

Calgary Metropolitan Region Board
Agenda - Land Use & Servicing Committee Meeting

June 17, 2022, 9:00 AM, Go-To Meeting/Call-In

MEETINGS ARE RECORDED & LIVE-STREAMED

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The purpose of this meeting is to convene, discuss and make decisions regarding recommendations to the Calgary Metropolitan Region Board

- | | | | |
|---|--------------|---------|-----------|
| 1. Call to Order & Opening Remarks | | Clark | |
| 2. Adoption of Agenda | | All | |
| For Decision: Motion to adopt and/or revise the agenda | | | |
| 3. Land Acknowledgment | | | |
| 4. Review and Approve Minutes | (Attachment) | All | 3 |
| For Decision: Motion that the Committee review and approve the Minutes of the May 5, 2022 meeting | | | |
| 5. Leading Mobility Transit Presentation | (Attachment) | Cooper | 5 |
| For Information: Motion that the Committee receive for information a Speaker Series presentation on transit from Leading Mobility | | | |
| 6. Phase 2 Indigenous Relations Project Definition Document (PDD) | (Attachment) | Copping | 30 |
| For Decision: Motion that the Committee direct Administration to develop an appropriately scaled project charter for Phase 2 Indigenous Relations strategic initiative for Board approval | | | |
| 7. Regional Economic Development PDD | (Attachment) | Copping | 34 |
| For Decision: Motion that the Committee direct Administration to develop an appropriately scaled project charter for Regional Economic Development strategic initiative for Board approval | | | |
| 8. Scoping Regional Transportation & Transit Master Plan PDD | (Attachment) | Graves | 61 |
| For Decision: Motion that the Committee direct Administration to develop an appropriately scaled project charter for Scoping Regional Transportation and Transit Master Plan strategic initiative for Board approval | | | |

9. Scoping the Water Roadmap Update PDD (Attachment) Graves **67**
For Decision: *Motion that the Committee direct Administration to develop an appropriately scaled project charter for the Water Roadmap Update strategic initiative for Board approval*
10. Environmentally Sensitive Areas Implementation PDD (Attachment) Tipman **75**
For Decision: *Motion that the Committee direct Administration to develop an appropriately scaled project charter for Environmentally Sensitive Areas Implementation strategic initiative for Board approval*
11. Next Meeting: Thursday September 8, 2022 @ 9:00 AM
12. Adjournment Clark

Committee Members:

Mayor Peter Brown (Airdrie)
 Cllr Gian-Carlo Carra (Calgary)
 Mayor Jeff Colvin (Chestermere)
 Mayor Jeff Genung (Cochrane)
 Reeve Delilah Miller (Foothills)
 Cllr Suzanne Oel (Foothills)

Mayor Craig Snodgrass (High River)
 Cllr Rachel Swenseid (Okotoks)
 Cllr Kevin Hanson (Rocky View) **Vice Chair**
 Shawn Ewasiuk, GOA Representative

Upcoming Meetings:

BOARD MEETING	Friday July 22 @ 9:30 AM	Mount Royal University
GOVERNANCE COMMITTEE	Thursday July 28 @ 9:00 AM	GoTo Meeting
LAND USE & SERVICING COMMITTEE	Thursday September 8 @ 9:00 AM	GoTo Meeting

Minutes of the Meeting of the
Land Use and Servicing Committee
of the Calgary Metropolitan Region Board
on Thursday May 5, 2022 by Go-To Meeting

Delegates in Attendance:

Mayor Peter Brown – City of Airdrie
Councillor Tina Petrow – City of Airdrie
Councillor Gian-Carlo Carra – City of Calgary
Mayor Jeff Colvin – City of Chestermere
Mayor Jeff Genung – Town of Cochrane
Reeve Delilah Miller – Foothills County
Councillor Suzanne Oel – Foothills County
Councillor Michael Nychyk – Town of High River
Councillor Rachel Swendseid – Town of Okotoks
Councillor Brent Robinson – Town of Okotoks
Councillor Kevin Hanson – Rocky View County (Vice Chair)

CMRB Administration:

Greg Clark, Chair
Jordon Copping, Chief Officer
Liisa Tipman, Director of Regional Planning
Jaime Graves, Director of Regional Projects
JP Leclair, GIS and Data Lead
Shelley Armeneau, Office Manager

1. Call to Order

Chair Clark called the meeting to order at 9:00 AM.

2. Approval of Agenda

Moved by Councillor Swenseid, **Seconded by** Mayor Genung, accepted by Chair.

Motion: That the Committee approve the agenda.

Motion carried unanimously.

3. Review Minutes

Moved by Mayor Brown, **Seconded by** Councillor Carra, accepted by Chair.

Motion: That the Committee approve the Minutes of the April 7, 2022 meeting.

Motion carried unanimously.

4. Overview of Catastrophic Loss

On behalf of the Insurance Bureau of Canada, Aaron Sutherland-Vice President of Western and Pacific Regions, provided a presentation to the Committee. Along with Aaron, Rob de Pruis-National Director of Consumer and Industry Relations,

answered questions from the Committee. Topics discussed included Calgary's Resilient Roofing Program, movement towards more resilient communities, concerns about municipalities taking on financial burdens, flood mapping and advocacy, financial resiliency, fire coverage in rural areas, and actuarial data. Rob suggested the following websites for additional information:

www.MARSH.COM and www.fireunderwriters.ca

On the discussion of data, Jordon Copping asked CMRB Administration to reach out to EMRB and Rob to explore the possibilities of a joint venture to level-up to more data informed approaches and fill some of the information gaps in the two regions.

Moved by Mayor Brown, **Seconded by** Councillor Swenseid, accepted by Chair.

Motion: That the Committee receive for information a presentation from the Insurance Bureau of Canada.

Motion carried unanimously.

5. **Growth Plan and Future Transportation Initiatives**

Jaime Graves reviewed this agenda item and answered questions. A member suggested more frequent meetings with the Alberta Transportation Minister or Deputy Minister to advocate for transportation priorities. In addition, consideration for rail and transportation mobility should be included in future discussions.

Moved by Mayor Brown, **Seconded by** Councillor Swendseid, accepted by Chair.

Motion: That the Committee receive for information an update on a high-level approach to future regional transportation initiatives.

Motion carried unanimously.

6. **Next Meeting:** Friday June 17 @ 9:00 AM.

7. **Adjourned** @ 10:40 AM.

Chair Greg Clark

Agenda Item	5
Submitted to	Land Use and Servicing Committee
Purpose	For Information
Subject	Leading Mobility Presentation on Transit
Meeting Date	June 17, 2022
<p><i>That the Committee receive for information a Speakers Series presentation on transit from Leading Mobility</i></p>	
<p>Summary</p> <ul style="list-style-type: none"> • The proposed Growth Plan and Servicing Plan outline the importance of regional mobility to achieving economic, social and environmental benefits of regional planning. • Given recent Board discussions, CMRB Administration is recommending moving forward with a Regional Transportation and Transit (Mobility) Master Plan. • The first step in this process begins with a scoping step, identifying what should be included in the plan and considering the appropriate scope and methodology for this work. Considering best practices and case studies from areas within and outside the CMR is part of this scoping work. • This presentation is meant to inspire the possible, touch on best practice, and generate momentum for the proposed Regional Transportation and Transit Plan scoping initiative. • Mr. David Cooper from Leading Mobility was identified by transit experts in the CMR as a knowledgeable expert in transit and mobility best practices, as well as a person familiar with CMR. • Mr. Cooper’s biography and presentation is provided as an attachment. 	
<p>Attachments</p> <ul style="list-style-type: none"> • Biography, Mr. David Cooper, Principal and Founder, Leading Mobility • Presentation - <i>Next Stop: An integrated regional transportation and transit vision</i>, Leading Mobility 	

1. Background

Mobility includes all modes of travel including transportation, transit, and active transportation. The proposed Growth Plan and Servicing Plan outline the importance of regional mobility to achieving economic, social and environmental benefits of regional planning.

To realize these benefits, the Growth and Servicing Plans identify the need to undertake a Regional Transportation and Transit Master Plan (RTTMP). The purpose of this document is to develop a unified vision for the future regional transportation network that aligns with the Growth and Servicing Plans.

The Board has indicated a desire to begin working on a plan for regional transportation and transit (mobility). This Speakers Series event is intended to be a discussion about transit and mobility ahead of the work for the RTTMP. This presentation is meant to inspire the possible, touch on best practice, and generate momentum for the proposed RTTMP scoping initiative.

2. Recommendation

That the Committee receive for information a Speakers Series presentation on transit from Leading Mobility

DAVID COOPER
MPL, MCIP, RPP
Principal & Founder, Leading Mobility



Since 2005, David Cooper has contributed to numerous transformative transportation initiatives across Canada. David is the founder and principal of Leading Mobility, a transportation planning firm that offers strategic and planning support for public transit, infrastructure delivery, stakeholder support, and government relations projects and initiatives.

David's distinctive experience as the only urban planner in Canada who has practiced in the public sector in Vancouver, Calgary and Toronto provide clients unique perspectives on how to successfully shepherd politically sensitive projects through large municipal and regional governments. Through his work in these three major cities, David has been integral in all stages of planning, procurement, delivery, and commissioning for multiple rapid transit projects.

Some of David's significant transportation contributions include: planning the Relief Line Subway and King Street Pilot in Toronto; procurement support for the Broadway Subway Project and development of TransLink's Battery-Electric bus program in Vancouver; implementation of LRT/BRT expansion and regional transit in Calgary. David recently authored the Canadian Urban Transit Association's COVID-19 National Recovery Strategy, a foundational plan which has helped to obtain emergency operational funding to maintain transit service during the acute stage of the pandemic and to secure long term capital funding to position public transit at the centre of economic recovery.

David firmly believes in supporting and facilitating success for new community builders. Through his work teaching as an adjunct faculty member at the University of Calgary, University of Toronto, and Ryerson University, he instructs future planners on transportation policy, planning processes and public consultation.

David's contributions to city building and transportation have been nationally recognized. He was the recipient of the 'President's Award for Young Planner of the Year' granted by the Canadian Institute of Planners, the 'Individual Leadership Award' from the Canadian Urban Transit Association, and received Mass Transit's 'Top 40 Under 40 Award' in North America.

Next Stop: An Integrated Regional Transportation and Transit Vision

Agenda Item 5i



David Cooper
MPI., MCIP, RPP

15+ years of experience

- R.M. of Wood Buffalo, City of Calgary, City of Toronto, TransLink

Key Projects

- CUTA COVID-19 National Transit Recovery Strategy
- Regional Transit Planning (Calgary)
- LRT/BRT Expansion (Calgary)
- Regional Investment Plan (Vancouver)
- Electric Battery Bus Program (Vancouver)

Adjunct Professor in Planning

- University of Calgary, University of Toronto and Toronto Metropolitan University

Awards

- CIP Young Planner of the Year
- Mass Transit Top 40 under 40 in North America
- CUTA Individual Leadership Award

Community Involvement

- Former Planning Commissioner for the City of Vancouver

Objective of Today's Presentation

1. Setting the Stage

2. The Opportunity



Objective of Today's Presentation

3. Regional Transit in 5, 10, 25 Years

4. Implications of Doing Nothing

5. Potential Next Steps



Setting the Stage

*What is at stake
in our regional
communities
when it comes to
public transit*



Setting the Stage



Employment
Mobility

Setting the Stage

Local and
Regional
Economic
Development



Setting the Stage



Post
Secondary
Mobility

Setting the Stage

Mobility for Seniors



Setting the Stage



Transportation
and Housing

The Opportunity



Building on the success of existing services

The Opportunity

Near term regional transit considerations



*Airdrie South Terminal +
40 Avenue Interchange*



17 Avenue SE Transitway

The Opportunity

Changes in
ridership during
the pandemic



The Opportunity



Maturation of
rural transit and
on-demand transit

The Opportunity

Federal funding programs



Rural
Transit
Fund



Active Transportation
Fund



Permanent
Transit
Fund

The Journey: Tale of Two Regions

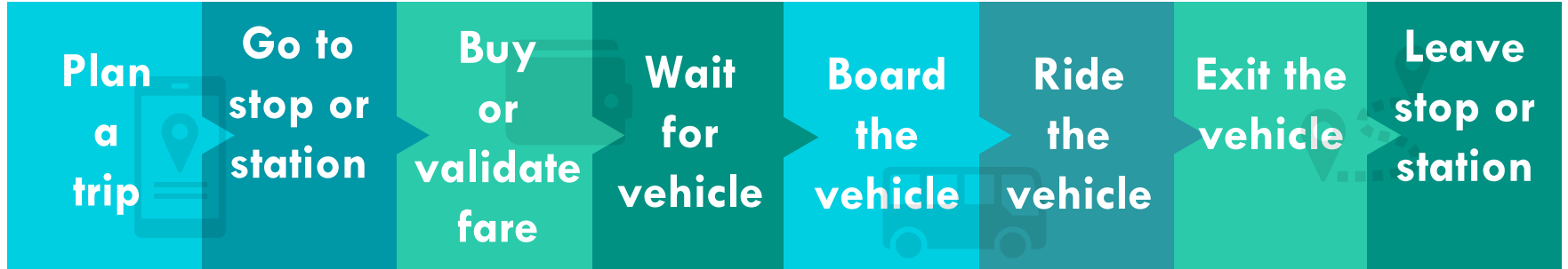


Edmonton Capital Region



Metro Vancouver

The Journey: A Seamless Trip



Ability to Scale and Leverage Regional Investments



LRT/BRT
Expansion



Calgary
Airport-Banff
Rail



Fleet and
facilities



Integrated
mobility
investments



Transit-oriented
development

Implications of Doing Nothing

- Impair ability to meet outcomes in Growth Plan
- Missed opportunities to secure federal funding
- Challenges in youth, student, and senior mobility
- Challenges in attracting employees in regional communities



Potential Next Steps

- Roadmap towards an integrated regional transportation system
- A monitoring plan to ensure that outcomes are achieved
- Framework for future operating and capital investments, prioritization, and phasing



Discussion Questions

- What feedback have you received from residents and employers about public transit for localized and regional transportation in your community?
- What is your Council priorities when it comes to public transit and local transportation?
- Looking forward 5-10 years what is your vision for regional transportation?



LEADING MOBILITY

David Cooper, MPI.,MCIP RPP

david@leadingmobility.com

www.leadingmobility.com

Agenda Item	6
Submitted to	Land Use and Servicing Committee
Purpose	For Decision
Subject	Phase 2 of Indigenous Relations Project Definition Document
Meeting Date	June 17, 2022
<i>Motion that the Committee direct Administration to develop an appropriately scaled project charter for Phase 2 Indigenous Relations strategic initiative for Board approval</i>	
<p>Summary</p> <ul style="list-style-type: none"> • To maintain transparency and support the success of future projects, CMRB Administration has proposed a standardized framework for project approval and execution based on best practices. The project lifecycle framework was approved by the Board on June 9, 2022. • CMRB Administration brought a recommended group of strategic initiatives to the Board with a 5 year draft timeline in March and June of 2022. Overall, the Board was supportive of the strategic initiatives. • The first step of the approved framework is to complete a Project Definition Document (PDD) to introduce the strategic initiative. The PDDs provide a line of sight to the overall Vision of the CMRB, articulate a project’s objectives, and define key considerations for members of the Board/Committee and municipal administrations to gain traction for proceeding to a project charter phase. • Following review of the PDD by the Land Use and Servicing Committee, the Committee would give direction to CMRB Administration to develop a project charter to be presented for approval by the Board or move forward through an expedited process. Alternatively, CMRB Administration may be asked to abandon, expedite, or refine the Project Definition Document, as required. • Feedback from the strategic initiative PDD presented to the Board on June 9, 2022 was supportive and no edits were made. • CMRB Administration recommends that this PDD be approved and that CMRB Administration develop an appropriately scaled project. 	
Attachments: Phase 2 Indigenous Relations Project Definition Document	

AGENDA ITEM 6i Calgary Metropolitan Region Board Project Definition Document-Draft		
Project Name	Indigenous Relations – Phase 2	Project #
Short Description	Phase 2: Actioning the Indigenous Relations Plan	Date
Relation to 5 Year Strategic Plan	Amazing Quilt of Rural and Urban Vision Element CMRB Growth Plan Truth and Reconciliation policy: 3.7.1.1 The CMRB will seek to build meaningful and mutually beneficial long-term relationships with Indigenous Nations and communities in and around the Region	
Project Objectives	<ul style="list-style-type: none"> • Advance the Indigenous Relations Plan • Develop and grow relationships at the pace of individual Indigenous Nations • Begin to engage non-elected and urban Indigenous community leaders and knowledge keepers 	
Project Deliverables	<ol style="list-style-type: none"> 1. Ongoing Dialogue through organized meetings with Indigenous Nations – maintain momentum 2. Demonstrating continued Learning about history and experiences through attendance at Indigenous celebrations around the region, others 3. Co-create initiatives (e.g. Additions to Reserve Framework, other) 4. Celebrate through partnerships and plan for stories from the land with third parties 5. Prepare an summary report 	
Approximate Duration	Multi year project, with the horizon of the project estimated to be around 1 year	
Dependencies	<u>INPUT</u> Board approved Growth Plan June 2021 Indigenous Awareness Sessions (Board) Dec 2021-May 2022 Indigenous Engagement Indigenous Relations Plan <u>OUTPUT may inform</u> Future work and other projects/studies Future growth plan updates	
Order of Magnitude Budget	Budgeted Amounts Not Public	

Proposed Output Data Classification	Dialogue – open data (summary updates at Board meetings) Learning – no data expected Co-create – TBD with individual stakeholders/parties Celebrate – open
Project Summary <ul style="list-style-type: none"> • Building on what we learned in Phase 1 of the Indigenous Engagement work (Dec 2021 to May 2022), the next phase of the work involves four action areas: <ul style="list-style-type: none"> ○ Ongoing Dialogue with Indigenous Nations and communities to discover shared interests and continue building and strengthening relationships ○ Commitment to Learning about the history and experiences of local Indigenous Nation and Indigenous Peoples in Canada more broadly ○ Co-create policies or frameworks that support shared interests and objectives among CMRB members and local Indigenous Nations and communities ○ Celebrate the Indigeneity of the Calgary Metropolitan Region by working with local Indigenous Elders and Knowledge Keepers to share stories of this land 	
Scope	
In Scope <ul style="list-style-type: none"> • Continued connections and meeting with Indigenous Nations to determine individual next steps <ul style="list-style-type: none"> ○ Bearspaw ○ Chiniki ○ Wesley ○ Siksika ○ Tsuut’ina ○ Metis Nation of Alberta Region 3 • Connections and meetings with local Indigenous Elders and Knowledge Keepers 	Out of Scope <ul style="list-style-type: none"> • Initiatives or actions which may arise from Dialogue, except Additions to Reserve Framework • Celebrate - Preparing partnership/grant applications • Consultant attendance at Learning events • Event/meeting expenses related to bookings, travel, accommodations, rentals, equipment or catering • Public engagement
Approach <ul style="list-style-type: none"> • The Plan summarized works completed since December 2021 and makes recommended actions for the 2022-2023 timeframe that fall under four key areas, all of which support the policy goal of meaningful and mutually beneficial long-term relationships: dialogue, co-creation of policy, commitment to learning, and celebrating the Indigeneity of the Region • Through the attached Indigenous Relations Plan, 2-6 actions for each action area of Dialogue, Learning, Co-create and Celebrate 	
Risk Assessment <ul style="list-style-type: none"> • Potentially limited availability of Indigenous Nations – mitigate by scheduling in advance, maintaining momentum • Potentially conflicting schedules of CMRB members – mitigate by planning ahead, and providing multiple opportunities for attending events 	

Team:

Project Sponsor: CMRB

Consultant Team: Forum Community Relations (consultant), Anne Harding and Andrea Hansen

Support: CMRB, Chair Clark, CMRB Administration,

Working Group: Municipal admin (Co-create actions)

External Stakeholders: contacts at Stoney Nakoda (Chiniki, Wesley and Bearspaw); Siksika; Tsuut'ina; and Métis Nation of Alberta Region 3; other organizations

Summary

The deliverables for this initiative will be co-created by the Team and an annual summary document prepared by the consultant.

Preliminary Stakeholders

- CMRB – Responsible
- Forum Community Relations (consultant) - Responsible
- Bearspaw First Nation
- Chiniki First Nation
- Siksika Nation
- Tsuut'ina Nation
- Métis Nation of Alberta Region 3
- Wesley First Nation

Note: Roles to be determined on case by case basis

Special Consideration

- June 2021 Indigenous Awareness Sessions (Board)
- Chair, Chief Officer, Forum meetings with Indigenous Nations Dec 2021-May 2022
- Recommendations from Indigenous Engagement initiative beginning Dec 2021

Project Definition Documents (PDD) are encouraged and are used to drive to Go /No-Go decisions. Projects approved at Project Definition Documents, will develop a Project Charter appropriately scaled to the nature and size of the project and phase.

The PDD is used to identify and describe a project as the first step in the project management lifecycle. It is used to gain input and approval from internal and external stakeholders such as the LUSC, TAG and participants as necessary, and as required. The results of the discussion will be incorporated into the PDD.

Responsible: Party who is completing the task

Accountable: Party who is making decisions and taking actions on the task(s)

Consulted: Party who will be communicated with regarding the decision-making process and specific tasks

Informed: Party who will be updated on decisions and actions during the project

Agenda Item	7
Submitted to	Land Use and Servicing Committee
Purpose	For Decision
Subject	Regional Economic Development Project Definition Document
Meeting Date	June 17, 2022
<i>Motion that the Committee direct Administration to develop an appropriately scaled project charter for Regional Economic Development strategic initiative for Board approval.</i>	
<p>Summary</p> <ul style="list-style-type: none"> • To maintain transparency and support the success of future projects, CMRB Administration has proposed a standardized framework for project approval and execution based on best practices. The project lifecycle framework was approved by the Board on June 9, 2022. • CMRB Administration brought a recommended group of strategic initiatives to the Board with a 5 year draft timeline in March and June of 2022. Overall, the Board was supportive of the strategic initiatives. • The first step of the approved framework process is to complete a Project Definition Document (PDD) to introduce the strategic initiative. The PDDs provide a line of sight to the overall Vision of the CMRB, articulate a project's objectives, and define key considerations for members of the Board/Committee and municipal administrations to gain traction for proceeding to a project charter phase. • Following review of the PDD by the Land Use and Servicing Committee, the Committee would give direction to CMRB Administration to develop a project charter to be presented for approval by the Board or move forward through an expedited process. Alternatively, CMRB Administration may be asked to abandon, expedite, or refine the Project Definition Document, as required. • Feedback from the strategic initiative PDD presented to the Board on June 9, 2022 was incorporated and focused on creating a shared vision for regional economic development. • CMRB Administration recommends that this PDD be approved and that CMRB Administration develop an appropriately scaled project charter. 	
Attachments: Regional Economic Development Project Definition Document	

AGENDA ITEM 7i Calgary Metropolitan Region Board Project Definition Document-Draft		
Project Name	Regional Economic Development Collaboration	Project #
Short Description	Build on the work concluded by the Board in Q3 2021 by developing a Calgary Region Economic Framework and develop a communications plan.	Date
Relation to 5 Year Strategic Plan	<p>Vision Element - Economic Wellbeing</p> <ul style="list-style-type: none"> • The Calgary Metropolitan Region is a globally recognized economy, attracting the best and brightest in a variety of economic sectors to support regional prosperity and a high quality of life. • The Calgary Metropolitan Region has a strong and coordinated approach to regional economic growth. • The members of the region support each other and embrace that members share in regional prosperity. <p>GP Policy Area – Section 3.2 Economic Well Being Growth Plan Objectives</p> <p>a) Diversify the economy in the CMR, supported by creating more resilient, efficient, and livable communities.</p> <p>(e) Build on the strengths of all member municipalities to create a plan for economic growth in the Region.</p> <p>(f) Collaborate among municipalities and with industry partners.</p>	
Project Objectives	<ul style="list-style-type: none"> • Review, establish and confirm starting position and present to the Board • Complete a summary scan of current Economic Development activities being undertaken by CMRB member municipalities • Establish a framework and vision for Regional Economic Development Collaboration • Develop a communications plan to roll out Regional Economic Development Collaboration 	
Project Deliverables	<ol style="list-style-type: none"> 1. Scan of current Economic Development efforts by municipalities 2. Workshops to develop Calgary Region Economic Development Framework and vision 3. Communications plan to convey desire to collaborate on Regional Economic Development 	

Approximate Duration	<6 months (not including a tendering phase)	
Dependencies	None	
Order of Magnitude Budget (+/- 25%)	Budgeted Amounts Not Public	Open Tender APC
Proposed Output Data Classification	OPEN	
Project Summary		
<ul style="list-style-type: none"> • Following the HATCH workshop series, a scan of regional economic development (Ec Dev) trends was completed across the globe (see attached Regional Economic Development Background Report). • HATCH provided several recommendations including: <ul style="list-style-type: none"> ◦ Create a Regional Economic Development Framework • Using a workshop style methodology involving both elected officials and municipal economic development professionals, determine a Calgary Region Economic Framework and vision to frame the growth aspirations for the region. • Create a communications plan to begin messaging the desire of the CMRB members to work together to grow regional economic development 		
Scope		
In Scope		Out of Scope
<ul style="list-style-type: none"> • Review, establish and confirm starting position among elected members and municipal economic development professionals • Complete an environmental scan • Set Calgary Region Economic Development Framework and Vision • Create a communications plan 		<ul style="list-style-type: none"> • Strategy for Regional Economic Development • Public engagement
Approach		
<ul style="list-style-type: none"> • Develop a Request for Proposal to reflect Project Framework and Regional Economic Development Background Report recommendations (see attached Regional Economic Development Background Report). • Create a project work plan for CMRB review and approval, including project milestones, meeting schedules, stakeholder identification and outreach, other • Gather applicable provincial, municipal and stakeholder feedback on regional economic development. • Consolidate information in an environmental scan and conduct gap analysis. • Conduct workshops to develop Regional Economic Development Framework. Workshops would include not only elected officials, but economic development professionals from each member municipality, as well as others recommended by the consultant. 		
Risk Assessment		
<ul style="list-style-type: none"> • Existing Economic Development organizations availability or openness to sharing information 		

<ul style="list-style-type: none"> Concerns that regional efforts may negatively impact local/municipal economic development
<p>Team and Roles:</p> <ul style="list-style-type: none"> CMRB Administration - Project Sponsor/Director (on behalf of CMRB) CMRB LUSC – Provide input and informed on project progress CMR Board – Provide final approval of project deliverables Consultant – Project Manage and Execute Working Group – Regional Economic Development specialists External Stakeholders – to be determined by the consultant which may include, but not limited to: business organizations, post secondary organizations, research organizations and others
<p>Preliminary Stakeholders and Roles</p> <ul style="list-style-type: none"> CMRB Admin – A Consultant – R Municipal professionals – C External Stakeholders: <ul style="list-style-type: none"> Government of Alberta - C Existing economic development bodies in the Region - C Public – I (will be informed through LUSC meeting updates) Others, potentially including but not limited to: business organizations, post secondary organizations, research organizations and others – C <p>R = Responsible, A = Accountable, C = Consult, I = Inform</p>
<p>Special Considerations</p> <ul style="list-style-type: none"> CMRB Vision Elements Hatch Workshop Series Summary Report Approved Growth Plan Deliverables may inform KPIs for Growth Plan implementation Deliverables may inform future GP Updates, other CMRB projects

Project Definition Documents (PDD) are encouraged and are used to drive to Go /No-Go decisions. Projects with approved Project Definition Documents will develop a Project Charter appropriately scaled to the nature and size of the project and phase.

The PDD is used to identify and describe a project as the first step in the project management lifecycle. It is used to gain input and approval from internal and external stakeholders such as the Board/LUSC, TAG as necessary, and as required. The results of the discussion(s) will be incorporated into the PDD.

Responsible: Person who is completing the task

Accountable: Person who is making decisions and taking actions on the task(s)

Consulted: Person who will be communicated with regarding the decision-making process and specific tasks

Informed: Person who will be updated on decisions and actions during the project



Calgary Metropolitan Region Board: Recommendations for future CMRB Economic Development

October 2021



Agenda Item 7ii



HATCH

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CMRB Land Use & Servicing Committee Agenda Pkg June 17 2022

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Executive Summary

In June 2021, the Calgary Metropolitan Region Board (CMRB) appointed Hatch to oversee a series of facilitated workshops with Members on future priorities for the Board. The successful delivery of the Calgary Region Growth & Servicing Plans by the Board in May 2021 provided a natural juncture to consider the CMRB's future role.

Over three consecutive workshops the Board considered different aspects of regional economic development, including:

- + Major global economic drivers impacting regional economies such as COVID, globalisation, digitisation and net zero;
- + Case studies from other regions that operationalised innovative regional economic development strategies;
- + Deep dive into oil and gas economic diversification strategies used by other regions; and
- + An assessment of the current structure and role of CMRB against peer Local Development Agencies (LDAs).

CMRB Board Members almost unanimously agreed that the current structure and role of CMRB was too limiting and impeded growth into a wider regional economic development role. It was noted the CMRB's current structure and governance arrangements were established to deliver a singular purpose – regional land use and servicing plans, as required under statute, and has completed this successfully. However, moving forward the current organisation and governance arrangements have the following drawbacks:

- Board membership is limited to elected representatives only, with no involvement by other regional stakeholders. The CMRB is an outlier as Board Membership of all other Local Development Agencies (LDAs) globally include a mix of stakeholders from industry, civic groups and universities alongside elected representatives.
- The current voting structure gives one member a higher weighting than others. The structure may not be appropriate for future decision-making in the context of regional economic development.

Executive Summary (cont'd)

- The current operational resource of the CMRB is slimline which means there is limited capacity to expand Board commitments into more operational functions.
- Limited financial resource over the short to medium term means it will be a challenge to expand operational resource and expand into operational functions. An expansion of the Board Membership would give the CMRB options for wider financial sources.

During the third workshop the Board considered several options for expanding the CMRB's roles, functions and activities. A full and frank discussion followed. The options set out in this paper are those that received the strongest endorsement by CMRB Board Members at the workshop, and which the Board agreed worthy of future consideration.

There is some urgency to considering CMRB's future as the Calgary region's economy is at a significant juncture. The COVID

pandemic, combined with advances in the ability to work remotely, are driving shifts in behaviour, residence, consumption and working patterns unseen for generations. At the same time, new sectors and industries are being spun-out of innovations in science and technology, unimaginable ten years ago.

It is our recommendation that the success of the CMRB is built on an expansion of its functions and activities. We believe this would be best achieved by establishing a new operational company ('NewCo') to complement the existing CMRB.

The Calgary region is extremely well placed to take advantage of emerging technology, consumer and behavioural shifts and leap-frog the economy forward. However, this will require region-wide commitment to a set of aspirational, but achievable aims; coordinated and disciplined cross-regional action; and the bravery to take some risks. An expanded CMRB can help steer this course.



Part 1: Overview of regional economic priorities

Calgary Metropolitan Region economic priorities

The expansion of CMRB's functions should be framed by the region's most pressing economic priorities of which there are several:

- + The Calgary Metropolitan Region (CMR) experienced one of the fastest population growth rates of all 500+ OECD cities between 2008-2018.
- + The exceptional population growth was not matched by an equivalent rate of GDP growth, which suggests there is an issue with productivity.
- + Compared to other Canadian city regions, the CMR has greater GDP growth volatility which mirrors oil price volatility. GDP per capita compared to other North American oil and gas cities is low.
- + There is a high net outward migration rates of young professionals and students as younger populations move out of the CMR.
- + Calgary is moving down the global league table of most liveable global cities which will impede future positioning and competition.

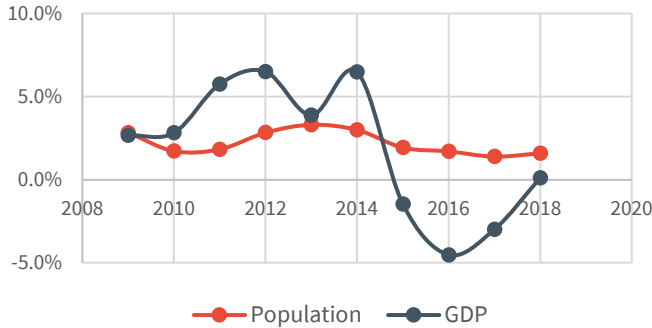
There is an opportunity for the CMRB to take a longer-term view on behalf of the CMR to shape and guide development of the future economy to tackle these issues.

We suggest that CMRB frames its future economic development work with the following **economic aims**:

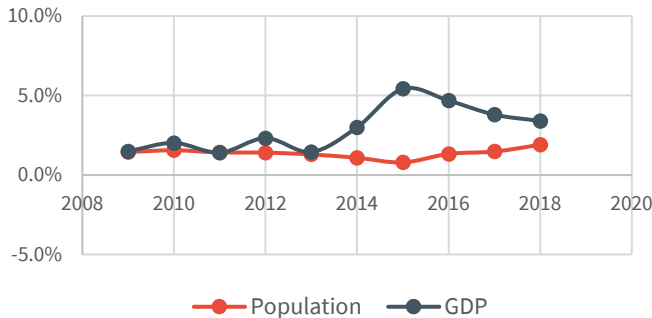
- + Target a specific increase in **GDP per capita** (e.g. \$x0,000 by 2030) across the region. This will ensure ongoing focus on both GDP expansion and productivity.
- + Make the CMR the Canadian capital of two or three emerging clusters/industries that are oil + gas counter cyclical to stabilise GDP growth and reduce economic volatility.
- + Turn the region into a net importer of young people aged 20-35 and reverse the outflow of young professionals and post-graduate students.
- + Get Calgary back into the top ten of most liveable global cities.

Calgary region's GDP growth rates are highly volatile

Greater Calgary region population and GDP growth



Greater Toronto region population and GDP growth

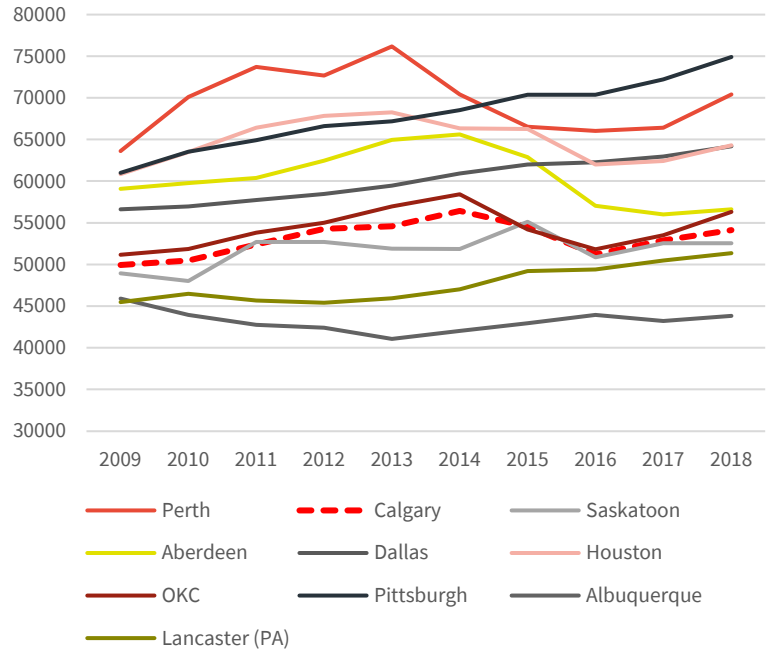


Source: OECD.stat city region statistics population (all) and GDP (PPP measure, nominal 2015 USD prices), Hatch analysis

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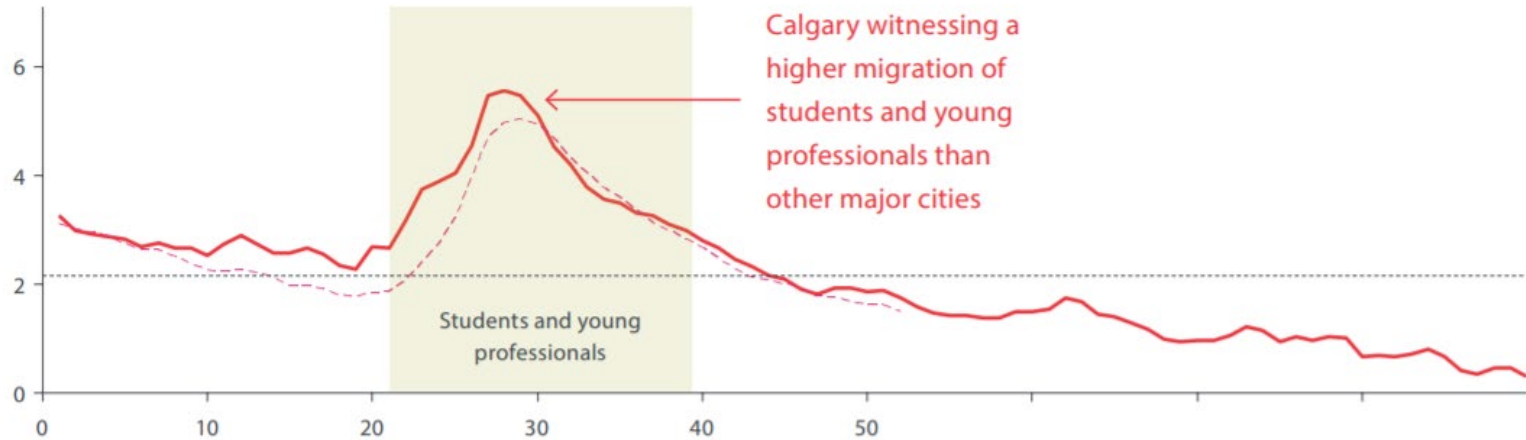
And GDP per capita is lower than other oil-dominated regions

Comparative GDP per capita for major oil-dominated city regions (USD, 2015 prices)



Future GDP growth will be impacted by high outward migration rates of young professionals

Outward migration from Calgary region by age













Source: Statistics Canada

Another unique dynamic to the CMR, when compared to other urban-based regions, is the higher net outward migration rate of students and young professionals than seen in other major cities.

This is of concern as it is this population cohort that cities compete to attract and retain as they drive innovation and productivity increases. The CMR ideally needs to find a way to reverse the pattern.

Whilst still one of the most liveable global cities, Calgary is dropping down the league table

Top 10 Global Cities

EIU's Global Liveability Ranking 2021 ^{[6][8]}		
	City	Country/Region
1	Auckland	 New Zealand
2	Osaka	 Japan
3	Adelaide	 Australia
4	Wellington	 New Zealand
5	Tokyo	 Japan
6	Perth	 Australia
7	Zurich	 Switzerland
8	Geneva	 Switzerland
9	Melbourne	 Australia
10	Brisbane	 Australia

Source: Economic Intelligence Unit, 2021

For the last few years, Calgary has featured high on various lists of most liveable global cities globally. Calgary’s previously high ranking reflects the proximity of natural assets like the Rocky Mountains, strong economy with good jobs, low crime rate and welcoming nature of the city region. Net population growth of almost 25% over ten years is testament to the city’s attractiveness to outside residents.

However, the perception that the city region is oil and gas-centric, combined with fewer public transport amenities (compared to other large city-regions), few ‘sticky’ attractions and higher prices is starting to impact on the city region’s reputation. In the 2021 release of the EIU’s Global Liveability Ranking Calgary fell down the table to 36th place.

It takes several years for narratives to be established (for example, turning Calgary’s reputation into the Canadian Denver), so addressing these false perceptions quickly with counter-evidence is a useful step to ensure future regional competitiveness.

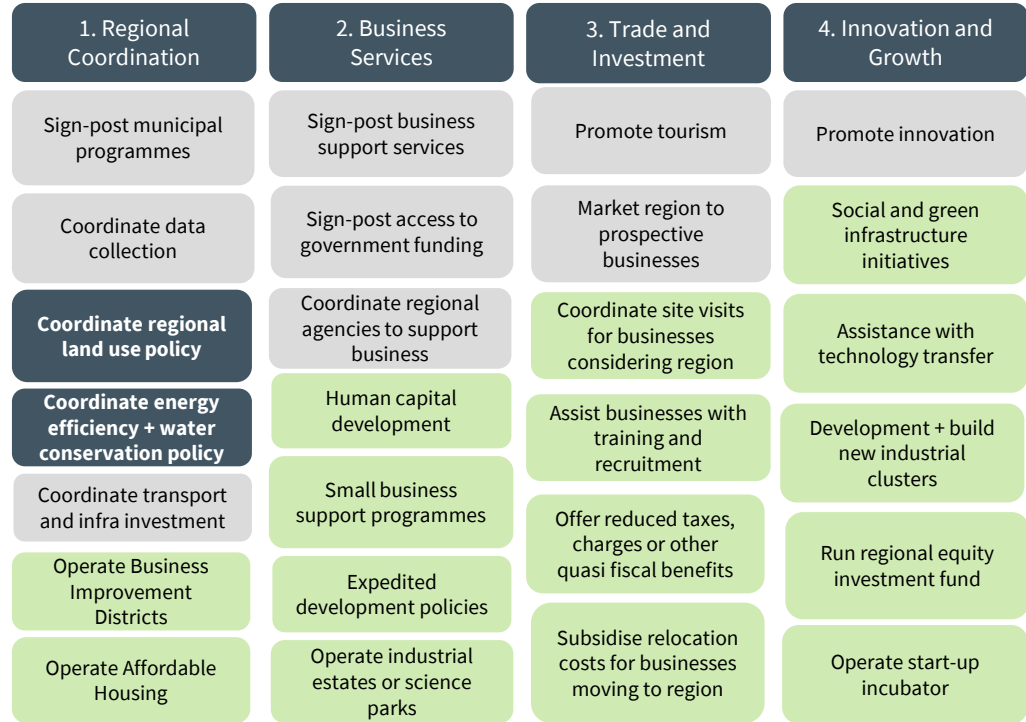


Part 2: Recommended expansion of CMRB functions

CMRB's primary role to date has been regional coordination of land use policy

The illustration to the right sets out the functions regional development agencies across developed countries most frequently adopt. Most focus on one or two different roles (e.g. Regional Coordination, Economic Development, Trade and Investment or Innovation and Growth) and carry out a sub-set of functions under each. This ensures both role and functions tie back neatly to the framing of regional economic development objectives.

The CMRB was established with a remit to develop social, economic and environmental policy across the region. Within that is a specific statutory obligation to coordinate regional land use policy. To date CMRB has focused on this statutory obligation, which is now complete with the ratification and publication of the *Calgary Region Growth & Servicing Plan*.



CMRB should prioritise functions that have the most impact

1. Regional Coordination	2. Business Services	3. Trade and Investment	4. Innovation and Growth
Provide information on municipal programmes	Sign-post business support services X	Promote tourism X	Promote innovation
Coordinate data collection	Sign-post access to government funding X	Market region to prospective businesses X	Social + green infrastructure
Coordinate regional land use policy	Coordinate regional agencies to support business X	Coordinate site visits for businesses	Assistance with technology transfer
Coordinate energy efficiency + water conservation policy	Assistance with access to VC	Assist businesses with training and recruitment	Develop + build new industrial clusters
Coordinate transport and infra investment	Provide SME business support programmes X	Reduced taxes, charges or other quasi fiscal benefits	Run regional equity investment fund
Operate Business Improvement Districts	Operate industrial estates or science parks	Subsidise relocation costs for businesses moving to region	Operate start-up incubator

When considering additional roles/functions the Board should draw on past lessons. The functions in the diagram to the left have been color coded according to the frequency with which they are carried out within a sample of 30 LDA. For instance, a large proportion of sample LDAs focus resources on marketing targeted at overseas business to sign-post and provide support to local businesses. An OECD study determines the impacts of LDA efforts by function on business revenues and local GDP growth. It found that the functions with the red “x” had little to no measurable impact. This suggests that other organisations (such as Chambers of Commerce and municipalities) may have more success in these areas and CMRB may not be the best vehicle to carry out these activities.

Key:

- More than 80%
- More than 50%
- More than 20%
- Less than 20%
- No measurable impact * ~~X~~

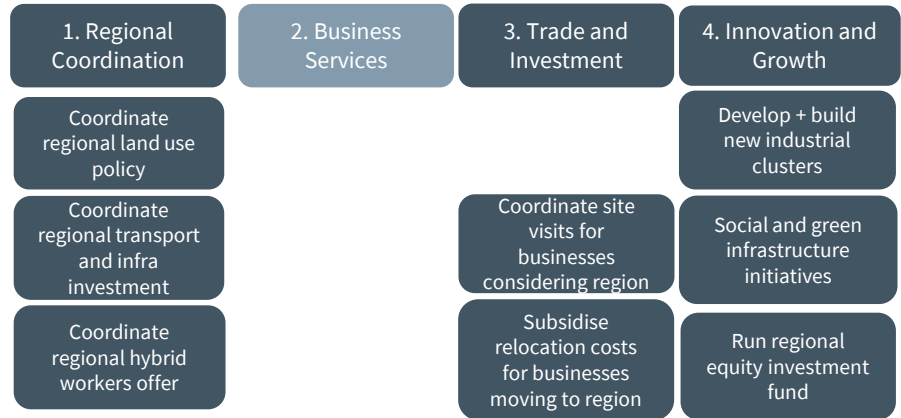
Sources: Multinational lessons from local and regional economic development agencies, *Journal of Organisational Development*, Beers, Clower, Flinders (2014)
 Organising for local development: the role of local development agencies, OECD LEED Programme, Summary Report, 2018

Recommended roles and functions going forward

CMRB Board Members debated additional functions the CMRB would be well placed to undertake in the future. It was agreed that these functions should mirror the regional economic priorities, complement the ongoing work of Calgary region’s economic development agencies and municipalities.

On this basis the Board agreed further consideration should be given to:

- An expansion of **Regional Coordination** functions to cover future infrastructure and investment.
- **Trade and Investment** functions to specifically target inward investment by evolving new sectors and clusters that will be important in the future economy to diversify the economic base. This included the potential to market the Calgary region as a magnet for hybrid workers and the companies that employ them.



- **Innovation and Growth** functions to strengthen the research and development ecosystem as a means of fostering company creation and patents in high value emerging clusters like biological materials and precision farming.

It was acknowledged by the Board that much work to stimulate private sector growth through business services is currently undertaken successfully by existing municipal economic development teams.



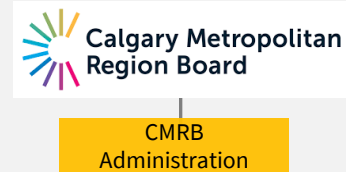
Part 3: Options for CMRB expansion

It is recommended that CMRB expand its functions and operational capability

The CMRB's Board structure and governance arrangements were established by provincial statute, and as such cannot be changed. However, this does not prevent the CMRB from expanding functions and operations and widening regional participation, as allowed under the current remit. We suggest this is achieved in the following way:

- + One or more subsidiary or a sister NewCo is set up to deliver CMRB's extended functions. The separate organisation(s) would act as the operational arm of CMRB and enable a more interventionist role.
- + Membership of the NewCo Boards to include a wider set of economic stakeholders. This may include chief executives of regionally significant businesses, civic leaders, heads of universities, major tourist sites and research and development institutions alongside elected representatives

Current CMRB Structure

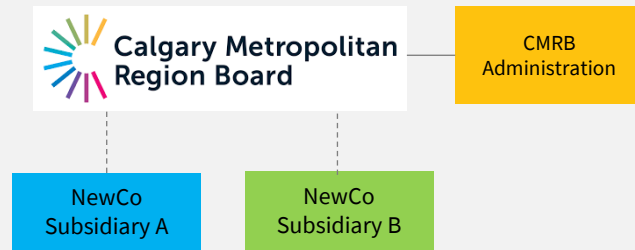


- + A multi-year funding structure to enable the NewCo to hire delivery staff, appoint secondees and specialists. Consideration should be given to creating an income-generating entity to recycle investment returns gained through direct delivery.

The CMRB NewCos can be established in a number of different ways. The CMRB Board considered several options and the two most popular models are described in the following pages.

Model 1: Create mission-specific NewCo subsidiaries

Model 1 NewCo Structure



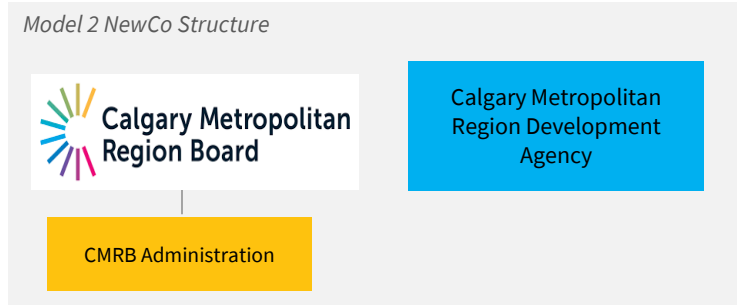
In Model 1, one or more NewCos would be established as subsidiaries under the umbrella of the CMRB. Each subsidiary NewCo would be tasked with a specific, mission-driven remit and resourced to deliver that remit. For example, one subsidiary may be given the mission of defining and delivering projects to attract and retain students and young professionals.

The mission for each subsidiary NewCo would be set by the CMRB Board. Each NewCo would achieve their mission by working with

businesses, researchers, investors and regional partners to operationalise the mission-specific projects, activities and Each subsidiary would be a stand-alone NewCo structured as follows:

- + Members would be drawn from the CMRB Board, business leaders with a direct corporate interest in the subsidiary NewCo's specific mission, academics, researchers and others with applicable knowledge.
- + NewCo Board voting structure based on one vote system with majority margin and quorum as declared in the NewCo formation papers.
- + Dedicated resource employed directly by the NewCo subsidiary to operationalize decisions. This may include a combination of direct hires with specialist knowledge and secondees from corporates and universities.
- + Multi-year, mission-linked financial plan with financial contributions raised from municipalities, corporates and other interested parties.

Model 2: Create a CMRB sister NewCo - CMRB Development Agency



Under the second model, a separate sister NewCo would be set up to sit alongside the CMRB. The sister NewCo would be tasked with driving an increase in GDP per capita across the Calgary region. The NewCo would be established as a partnership between the region's municipalities and the private sector.

The NewCo would have sole autonomy to decide on a set of annual delivery projects and initiatives that help the region to achieve a measurable increase in GDP per capita.

The CMR Development Agency (sister NewCo) could be established as a non-for-profit and structured as follows:

- + NewCo Board Members made up of four elected representatives (who also sit on the CMRB Board). In addition, the CMRB Board appoints business leaders, university, R&D, and civic leaders for a fixed term.
- + NewCo Board voting structure based on one vote system with majority margin and quorum as declared in the NewCo formation papers.
- + NewCo funded jointly by regional municipalities, private sector, research and development organizations and universities.
- + Dedicated staff employed directly to deliver the initiatives and activities as decided by the NewCo Board.

The CMRB Development Agency would report to the CMRB Board on an annual basis and publish a publicly available annual report with financial accounts.



Part 4: Recommended next steps

Recommended next steps

It will be important to set out a clear and transparent process to debate and decide on an expansion of CMRB functions and creation of a NewCo to deliver them. This ensures decisions taken are backed fully by elected representatives, municipal officials and Calgary Metropolitan Region stakeholders – which is a prerequisite for any form of NewCo to succeed. Based on our experience working with other regional development agencies, we suggest three sequential steps:

Step 1: Establish Calgary Region Economic Framework. This step will frame the growth aspirations for the region and the work itself can help to draw together interested parties in a NewCo.

Step 2: Design the new structure and reporting lines for the NewCo including CMRB relationship and reporting, membership, governance and functions.

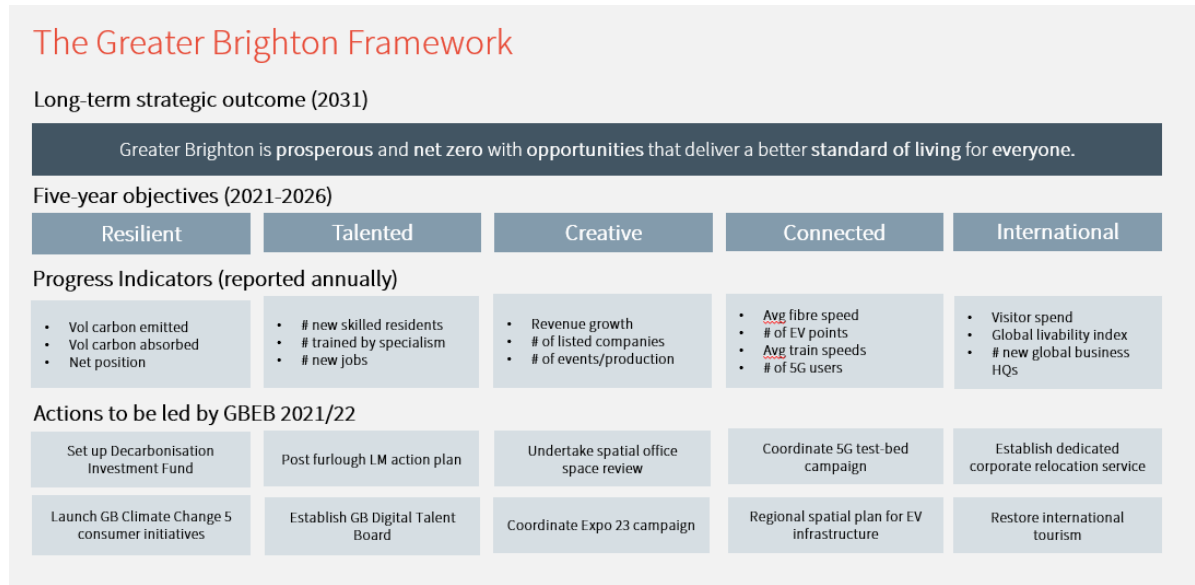
Step 3: Draft and agree detailed five-year NewCo organisation strategy including budgets, staffing profile, targeted activities and outcomes. These will be framed by the Calgary Region Economic Framework (Step 1) and the powers and structures agreed in Step 2.



Step 1: Calgary Region Economic Framework

The Calgary Region Economic Framework sets out the ambitions and strategic priorities for the region over the long-term. The long-term outcome is broken down into medium-term objectives, which are measurable and reportable on an annual basis.

Delivery of actions can be shared by CMRB, NewCo, municipalities and other regional partners. It is a means of ensuring coordination and enabling all economic development activities are acting in concert across the region.



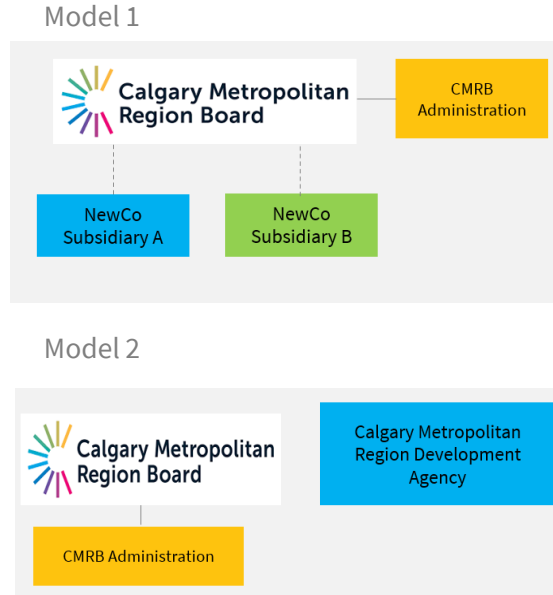
An example framework is illustrated above. It was designed for the Greater Brighton region in the UK and forms the basis of all future activities and planning for six local authorities, two universities and a range of large businesses and innovation research centres.

Step 2: CMRB NewCo design

During this step a detailed assessment of the two NewCo models should be undertaken, alongside any other models for consideration.

The assessment should cover the pros and cons of each from the perspective of the CMRB Board, partner organisations including municipal economic development functions, universities and research organisations and importantly regional businesses.

The assessment should cover different corporate forms for NewCo including for-profit and not-for-profit, governance, financial, tax and liability implications.



This stage of work should also identify potential sources of grants and funding alongside variable income measures such as subscription models. Consultations on NewCo governance arrangements including Board Membership structure, process to appoint Board Members, compensation, voting powers and related matters.

The decision on which model and set of governance arrangements to be applied will be taken to the CMRB Board for final decision by vote.

Step 3: Five year NewCo organisation strategy

When the NewCo is established its first task will be to set out a five-year organisational plan, covering activities, actions and priorities alongside costs, revenues, staffing profile, PR/marketing and reporting.

This is usually broken down into a series of activities deliverable in specific timeframes and that are framed by the Regional Economic Framework.

The NewCo will own this document and determine the activity and projects contained within it. In return for funding, the NewCo will be accountable for the delivery of the strategy through a published annual report and formal reporting to the CMRB Board.

Five-Year Objective	GBEB Actions 2021/22	Description	Aim
Connected	Co1: Coordinate 5G test-bed campaign	GBEB to work with the Digital Catapult Centre to find ways to increase involvement by businesses in the Brighton 5G testbed. This should include direct involvement by local authority public services (e.g. social care provision) to	To increase participation in the region's 5G test-bed. Awareness of how to participate and what companies could benefit, particularly in the area of local
Five-Year Objective	GBEB Actions 2021/22	Description	Aim
Creative	Cr1: Undertake spatial office space + creative space review	GBEB to commission a spatial office and commercial space review on behalf of the region. The nature and use of offices is undergoing a massive change as companies and workers adopt hybrid working practices. The review will assess the availability, location and appropriateness of current office and commercial stock across the region with recommendations for change and will look at measures to create dedicated working space for creative sectors.	To coordinate a regional plan, drawing on directly owned office and commercial assets to establish Greater Brighton as a natural home for regional corporate hubs and workers seeking hybrid working environments who plan to relocate out of cities.
Creative	Cr2: Coordinate Expo 23 campaign	GBEB to establish a region-wide competition and communications to showcase businesses at Expo 23 in Buenos Aires. The theme of Expo 23 is <i>Creative Industries in Digital Convergence</i> . Expo 23 will provide a global stage for Greater Brighton's creative digital businesses to obtain global customers and investment.	To use Expo 23 as a means of creating region-wide focus by creative digital businesses on new international markets and providing a collective deadline to bring new products and prototypes to market.

Important Notice

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Agenda Item	8
Submitted to	Land Use and Servicing Committee
Purpose	For Decision
Subject	Scoping the Regional Transportation and Transit Master Plan Project Definition Document
Meeting Date	June 17, 2022
<p><i>Motion that the Committee direct Administration to develop an appropriately scaled project charter for Scoping the Regional Transportation and Transit Plan strategic initiative for Board approval.</i></p>	
<p>Summary</p> <ul style="list-style-type: none"> • To maintain transparency and support the success of future projects, CMRB Administration has proposed a standardized framework for project approval and execution based on best practices. The project lifecycle framework was approved by the Board on June 9, 2022. • CMRB Administration brought a recommended group of strategic initiatives to the Board with a 5 year draft timeline in March and June of 2022. Overall, the Board was supportive of the strategic initiatives. • The first step of the approved framework is to complete a Project Definition Document (PDD) to introduce the strategic initiative. The PDDs provide a line of sight to the overall Vision of the CMRB, articulate a project's objectives, and define key considerations for members of the Board/Committee and municipal administrations to gain traction for proceeding to a project charter phase. • Following review of the PDD by the Land Use and Servicing Committee, the Committee would give direction to CMRB Administration to develop a project charter to be presented for approval by the Board or move forward through an expedited process. Alternatively, CMRB Administration may be asked to abandon, expedite, or refine the Project Definition Document, as required. • Feedback on the strategic initiative PDD presented to the Board on June 9, 2022 was generally supportive and no edits were made. • CMRB Administration recommends that this PDD be approved and that CMRB Administration develop an appropriately scaled project charter with input from Transportation and Transit TAG. 	
<p>Attachments: Scoping the Regional Transportation and Transit Master Plan Project Definition Document</p>	

AGENDA ITEM 8i Calgary Metropolitan Region Board Project Definition Document-Draft		
Project Name	Scoping of Regional Transportation and Transit Master Plan (RTTMP)	Project #
Short Description	Collaborative development of scope for RTTMP using SMEs, Working Groups, with input from Alberta Transportation and others	Date
Relation to 5 Year Strategic Plan Full vision element and objectives are appended to this PDD	<p>Blueprint for Growth Vision Element Economic Wellbeing Vision Element</p> <p>Growth Plan Policy 3.2.2.1: <i>3.2.2.1 Future regional transportation planning undertaken by the CMRB should address the following:</i> <i>(a) identify strategies to minimize the effects of commuter congestion on important goods movement and trade routes;</i> <i>(b) identify a network of priority routes for regional goods movement, linking key hubs such as intermodal facilities and the Calgary International Airport with an emphasis on reliability; and</i> <i>(c) protect the integrity of major goods movement routes through coordination with land use planning.</i></p> <p>3.5.1 Growth Plan Policies for Transportation and Transit Corridors</p> <p>Regional Transportation definition (SP): Regional transportation and transit is the system of arterial roads, highways, rail, transit infrastructure and service delivery, regional pathway corridors, airports, and other forms of transportation and related services that support intermunicipal travel and/or trade within the CMRB and beyond.</p> <p>Transportation Commitment (SP): Undertake a Regional Transportation and Transit Master Plan (RTTMP) to develop a unified vision for the future regional transportation network that aligns with the Growth Plan</p>	
Project Objectives	<ul style="list-style-type: none"> • Collaborative development of scope and project charter elements for RTTMP such that multiple scales ,contexts and modes of transportation are considered in alignment with the Growth Plan policy and Servicing Plan commitments 	

Project Deliverables	<ol style="list-style-type: none"> 1. Review and summarize existing policy direction, Board vision, values related to transportation and mobility in the CMR 2. Review and integrate Growth Plan and Servicing Plan direction into articulated RTTMP objectives 3. Scoping of RTTMP based on working group and subject matter expert recommendations 4. Recommended RTTMP scope, schedule and ballpark cost estimate
Approximate Duration	1 year
Dependencies	<u>INPUTS</u> CMRB Vision Growth Plan Servicing Plan Working Group Principles CMRB Transit Background Report JPA Context Study TOR (if available) Municipal transportation/transit/mobility/cycling master plans, where available Goods movement initiatives, where available Provincial initiatives (AT), federal initiatives External stakeholder initiatives (academia?) <u>OUTPUTS:</u> Project Charter and Scoping documents of RTTMP
Order of Magnitude Budget (+/- 25%)	Budgeted Amounts Not Public
Proposed Output Data Classification	Open (see CMRB Data Sharing Framework)
Project Summary <ul style="list-style-type: none"> ○ It is anticipated that subject matter experts in transportation AND transit/mobility (2 total) will be required to meet the objectives of the project. ○ The focus of the scoping will be on the Board Vision and Growth Plan policy and the Board's additional direction ○ Given the policy of the Growth Plan in Economic Wellbeing chapter and direction from the Servicing Plan's Regional Transportation chapter, develop a project charter and scope of work for the RTTMP that CMRB Administration can utilize to engage an external consultant to complete in future stages of implementation of the Growth and Servicing Plans ○ SMEs will be used to facilitate discussions, work collaboratively among Working Group and external stakeholder (AT) project committee, and create deliverables 	
Scope	
In Scope <ul style="list-style-type: none"> • Review of regional transportation and transit best practices (speaker?) • Review working group principles 	Out of Scope <ul style="list-style-type: none"> • Completing the RTTMP • Model runs of the RTM

<ul style="list-style-type: none"> • Review of provincial initiatives • Consider context study inputs 	<ul style="list-style-type: none"> • Detailed planning of lower classification roadways or corridor alignments • Public engagement
<p>Approach</p> <ul style="list-style-type: none"> • The study/initiative will consider previous work of the Board (NCRTS, S&ECRTS), CMRB Vision document, the Growth Plan policies, Servicing Plan commitments • A number of scope suggestions have been identified in Appendix B of the Servicing Plan • Requires support from Subject Matter Experts in mobility planning (transportation and transit/mobility) • Special consideration should be given of how to integrate multimodal transportation and innovative regional approaches to mobility into RTTMP scope. This might include increased emphasis on transit and active transportation opportunities, such as pedestrian connectivity and forms of micromobility (i.e. bikes, e-scooters, e-bikes, etc) 	
<p>Risk Assessment</p> <ul style="list-style-type: none"> • Scope Creep – mitigate through clear Project Charter • Schedule – level setting may take additional time and effort. Mitigate by ensuring appropriate time/fee budgeting • Resourcing – may require a consortium of consultants working together, availability of Working Group members. Mitigate by ensuring appropriate updates • Stakeholder information may not be in alignment with municipalities’ goals – mitigate by offering clarity on engagement • Unable to reach consensus on scope – mitigate with LUSC discussion and direction 	
<p>Team:</p> <p>The team will include CMRB Administration, municipal working groups, other municipal experts, external stakeholders representing a regional perspective, subject matter experts (SME). The deliverables for this initiative will be created by the SMEs with input from CMRB Administration and working groups.</p> <p>Project Sponsor - CMRB Administration for CMRB Technical Committee – Transportation and Transit TAG, External Stakeholder contacts from time to time (e.g. AT, academia, economic development institutions, YYC & YBW airports) SME Consultants – Best Practice review, facilitation, deliverable preparation Participation of Technical Committee – all member municipalities should have at least one representative on the technical committee</p>	
<p>Preliminary Stakeholders and Roles</p> <ul style="list-style-type: none"> • Project Sponsor (CMRB) - A • LUSC -C • Subject Matter Experts (2) - R • Working Group – C • External Stakeholders (AT, YYC & YBW airports, external municipalities?, others?) - C 	
<p>Special Consideration</p>	

- Background studies:
 - Transit Background Report (2020)
 - NCRTS (2019) and S&ECRTS (2020)
- Growth Plan policies
- Servicing Plan: Chapter 3 Transportation and Transit, Appendix B
- Context Studies, where available
- [CMRB external stakeholder participation policy](#)
- Board direction

Project Definition Documents (PDD) are encouraged and are used to drive to Go /No-Go decisions. Projects approved at Project Definition, will develop a Project Charter appropriately scaled to the nature and size of the project and phase.

The PDD is used to identify and describe a project as the first step in the project lifecycle. It is used to gain input and approval from internal and external stakeholders such as the LUSC, TAG and participants as necessary, and as required. The results of the discussion will be incorporated into the PDD.

Responsible: Party who is completing the task

Accountable: Party who is making decisions and taking actions on the task(s)

Consulted: Party who will be communicated with regarding the decision-making process and specific tasks

Informed: Party who will be updated on decisions and actions during the project

Blueprint for Growth	
CMRB Vision Elements	Growth Plan Objectives
<ul style="list-style-type: none"> • We successfully use our commitment to Preferred Placetypes and specified growth areas to accomplish our vision while reducing water consumption, vehicle mileage, carbon emissions, land consumption and the cost of infrastructure. • The Region is built on a backbone of excellent integrated multi-modal transportation which ensures efficient and effective movement of people and goods. 	<ul style="list-style-type: none"> (a) Create opportunities for each municipality to grow and develop in a way that contributes to balanced regional growth. (b) Promote a range of housing and neighbourhood types within each municipality. (c) Strengthen the importance and livability of existing urban and rural centres. (d) Provide adequate land area for a variety of employment opportunities in appropriate areas. (e) Focus future urban growth in suitable locations where land use, infrastructure and servicing are aligned. (f) Promote compact and walkable communities. (g) Reduce the amount of land consumed by achieving higher densities and more

PDD: Scoping of RTTMP

	<p>efficient and mixed-use development patterns.</p> <p>(h) Limit or discourage new auto-oriented residential communities that are dominated by single-detached housing with limited amenities.</p> <p>(i) Encourage country residential development in a clustered form of development which promotes land conservation for ecological and open space purposes.</p> <p>(j) Reduce the cost of infrastructure to support growth compared to past practices.</p> <p>(k) Focus regional service delivery in areas that take advantage of existing services, collaboration and plans.</p>
Economic Wellbeing	
<p>CMRB Vision Elements</p>	<p>Growth Plan Objectives</p>
<ul style="list-style-type: none"> • The Calgary Metropolitan Region is a globally recognized economy, attracting the best and brightest in a variety of economic sectors to support regional prosperity and a high quality of life. • The Calgary Metropolitan Region has a strong and coordinated approach to regional economic growth. • The members of the region support each other and embrace that members share in regional prosperity. 	<p>(a) Diversify the economy in the CMR, supported by creating more resilient, efficient, and livable communities.</p> <p>(b) Enable transit, walking and cycling to work, which will contribute to attracting and retaining workforce.</p> <p>(c) Provide an effective transportation network, assuring efficient transportation of goods to market.</p> <p>(d) Ensure adequate suitable land for emerging market demand, providing capacity for economic growth.</p> <p>(e) Build on the strengths of all member municipalities to create a plan for economic growth in the Region.</p> <p>(f) Collaborate among municipalities and with industry partners.</p>

Agenda Item	9
Submitted to	Land Use and Servicing Committee
Purpose	For Decision
Subject	Scoping the Water Roadmap Update Project Definition Document
Meeting Date	June 17, 2022
<i>Motion that the Committee direct Administration to develop an appropriately scaled project charter for Scoping the Water Roadmap Update strategic initiative for Board approval.</i>	
<p>Summary</p> <ul style="list-style-type: none"> • To maintain transparency and support the success of future projects, CMRB Administration has proposed a standardized framework for project approval and execution based on best practices. The project lifecycle framework was approved by the Board on June 9, 2022. • CMRB Administration brought a recommended group of strategic initiatives to the Board with a 5 year draft timeline in March and June of 2022. Overall, the Board was supportive of the strategic initiatives. • The first step of the approved framework is to complete a Project Definition Document (PDD) to introduce the strategic initiative. The PDDs provide a line of sight to the overall Vision of the CMRB, articulate a project's objectives, and define key considerations for members of the Board/Committee and municipal administrations to gain traction for proceeding to a project charter phase. • Following review of the PDD by the Land Use and Servicing Committee, the Committee would give direction to CMRB Administration to develop a project charter to be presented for approval by the Board or move forward through an expedited process. Alternatively, CMRB Administration may be asked to abandon, expedite, or refine the Project Definition Document, as required. • Feedback on the strategic initiative PDD presented to the Board on June 9, 2022 was generally supportive and no substantive edits were made. • CMRB Administration recommends that this PDD be approved and that CMRB Administration develop an appropriately scaled project charter with input from Water TAG. 	
Attachments: Scoping Water Roadmap Update Project Definition Document	

AGENDA ITEM 9i Calgary Metropolitan Region Board Project Definition Document-Draft		
Project Name	Scoping the Water Roadmap Update	Project #
Short Description	Scoping of Water Roadmap Update as path to CMR Long-term Water Strategy	Date:
Relation to 5 Year Strategic Plan Full CMRB Vision Elements and associated objectives are appended.	Blueprint for Growth Vision Element Water Stewardship Vision Element Protect and Enjoy the Environment Vision Element Section 3.1.1 Blueprint for Growth Region-Wide Policies 3.1.1.1 Municipalities should collaborate to coordinate planning for land use, infrastructure, and service provision with other member municipalities, where appropriate. Section 3.3.1 of the Growth Plan: Flood Prone Areas 3.3.1.1 No new development shall be permitted within a provincially identified Floodway, with the exception of uses with no permanent buildings, such as Agriculture, natural areas, outdoor recreation, parks, roads, bridges, utilities, aggregate extraction, and flood mitigation infrastructure. 3.3.1.2 Development in provincially identified Flood Fringe areas shall include flood protection measures to mitigate risk at the 1:100 year flood event level. 3.3.1.3 New Area Structure Plans for Greenfield Developments must include cumulative protection measures to mitigate flood damage risk in Flood Hazard Areas at the 1:200 year food event level up to the limits of the Flood Fringe. 3.3.1.4 After updated provincial flood hazard mapping is finalized, the CMRB shall work with the Province of Alberta and member municipalities to investigate changing the provincial definition of the flood hazard area to the 1:200 year level, including an assessment of the impacts to Alberta’s Disaster Relief Program and private insurance. Section 3.3.2 of the Growth Plan: Environmentally Sensitive Areas – Many of the defining characteristics of an ESA are water-related and include areas that maintain the provision of water quality and quantity and provide protection against drought and flood events. Includes water courses, water bodies, and riparian areas, among others.	

PDD: Scoping Water Roadmap Update

	<p>Section 3.4 of the Growth Plan: Water Stewardship</p> <p>3.4.1.1 The CMRB will continue to advocate for enhanced protection of the headwaters of rivers that the CMR relies on for drinking water and economic production that are located inside and outside the CMR.</p> <p>3.4.1.2 The CMRB will support the continued assessment of upstream reservoirs on the Region’s rivers to provide water storage capacity and flood mitigation, where applicable.</p> <p>3.4.1.3 CMRB member municipalities shall coordinate to manage impacts to Source Water quality in Regionally Significant Source Watersheds.</p> <p>3.4.2.1 The CMRB will provide regional leadership for the management of Stormwater for Regionally Significant Stormwater issues.</p> <p>3.4.2.2 The CMRB and member municipalities should identify locations where Stormwater management may impact Regional Infrastructure systems and develop appropriate policies to address areas of impact.</p> <p>3.4.3.1 The CMRB shall work with the Province to advance initiatives that improve the Region’s ability to sustainably use and reuse water.</p> <p>3.4.3.2 CMRB Members should collaborate to identify higher and consistent water efficiency standards across the Region.</p> <p>3.4.4.1 CMRB Members should investigate approaches to water collaboration within the CMR at the regional and sub regional scales, as appropriate.</p>
<p>Project Objectives</p>	<ul style="list-style-type: none"> • Level-setting and review of previous regional water studies, roadmap, Growth Plan direction and Servicing Plan commitments. • Link regional perspective of water with Province’s water for life strategy and show alignment with goals • Summarize provincial strategies, existing members’ municipal strategies and determine best path forward to achieve regional goals • Identify strategies to effectively manage the limited water resource in the region • Articulate principles, goals, and priority outcomes (actions?) for the Board that will inform the water roadmap update scope to, over time, create a long term water strategy • Articulate regional/sub-regional actions that support desired outcomes • Others, as directed by the Board
<p>Project Deliverables</p>	<ol style="list-style-type: none"> 1. Level setting presentation/workshop for elected and municipality staff (speaker series?) 2. Concise ‘situation summary’ of water in the CMR, define potential regional role 3. Concise summary of relevant external stakeholder water initiatives

	4. Clear, vetted objectives for future long term strategy 5. Scope for the Water Roadmap Update	
Approximate Duration	<1 year	
Dependencies	<u>INPUTS</u> Previous Water Roadmap CMRB Vision Element – Water Stewardship Growth Plan Servicing Plan and Working Group Principles JPA Context Studies (where available) Municipality servicing master plans Municipality water-related resource plans Provincial initiatives External stakeholder water-related initiatives Other Board direction <u>OUTPUTS</u> Vetted objectives for future long term strategy Scope for future work to update former Water Roadmap	
Order of Magnitude Budget (+/- 25%)	Budgeted Amounts Not Public	
Proposed Output Data Classification	OPEN (see CMRB Data Sharing Framework)	
Project Summary <ul style="list-style-type: none"> The initiative is regional in nature and focuses collaborative attention to level-setting of state of water in the Region (flood risk, water quality, water quantity, water resource management, regional stormwater management, and water security risks at Regional scale) Growth and Servicing Plans commitments will be identified, and objectives and principles will be identified to guide the future step of creating/updating a Water Roadmap as a pathway to a long-term water strategy The project should identify how the Board plans to address direction from Growth and Servicing Plans, over time It is anticipated that provincial and other external stakeholder initiatives may inform the objectives of the Water Roadmap Scoping project. The availability or relevance of this data is currently unknown. 		
Scope		
IN Scope <ul style="list-style-type: none"> Level setting exercise Summarization of previous work of Board, CMRB Growth Plan, Servicing Plan, member municipalities, provincial initiatives, pertinent external initiatives Identify pertinent policies in the Growth Plan and commitments from Servicing Plan Identify principles and goals for water roadmap update which is the 		Out of Scope <ul style="list-style-type: none"> Updating the water roadmap Developing Regional Water Strategy Data analyses Water modeling Public engagement

<p>path to a CMR long term water strategy</p> <ul style="list-style-type: none"> • Articulate how the Board plans to address Growth Plan and Servicing Plan direction, over time (recommendations for potential future studies) 	
<p>Approach</p> <ul style="list-style-type: none"> • Gathering relevant Vision elements, objectives, policy and commitments, some technical information (in accessible way) • Complete best practice review on regional / intergovernmental water initiatives • Complete regional scan of existing/ongoing initiatives • Workshop development of principles, outcomes and goals for long term strategy • Scope a path to long term water strategy (Water Roadmap Update) 	
<p>Risk Assessment</p> <ul style="list-style-type: none"> • Scope Creep – mitigate through clear understanding of Project Charter, can be challenging to think about water at regional scale • Schedule – level setting may take additional time and effort • Resourcing – may require a consortium of consultants working together, case studies must be applicable in Alberta and regional context • Stakeholder information may be overwhelming, or partially relevant – • Disagreement on high level goals and outcomes – budget time for presentations and workshopping 	
<p>Team:</p> <p>The team will include CMRB Administration, municipal working groups, other experts, external stakeholders, consultant(s). The deliverables for this initiative will be created by the consultant with input from CMRB Administration and working groups</p> <p>Project Sponsor - CMRB Administration for CMRB</p> <p>Supports – Working Groups (water table), External Stakeholder contacts</p> <p>Consultants – Best Practice review, facilitation for potential workshop phase</p>	
<p>Preliminary Stakeholders and Roles</p> <ul style="list-style-type: none"> • Project Sponsor (CMRB) - A • Project Director (CMRB Admin) - A • Water Working Group – C • LUSC -C • Consultant - R • External Stakeholders (BRBC, AEP) - C 	
<p>Special Consideration</p> <ul style="list-style-type: none"> • Background reports <ul style="list-style-type: none"> ○ Water Use and Conservation in the CMR (2019) ○ Natural and Managed Capacity of Regional Water Supply in the CMRB (2019) ○ CMR Existing Water and Wastewater Reservicing and Regional Potential Report (2019) ○ Environmentally Sensitive Areas Background Report (2019) ○ Stormwater Background Report (2020) ○ Flood Workshop summary report 	

- Member municipality water-related documents
- Previous Board advocacy interests: 10% holdback and appurtenance
- FAQ sheet, [A new approach to mapping floodways in Alberta](#) (2021)
- [CMRB external stakeholder participation policy](#)

Project Definition Documents (PDD) are encouraged and are used to drive to Go /No-Go decisions. Projects approved at Project Definition Documents, will develop a Project Charter appropriately scaled to the nature and size of the project and phase.

The PDD is used to identify and describe a project as the first step in the project management lifecycle. It is used to gain input and approval from internal and external stakeholders such as the LUSC, TAG and participants as necessary, and as required. The results of the discussion will be incorporated into the PDD.

Responsible: Party who is completing the task

Accountable: Party who is making decisions and taking actions on the task(s)

Consulted: Party who will be communicated with regarding the decision-making process and specific tasks

Informed: Party who will be updated on decisions and actions during the project

Blueprint for Growth	
CMRB Vision Elements	Growth Plan Objectives
<ul style="list-style-type: none"> • We successfully use our commitment to Preferred Placetypes and specified growth areas to accomplish our vision while reducing water consumption, vehicle mileage, carbon emissions, land consumption and the cost of infrastructure. • The Region is built on a backbone of excellent integrated multi-modal transportation which ensures efficient and effective movement of people and goods. 	<ul style="list-style-type: none"> (a) Create opportunities for each municipality to grow and develop in a way that contributes to balanced regional growth. (b) Promote a range of housing and neighbourhood types within each municipality. (c) Strengthen the importance and livability of existing urban and rural centres. (d) Provide adequate land area for a variety of employment opportunities in appropriate areas. (e) Focus future urban growth in suitable locations where land use, infrastructure and servicing are aligned. (f) Promote compact and walkable communities. (g) Reduce the amount of land consumed by achieving higher densities and more efficient and mixed-use development patterns. (h) Limit or discourage new auto-oriented residential communities that are

	<p>dominated by single-detached housing with limited amenities.</p> <p>(i) Encourage country residential development in a clustered form of development which promotes land conservation for ecological and open space purposes.</p> <p>(j) Reduce the cost of infrastructure to support growth compared to past practices.</p> <p>(k) Focus regional service delivery in areas that take advantage of existing services, collaboration and plans.</p>
Water Stewardship	
CMRB Vision Elements	Growth Plan Objectives
<ul style="list-style-type: none"> • We work together to ensure our scarce fresh water is shared in a way that meets the needs of our current and future residents and our ecosystem. Our strategy works even in times of drought and flood. • The members of the Calgary Metropolitan Region work together to manage fresh water, wastewater and stormwater in a way that minimizes waste and provides safe and healthy water for our growing region. • The members of the Region work proactively with each other and our neighbours to ensure flood prone areas are understood and proactively managed. 	<p>(a) Enhance protection of our watersheds and natural water systems.</p> <p>(b) Provide a safe, affordable, and reliable supply of drinking water for residents and businesses.</p> <p>(c) Enhance regional collaboration of water stewardship.</p> <p>(d) Enhance the Region’s resilience to changes to natural water systems, due to Climate Change and human development.</p> <p>(e) Improve the efficiency with which we use our limited water supply.</p> <p>(f) Advance opportunities to better manage and share the risks and costs of water, wastewater and Stormwater infrastructure and service delivery.</p> <p>(g) Enhance protection of Regionally Significant Source Waters.</p>
Protect and Enjoy the Environment	
CMRB Vision Elements	Growth Plan Objectives
<ul style="list-style-type: none"> • We enjoy and protect our spectacular natural environment which has been a source of our quality of life and prosperity for thousands of years. • The Calgary Metropolitan Region is a global leader in minimizing the undesirable impacts of development on our natural environment including land, water, air and wildlife. • The members of the Region work proactively with each other and our 	<p>(a) Increase awareness and understanding of natural and sensitive areas through Environmentally Sensitive Area mapping.</p> <p>(b) Preserve the function of Regionally Significant natural systems.</p> <p>(c) Plan responsibly in Flood Prone Areas through sensitive development and flood mitigation.</p> <p>(d) Reduce the Region’s impact on the environment and climate through proper</p>

<p>neighboring regions to ensure our vision is shared and achieved</p>	<p>and efficient land use planning, including the use of measurable targets to reduce impacts on land, water and air. (e) Increase the environmental, economic, and social resiliency of our region.</p>
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Agenda Item	10
Submitted to	Land Use and Servicing Committee
Purpose	For Decision
Subject	Environmentally Sensitive Areas Implementation Project Definition Document
Meeting Date	June 17, 2022
<i>Motion that the Committee direct Administration to develop an appropriately scaled project charter for Environmentally Sensitive Areas Implementation strategic initiative for Board approval.</i>	
<p>Summary</p> <ul style="list-style-type: none"> • To maintain transparency and support the success of future projects, CMRB Administration has proposed a standardized framework for project approval and execution based on best practices. The project lifecycle framework was approved by the Board on June 9, 2022. • CMRB Administration brought a recommended group of strategic initiatives to the Board with a 5-year draft timeline in March and June of 2022. Overall, the Board was supportive of the strategic initiatives. • The first step of the approved framework is to complete a Project Definition Document (PDD) to introduce the strategic initiative. The proposed Environmentally Sensitive Areas work presented in this PDD has been previously scoped through the Environmentally Sensitive Areas Background Study completed by O2 Planning and Design with extensive TAG consultation. • The ESA Background study and its recommendations were reviewed by the Land Use Committee in November 2019 (see pages 26 to 50 of the LUC agenda package) and the Study was unanimously approved by the Board in December 2019 (see pages 8 to 29 of the agenda package). • Two of the recommendations provided by the Study are being implemented through the policies of the Growth Plan. The attached PDD proposes to complete the recommendations of the Background Study as they remain relevant and important to achieving Board goals around water and responsible development. • As noted in O2's previous presentation to LUC in November 2019, "Municipalities already adopt a variety of methods to assess and manage environmental features. A consistent regional framework for ESA 	

Agenda Item 10

management is required:

- To bring efficiency and coordination to the process
 - To help maintain regionally important services
 - To make cross-boundary management efforts more effective
 - To bring regional consistency to the development process”
- The [November 2019 presentation to LUSC](#) also highlighted that the proposed approach is “adaptive and based on practical criteria” to “reflect municipal capacity and data availability” (see page 37).
 - As described in the Background Study, “the intent is not to dictate the approach or level of effort of each municipality, but to arrive at a shared framework for environmental stewardship that minimizes effort, maximizes the value of municipal planning processes, and encourages consistency across the region. Ensuring that municipalities focus their efforts on comparable measures allows for more efficient information sharing and enables cross-boundary collaborative stewardship. This framework enables municipalities to more effectively maintain the ecosystem functions and services that the region depends upon, aligning existing monitoring and management efforts towards the preservation of regionally important ecological values, and bringing regional consistency to the development process. Consequently, establishing this framework not only provides more robust and defensible land use planning but ensures more streamlined and consistent planning across municipal boundaries. The objective is to guide the conducting of rigorous assessments, within the means of varied municipalities, at the scale and level-of- detail appropriate to the plans they support” (page 1).
 - The attached PDD requests the authority to develop, using existing information, the dataset necessary to work towards a shared regional framework and to better incorporate ESAs into the work of the Board. This information would form an important input to other work of interest to the Board, such as water studies.
 - Following review of the PDD by the Land Use and Servicing Committee, the Committee would give direction to CMRB Administration to move forward with a project charter and a request for proposal for the remaining work. Alternatively, CMRB Administration may be asked to abandon, expedite, or refine the Project Definition Document, as required.
 - Feedback from the strategic initiative PDD presented to the Board on June 9, 2022 was generally supportive and no substantive edits were made.
 - CMRB Administration recommends that this PDD be approved and that CMRB Administration develop an appropriately-scaled project charter with input from Land Use TAG and municipal experts as part of developing an request for proposal for the remaining work outlined in the ESA Background Study.

Attachments:

- Environmentally Sensitive Areas Implementation Project Definition Document
- Environmentally Sensitive Areas Background Study, O2 Planning and Design, December 2019

AGENDA ITEM 10 i Calgary Metropolitan Region Board Project Definition Document-Draft		
Project Name	Environmentally Sensitive Areas Implementation Framework and Database	Project #
Short Description	Building on 2019 ESA Background Report, create framework to implement ESA policy of the Growth Plan	Date
Relation to 5 Year Strategic Plan Full CMRB Vision Elements and associated objectives are appended.	<p>Vision Elements: Protect and Enjoy the Environment Water Stewardship</p> <p>GP Policy Area – Section 3.3.2 Environmentally Sensitive Areas 3.3.2.1 ASPs and ARPs shall complete a desktop screening or environmental study and mitigate identified impacts 3.3.2.2 MDPs shall include ESA maps 3.3.2.4 The CMRB shall compile the municipally identified Environmentally Sensitive Areas into a common database for the Region. ESA Definition (May 21, 2021 Growth Plan) Environmentally Sensitive Areas are key natural components of the regional landscape, providing essential ecosystem functions and services. These functions and services include flood mitigation, drinking water supply, maintenance of regional biodiversity, preservation and connectivity of unique habitats and landscapes, and provision of culturally and economically valued resources and opportunities.</p>	
Project Objectives	<ul style="list-style-type: none"> • Use shared definition of ESAs (see GP glossary and ESA background report) to create a common approach to regional ESA identification and data gathering, a regional ESA database, and shared mapping • Collaboratively identify ways in which environmental studies completed for statutory plans can be incorporated into the regional understand of ESAs and ESA database. • Collaboratively identify a regional approach to planning for ESAs, leading to ways in which ESAs can be incorporated into statutory planning to achieve objectives set out in the GP • Create a shared database of regional ESAs and process for database management 	

Project Deliverables	<ol style="list-style-type: none"> 1. Implementation Framework for ESA policies in GP 2. Regional ESA database v1 (ESRI) 3. Identify data gaps and recommend strategies to fill gaps such as through ESA studies completed for ASPs/ARPs 4. Recommend planning and mitigation strategies to fulfill the Board's Vision and the CMR Growth Plan 	
Approximate Duration	1.5 years (not including a scoping / tendering phase)	
Dependencies	<u>INPUTS</u> 2019 Environmentally Sensitive Areas Background Report GP Ministerial Order Municipal/Provincial ESA information and datasets External Stakeholder Organization ESA information and Datasets (i.e. BRBC, Miistakis, etc) <u>OUTPUTS may inform:</u> Long term water strategy Regional ESA database KPIs for Growth Plan implementation future GP Updates, other CMRB projects	
Order of Magnitude Budget (+/- 25%)	Budgeted Amounts Not Public	Open Tender APC
Proposed Output Data Classification	GIS - OPEN (see CMRB Data Sharing Framework) Summary Report - OPEN	
Project Summary <ul style="list-style-type: none"> • Environmentally Sensitive Areas (ESAs) are not a defined term in the Province of Alberta. CMRB's first step during the development of the CMR Growth Plan (GP) was to create a shared definition and criteria for regional ESAs. This shared definition can be found in the Glossary of the Growth Plan and in the CMRB's Environmentally Sensitive Areas Background Report. • The vetted shared definition and criteria for ESAs was intended to lead to a shared approach to planning for ESAs in the region informed by a common database and mapping for regional ESAs • The 2019 Background Report was meant to eventually lead to the creation of a regional dataset that would be appropriate to the CMR and its work, that would support the Board in its future studies and reports, and that would improve planning recommendations and policy monitoring and reporting. • The project deliverables include a framework for creating a regional approach to approach to planning for ESAs ("road map") and how environmental data may be built through existing provincial, municipal and stakeholder datasets, and, over time, through studies undertaken as part of the ASP planning process, ultimately leading to a regional ESA database. • For this project, a consultant would gather an inventory of municipal, provincial and other sourced environmental information and normalize it to the key definitions and outcomes identified in the ESA Background Report. This normalization would set a path for environmental studies and reports already being created for Area Structure Plans to report findings and data in ways that build the regional ESA database. 		

<ul style="list-style-type: none"> To this end, the consultant will make recommendations on how planning for future developments and REF Applications will meet the direction in ESA Growth Plan policies (Chapter 3.3, especially Section 3.3.2 of the Growth Plan). The consultant’s recommendations related to creating shared approach to planning for ESAs in the CMR. An ESA database must align with a greater framework of how the region will move towards a greater understanding of managing ESAs. 	
Scope	
In Scope <ul style="list-style-type: none"> Framework for establishing ESAs Regional GIS database v1 Recommendations for municipalities and industry to meet the policy direction in GP and REF requirements 	Out of Scope <ul style="list-style-type: none"> Fieldwork of any kind Maintenance of GIS dataset Filling data gaps, once identified Additional ESA policies Public Engagement
Approach <ul style="list-style-type: none"> CMRB Admin to develop a Request for Proposal to reflect Project Framework, ESA Background Report recommendations and Growth Plan policies. Post RFP to Alberta Purchasing Connection. Select consultant. Consultant to create a project work plan, including project milestones, meeting schedules, stakeholder identification and outreach, other. Communicate workplan to working group. Consultant to develop a framework for a regional approach to planning for ESAs that the information in the ESA database supports Gather applicable provincial, municipal and stakeholder ESA reports and datasets. Consolidate information and normalize it into a regional database in alignment with 2019 ESA Background Report criteria. Identify information gaps and potential approaches to filling those gaps. Outline an approach to collecting information from environmental studies already completed as part of the regular process of developing Area Structure Plans and Area Redevelopment Plans to incorporate into the regional dataset. Recommend a process for the ongoing maintenance and updating of a regional database. 	
Risk Assessment <ul style="list-style-type: none"> Municipal dataset availability or openness to sharing data – mitigate with communications and the CMRB Data Sharing Framework Normalizing data may be contentious – mitigate by consultant recommending options Resourcing issues or engagement of municipal experts – mitigate with communication and optional working group participation 	
Team and Roles: <ul style="list-style-type: none"> CMRB Administration - Project Sponsor (on behalf of CMRB) CMRB LUSC –Informed on project progress, provide feedback CMR Board –Informed on project progress, provide final approval of project deliverables Consultant – Project manage milestones, facilitate technical discussions, incorporate municipal feedback, and create project deliverables 	

<ul style="list-style-type: none"> • Project Steering Committee (TAG and municipal environmental experts) – provide expert knowledge, vet approach and technical recommendations • External Stakeholders – potential input to project methods or to identify alternate data sources and assumptions/context for its use in project • Recommend project Working Group include at minimum: 1 rural municipality, 1 medium sized urban municipality and 1 large urban (Calgary), plus external stakeholders
<p>Preliminary Stakeholders and Roles</p> <ul style="list-style-type: none"> • CMRB Admin – A • Consultant – R, A • TAG and municipal environmental experts – C • External Stakeholders: <ul style="list-style-type: none"> ○ Government of Alberta - C ○ BRBC - C ○ Public – I (will be informed through LUSC, Board meeting updates) ○ Others – TBD, as necessary <p>R = Responsible, A = Accountable, C = Consult, I = Inform</p>
<p>Special Considerations</p> <ul style="list-style-type: none"> • CMRB external stakeholder participation policy

Project Definition Documents (PDD) are encouraged and are used to drive to Go /No-Go decisions. Projects approved at Project Definition Documents, will develop a Project Charter appropriately scaled to the nature and size of the project and phase.

Responsible: Party who is completing the task

Accountable: Party who is making decisions and taking actions on the task(s)

Consulted: Party who will be communicated with regarding the decision-making process and specific tasks

Informed: Party who will be updated on decisions and actions during the project

CMRB Vision Elements (May 21, 2021)

Protect and Enjoy the Environment	
CMRB Vision Elements	Growth Plan Objectives
<ul style="list-style-type: none"> • We enjoy and protect our spectacular natural environment which has been a source of our quality of life and prosperity for thousands of years. • The Calgary Metropolitan Region is a global leader in minimizing the undesirable impacts of development on our natural environment including land, water, air and wildlife. • The members of the Region work proactively with each other and our neighboring regions to ensure our vision is shared and achieved 	<ul style="list-style-type: none"> (a) Increase awareness and understanding of natural and sensitive areas through Environmentally Sensitive Area mapping. (b) Preserve the function of Regionally Significant natural systems. (c) Plan responsibly in Flood Prone Areas through sensitive development and flood mitigation. (d) Reduce the Region’s impact on the environment and climate through proper and efficient land use planning, including

PDD: Environmentally Sensitive Areas

	<p>the use of measurable targets to reduce impacts on land, water and air. (e) Increase the environmental, economic, and social resiliency of our region.</p>
Water Stewardship	
CMRB Vision Elements	Growth Plan Objectives
<ul style="list-style-type: none"> • We work together to ensure our scarce fresh water is shared in a way that meets the needs of our current and future residents and our ecosystem. Our strategy works even in times of drought and flood. • The members of the Calgary Metropolitan Region work together to manage fresh water, wastewater and stormwater in a way that minimizes waste and provides safe and healthy water for our growing region. • The members of the Region work proactively with each other and our neighbours to ensure flood prone areas are understood and proactively managed. 	<ul style="list-style-type: none"> (a) Enhance protection of our watersheds and natural water systems. (b) Provide a safe, affordable, and reliable supply of drinking water for residents and businesses. (c) Enhance regional collaboration of water stewardship. (d) Enhance the Region’s resilience to changes to natural water systems, due to Climate Change and human development. (e) Improve the efficiency with which we use our limited water supply. (f) Advance opportunities to better manage and share the risks and costs of water, wastewater and Stormwater infrastructure and service delivery. (g) Enhance protection of Regionally Significant Source Waters.

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Environmentally Sensitive Areas Background Study
Calgary Metropolitan Region Board

Approved Version, December 13, 2019

 O2 Planning + Design

Project Intent

Environmentally Sensitive Areas (ESAs) are key landscape features, providing important ecosystem services to municipalities at regional and local scales. The stewardship of ESAs is essential to the long-term maintenance of ecosystem function and biological diversity of the region. These cherished and often irreplaceable natural places are worthy of retention or special care to maintain water quality, provide flood mitigation, retain natural habitats and diverse landscapes, and preserve other valued ecosystem functions and services.

- **Ecosystem functions** describe the underlying biotic and abiotic processes that sustain, maintain, and transform the landscape over time.
- **Ecosystem services** are those aspects of the landscape that provide direct benefit to humanity. Such services provide protection from disturbances and disasters, provide municipalities with clean drinking water, and provide residents with diverse opportunities for recreation and economic benefit.

ESAs are recognized as sensitive landscape features as their loss or degradation directly impacts ecosystem function. These areas have a disproportionate impact on the function of the regional landscape and require particular focus and attention during all stages of land use planning efforts. Areas may be ‘sensitive’ even if they are not presently at risk of loss or disturbance. Their designation is meant to inform municipal management decisions over time, not necessarily as a triage tool to direct immediate action. Thus, assessments of risk must be a component of the decision-making process during land use planning efforts, and in the ongoing monitoring and assessment of the health of the regional landscape.

The loss or degradation of an ESA produces meaningful impacts to ecosystem function and to the important ecosystem services which the region depends upon, directly impacting human society and economy. In the event of the absence of functioning ecosystems, municipalities must make costly infrastructure improvements to maintain the quality of life that would otherwise be provided by natural areas. As ecosystem services have been widely recognized as key components of healthy rural and urban systems, ESAs must be seen as cherished spaces which greatly contribute to the well-being of the region. The wise stewardship of these landscape features is necessary to preserve natural function, ensure healthy populations and maintain a sustainable balance as the Calgary Metropolitan Region continues to grow.

The suggested definitions, criteria, analytic approaches and policy recommendations contained in this document are intended to foster a shared regional language for the management of these important natural functions and services. The intent is not to dictate the approach or level of effort of each municipality, but to arrive at a shared framework for environmental stewardship that minimizes effort, maximizes the value of municipal planning processes, and encourages consistency across the region. Ensuring that municipalities focus their efforts on comparable measures allows for more efficient information sharing and enables cross-boundary collaborative stewardship. This framework enables municipalities to more effectively maintain the ecosystem functions and services that the region depends upon, aligning existing monitoring and management efforts towards the preservation of regionally important ecological values, and bringing regional consistency to the development process. Consequently, establishing this framework not only provides more robust and defensible land use planning but ensures more streamlined and consistent planning across municipal boundaries. The objective is to guide the conducting of rigorous assessments, within the means of varied municipalities, at the scale and level-of-detail appropriate to the plans they support.

Calgary Metropolitan Region Board Regulation

Section 9(1)(d) of the *Calgary Metropolitan Region Board Regulation* (“the Regulation”) requires that the Growth Plan contain policies regarding ESAs. To this end, in May 2019 the Land Use Committee (LUC) approved a request by CMRB Administration to undertake a background study around ESAs. The purpose of this report is to inform the development of the Growth Plan and Servicing Plan. The outcomes of this study are not binding on the Growth Plan.

This ESA Background Study provides guidance towards the development of a cooperative regional framework to

support municipalities in planning for ESAs, particularly those that span jurisdictional boundaries. This background study also provides an overview of existing policies and approaches, supplemented by current established best practices, to inform a regional approach to policies regarding ESAs as required by the Regulation. This background study provides a clear definition, practical objectives, and recommended criteria for the assessment and identification of ESAs. Drawing on input from all Calgary Metropolitan Region Board (CMRB) partner municipalities, and informed by broader-scale provincial approaches, this collaborative effort establishes a regional framework for ESA assessment, and guides the development of the CMRB's Growth Plan to ensure wise stewardship of the region's irreplaceable environmental features. This background report is intended to inform the development of the integrated Growth Plan and Servicing Plan, but the following recommendations are not necessarily binding on either Plan.

Regional Context

Across the CMR, policy and management approaches vary considerably in the criteria used to identify ESAs and in the approaches used to ensure their preservation. Building a consistent regional framework across all member municipalities requires a change in this approach, by shifting the focus of all municipalities towards a shared set of environmental criteria. The ongoing development of the Growth Plan highlights the need for a shared regional understanding of the location and functional contribution of ESAs. A comprehensive spatial map of known and potential ESAs has not yet been compiled and this lack of knowledge impacts the wise stewardship and sustainable development of the region.

Municipalities throughout the CMR have universally recognized the importance of protecting natural systems within their boundaries, albeit using a variety of definitions and approaches to do so. The Province has similarly recognized the wide variety of values that natural systems provide and has conducted province-wide assessments and valuations of ecosystem services, as well as formally defining Environmentally Significant Areas (also referred to as ESAs). Municipal policies refer to both Environmentally Significant Areas and Environmentally Sensitive Areas, often interchangeably. Others speak specifically of Wetland Policy, River Valley Management, Urban Forests, and Environmental Sustainability. The broad intent of all such policies is to preserve and support the essential ecosystem functions and services provided by natural areas.

The Water Roadmap, developed by the water servicing technical advisory group, identifies an iterative path forward for how water, wastewater and stormwater may be addressed in the Growth and Servicing Plan. Member municipalities identify water quality as it relates to land use as a consideration of regional interest. Given that regional environmental systems provide services which support water quality, this study incorporates water quality into the ESA definition and its associated criteria to support CMR municipalities in addressing the water quality complexity of the Water Roadmap.

While a great deal of consensus exists across municipalities in their focus on riparian areas, wetlands, river systems, source water areas and highly diverse ecosystems, differing terminology and specification has made it difficult to align municipal efforts across the region. As many of these landscape features span municipal boundaries, a regional framework is needed which ensures consistency and interoperability, with municipalities collecting and incorporating spatial data on the same set of features using a common framework. This regional framework ensures that municipalities identify and manage ESAs in a coordinated fashion, allowing for a shared understanding of the regional landscape and the effective stewardship of its important ecosystem services.

Municipalities vary in the spatial context of the natural systems functioning within their boundaries, the economic and social drivers for development of their lands, and their capacity for environmental management (in terms of staffing availability, subject matter expertise and availability of spatial data describing the location, condition and function of environmental features). A one-size-fits-all approach to establishing ESA criteria is therefore unrealistic.

To this end, this study identifies a range of criteria that can lead to the identification of an area as Environmentally Sensitive, and a variety of potential methods and approaches that can be used to assess these criteria.

Municipalities must adopt the approaches which best reflect their capacity to manage the unique set of landscape features that fall within their boundaries. This proposed framework, and the tools identified within it, provides a

sound and practical approach that ensures all municipalities contribute to the identification and management of regionally important environmental features in a consistent and regionally relevant manner. As noted above, the outcomes of the study are intended to inform the development of the Growth Plan and Servicing Plan and are not binding on either Plan.

Recommended ESA Definition

Environmentally Sensitive Areas (ESAs) are key natural components of the regional landscape, providing essential ecosystem functions and services. These include flood mitigation, drinking water supply, maintenance of regional biodiversity, preservation and connectivity of unique habitats and landscapes, and provision of culturally and economically valued resources and opportunities.

Recommended ESA Objectives

The identification and assessment of potential ESAs is a critical aspect of sustainable development in the region. As natural systems are difficult and often impossible to replace once lost, the delineation and preservation of key environmental features is essential to preserve the natural functioning of the region. The identification and assessment of existing ESAs is the first step to the stewardship of these features. The management strategies taken to maintain these areas depends on the risk or vulnerability of each area, whether from human development, invasive species, erosion, or other external disturbances. As these factors change over time in response to conditions and context, the ongoing assessment of relative risk must be an ongoing task that extends beyond the identification and initial assessment of regional ESAs.

The objective of this study is to support sustainable regional land-use planning and development over time by identifying areas that require special management considerations during the land use planning process. This effort must align with existing provincial approaches but reflect the unique local context of the region at a scale appropriate for inter-municipal planning. All municipalities in the CMR already work towards this goal to greater or lesser extents. This study aims to ensure that a consistent approach is adopted that allows municipalities to better coordinate and streamline this process.

ESA identification is used to ensure awareness of the fulsome set of potentially valuable areas, to guide more detailed assessment. ESA assessment aims to confirm potential ESAs and highlight regionally important natural features for preservation, including those that may span municipal boundaries, providing a framework for collaborative municipal stewardship of ecosystem functions and services.

Recommended ESA Criteria

Well-defined criteria provide a clear and consistent approach to identifying and assessing ESAs, simplifying the management process for municipalities, and communicating the requirements for responsible and sustainable development to private enterprise. Four key criteria encompass the range of valued ecosystem functions and services occurring in the region, from water quality provision to flood mitigation to biodiversity preservation. More specific sub-criteria highlight the variety of nuanced factors within the CMR that contribute to the provision of ecosystem functions and services. High-level and detailed-level identification methodologies have been recommended for the various sub-criteria based on existing data and established best practices (see Appendix A). These methodologies are provided as examples which, through consultation with subject-matter experts, may be improved or modified to align with emerging best practices.

These approaches reflect different timing and levels of effort for ESA identification, with high-level identification occurring as a desktop exercise using readily available data during the development of statutory Area Structure Plans, while detailed-level identification occurs through additional analysis and ground-truthing often during the development of non-statutory Outline Plans or prior to subdivision.

The definition, objectives, and criteria for ESA assessment outlined in this background study were developed through an iterative review process with key stakeholders, the CMRB's Technical Advisory Groups (TAGs) comprised of municipal environmental planning staff, and the CMRB's Land Use Committee. They are intended to provide clarity, consistency and flexibility in implementation to ensure that relevant and practical data are collected over the life of the CMRB's Growth Plan. As municipalities vary in their environmental context and their management capacity, these criteria were developed to ensure that the varied municipalities share a common focus for the regional management of Environmentally Sensitive Areas.

The higher-level criteria that should be used to identify and assess Environmentally Sensitive Areas are:

1. Areas maintaining the provision of water quality and quantity throughout the Region and providing protection against drought and flooding events.
2. Areas providing habitat for identified local species of interest, designated species of conservation concern (SCC), or identified focal species groups.
3. Areas providing rare, unique, or biologically diverse ecosystems or unique landforms.
4. Areas contributing to other important ecosystem functions or services at regional or local scales.

ESA Policy, Implementation and Monitoring Opportunities

The following opportunities are intended for consideration by the Growth Plan consultant and are not binding to the development of the Growth Plan itself. The list below reflects concerns and practical considerations that have arisen from discussions with TAG members and municipal experts during the development of this background study.

- It is recommended that all Municipal Development Plans (MDPs) prepared by CMR municipalities adopt a shared, formal definition of ESAs in accordance with the Criteria.
- It is recommended that all MDPs to establish a desktop-based process for identifying potential ESAs during the development of Area Structure Plans, and a rigorous fieldwork-based process to confirm and refine potential ESAs during the development of finer-scale non-statutory plans, or prior to subdivision. These assessments must quantify the function of confirmed ESAs, in alignment with the Criteria and Sub-Criteria.
- It is recommended that a spatial map of potential and confirmed ESAs across the region be created to support responsible development planning and stewardship of the region's environmental resources. Given the complexity of developing this map, this work would be undertaken after the completion of the Growth Plan as part of future studies.
- In the absence of a fulsome inventory of confirmed ESAs, it is recommended that TAG develop a list of high-level and readily available spatial data to support the consideration of regional ESAs during the development of the Growth Plan.
- It is recommended that the CMRB develop a well-maintained regional database of potential and confirmed ESAs over time, with clear standards for data collection and dissemination, to provide a consistent and fulsome inventory of important environmental features. This regional database would aggregate municipal spatial data to identify potential regional ESAs using agreed upon criteria, providing municipalities with a shared understanding of the regional context. This database would be used to inform municipal planning processes and could be used to develop of spatial map of regional assets.
- It is recommended that the CMRB investigate implementation and monitoring options for the creation and maintenance of such a regional database. Completing this work at the regional scale, in collaboration with experts and key stakeholders, could:
 - Ensure an ongoing effort is made to update, critique, and improve spatial environmental data.

- Provide a forum to develop, critique, and update spatial environmental datasets (such as wetland and watercourse inventories, land cover datasets, wildlife habitat, and human footprint and disturbance impacts), to align with regional definitions and standards.
- Encourage contributions to municipal and provincial inventories and observation databases from citizen groups, academic institutions, consultants and other subject matter experts.
- Identify lists of species of local importance and their habitat requirements.
- Maintain and improve the spatial dataset of all identified ESAs, their management status, and associated data regarding their function.

Recommended Specific ESA Criteria/Sub-criteria Descriptions

The following detailed sub-criteria reflect more nuanced aspects of the higher-level criteria. They reference the particular set of ecosystem functions and services which are provided by landscape features captured by the sub-criteria. This set of sub-criteria reflect the recommendations of the TAG groups, as well as current best and most appropriate practices and approaches for the CMR.

1. Areas maintaining the provision of water quality and quantity, and providing source water protection or protection against drought and flooding events:

- a. Presence of functional riparian areas adjacent to watercourses:

- i. Intact riparian areas provide: filtration of overland flow, reduction of inputs of fertilizer and other pollutants into rivers and other water bodies; dissipation of flood energy (force, height and volume); bank stabilization.

Ecosystem service: flood mitigation, water quality, maintenance of biodiversity, food provision, moderation of water temperature, climate change resiliency

Ecosystem function: disturbance regulation, water regulation, soil retention, nutrient regulation, supporting habitat, raw materials, provision of shade and shelter

- b. Catchment areas of large wetlands or wetland complexes:

- i. Wetlands provide water filtration and storage, contribute to groundwater recharge, delay the overland movement of water during flooding, and retain water during droughts.

Ecosystem service: flood mitigation, water quality, maintenance of biodiversity, food provision, moderation of water temperature, climate change resiliency

Ecosystem function: disturbance regulation, water regulation, soil retention, nutrient regulation, supporting habitat, raw materials, provision of shade and shelter

- c. Presence of well-functioning natural or naturalized floodplains:

- i. Undeveloped floodplains allow flood waters to spread over a large area, reducing energy of flows and reducing peak flows downstream. This reduces potential damage to infrastructure and communities and improves channel stability.

Ecosystem service: flood mitigation, maintenance of ecosystems and biodiversity, climate change resiliency

Ecosystem function: disturbance regulation, water regulation, soil retention, nutrient regulation, supporting habitat, food provision, raw materials, provision of shade and shelter

2. Areas providing habitat for identified native species of interest, designated species of conservation concern (SCC), or identified focal species groups:

- a. Area provides habitat for identified native species of interest:

- i. Habitat loss is one of the main threats to the long-term survival of identified native species of interest and their habitat may require special management considerations.
 - b. Area provides habitat for designated species of conservation concern:
 - i. Habitat loss is one of the main threats to the long-term survival of identified provincial or federal species of conservation concern and their habitat may require special management considerations.
 - c. Area provides habitat for identified focal species groups:
 - i. Habitat that supports a large range of species is important for the long-term maintenance of biodiversity in the region:

Ecosystem service: maintenance of biodiversity, pollination of crops and natural vegetation, control of pests, dispersal of seeds and translocation of nutrients, climate change resiliency

Ecosystem function: nutrient regulation, pollination, biological control, genetic resources

- 3. Areas providing rare, intact, or biologically diverse ecosystems or unique landforms:
 - a. Presence of biologically diverse ecosystems:
 - i. Biologically diverse ecosystems perform many ecosystem functions and provide numerous ecosystem services. Highly diverse systems are more resilient to disturbance.

Ecosystem service: Soils formation and protection, nutrient storage and cycling, pollution breakdown and absorption, climate change resiliency, maintenance of ecosystems and biodiversity, recovery from unpredictable events, invasive weed suppression, food provision, medicinal resources, wood products, ornamental plants

Ecosystem function: Breeding stocks, population reservoirs, future resources, diversity in genes, species and ecosystems

- b. Rare ecosystems:
 - i. Rare ecosystems are unique and irreplaceable landscapes whose preservation will ensure a representative and complementary regional ecological network.

Ecosystem service: maintenance of biodiversity, food provision

Ecosystem function: supporting habitats, raw materials, genetic resources

- c. Areas where intact ecosystems occur:
 - i. Highly intact ecosystems are more resilient to change, and as a result, are more likely to maintain their full range of ecological processes. Intact ecosystems are considered to be critical for the persistence of a broad range of flora and fauna than highly impacted habitats.

Ecosystem service: maintenance of biodiversity, habitat connectivity, generation and renewal of soils and natural vegetation, pollination, food provision, pest control

Ecosystem function: supporting habitats, raw materials, genetic resources, disturbance regulation, water regulation, soil retention, nutrient retention, pollination, provision of shade and shelter

- d. Areas where regionally, provincially or nationally recognized landforms are present:

- i. These unique landforms are considered to be exceptional examples of landscape diversity and may support important or unique ecological communities, species, and populations.

Ecosystem service: maintenance of ecosystems and biodiversity, cultural services

Ecosystem function: supporting habitats, raw materials, genetic resources

- 4. Areas that significantly contribute to other important ecosystem functions or services at regional or local scales:

- a. Important connectivity corridors, shelterbelts and steppingstones between core areas:

- i. Landscape connectivity allows the maintenance of subpopulation genetics, the re-establishment of extirpated populations in isolated habitats, and the linking of habitat types for species with varied life histories.

Ecosystem service: maintenance of ecosystems and biodiversity

Ecosystem function: supporting habitats, nutrient distribution, genetic resources, colonization

- b. Important natural resources (plant products, forage, food sources):

- i. Important natural resources provide economic and cultural services which benefit regional industries and should be managed to ensure that use does not compromise the access to or quality of such resources.

Ecosystem service: provisioning services

Ecosystem function: raw materials, genetic resources

- c. Ecotourism and unique recreational opportunities:

- i. Unique landforms, environments and biological entities provide important economic contributions, drawing visitors to the region and providing unique experiences to regional populations.

Ecosystem service: cultural services, recreational services, educational services

- d. Culturally important landforms

- i. Historic, cultural or spiritual valuation of unique landscapes and landforms preserve heritage and act as educational opportunities, acting to maintain the regional identity over time.

Ecosystem service: cultural services, educational services

APPENDIX A

Recommended ESA Sub-criteria with Measures and Methods

As described in the section above the following sub-criteria are intended to provide guidance to municipal partners in assessing the environmental sensitivity of landscape features in their unique context. The majority of these measures and methods are already in use across many municipalities of the Calgary Metropolitan Region, but a consistent regional framework for ESA management has not yet been achieved.

Sub-criteria examples are split into high level desktop approaches using readily available spatial datasets (conducted during initial planning stages such as Area Structure Plans) and detailed level field approaches requiring greater subject matter expertise and inventory effort (which can be conducted during the initial stages of development of subdivisions, Outline Plans, Conceptual Schemes, or Site Development Plans). These sub-criteria are neither exhaustive nor prescriptive and should be revised and updated by subject matter experts as a more comprehensive understanding of the ecosystem function of the regional landscape is developed. Proposed datasets listed below are representative of commonly available appropriate data and are not prescriptive nor exhaustive. Municipalities are encouraged to incorporate comparable data into their assessment processes, to reflect improvements in understanding. Assessments must always be conducted by qualified professionals.

1. Areas maintaining the provision of water quality and quantity throughout the region and providing protection against drought and flooding events.

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
<p>1.1. Presence of functional riparian areas adjacent to watercourses</p>	<p>Measure: Presence of a native vegetation community, adjacent to a watercourse, whose ecological functions of water retention and filtration have not been lost or highly impaired due to rural or urban development, resource extraction or agricultural purposes.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Use NRCan/CanVec stream network (Natural Resources Canada 2019a, 2019) to identify where watercourses occur. Ortho imagery and drainage modelling via LiDAR DEM can supplement CanVec layers. 2. Use vegetation layer (GVI (Alberta Environment and Parks (AEP) 2016), Municipal layers, ABMI (Alberta Biodiversity Monitoring Institute 2010), ACIMS (Alberta Parks 2017)) to identify where native vegetation communities are present adjacent to watercourse. 3. Overlay ABMI human footprint and NRCan/CanVec road etc. layers to identify areas with minimal human footprint. 	<p>Measure: Presence of a healthy riparian community adjacent to watercourse.</p> <ul style="list-style-type: none"> ● Contiguous size ● Bank Stability ● Overland flow distance <p>Methods:</p> <ol style="list-style-type: none"> 1. Identify presence of watercourse and classify as per provincial classification system (Alberta Agriculture and Forestry 2016). 2. Identify riparian community and delineate. 3. Complete Cows and Fish riparian health assessment (Adams and Hale 2009).

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
<p>1.2. Catchment areas of large wetlands or wetland complexes</p>	<p>Measure: Presence of wetlands over a certain size, or a wetland complex of nearby wetlands over a certain size.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Use NRCan/CanVec waterbody (Natural Resources Canada 2019) and Alberta Merged Wetland Inventory (Alberta Environment and Parks (AEP) 2017), by using historic and present day ortho imagery to identify potential inaccuracies and data gaps. 2. Identify wetland complexes using buffers or cost-distance methods to select large aggregations of wetlands. 	<p>Measure: Presence of a wetland that scores an ‘a’, ‘b’, or ‘c’ on the provincial ABWRET-A evaluation, or those wetlands which score highly in the surface water storage, sediment & toxicant retention & stabilization, Phosphorus retention, nitrogen retention, organic nutrient export ABWRET-A functional components.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Complete ABWRET-A for each wetland and submit to Province for results (Government of Alberta 2016a).
<p>1.3. Presence of well-functioning natural or naturalized floodplains</p>	<p>Measure: Presence of a watercourse-adjacent floodplain dominated by natural or naturalized land cover.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Use NRCan/CanVec stream network (Natural Resources Canada 2019) to identify where watercourses occur and floodway/flood fringe/inundation mapping where available. Historic and present day ortho imagery, LiDAR DEM and contour maps will provide additional tools to delineate flood plain extents. 2. Use vegetation layer (GVI/ACIMS/Municipal layers) to identify where native vegetation communities are present (Alberta Environment and Parks (AEP) 2016, Alberta Parks 2017) adjacent to watercourse and where human footprint is present (ABMI human footprint layer (Alberta Biodiversity Monitoring Institute n.d.) or equivalent). 	<p>Measure: Presence of a watercourse-adjacent floodplain dominated by natural or naturalized land cover.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Identify presence of watercourse and classify as per provincial classification system (Alberta Agriculture and Forestry 2016). 2. Refer to provincial flood hazard mapping, inundation mapping, or develop own mapping. 3. Field work to confirm if undeveloped (lacking hard infrastructure, such as riprap, houses, roads, bridges, or intact meander belt).

2. Areas providing habitat for identified local species of interest, designated species of conservation concern (SCC) or identified focal species groups.

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
<p>2.1. Area that provides habitat for identified native species of interest</p>	<p>Measure: Native vegetation patch that meets key habitat requirements. Presence of important habitat features that are known breeding, roosting, or foraging sites, or overwintering areas.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Municipalities to identify which species are of local interest. 2. Determine key habitat the species requires (breeding/stopover, key habitat characteristics) and develop list of key habitat criteria for use in Detailed Level. 3. Use vegetation layer (GVI/FWMIS/municipal data) to identify where this habitat or landscape feature occurs (Alberta Environment and Parks (AEP) 2016, Alberta Environment and Parks 2019). Ortho imagery may be used to supplement and validate data. 4. Build regional dataset by referring to existing information (regional and local studies, provincial data) and requesting information from AEP wildlife biologists. 	<p>Measure: Native vegetation patch that meets key habitat requirements. Presence of important habitat features that are known breeding, roosting, or foraging sites, or overwintering areas.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Complete field surveys to identify if key habitat exists and general/targeted wildlife or vegetation surveys to identify species and/or features that are present. 2. Identify if the site has the potential to have important habitat features or has an area identified in the regional dataset. 3. Identify which general or targeted wildlife surveys are required based on habitat available. 4. Complete minimum number of surveys identified in the Sensitive Species Survey Guidelines (Alberta Environment and Sustainable Resource Development (AESRD) 2013) to identify if features are present.
<p>2.2. Area provides habitat for designated species of conservation concern</p>	<p>Measure: Presence of:</p> <ul style="list-style-type: none"> ● An Important Bird Area (Bird Studies Canada (BSC) 2012); ● Ramsar wetlands (The Ramsar Convention 2019); ● Designated critical habitat/Emergency Orders under Species at Risk Act (including aquatic habitat) (Government of Canada 2002), provincial Key Wildlife Biodiversity Zone (Alberta Environment and Parks 2019) 	<p>Measure:</p> <ul style="list-style-type: none"> ● Observed Designated SCC in conjunction with breeding behaviour, or significant foraging/stopover/wintering location. ● Provincial Sensitive Species ranges and either contains (or likely contains) suitable habitat for that species or has observations of that species. <p>Methods:</p> <ul style="list-style-type: none"> ● Use GIS to determine if any of these are in the regional area.

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
	<p>and area is dominated by natural cover;</p> <ul style="list-style-type: none"> ● Provincial Key Wildlife Habitat (Piping Plover waterbodies, Trumpeter Swan waterbodies, Greater Short-Horned Lizard Habitat, Ord’s Kangaroo Habitat, Grizzly Bear Zone, Mount Goat and Sheep Areas, Colonial Nesting Birds) (Government of Alberta n.d.) ● and area is undeveloped; ● Within provincial sensitive species ranges and either contains (or potentially contains) suitable habitat for that species OR has historical observations of that species (FWMIS/ACIMS), or Class A and B watercourses, fish-bearing water bodies (Government of Alberta 2012b) with previous observations of fish species of conservation concern (Alberta Environment and Parks 2019), or appropriate habitat for specie of conservation concern in the range. <p>Methods:</p> <ol style="list-style-type: none"> 1. Use GIS to determine if any of these are in the regional area. 2. Provincial/federal datasets: IBA (Bird Studies Canada (BSC) 2012), Ramsar (The Ramsar Convention 2019), SARA (Government of Canada 2002), AEP Key Wildlife Biodiversity Zones, AEP wildlife sensitivity datasets(Government of Alberta n.d.), ESAs (Fiera Biological Consulting Ltd. 2014), LAT, FWMIS (Alberta Environment and Parks 2019), ACIMS (Alberta Parks 2017). 	<ul style="list-style-type: none"> ● Use provincial/federal datasets: IBA (Bird Studies Canada (BSC) 2012), Ramsar (The Ramsar Convention 2019), SARA (Government of Canada 2002), AEP Key Wildlife Biodiversity Zones, AEP wildlife sensitivity datasets(Government of Alberta n.d.), ESAs (Fiera Biological Consulting Ltd. 2014), LAT, FWMIS (Alberta Environment and Parks 2019), ACIMS (Alberta Parks 2017). ● Complete general/targeted wildlife or vegetation surveys to add to species observations.
<p>2.3. Area that provides habitat for</p>	<p>Measure: Quarter section that meets the minimum number of species</p>	<p>Measure: Habitat patch that meets the criteria for the focal species group.</p>

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
identified focal species groups	<p>observed within one focal species group.</p> <ul style="list-style-type: none"> ● Use Provincial ESA waterfowl and amphibian groups, adjusting species to be more region specific where needed (Fiera Biological Consulting Ltd. 2014). ● Create other species groups: mammals, fish, grassland and forest birds, or raptors. <p>Methods:</p> <ol style="list-style-type: none"> 1. Region to identify focal species groups. 2. Use vegetation layer (GVI (Alberta Environment and Parks (AEP) 2016), ABMI (Alberta Biodiversity Monitoring Institute 2010), Municipal layers) to identify where native vegetation communities are present and remove impermeable built areas. 3. Modelled habitat suitability identifies the area as likely to contain a sufficient number of focal group species. 	<p>Methods:</p> <ol style="list-style-type: none"> 1. Identify if focal group habitat exists on the site. 2. Identify which general or targeted wildlife surveys are required based on habitat available. 3. Complete minimum number of surveys identified in the Sensitive Species Survey Guidelines (Alberta Environment and Sustainable Resource Development (AESRD) 2013). 4. Determine if the minimum number of species for a focal species guild is observed within a specific habitat patch.

3. Areas providing rare, intact, or biologically diverse ecosystems or unique landforms.

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
3.1. Presence of biologically diverse ecosystems	<p>Measure: Diversity tends to increase with natural patch size.</p> <p>Modelled species habitat for a wide set of species provides an estimate of species richness.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Municipalities may wish to adopt a minimum size threshold to reduce the impact of edge effects. A common assumption is the larger the patch size, the more 	<p>Measure: Areas where a high number of native species are observed.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. General and targeted wildlife field surveys; 2. Detailed vegetation surveys (vegetation community mapping and detailed vegetation list as part of rare plant surveys).

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
	<p>diverse an area is. This assumes that wildlife species diversity will also be higher in native vegetation communities.</p> <p>2. Use ABMI all species richness dataset (which presents relative species richness across Province), clip out region, determine the relative species richness classes, and select areas which fall within the top quantile of those classes.</p>	
<p>3.2. Areas providing rare or unique ecosystems</p>	<p>Measure: Meets the following:</p> <ul style="list-style-type: none"> ● Within the Provincial Threatened and Endangered Plant Ranges with suitable habitat for the identified species (Government of Alberta n.d.). ● Presence of Rare ecological communities (Alberta Parks 2017). ● Presence of unique ecosystems identified by the municipality. <p>Methods:</p> <ol style="list-style-type: none"> 1. Overlay Provincial Threatened and Endangered Plant Ranges layer (Government of Alberta n.d.) with vegetation layers (GVI (Alberta Environment and Parks (AEP) 2016) etc.) and ABMI human footprint (Alberta Biodiversity Monitoring Institute n.d.) (or other disturbance datasets, accounting for successful restoration efforts) to ID if suitable habitat exists. 2. Overlay ACIMS data (Alberta Parks 2017) to see where RECs occur within the region. 3. Overlay identified unique ecosystems identify by the municipality. 	<p>Measure: Meets the following:</p> <ul style="list-style-type: none"> ● Within the Provincial Threatened and Endangered Plant Ranges with observations of the species (Government of Alberta n.d.). ● Presence of rare ecological communities (Alberta Parks 2017). ● Presence of unique habitats identified by the municipality. ● Presence of A/B/C value wetlands determined by ABWRET-A (Government of Alberta 2016a). <p>Methods:</p> <ul style="list-style-type: none"> ● Complete orthophoto interpretation to delineate vegetation communities and identify areas that may provide rare or unique habitat. ● Complete early and late season rare plant surveys. ● Identify any Threatened and Endangered plants and delineate the area that they occur in. ● Identify any rare ecological communities and delineate area. ● Identify any unique habitats and delineate area.

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
<p>3.3. Areas where intact ecosystems occur</p>	<p>Measure: Presence of:</p> <ol style="list-style-type: none"> 1. Intact terrestrial vegetation communities. Municipalities may wish to adopt a minimum size threshold to reduce the impact of edge effects. 2. Intact lentic vegetation communities. Municipalities may wish to adopt a minimum size threshold to reduce the impact of edge effects. <p>Terrestrial Methods:</p> <ol style="list-style-type: none"> 1. Remove ABMI human footprint (Alberta Biodiversity Monitoring Institute n.d.) and provincial linear features from vegetation layers (Alberta Biodiversity Monitoring Institute 2010, Alberta Environment and Parks (AEP) 2016). 2. Remove any hydrography polygons (wetlands, rivers etc.). 3. Remove any vegetation polygons that are disturbed. 4. Identify any vegetation polygons remaining. 5. Municipalities may wish to adopt a minimum size threshold to reduce the impact of edge effects. <p>Lentic Methods:</p> <ol style="list-style-type: none"> 1. Using ABMI, GVI and other available wetland inventories to identify lentic wetlands (Alberta Biodiversity Monitoring Institute 2016, Alberta Environment and Parks (AEP) 2016, 2017). 2. Identify any lentic wetlands, removing any wetlands where known disturbances occur (dams, roads, stormwater management) or; 3. Wetlands of any size within natural, but not necessarily 	<p>Measure:</p> <ul style="list-style-type: none"> ● Intact terrestrial vegetation communities: rated “healthy” as per rangeland health assessment or Cows and Fish assessment (Adams and Hale 2009) or is a reference community described by rangeland guides (Government of Alberta 2019a) or; ● Intact lentic vegetation communities: wetlands rated as “Healthy” using the appropriate Wet Meadow IBI assessment (Government of Alberta 2016b). <p>Methods:</p> <ol style="list-style-type: none"> 1. Complete vegetation community mapping with plots to determine if vegetation community matches the reference community description. 2. Wetlands rated as “Healthy” using the appropriate Wet Meadow IBI assessment (Government of Alberta 2016b).

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
	<p>native, terrestrial vegetation patches.</p> <p>4. Municipalities may wish to adopt a minimum size threshold to reduce the impact of edge effects.</p>	
<p>3.4. Areas where regionally, provincially or nationally recognized landforms are present</p>	<p>Measure: Presence of significant landforms.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Overlay region with provincial and federal significant landforms layer (Alberta Parks 2014) and any landform feature deemed significant by the Region. 	<p>Measure: Presence of significant landforms.</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Overlay region with provincial and federal significant landforms layer (Alberta Parks 2014) and any landform feature deemed significant by the Region.

4. Areas that significantly contribute to other important ecosystem functions or services at regional or local scales.

Sub-criteria	High Level Desktop Assessments (ASP Scale)	Detailed Field Assessments (Non-Statutory / Outline Plan Scale)
<p>4.1. Important connectivity corridors, shelterbelts and steppingstones between core areas</p>	<p>Measure: Areas with high frequency of wildlife usage (may include seasonal usage).</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Wildlife/Vehicle Collision data. 2. Intact native vegetation located between known habitat areas. 	<p>Measure: Areas with high frequency of wildlife usage (may include seasonal usage).</p> <p>Methods:</p> <ol style="list-style-type: none"> 1. Circuitscape Models showing likelihood of wildlife movement. 2. Field assessment. 3. Wildlife Cameras.
<p>4.2. Important natural resources (plant products, food sources)</p>	<p>Measure: Area contains sustainable resources of economic importance.</p> <p>Method: Industry and provincially sourced resource data.</p>	<p>Measure: Area contains sustainable resources of economic importance.</p> <p>Method: Ground-truthing and stakeholder input during outline plan stages.</p>

<p>4.3. Ecotourism and unique recreational opportunities</p>	<p>Measure: Area supports valued recreational activities.</p> <p>Methods: Stakeholder input, social media geofenced posts and tweets.</p>	<p>Measure: Area supports valued recreational activities.</p> <p>Method: Stakeholder input during outline plan stages.</p>
<p>4.4. Culturally important landforms</p>	<p>Measure: Heritage lands, historic First Nations cultural centres.</p> <p>Method: Stakeholder consultation, TEK inventories, provincially designated sites, Historic Resource Value (HRV) Inventory highly valuable classes.</p>	<p>Measure: Heritage lands, historic First Nations cultural centres.</p> <p>Method: Ground truthing through assessment of archaeological potential, detailed interviews with First Nations.</p>

APPENDIX B

Definitions:

ABMI: The Alberta Biodiversity Monitoring Initiative tracks changes in Alberta's wildlife and their habitats from border to border, and provides ongoing, relevant, scientifically credible information on Alberta's living resources.

AMWI: The Alberta Merged Wetland Inventory is a generalized, merged product of 35 component wetland inventories that utilized different types of source data from different years, different data capture specifications and different classifications. Considerable variation in the level of detail and accuracy is present in this dataset.

Ecosystem: A community or group of living organisms that live in and interact with each other in a specific environment.

Ecosystem function: The biological, geochemical and physical processes and components that take place or occur within an ecosystem.

Ecosystem services: (also referred to as “ES”) Are the benefits that humans receive from nature including provisioning (e.g. food, fuel, fibre, fresh water), regulating (e.g. air quality, climate regulation, erosion control, water quality), and supporting services (e.g. production of oxygen, soil formation, resiliency). A breakdown of types of ecosystem services is available on the FAO site: <http://www.fao.org/ecosystem-services-biodiversity/background/provisioning-services/en/>

Biological diversity (or biodiversity): The variability among living and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Habitat: The resources and conditions present in an area that produce occupancy, including survival and reproduction, by a given organism. Habitat is organism-specific; it relates the presence of a species, population, or individual (animal or plant) to an area's physical and biological characteristics. Habitat implies more than vegetation or vegetation structure; it is the sum of the specific resources that are needed by organisms.

Important habitat feature: A specific element within habitat that is integral to the life history of a species, such as: established Bank Swallow colony, Sharp-Tailed Grouse lek, Ferruginous Hawk or other sensitive raptor nest, Great Blue Heron rookery, snake hibernacula, bat hibernacula/roost, trout spawning habitat.

Human Footprint: The ABMI defines human footprint as the visible alteration or conversion of native ecosystems to temporary or permanent residential, recreational, agricultural or industrial landscapes. The definition includes all areas under human use that have lost their natural cover for extended periods of time, such as cities, roads, agricultural fields, and surface mines. It also includes land that is periodically reset to earlier successional conditions by industrial activities such as forestry cutblocks and seismic lines.

Intact: Intactness is an indicator of “the absence of human modification of the habitat” (Theobald 2013: 1859). Landscapes with high levels of intactness are considered to have higher retention of (historical) ecological structure, composition, and function (Hak and Comer 2017). An intact ecosystem has the following characteristics:

- It is free from substantial anthropogenic fragmentation, such as urban development, cultivation, roads, pipelines, powerlines, clearcuts and industrial activities.
- It is free from substantial human influence for periods that ensure that it is formed by naturally occurring ecological processes, including fires, wind and pests.
- It contains only naturally seeded native plants and supports viable populations of those species.
- It is large enough to be resilient to edge effects and to survive most natural disturbance events.

Local species of interest: Species or species groups designated by region or municipality as species of management priority.

Floodplain: The identified 1:100 year floodway and the adjacent flood fringe.

Focal wildlife species groups: Groups or guilds that have life requisites encompassing other species, ecosystems, and/or processes; their use in conservation efforts therefore represents not only their own life histories, but a range of species, ecosystems and/or processes as well.

Riparian Area: Riparian areas are transitional areas between upland and aquatic ecosystems. They have variable width, extend above and below ground, and perform various functions. These lands are influenced by, and exert an influence on, associated water bodies, including alluvial aquifers and floodplains. Riparian lands usually have soil, biological and other physical characteristics that reflect the influence of water and other hydrological processes.

Natural: Natural ecosystem is a community of living and non-living organisms, where each component interacts together as a unit through biological, physical and chemical processes. The distinctiveness of natural ecosystems is that they are purely natural and their formations are not in any way influenced by human activity.

Naturalized: Naturalization is a process of ecological restoration that involves returning an altered or degraded site to a more natural condition through the use of trees, shrubs and flowers that are native to the area.

Source watershed: the source watershed generally includes the watershed area upstream of a water supplier's intake. It is delineated by the boundaries of drainage basins that supply streams, lakes, and reservoirs that serve as source water.

TEK: Traditional Ecological Knowledge describes indigenous and other forms of traditional knowledge regarding the sustainability of local resources.

Undeveloped: Undeveloped, or raw, land has no utilities, no structure or pre-defined building site and no intra-parcel roads. It lacks all the components of urban, rural or agricultural development.

Water: The Water Act defines water to mean all water on or under the surface of the ground, whether in liquid or solid state.

Water body: The Water Act defines a water body as any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent or occurs only during a flood, and includes but is not limited to wetlands and aquifers.

Watercourse: A natural channel or depression in which water flows regularly or intermittently.

Wetland Complex: A hydrologically connected aggregation of wetlands which function together to provide ecosystem services for the surrounding landscape.

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