Commute Times: **$94 million**
  (Annual Savings Per Minute Reduction in Commute Time)
- Agriculture – Conserving Agricultural Land: **$2.4 billion**
  (2023 value of Agricultural Land conserved through the RAMP)
- Integrated Land Use – Densification: **$460 million**
  (Net present value savings from CO_2 emissions reduced through densification)

The approach has its limitations, however there is diminishing returns to the usefulness of greater detail and specificity.

That said, it is clear that the EMRB model delivers value for taxpayers. This limited analysis included:

- administrative savings generated by diverting intermunicipal disputes through the regional evaluation framework;
- the millions saved by having one growth plan rather than 42 IDPs and ICFs;
- the billions of dollars prime agricultural land protected by the Regional Agricultural Master Plan;
- the millions potentially saved in more efficient infrastructure planning and decisions making; and
- the hundreds of millions in savings to taxpayers through smarter, long-term regional planning.

Given the limited nature of the analysis, further work could involve quantifying the cost savings, efficiencies, and value creation for members of the EMRB. For simplicity of the analysis, data like the municipal contribution to the IDP/ICF process was not included. However, including that data would only serve to bolster the value of the growth plan process, for example. Similar limitations can be identified in each section of the report, though further investigation is likely to conclude that the EMRB provides even greater value than what has been illustrated in this report.

4.0 | APPENDIX

Appendix A: Cost Savings Calculations

	EMRB Initiative	Total Cost to Complete	Provincial Contribution $	Provincial Contribution (% of Funding)	Estimated Community Partnership Grant Required	Cost Savings to Province	Notes
2017	Growth Plan 2.0	$2,100,000	$2,100,000.00	100%	$2,037,000	-$63,000	Average Planning Grant ($97,000) x 21 intermunicipal boundaries (IDP proxy)
2017-2023	Shared Investment for Shared Benefit	$580,000	$272,600	47%	$702,000	$429,400	Average Community Partnership Grant ($54,000 per Municipality) x 13 Municipalities
	Municipal Regional Servicing Plan (MRSP) 1.0	$248,000	$116,560	47%	$2,037,000	$1,920,440	Average Planning Grant ($97,000) x 21 intermunicipal boundaries (ICF Proxy)
	Broadband	$165,000	$77,550	47%	$676,000	$598,450	Average Infrastructure and Other Grant ($52,000 per Municipality) x 13 Municipalities
	Integrated Regional Transportation Master Plan	$672,000	$315,840	47%	$728,000	$412,160	Average Transportation Grant ($62,000 per Municipality) x 13 Municipalities
	5-year Interim Growth Plan Review	$250,000	$117,500	47%	$2,037,0000	$1,919,500	Average Planning Grant ($97,000) x 21 intermunicipal boundaries (IDP proxy)
	Regional Agricultural Master Plan	$800,000	$376,000	47%	$585,000	$209,000	Average Regional Planning Grant ($45,000 per Municipality) x 13 Municipalities
	MRSP Implementation (Solid Waste Collaborative, Storm Water Collaborative projects)	$556,000	$261,320	47%	$806,000	$544,680	Average Water, Waste Water, Stormwater Grant ($62,000 per Municipality) x 13 Municipalities

	EMRB Initiative	Total Cost to Complete	Provincial Contribution $	Provincial Contribution (% of Funding)	Estimated Community Partnership Grant Required	Cost Savings to Province	Notes
	Solid Waste Data Model	$55,000	$25,850	47%	$159,000	$133,150	Average Water, Waste Water, Stormwater Grant ($159,000)
	Solid Waste Data Strategy	$75,000	$35,250	47%	$159,000	$123,750	Average Water, Waste Water, Stormwater Grant ($159,000)
Ongoing	Solid Waste Organics Current State	$97,000.00	$33,950	35%	$159,000	$125,050	Average Water, Waste Water, Stormwater Grant ($159,000)
	Storm Water – Flood Risk Assessment	$156,000.00	$54,600	35%	$159,000	$104,400	Average Water, Waste Water, Stormwater Grant ($159,000)
	Climate Risk And Vulnerability Assessment	$160,000.00	$56,000	35%	$162,000	$106,000	Average Infrastructure and Other Grant ($162,000)
					Total Cost Savings to Province	**$6,562,980.00**	

Appendix B: Economic Diversification and Employment

Item	Value
Number of Jobs Created through Edmonton Global Efforts	3,500[17]
Approximate average Income in the Edmonton Census Metropolitan Region	$46,000[18]
Approximate Annual Income Value	$160 million

[17] Provided by Edmonton Global
[18] Statistics Canada

Appendix C: Value of Wetlands Calculation

	Percent	Square KMs	Ha	Approximate Value (per Ha)	Total Value	Weighted Average
Regional Wetlands	100%	1332.5	133250			
Bog	3%	39.975	3997.5	$14,194.00	$56,740,515.00	$425.82
Fen	26%	346.45	34645	$15,069.00	$522,065,505.00	$3,917.94
Marsh	60%	799.5	79950	$14,248.00	$1,139,127,600.00	$8,548.80
Open Water	7%	93.275	9327.5	$14,385.00	$134,176,087.50	$1,006.95
Swamp	4%	53.3	5330	$14,138.00	$75,355,540.00	$565.52
Total		**2665**	**266500**		**$1,927,465,247.50**	**$425.82**
				avg value per Ha	$48,216,766.67	$14,465.03

Value of Added Wetlands 2019-2021

Amt of Wetland added in the EMR		
Sqkm	**in Ha**	**Total Value**
77.5	7750	$112,103,982.50

Appendix D: Value of Commute Time Calculations

	Commuter Population	Average Commute Time in Minutes (One Way)	Per Capita Time Value Per Minute	Per Capita Cost Per Commute Day (Round Trip)	Population Time Value Per Minute	Annualized Population Time Value Per Minute
2021	537,645	23.9	$0.70	$33.46	$376,351.50	$94,087,875.00
2016	653,745	25.9	$0.73	$37.99	$479,413.00	$119,853,250.00

	Time Value Per Minute	Average Commute Day (Round Trip)	Per Capita Time Value Per Commute Day	Population Time Value Per Commute Day	Annualized Population Time Value Per Commute Day	Annualized Per Minute Population Time Value Sensitivity
2021	$0.70	47.8	$ 33.46	$17,989,601.70	$4,497,400,425.00	$94,087,875.00
2016	$0.73	51.8	$37.99	$24,833,593.40	$6,208,398,350.00	$119,853,250.00

Source: Statistics Canada. 2016. "Focus on Geography Series: Edmonton CMA." https://www12.statcan.gc.ca/census-recensement/2016/as-sa/fogs-spg/Facts-CMA-Eng.cfm?TOPIC=12&LANG=Eng&GK=CMA&GC=835; Statistics Canada. 2021. "Focus on Geography Series: Edmonton CMA." https://www12.statcan.gc.ca/census-recensement/2021/as-sa/fogs-spg/Page.cfm?Lang=E&Dguid=2021S0503835&topic=13

Appendix E: Densification Calculations

Population Projection	Per capita Tonnes of CO2 Equivalent	Total Emissions	SCC/SC-CO2 (Estimates)	Projected Benefit	Discount rate (2%)	Discounted Value
1400000	1	1400000	$261	$365,400,000	1	$365,400,000
1430520	1	1430520	$266	$380,518,320	0.98	$372,907,954
1461705	1	1461705.336	$271	$396,122,146	0.96	$380,277,260
1493571	1	1493570.512	$275	$410,731,891	0.94	$386,087,977
1526130	1	1526130.349	$280	$427,316,498	0.92	$393,131,178
1559400	1	1559399.991	$285	$444,428,997	0.9	$399,986,098
1593395	1	1593394.911	$289	$460,491,129	0.88	$405,232,194
1628131	1	1628130.92	$294	$478,670,490	0.86	$411,656,622
1663624	1	1663624.174	$299	$497,423,628	0.84	$417,835,848
1699891	1	1699891.181	$303	$515,067,028	0.82	$422,354,963
1736949	1	1736948.809	$308	$534,980,233	0.8	$427,984,186
1774814	1	1774814.293	$313	$555,516,874	0.78	$433,303,161
1813505	1	1813505.244	$317	$574,881,162	0.76	$436,909,683
1853040	1	1853039.659	$322	$596,678,770	0.74	$441,542,290
1893436	1	1893435.923	$327	$619,153,547	0.72	$445,790,554
1934713	1	1934712.826	$331	$640,389,946	0.7	$448,272,962
1976890	1	1976889.566	$336	$664,234,894	0.68	$451,679,728
2019986	1	2019985.759	$341	$688,815,144	0.66	$454,617,995
2064021	1	2064021.448	$347	$716,215,442	0.64	$458,377,883
2109017	1	2109017.116	$352	$742,374,025	0.62	$460,271,895
2154994	1	2154993.689	$357	$769,332,747	0.6	$461,599,648
2201973	1	2201972.551	$362	$797,114,064	0.58	$462,326,157