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ARCKP

Alberta Regional Caribou Knowledge Partnership

PROJECT REPORT

Review of Alberta's Integrated Land Management Policies, Practices and Legislation

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Review of Alberta's Integrated Land Management Policies, Practices and Legislation

Final Report

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1. Executive Summary

Changing social values, conflicting land uses, ever increasing demand for access to public land and resources, climate change, increasing recreational use of forests and a host of other external demands have increased the complexity of land use in Alberta. Alberta's social economic reliance on development of natural resources has reached a point whereby overlapping land uses are increasing conflicts not only with each other, but on other values such as caribou. As land use conflicts became more common in the Alberta resource sector, regional experimentation with alternative land use management practices and planning tools developed over the past two decades, including Alberta's Land Use Framework (LUF) of 2008 which was designed to balance Albertans' social, environmental and economic goals. Past and future land use decisions are made by elected officials on behalf of the people and successful implementation of ILM can be a significant contributor to mitigation of the effect of resource development on other values.

Integrated Land Management (ILM) has shown potential over the past couple of decades to reduce conflicts, however, many projects have found it difficult to advance ideas beyond analyses to on-the-ground implementation. This, combined with the slow implementation and lack of momentum of a province-wide LUF process and siloed regulations, is causing some Alberta land use stakeholders to believe that, without timely intervention, we may go past the tipping point of the land's ecological capacity to recover.

In early 2020, stakeholders from across Alberta established the Alberta Regional Caribou Knowledge Partnership (ARCKP). Operating under fRI Research, this collaboration between Alberta's forestry sector and the provincial government believes that a strong ILM approach can help manage footprint and potentially coordinate restoration within caribou habitat. ARCKP issued a request for proposals in mid-2020 to investigate opportunities, gaps and/or barriers in Alberta's ILM policies, practices and legislation.

This initiative evaluated several cases of the latest efforts in resource and land policy integration, combined with a literature review, and interviews with 32 subject matter experts (SME's) from Indigenous communities, academia, forest and energy sectors, government, Alberta Energy Regulator, and environmental organizations to develop specific recommendations for Alberta to overcome conflicting implementation forces and barriers.

Recommendations are presented to place ILM in the right context on how development will occur, not on the decision of whether it occurs. By using the appropriate context, ILM can advance at operational and tactical scales to:

1. reduce industrial footprint through collaboration
2. produce better outcomes, and
3. provide provisional steps to follow to produce landscape level access plans

This operational and tactical work must also be supported and enabled by bold, strategic actions from the Alberta government. These bold actions support the Government of Alberta (GoA) taking

ownership in land use decisions and overcoming the systematic barriers affecting all levels of government that will enable ILM to achieve smart development, support caribou recovery, and many other environmental benefits.

This report provides a comprehensive description of the learnings and insights gathered and an extensive set of appendices for those wishing to review the specific findings. The following page provides a summarized list of a spectrum of recommendations to create positive change for ILM in Alberta.

2. What does Integrated Land Management in Alberta Need?

2.1 Clear Definitions Including What ILM Means and Who's Going to Lead It

While the mindset and principles of ILM should be included in land use and sub-regional plans as they are developed, there is a necessity to only concentrate ILM on footprint reduction strategies, not on the land use decisions made by Cabinet. Additionally, the following is required:

- Acceptance of a standard definition of ILM and an ILM charter that outlines expectations.
- The government and industry should clearly identify and reach agreement on roles and responsibilities for developing and implementing ILM.
- GoA must develop and support capacity requirements for Indigenous communities to actively and meaningfully participate in land use, sub-regional plans, ILM planning, and play-based regulation.

2.2 Take BOLD Action

GoA must invest in some bold actions that will enable ILM to be realized at operational, tactical and strategic levels such as centralized development and ownership of primary resource roads. This would include:

- Formal development of regionally specific, jointly managed ILM Working Groups made up of government, Indigenous communities, municipalities, and industry representatives to develop ILM corridor plans.
- GoA and industry adopt clearly outlined process steps to develop ILM corridor plans.
- GoA must align regulations, complete land use, and caribou action plans.

2.3 Risk Small to Win Big

- In areas with completed, or soon to be completed, caribou range plans, GoA immediately and formally sets up ILM corridor pilot projects with industry.
- Early identification of operational and tactical ILM business value and opportunities as they arise.

2.4 Support Positive Change

Changing a system, mindsets, and way of doing business that are surrounded by global influences and forces is no easy task and requires tools and policy combined with people to make it happen.

- GoA and industry should cooperate in the development of communications strategies for communicating the value of ILM.
- Companies and government must develop, educate, and employ change management strategies.

2.5 Positive Change Needs to be Backed by Integration, Evaluation and Data

- Review of operating conditions for effectiveness.
- GoA should establish a comprehensive, up to date resource information system and acquire the data necessary to accomplish its land use, ILM management, and stewardship responsibilities.

- Once other recommendations are implemented, GoA should mandate appropriate integration at all levels of the planning and management hierarchy.

3. Understanding the Past to Appreciate the Current Challenge

From Bronze Age farmers to New World colonialists, the stories of struggle to claim more ground have shaped where and how we live[1].

3.1 A Very Brief History of Land Use in Alberta

Humans have competed for appropriation and exploitation, on the one hand, and stewardship and restoration, on the other. Tracing our relationship to land from the dawn of agriculture to the current age remains a central challenge. Influenced by extent, duration, and level of use, a landscape *"forgives or forgets almost all of the assaults that mankind willfully or neglectfully imposes upon it."*[2] When human populations were relatively low, and when localized land could not support the current use, it was easy to move to new land and the disturbed land would recover over time.

Indigenous Peoples have inhabited regions east of the Rocky Mountains in Alberta with relatively low populations for around 10,000 years. Prior to the arrival of Europeans in North America, the land provided Indigenous Peoples with everything they required for their mental, physical, spiritual and emotional well-being. Everything in nature was seen as living; therefore, Indigenous Peoples respected and took care of the land around them. The land took care of the Indigenous Peoples by continually growing herbs and plants for healing and providing the wildlife they needed to survive. Indigenous Peoples had established independent and organized societies across the continent prior to contact with Europeans.

Prior to European contact, First Nations in Alberta included the Siksika (Blackfoot), Kainai (Blood), Piikuni (Peigan) and Gros Ventre (now in Montana). Other groups, including the Kootenay and the Crow, made expeditions into the land to hunt buffalo and go to war.[3]

Over the last three centuries, in what is now Canada, the French, British and other European settlers would continue to prosper from the fisheries and the fur trade in the east. Through many wars and battles that involved land and the establishment of colonies, settlers and explorers gradually started to move further west. Following traditional ways of reciprocal sharing of resources with those in need, Indigenous communities across the land in Alberta assisted the newcomers as they arrived.

In the Royal Proclamation of England, 1763, King George III stated that Indigenous nations own their lands. The King declared that the only legal way newcomers could gain control of those lands was by making treaties between the two nations (e.g. Canada and First Nations). The Government of Canada, learning from past wars and conflicts in the east, designed treaties as a means to influence how land would be shared peacefully. Treaties 4 (1874), 6 (1876), 7 (1877), 8 (1899) and 10 (1906) reside in Alberta. Differing interpretations between the nations of what the treaties meant with respect to the land ownership and sharing remains to this day.

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[1] Francisco Cantú Human History and the Hunger for Land January 11, 2021

[2] Simon Winchester's new book, "Land: How the Hunger for Ownership Shaped the Modern World" (Harper) Jan 19, 2021

[3] History of First Nations Peoples in Alberta www.aadnc-aandc.gc.ca/eng/1100100020670/1100100020675

European exploration and the fur trade in the Alberta area dates back to the 1700s, with the first Euro settlements established at Fort Vermillion and Fort Chipewyan in 1788.

Following confederation in 1867, the new government looked westward as a place to expand its territorial claims, settle its anticipated immigration boom, and provide a source of natural resources. To accomplish this as per the Royal Proclamation of 1763, the new government needed to deal with pre-existing Indigenous land title throughout Rupert's land. For the newly formed government of Canada, formalizing their ownership of Rupert's Land was critical.

With the fur trade in decline, the British government and leaders in British North America became interested in the agricultural potential of the prairies. In 1867, the Dominion of Canada was created. In 1870, Canada purchased Rupert's Land and the North West Company from the Hudson's Bay Company, labelling the entire western and Arctic region the North-West Territories. In 1874, Canada began asserting its presence in what would become Alberta, sending the North West Mounted Police across the prairies to present-day Lethbridge to establish Fort Macleod.

Arguably, the signing of treaties covering Alberta protected under international law was the beginning of a formalized "peaceful and friendly" example of land use planning and policy development in Alberta.

3.2 Emergence of Land Use Planning in Alberta

Beginning in the early 1900s, there was a swell of settlers from the countryside into the cities which led to the value of land within the cities skyrocketing. By the time Alberta became a province in 1905, the population of Alberta was approximately 184,000 people. As the cities ballooned and subdivisions were created within and beyond the municipal boundaries, there was a need for a municipal affairs department which began in 1911. Regulations to manage subdividing land were enacted through the *Town Planning Act* in 1913. This was the first example of the need for orderly development and land use planning in Alberta predicated by significant increases in population.

In 1930, the federal government transferred management of natural resources to Alberta with the enactment of the Alberta Natural Resources Act. By this time, the Alberta population was 731,600.

Resource allocation assumptions at this time were created during a period when Alberta was still relatively empty of humans and their infrastructure. In this "empty world" context, built capital was the limiting factor, while natural capital and social capital were abundant.[4] It made sense, in that context, not to worry too much about environmental and social "externalities" since they could be assumed to be relatively small and ultimately solvable. It made sense for government to focus on the growth of the market economy, as measured by GDP, as a primary means to improve human welfare. Additionally, using that context, to think of the economy as only marketed goods and services and to think of the goal as increasing the amount of these goods and services produced and consumed.

[4] I.P. Soloviy and W.S. Keeton (2009) Ukraine. Ecological Economics and Sustainable Forest Management: Developing a Transdisciplinary Approach for the Carpathian Mountains.

But Alberta changed dramatically in 1946 with the discovery of oil west of Leduc which caused a significant economic boom and initiated the need for land use planning on public land outside of municipalities.

Billions of investment dollars flowed into Alberta and were followed by massive immigration to the province following the discovery. Alberta's two major cities saw their populations double within a few years and many communities were formed to support the oil sector such as Swan Hills, Devon, and Leduc. [5]

Introduction of Green, Yellow & White Areas

In 1948, in response to anticipated pressure that the discovery of oil would place on Alberta's land and in an effort to restrict settlement to certain areas, the Alberta government divided the province into 'Green,' 'Yellow,' and 'White' Areas. In the 'Green Area,' also referred to as the forest zone, all forms of land settlement were prohibited. As the supply of available land in the 'Yellow Area' which corresponded largely with the Peace River Parkland region and was known as the settlement zone became exhausted, lands were withdrawn from the 'Green Area' and made available to settlers. [6] The 'Yellow Area' was mainly extinguished by the availability of small amounts of land for homesteading under strictly regulated conditions. Lastly, the 'White Area' was designated for settlement and agriculture. Today, the 'Green Area' comprises 61% of Alberta's landmass and is owned mostly by the provincial government and managed for forest production, wildlife, and recreation. The 'White Area' comprises the remaining 39% of land in Alberta (and includes all of the former 'Yellow Area').

Evolution of the Industry Regulation

The regulatory environment in Alberta has continued to evolve which has affected how industries business models developed to access and extract resources on the land. While the basic tenants of the business models have remained relatively constant, the models have been influenced by increasing populations, changing social values, developing provincial infrastructure (roads, rail etc.), technological advances, and markets for products produced.

- The forest industry in Alberta has evolved over the last 130 years in essentially four distinct temporal periods: [7]
    - Period 1 (1880 to 1949) - is characterized as largely unregulated
    - Period 2 (1949 to 1966) – Alberta Forest Act enacted which set regulated sustained yield system focused on resource development and forest management.[8]
    - Period 3 (1966 to 1985) – characterized by maximum sustained yield and introduction of new tenure system (e.g. quotas, FMA's) to provide for community stability and investment in the forest (reforestation) and capital investment in production facilities and roads.
    - Period 4 (1985 to present) characterized by constraints on forest production land for other uses and values. This period is dominated by more rules, emergence of ecological considerations, certification, and more pressures from burgeoning energy development and conflicting land uses.

[5] https://en.wikipedia.org/wiki/Leduc_No._1

[6] RD Loomis (1956) Orest Surveys in Alberta. The Forestry Chronicle

[7] Andries K, Thorp W.; Forest Industry Competitiveness Study Current state assessment (2006)

[8] Murphy P. The Evolution of Forest Management Agreements on the Weldwood Hinton Forest (2002)

- Since the discovery of oil in Alberta in 1948, the energy sector regulatory system has also evolved over time. However, the basic tenants are heavily influenced by the government's desires to maximize the economic contribution of this sector to the province.

Mandates for growth exist for each primary resource sector—forestry, agriculture, tourism, energy and mining – and within most Alberta municipalities. Parallel to these mandates are federal, provincial and territorial objectives for land/resource conservation and protection – the conflict and need for balance begins to emerge. [9]

Industrial activity, municipal development, infrastructure, recreation, Indigenous traditional use, and conservation interests often occupy the same land base and are competing with each other—all with the intent of pursuing their own interests and are frequently managed independently. Water, air, wildlife, fish, conservation, recreation, gas and oil, mineral, gravel, and forests are often regulated under separate legal and policy regimes and by different departments or agencies with differing and often conflicting mandates. Furthermore, the decision-making processes are ill equipped to address landscape-scale issues when they do arise. As a result, the interests of decision makers, project proponents and other interested parties are poorly served as the elements of the fragmented regimes struggle to address issues that can only be managed on an integrated basis.[10]

There are more and more people doing more and more activities on the same piece of land. The competition between user groups creates conflict, and often puts stress on the finite capacity of our land, air, water and habitat.

SME quote" All of the non-economic uses are essentially managed by constraints on economic uses and by trying to maximize sustained yield of fish, wildlife, water"

3.3 Land Use and Environmental Planning for Alberta

Land-use planning outside of the municipalities in the green and white zones of Alberta has now been practiced in various forms by the Alberta government for more than 90 years. At the same time, Alberta's population has grown to more than 4.4 million people. Over the years, the government has developed a vast array of policies, strategies, and initiatives for managing lands and competing land uses. These developments, designed by the Alberta government, were intended to ensure sustainability, community stability, economic growth, environment, and orderly allocation of resources. Examples of key milestones in Alberta are provided below:

Table 1. Evolution of Environmental Management in Alberta. [11]

Milestone	Year	Purpose
Natural Resources Transfer Agreement	1930	Granted provincial legislative jurisdiction over all natural resources
GoA establishes the Eastern Rockies Forest Conservation Board	1947	Established to protect the lands of the eastern Rockies with the objective of managing most desirable conditions for the watershed

[9] Integrated Landscape Management: Applying Sustainable Development to Land Use. Prepared by: Canadian Integrated Landscape Management Coalition May 2005

[10] 2006 Integrated Landscape Management in Canada: Getting from Here to There Kennett, Steven A. Canadian Institute of Resources Law

[11] Budny Tomasz K. Integrated Environmental Policy in Alberta Jan 2014 and ILM project literature review

Milestone	Year	Purpose
GoA establishes the Department of Environment	1971	Government established department to protect the environment
Land Surface Conservation and Reclamation Act promulgated	1973	Established environmental impact statement in Alberta
GoA establishes the Provincial Resource Development Board (PRDB)	1973	Established to assist with legislative and regulatory responsibilities and eventually expanded their mandate to regulate all energy resources in Alberta, as well as pipelines and transmission lines
GoA creates the Department of Energy and Natural Resources	1975	Department was created to improve energy and renewable resource management and coordination
GoA establishes the Eastern Slopes Interdepartmental Planning Committee	1975	Committee established to make recommendations on **integrated resource planning** approach to managing the Eastern Slopes
GoA forms the Resource Evaluation and Planning Division of Alberta Energy and Natural Resources	1976	Division responsible for the efficient delivery of professional and technical evaluation of **integrated planning** of resources
GoA releases the Eastern Slopes Policy	1977	Policy outlined that the protection of public lands and resources in the Eastern Slopes are to be protected, and developed according to an **integrated management** approach
GoA approves the Integrated Resource Plans (IRPs) for the Eastern Slopes	1983	Sub-regional **integrated resource plans** (IRPs) were developed and released as part of the Eastern Slopes Policy
GoA publishes *Alberta Public Lands*	1988	Publication stated **integrated resource management** has been established as a fundamental approach to decision making on public lands in Alberta. The key approach was to ensure wise land and resource management, meaningful consultation with affected parties during decision making, and consideration of present and future needs. It articulated the GoA commitment to **integrated resource management**
GoA creates the Alberta Round Table on Environment	1990	The Round Table provided recommendations on how the concept of sustainable development should be implemented in Alberta
GoA announces the *Clean Air Strategy*	1990	Consultation program launched to develop a plan to respond to environmental impacts of energy-related emissions
GoA establishes the Natural Resources Conservation Board (NRCB)	1991	Board was established to provide a forum and a process for public hearings on major developments. It was set up to consider environmental, social, and economic impacts of non-energy sector projects, with direct input from Albertans. It was intended to contribute to sustainable development of Alberta's natural resources through determining whether projects are in the public interest
Alberta Round Table on Environment and Economy Alberta: Working for a Sustainable Future	1992	The report outlined the vision for Alberta, which described what Alberta will look like when sustainable development is achieved. The vision was: "Alberta, a member of the global community, is a leader in sustainable development, ensuring a healthy environment, a healthy economy, and a high quality of life in the present and the future."
GoA passes the *Environmental Protection and Enhancement Act* (EPEA)	1992	EPEA became Law and created a new regulatory framework in a single act and took an **integrated** approach to the protection of environmental media. Act established the Sustainable Development Coordinating Council, where the Deputy Ministers coordinated, reviewed, and recommended actions to the Minister of Environment

Milestone	Year	Purpose
		on interdepartmental matters related to sustainable development and protection of the environment
Clean Air Strategic Alliance	1994	Formed as a way to manage air quality issues in Alberta
GoA establishes the Ecological Landscape division, which later became the Integrated Resource Management Branch	1999	The division was formed to lead the promotion of **integrated resource management** as a measure to achieve sustainable development
GoA reaffirms its commitment to the wise management of natural resources and environment in *Alberta's Commitment to Sustainable and Environmental Management, 1999*	1999	Reconfirmed the GoA commitment to sustainable development and identified **integrated resource management** as one component of the government's overall approach to sustainable development
GoA completes the *Regional Sustainable Development Strategy* (RSDS) for the Athabasca Oil Sands Area	1999	Strategy focuses on environmental effects of development occurring in the Regional Municipality of Wood Buffalo. Strategy implemented in cooperation with the Cumulative Environmental Management Association (EMA)
GoA releases its *Northern East Slopes Sustainable Resource and Environmental Management Strategy* (NES Strategy)	2000	Major initiative aimed at **integrated** economic, environmental, and community values in planning for sustainable development in the northern east slopes region of Alberta
GoA releases the *Alberta Land Use Framework* (*LUF*)	2008	*LUF* provides an outcomes-based framework and **integrated regional planning** in determining land-use decisions to enable the management of cumulative impacts
GoA approves the *Alberta Land Stewardship Act* (*ALSA*)	2009	*ALSA* provides government with ability to give direction and leadership relating to land for economic, environmental and social consideration and reduce ministerial discretion. This includes planning for current and future needs of the Province. Under *ALSA*, the province is divided into 7 planning regions, each of which is subject to a region-specific land use plan
GoA amalgamates the ministries of SRD and ENV into the Ministry of Environment and Sustainable Resource Development (AESRD)	2012	In an effort to reduce fragmentation and promote **integrated** outcomes, the SRD and ENV is amalgamated into one ministry
GoA established Clean Energy Natural Resources Group (CENRG)	2012	GoA establishes a new institutional body made of the deputy ministers and assistant deputy ministers of ENV, SRD, DoE, and ARD to **promote integrated outcomes** and further the pursuit of **Integrated** Environmental and Resource Management. CENRG replaces the *SREM* initiative
Cabinet approves the *Lower Athabasca Regional Plan* (*LARP*)	2012	The plan represents a novel and legal binding approach to planning. *LARP* and its associated management frameworks are legally binding on the Crown and other players.
GoA establishes the Alberta Energy Regulator	2013	The single regulator for upstream oil and gas is officially created to address regulatory fragmentation and achieve **integrated** outcomes.
GoA amalgamates Forestry and Agriculture (AgFor) and splits out Environment and Parks into its own Ministry	2015	Environment Minister is responsible for environmental policy and sustainable resource development in Alberta. AgFor is responsible for policies, legislation, regulations and services necessary for Alberta's agriculture, food and forest sectors to grow, prosper and diversify.

The significant and evolving environmental measures listed above clearly demonstrates that the Alberta government has recognized for decades that the environment must be integrated into economic development plans.

Integrated resource management has been consistently touted as an outcome within many of the initiatives listed; however, the initiatives **never achieved comprehensive integrated planning** which is particularly evident at the policy, regulatory, allocation, and industrial development stages of land management.

Governments often make broad commitments to "sustainability" and issue statements affirming the need to balance economic and social development with environmental protection. These are frequently non-specific, not supported by direct legislation, and not always translated into meaningful operating practices. As well, sector-based or single resource-based management approaches are deeply entrenched. [12]

LUF and ALSA were designed to help with the establishment of integrated goals and objectives designed to "manage growth, not stop it" and "to sustain Alberta's growing economy, but balance this with social and environmental goals" [13]. This is what the LUF is about—smart growth which is particularly challenging because allocations have already been made before any of the plans were completed. [14]As part of the *LUF*, the GoA also established the following bodies to support the development of *LUF* and/or the development and implementation of plans: Regional Planning Team (RPT), Land Integration Team (LIT), Regional Advisory Councils (RACs), and the Land Use Secretariat (LUS). The RACs are established for each region by Cabinet to provide advice to the LUS on the development of regional plans (Government of Alberta, 2009a). The LUS is responsible for supporting Cabinet decision making. The LUS is responsible for leading the development of plans and for working with the RACs to develop recommendations to Cabinet. What Cabinet does with the LUS recommendations and how ILM can be an additional influencer is shown in Figure 2.

Completed Land Use Plans under LUF are also intended to guide the development of sub-regional plans (e.g. caribou recovery plans). However, only 2 of 7 Land Use Plans have been completed to date, no sub-regional caribou range plans have been finalized, and fragmentation of data remains.

A thesis project Budny, T. (2014) Integrated Environmental Policy in Alberta (Unpublished master's thesis) found that LUF had little support from the cohort of politicians and bureaucrats who ascribed to the dominant institutional perspective that prioritized resource development and client based ministries such as energy for example did not support LUF. The challenges facing LUF in 2011/2012 can be attributed to the lack of consistent underlying political support. In response to this political scrutiny in 2011, support for LUF, by the GoA's elected executive waned. The absence of a strategic policy framework enabled Cabinet ministers to establish new priorities, which were incoherent and vague, that intentionally deviated from the LUF thereby effectively relinquishing support. This resulted

[12] Canadian Integrated Landscape Management Coalition: INTEGRATED LANDSCAPE MANAGEMENT APPLYING SUSTAINABLE DEVELOPMENT TO LAND USE Prepared by: May 2005

[13] Alberta Land Use Framework 2008.

[14] Budny Tomasz K. Integrated Environmental Policy in Alberta Jan 2014

in the development of subsequent policy initiatives by the ministries largely devoid of references to the pillars of Environmental Policy Integration (EPI) particularly *LUF*. [15]

Additionally, the LUF lacks detailed mandatory content which also leaves the process ripe for inconsistency between regional plans. Since each region is unique, each region's plan will be different. However, without more stringent mandatory requirements, the scope and substance of the plans may vary dramatically. [16]

The land use planning framework established goals (see Figure 1) and there is a need to build "tools" to accomplish the goals. ILM is viewed as one of the mindsets and tools.

3.4 We've Reached the Tipping Point

It is widely accepted that land and resource use is reaching a tipping point in Alberta as there are limits to the land's capability to sustain the economy or the environment. Use of the resources must not exceed the environment's capacity for renewal to support ongoing flow of benefits. [17]

Adding to the challenge, before LUF plans were completed, in 2012, Environment and Climate Change Canada (ECCC) released a Woodland Caribou (boreal population) Recovery Strategy. In 2014, ECCC released a Woodland Caribou (Southern Mountain population) Recovery Strategy. In 2018, a federal caribou Action Plan followed. This increased the pressure for Alberta and their requirement to develop caribou range plans. Given the variation in management contexts, population and habitat information, and levels of risk across the geographic distribution of boreal and mountain caribou, range plans should have been completed by the responsible jurisdiction(s) within **3-5 years** of the posting of each federal recovery strategy. [18] (I.e., by 2017 and 2019 respectively). Note: no jurisdiction in Canada met the legal timeframes for caribou range/action plans to date.

It is thought that ILM plans to reduce future development footprint and restoration of historical footprint will play a significant role in meeting the most recent Alberta caribou conservation agreement: [19]

The Government of Alberta and the Government of Canada have negotiated a caribou conservation agreement under Section 11 of the federal Species at Risk Act (SARA) – October, 2020.

The agreement included Alberta commitments such as:

"Finalize sub-regional plans that consider all land uses, including footprint, recreational and access management plans, for identified ranges."

Mr. Eric Denhoff was appointed in Dec 2015 by the Minister of Alberta Environment to review a draft range plan for the west-central region of Alberta and produced a "mediator report" in 2016 titled

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[15] Budny Tomasz K. Integrated Environmental Policy in Alberta Jan 2014

[16] Alan Harvie* and Trent Mercier (2010) The Alberta Land Stewardship Act and its impact on Alberta's oil and gas industry

[17] Alberta Land Use framework 2008.

[18] Environment and Climate Change Canada (ECCC) Recovery Strategy (2012)

[19] ARCKP ILM project SME interviews Dec 3, 2020- Feb 22, 2021 (see Appendix)

"Setting Alberta on the Path to Caribou Recovery." Mr. Denhoff stated that "the provincial government has a strong, over-arching responsibility to protect caribou and their habitat, even if federal SARA legislation did not exist. Normal land use planning values require provincial governments, as stewards of the land for future generations, to plan not only for economic values for land use, but also for conservation, recreation and, importantly, for Indigenous peoples' ability to exercise their rights. It is evident that economic interests tend to aggressively pursue government's attention, towards ensuring that the generation of wealth - a legitimate enterprise which creates jobs and tax revenue - are met."[20] Alberta, like much of the rest of Canada, faces dramatic and urgent decisions to protect the remaining great caribou herds from the cumulative effects of climate change, human interaction, and other threats. [21]

Alberta has been working hard to meet its obligations with releases of draft caribou range plans but final approval has been delayed in part by a lack of completed land use plans and desire for continued growth which may be viewed as contrary to caribou recovery requirements. Consider that, in the Little Smoky and A La Peche ranges, Alberta has engaged in no less than ten separate study/stakeholder engagement or task force approaches to reviewing and recommending over the last thirty or forty years, but has yet to finalize a plan.[22]

3.5 Enter Integrated Land Management & Our Task

Embedded within many of the past initiatives, commitments, and plans is the concept of ILM, including the LUF to support land use goals. ILM is the idea of managing all of the activity on a landscape in the service of a common outcome; it is the management of cumulative effects.[23] While there have been successful examples of practicing ILM in Alberta, for the most part they have been voluntary at operational scales (company to company when it makes good business sense) and haven't risen to the strategic landscape level.

There are many publications throughout the world, Canada, and Alberta that were designed to guide the implementation of ILM to support integrated land and resource use. These publications (Appendix 1) offer excellent examples of the definition of ILM, key elements for ILM planning, principles, and strategies for implementation. However, they have been either **silent or very limited** on addressing specific challenges of implementation.

The ARCKP recognized that implementation of ILM in Alberta is not hindered by the lack of knowledge, or agreement of the need, but, rather by inherent challenges and barriers. In August of 2020, ARCKP issued a Request For Proposals (RFP) to answer the following question:

What are the opportunities, gaps and/or barriers in Alberta's policies, practices and legislation for implementing ILM and what recommendations can be collated?

[20] Denhoff E. Setting Alberta on the Path to Caribou Recovery May 30, 2016
[21] ibid.
[22] ibid.
[23] ibid.

ARCKP outlined in the RFP that the result of the review of opportunities will include clear recommendations for cross-industry ILM approaches for improved woodland caribou habitat.

Moreover, the following success indicators were identified:

- clearly identify key barriers to ILM in Alberta and steps or opportunities to overcome;
- articulate ideas, adjustments or recommendations related to land use developments that are harmonized that precede applications to ease review/approval process;
- provide examples of small scale ILM success and how the industry can build on these successes;
- create a document/final product that's easy to use as a reference and doesn't "sit on a shelf;" and
- Create energetic and enthusiastic responses by forestry and oil & gas to adopt/implement ILM.

This report is intended to provide the reader with a better understanding of the connectivity of current forces, challenges, opportunities, barriers, and ultimately a spectrum of recommendations for progressive and successful implementation of ILM to assist Alberta in the development of woodland caribou range plans. Identification of the challenges and barriers ("the problem") with implementing ILM in Alberta is an important first step in understanding how solutions to land use and human footprint can be applied to caribou ranges.

4. Research Methodology & Limitations

The ARCKP project steering committee and the project team (Kim Hyshka, Wayne Thorp, and Chantelle Bambrick) held a project kick off meeting on November 25, 2020. The project team outlined an approach that was designed to be as inclusive as possible within the time frame and also had to be innovative in order to gather ideas and identify the problem within a virtual setting because of safety concerns related to the COVID-19 global pandemic.

Our objective was to collect enough evidence to answer the ARCKP question, and ensure that all stakeholders were a part of the process so that the scope of the problem, including what is out of scope, could be defined and completed.

The primary research method used for this analysis of regulatory issues and options was a series of key interviews. All interviews were conducted virtually. Subject Matter Experts (SME's) from within the following themes were selected as interviewees to ensure adequate representation: Land Use planning, ILM, policy, dispositions, conservation, Indigenous values, and operating approvals. The project team received advice from the project steering committee on potential names of interviewees because they were known to have either been exposed to ILM in related planning processes or are practicing ILM in their current or past positions in government, industry, Indigenous communities, Environmental Non-Government Organizations (ENGO), Alberta Energy Regulator (AER), and academia within and outside of Alberta.

The interviewees do not, however, constitute a representative sample of any broader group. Time and budget limitations precluded a more comprehensive set of interviews. A list of interviewees is included as Appendix 2.

Prior to starting the interviews, the project team requested that the ARCKP project steering committee review the potential interview list, the process to be used for conducting the interviews, and identify what "Measures of Success" would look like. Interviews from a variety of SME's and an extensive literature review were considered key to the evidence gathering phase of this project's hypothesis.

Potential interviewees were generally contacted first by email to determine whether they were willing to be interviewed; some were contacted directly by telephone. At least one follow-up email was sent to potential interviewees who did not respond to the initial request for an interview. Once agreement was reached for an interview, a date and time was selected, a virtual meeting invite was sent, and a few days before the interview was scheduled, an outline of the project including a suite of sample questions was emailed to each interviewee so that they had time to prepare.

The project team leads (Kim/Wayne) conducted confidential one-on-one structured interviews with each SME. Chantelle, an ILM technician from the FLMF, kept notes of the key points made by each interviewee. The process used during the interviews provided for an open and transparent dialogue through the assurance that anything said would be held in strict confidence. Anonymity of the SME was considered paramount for successfully providing for unencumbered sharing of ideas, concerns, challenges and potential solutions. The draft notes of the interviews were shared with the interviewee

within 1-3 days for confirmation of accuracy before being used for input into the final report recommendations.

On January 25, 2021, after 25 interviews were completed, the project team held a check-in meeting with the ARCKP project steering committee to review preliminary results from the SME interviews, literature review findings to date, and to seek direction on the variety of ILM definitions and associated anticipated outcomes to show on a graphic such as barriers/challenges that are impacting effective ILM implementation. At the conclusion of this meeting, the steering committee was asked: "Based on what you've seen and heard, is there anything we need to change, adjust or refine to ensure we meet your expectations and success metrics?" The steering committee advised they would like the project team to reach out to some additional SME's that they felt were important to hear from and reiterated the importance of reviewing successful ILM projects to tease out success factors.

Seven additional SME interviews were completed from February 3-22, 2021, bringing the grand total to 32 interviews. At this point, additional interviews were beginning to offer diminishing returns.

An interim report was completed by the project team on February 15, 2021 and submitted to the ARCKP project steering committee. On March 12, 2021, another check-in meeting was held with the steering committee to:

1. Review the draft ILM graphic,
2. Provide an overview of the March 18 ARCKP steering committee and SME workshop agenda,
3. Review a draft final report outline, and
4. Review a suggested ILM definition.

On March 18, 2021, the ARCKP steering committee and all SME's were invited to attend a virtual 3.5 hour interactive workshop to:

- Share the key findings of the SME interviews and literature research
- Validate a definition of ILM in Alberta including what it is and what it isn't
- Provide a "state of the union" specifically related to the challenge of ILM in Alberta (the draft graphic)
- Review a listing of barriers from interviews and literature and guided discussion/brainstorm regarding an action plan and prioritization
- Identify gaps or missing information/content prior to the preparation of the final report and recommendations
- Share and seek feedback on a new "Bold Idea" for ILM planning (E.g. the establishment of a Third Party Integrator (TPI) was later revised to an ILM Working Group).

The workshop list of attendees and summary notes are provided in Appendix 3.

Interviews, steering committee direction, workshop results, and literature review was categorized by ILM scope, barriers, and potential ideas to ensure successful ILM implementation, and what objectives/deliverables were expected to form the final report.

On April 26, 2021 the project team shared an initial draft of the final report with the ARCKP steering committee to seek feedback and recommendations for improving the document. The feedback received, along with a supplemental literature review, was incorporated into this final report.

A limitation on the methodology used was that, despite repeated attempts to arrange SME interviews, nobody from Alberta Energy agreed to participate in this project. Additionally, the project team could not find any published ILM (human footprint management) success stories in any jurisdictions that were relevant to the Alberta resource development situation.

5. The Challenge of ILM in Alberta

"Einstein believed the quality of the solution you generate is in direct proportion to your ability to identify the problem you hope to solve"

Everyone understands or interprets ILM differently

Both the literature and the SME interviews have revealed that there is NOT a universal (or province-wide) agreement of the definition of ILM and the challenge that ILM is trying to solve. More concretely, people and organizations have different expectations of the level/need of the "problem," which, directly correlates to their expectations of anticipated outcomes of ILM and its relationship to land use.

If there isn't a CLEAR & SHARED understanding of the problem and the desired outcomes or end state, continually applying a tool (such as ILM) will constantly be spinning its wheels – the tool isn't the problem (or it's not the big problem), it's the complex system it's trying to navigate through.

5.1 To Begin, Let's Better Understand the System that ILM is Working In

There are many forces such as climate change, politics, growing human populations, Indigenous values, social economic goals, global markets, and technology that are continuing to change and causing significant tensions on land and resources in Alberta.[24] (see also Figure 1)

Table 2. Global Forces Affecting ILM in Alberta.

Global Force or Influence Description	How does it show up? How is it experienced in action?	Impacts on ability to undertake ILM in Alberta
Political Direction, will or choices Decision makers (elected officials) are driven by short term goals and mandates to achieve political results. Cyclical values with different regimes- Economy vs. environment	• Failure of the Government of Alberta to follow through on important strategic policy directions and on the implementation of recommendations from multi-stakeholder processes that it has initiated or supported. • Choices made to prioritize jobs over environmental issue • Choice for continued growth, everywhere, all the time. • Elected officials make decisions and expect bureaucrats to resolve conflicts and tradeoffs. • Government ministries with competing mandates that are in conflict with each other	• No desire to establish thresholds (constrains future known and unknown development) • Difficult to effectively undertake land use planning and ILM implementation because it requires a strategic long-term vision which doesn't align with political timeframes.

[24] ARCKP ILM Literature review and SME interviews

Global Force or Influence Description	How does it show up? How is it experienced in action?	Impacts on ability to undertake ILM in Alberta
	• Plans don't transcend political timeframes • Not to develop is not an option. • Not going to sterilize resources now or in the future.	
Climate change & action associated with climate change The climate in Alberta is changing. Changes in temperature, precipitation and moisture regimes, occurrence of insects, disease, wildlife incursion (such as white tail deer into caribou ranges), and extent of wildfires, and water availability are expected to impact the ecological good and services, communities, and sectors throughout the province.	• Heightened awareness of climate change and the impacts it's having on the natural world • Rise in environmental social governance (ESG) • Increase in mandates, policies from government and industry to deal with Mountain Pine beetle, increased intensity and frequency of wildfires, watershed management, ecological based management, adaptive management. • Managers will need to develop adaptive management systems that are robust under a range of different futures and that can be updated frequently as the need arises. Conservation planning will need to be done using a range of future scenarios so that alternative responses can be prepared.	• Climate change can result in increasing risk and change to ecological functions or processes that can be hard to predict and plan for. This impacts ILM plans ability to be "live and adaptive" • Integrated land use planning that incorporates both protected areas and working landscapes will be required to adequately conserve habitat. Increases in disturbance rates (e.g. Fire, floods, drought, permafrost melting in the north, insects, disease) and, invasive species) mean that the nature of habitat conditions will be less stable than today, and may favor species different than those that are focused on today. • Climate change adaptation encompasses societal responses or actions that reduce the negative impacts or developed to take advantage of potential opportunities that arise from climate change.
Environmental Ecological resilience and goods and services have limits; however, it is difficult to assess when the limit is reached until it is too late. Long term environmental effects of development and operating practices, especially when combined with climate change, are not well known. How much development is too much? How much protection is needed?	• Pressure to develop more conservation areas to deal with the unknown (e.g., federal target of 25% protected areas by 2025 and 30% by 2030).	• Lots of pressure for ILM to solve outside forces but is limited on its influence. • ILM may be limited to simply influence the balance environment and economic goals.

Global Force or Influence Description	How does it show up? How is it experienced in action?	Impacts on ability to undertake ILM in Alberta
Desire/value for economic growth Creates a continual growth attitude At the social level, resource development is needed to contribute to livelihoods, income generation and employment.	Restrictions on development and human footprint (as contemplated in Land Use and ILM plans) can be in direct conflict with social economic goals.	• Society values are constantly changing, policy and initiatives (Land use, ILM etc.) Can't stay current.
Global markets Alberta is a resource based economy which sells into a global market. This dependency requires continued development of resources to thrive, but it also heavily impacted by the changes in global markets, expectations and pressures	• Most natural resource development products depend on ability to sell into a global market. • Land use policy in Alberta is influenced by global perceptions. • Economic growth resulting from trade expansion can have an obvious direct impact on the environment by increasing pollution or degrading natural resources. However, increased trade can in turn, by supporting economic growth, development, and social welfare, contribute to a greater capacity to manage the environment more effectively.	• Land use and ILM objectives must be based on globally accepted principles. • What may be viewed as best for Alberta is influenced by global forces. It isn't just Albertans who get to decide anymore.
Technological Change Technologies change the way societies behave and operate. "necessity is the mother of invention"	• Technology changes can create previously unknown economic opportunities, mitigate development effects, improve profitability, and may conflict with other goals at the same time (e.g. jobs).	• Technology can open up previously unforeseen resource development potential which is hard to predict at the land use and ILM planning stages. • How to allow for ILM plans to continually adapt and re-planning is difficult.
Need for incorporation of Indigenous values & reconciliation Indigenous values and rights are gaining in recognition	• United Nations Declaration on the Rights of Indigenous Peoples. • "Free and informed consent" • Truth & Reconciliation Commission – 94 Calls to Action • Idle No More Movement • If you don't have Indigenous Peoples at the decision-making table, it will fail.	• ILM has been primarily designed to integrate industrial development without incorporation of Indigenous values. • The more values and perspectives incorporated the more complex and potentially time/resource-consuming a process may become. • ILM is viewed as simply an excuse to approve/allow development and doesn't adequately consider Indigenous

Global Force or Influence Description	How does it show up? How is it experienced in action?	Impacts on ability to undertake ILM in Alberta
		values at the same level of industrial development.
Population Growth Ever increasing human population and demands on public lands has a significant influence on how land use decisions are made and viewed over time.	• Population growth increases the level of human demands and use of the land and ecological goods and services.	• Increasing human use of the land puts pressure on the ability and sustainability of ILM principles to adequately deal with demands. • This can cause some to question the value of ILM.

These global forces are continuing to increase in Alberta which is putting significant pressure on land managers to come up with solutions to conflicts on land use.

5.2 The Challenge at a Glance

Similar to other complex problems, half of the battle is often in describing the challenge and associated influences or forces. It has been our project team's collective experience that so much time is spent defining or describing the challenge of ILM in Alberta that there is a lack of energy to actually tackle the problem itself. In an attempt to illustrate the problem on one page the following infographic was created.

> *SME Quote: "We have created an un-implementable web of expectations"*

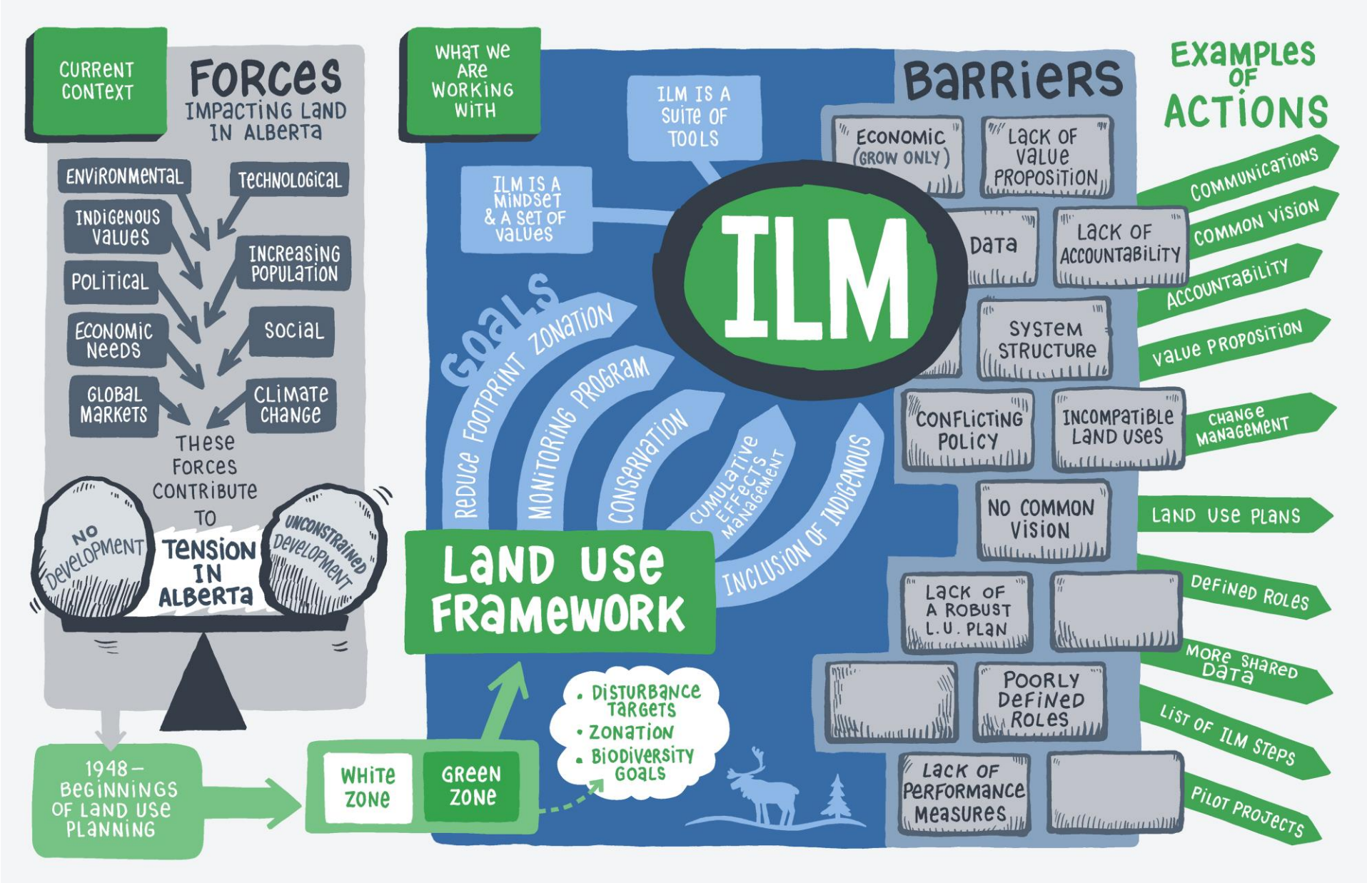

Figure 1. ILM in Alberta in a Land Use Context.

SME quote: "ILM cannot solve the over allocation issue in Alberta; it can only mitigate the impact."

While this graphic is NOT fully comprehensive of every nuance of ILM in Alberta, it is intended to provide an overall depiction of the situation, where ILM fits into the land use planning hierarchy (i.e. left to right), and provide a launch point for discussion. In other words, let's stop talking about what we already know and instead move to what's unknown or possible.

In the "perfect world," a land use plan for all of Alberta's regions would be completed prior to resource allocations followed by sub-regional plans that are area-based and use quantitative analysis and scenarios to ensure that targets and actions are integrated and implementable. Sub-regional plans would have objectives and targets for values such as caribou and then strategies such as human footprint plans (e.g. ILM plans) would be designed to support the stated higher level goals of cumulative effects, conservation, inclusion of Indigenous values, monitoring programs and strategies to reduce footprint.

In Alberta, we have anything but a "perfect world" scenario as shown in the graphic, especially when considering that, for the most part, allocations have been made to meet social economic goals without the guidance of pre-allocation land use planning hierarchy being completed. The result is that Alberta has the huge task of implementing strategies to catch up and adequately deal with conflicts.

The historical approach to policy in the GoA has been to serve the interests of each respective sector and client. The GoA takes a very client focus. The most client focus ministries are Alberta Agriculture, Forestry and Energy with Environment being the least client focused. This client focus creates resistance to change, and it is something that is institutionalized within the GoA. The client approach of the ministries accounts for the apprehensiveness by the ministries to adopt integrated policy. Results indicated that policy making in Alberta has followed a path-dependent approach that has prioritized the interests of the energy industry. Policy efforts with the potential to compromise the interests of the energy resource sector have been previously circumvented by decision makers in the province, as indicated by efforts to thwart LUF prior to its reconceptualization as a broader sustainability initiative.[25]

5.3 So Then, Let's Define ILM

SME Quote: "Without ILM we have resource development shooting up and there is no balance with other values. Industry doesn't do it on purpose to degrade the environment but can happen as it isn't in their primary interest when developing."

We heard that ILM is everything from an operational and tactical tool to manage and reduce human footprint on the landscape to a strategic mindset, a way of thinking. A majority of interviewees indicated that it should be combination of a tool, a process, and a mindset for the way to use land and resources.

Therefore, we recommend that the following ILM definition be used:

"Integrated land Management (ILM) is a strategic, planned approach to manage and reduce human footprint on the landscape. It is a collaborative approach to promote responsible use of

[25] Budny Tomasz K. Integrated Environmental Policy in Alberta Jan 2014

public lands by influencing human behavior and encouraging ILM as a way of thinking for all land users." [26]

5.4 The 'Where' & 'How' ILM Best Serves in this System

But let us go back to the problem of defining ILM in the Alberta system. As stated previously, because of the differing expectations of "how much/how earnestly ILM is needed," there continues to be stalled progress or desire for change, and lack of a consensus on whether ILM can actually solve land use issues.

SME quote: "ILM: It's a dream"

Progress on ILM in Alberta is constantly affected by some land and environmental managers at the bureaucratic and industry levels gravitating to a debate about whether there is already too much resource development (either planned or allocated) as a result of the desire for continued growth of economic development. This was made apparent through the 32 SME interviews; **however, all believed that ILM is worth doing and some qualified that with "even if it only buys time."**

Presumably, the allocation decisions have been influenced by the global forces shown in graphic 1 and the tradeoffs were deemed acceptable by the decision makers. The challenge then is for land use managers to understand their role, understand and influence the allocation (land use) decisions, and implement specific strategies such as ILM to contribute to achieving a balance between the environment and economic goals. This requires industry and government bureaucrats to concentrate on areas where ILM can have a higher degree of influence or power to guide and to inspire actions such as footprint reduction.

SME Quote: "Stop packaging ILM as a thing- remove this artificial lens- erase the lines"

5.5 Why is this Important for ILM Implementation?

If ILM practitioners continue to debate the need to revisit land use decisions where ILM has limited power of influence, progress will not be made. It is possible, however, that if ILM is successfully implemented, it can influence the gravity and extent of global forces, thereby offsetting the impact of un-integrated land use decisions.

ILM has been proven effective (see case studies in appendix 5) in reducing footprint at a localized operational scale. Reducing footprint can have real benefits in meeting other goals such as: Species at Risk, cumulative effects, need and extent for trade-offs, and biophysical habitat as shown in Figure 2 below which will ultimately influence in how ILM affects the extent of global forces pointing inward to illustrate a "sphere of influence."

[26] Alberta Government ILM Tools Compendium (2012)

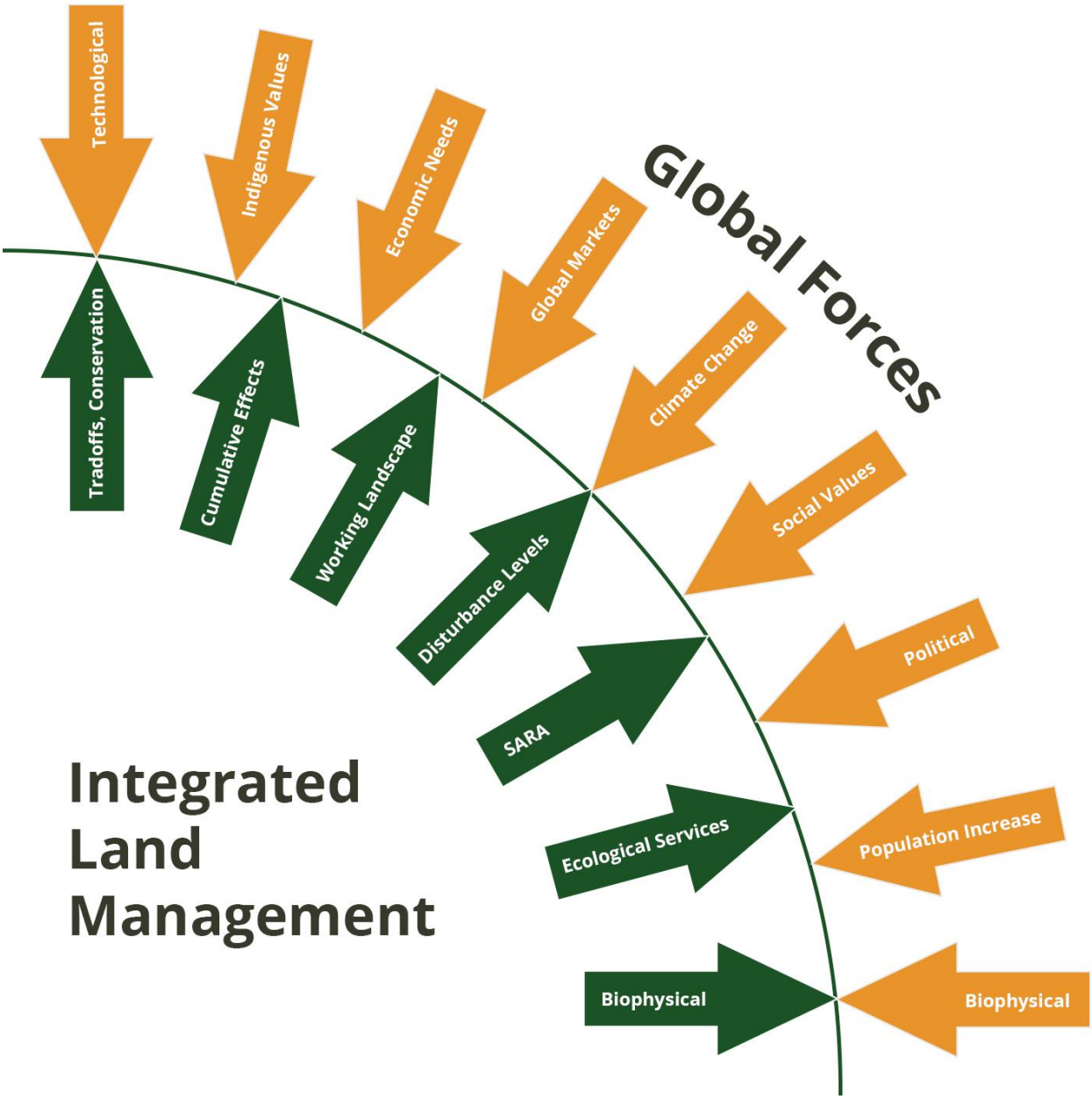

Figure 2. ILM's "Sphere of Influence" in Alberta.

We recognize the challenge is how to change mindsets and have ILM as a strategic way of thinking when creating plans for development. This is particularly daunting when considering that Alberta is faced with finding innovative ways to reduce human footprint after resource allocations and significant infrastructure (producing wells, processing facilities, etc.) are established. This places Alberta in an extremely difficult situation by often placing the burden of non-integrated landscape scale land use decisions on industry and lower level government managers to solving/attempting to solve conflicts after significant investment has been made in project planning, and, in the case of energy dispositions, the allocation sale revenue is deposited in government coffers.

ILM cannot be viewed as a one-stop solution for all of the challenges of land use in Alberta – other initiatives, regulations and guidelines are required to restore balance and help move Alberta to a situation that restores natural ecological functions and away from our current tipping point.

The project team has chosen to focus ILM on the areas where influences are the strongest and have a much higher degree of control. Based on this and to provide clarity for effective implementation of ILM, the project team has made an assumption to guide the development of this report as follows:

ASSUMPTION: While the mindset and principles of ILM should be included in land use and sub-regional plans as they are developed, there is a necessity to ONLY concentrate ILM on footprint reduction strategies NOT on the land use decisions made by Cabinet.

6. Barriers to Achieving ILM in Alberta

For the development of ILM implementation strategies we categorized barriers to provide guidance (see Figure 3 ILM barriers). Based on the SME interviews and literature review, the following are the key significant barriers to the effective implementation of ILM in Alberta. Many of these barriers are also impacted/created by larger global forces and influences detailed in the previous section. We created distinct categories based on the SME interviews (Appendices 4, 8 & 9) to better understand barriers so that potential solutions or areas of progress can be pursued. It is noted that all of the themes are interconnected so just solving one at a time wouldn't provide a systematic solution.

> *SME Quote: "the biggest issue in making progress on ILM/CEM in Alberta is that there is no interest in anything but an economic growth attitude in Alberta."*

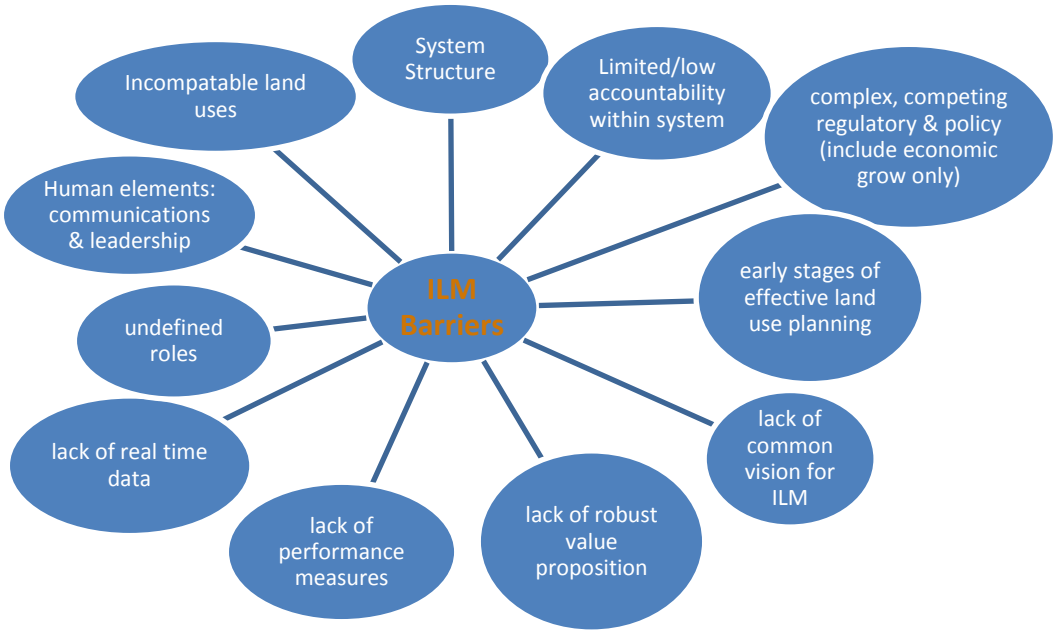

Figure 3. Barriers to ILM in Alberta.

The following table provides a description of each major category of barriers, examples of each barrier and its impacts on successful implementation of ILM in Alberta.

Table 3. Barriers to Achieving ILM in Alberta (collated from SME interviews).

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
System Structure - ILM is inherently collaborative and holistic in its approach, Alberta's current system and structure around land use, management and decision-making is NOT	• Current approaches to land management rely on decision-making based on a disposition-by-disposition or project-by-project basis. • Government regulators job is to approve projects with conditions "no – go" is not an option. (conditions are often not monitored for effectiveness) • Multi-stakeholder processes seen by some bureaucrats as giving up control.	• Silos/fragmented decision-making between government departments • Decisions are made incrementally – the process relies on muddling through, including the decision makers experience, and intuition, rather than on formal procedures.	As a result of institutional fragmentation along sectoral lines, decision-makers are often focused on a narrow set of interests, issues and impacts rather than considering the implications of multiple activities and their impact over broad landscapes and across resource sectors.
Limited or low accountability within the system ILM is operating in	• Politicians seldom are accountable for past land use decisions. (4 year terms with an emphasis on re-election and land use decisions which span several decades). • Turning around past decisions are too costly (e.g. buy back allocations) • Elected officials (Cabinet) are the ultimate decision makers; bureaucrats are seldom held accountable and resist (tendency to impede progress and wait it out for next regime) • Unbalanced power within government departments-unfair fights.	• Short term economic decisions made and leave to bureaucrats to "figure it out" which creates unintended consequences • Reaction - impose ad hoc conditions on development approvals without monitoring for effectiveness. • Industry simply complies regardless of effectiveness to gain timely approval.	Affects the ability of ILM to meaningfully and effectively achieve and report on goals.
Complex and competing Regulatory/Policy environment	• The regulatory environments governing different land users are usually distinct from each other, and have unequal power and control. • Alberta Energy and Mineral regulations don't align with the goal of ILM. • GoA policies can be contradictory • AER and AEP disconnects (conditions of approval for AER will have to reviewed)	• Issuance of dispositions that conflict with other uses growth vs. conservation. • Resource management and regulatory processes are inefficient and increase the risk of conflict. For example, landscape-level issues that are not addressed at the policy and planning stages (e.g., during project-	Policy and regulations haven't kept up or aligned with the need. Currently, there isn't an approval mechanism(s) for multi-sectoral landscape level plans (e.g. regional access plans).

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
	• Government departments are in a competition with each other for limited resources and control. • Policy barriers such as "use it or lose it" forces companies to do things they don't want to. • Policy is usually developed to solve problems not to be proactive. • The need to aggregate individual decisions for landscape-scale caribou management within a broader strategy is intuitively obvious, but difficult to achieve under the present regulatory regime. • Policy is not based only in science it also needs to consider values and needs. • Some policies include economic grow only drivers.	specific environmental assessment and regulatory processes) may surface after resource rights have been issued and after significant investment has been made in project development. • SME quote: AER has been a failure – actually has put ILM backwards. • Much of the legislation for development was built when there wasn't a problem- therefore there is a heavy reliance on operating conditions to fix.	We have a poor process to manage change and revise plans - not iterative, dynamic, and living.
Early stages in practice of Land Use planning to guide ILM and other initiatives in Alberta	• Land Use and sub-regional planning is still at its infancy in Alberta (2 of 7 land use plans complete, 0 - caribou range plans). The 2 completed regional plans have limited direction regarding disturbance targets, biodiversity goals, etc. • Land use plans do more harm than good when incomplete; in the past we at least had the regulators discretion on applications • At the higher level it fails because we haven't decided what we want from the landscape. We don't know "what we want" (the royal "we" – the government of behalf of the people) • Land Use plans – tries to get at a lot of ILM principles but has been a significant failure (favors industry over other users Tourism, recreation, conservation, and traditional land users) • Current decision-making processes can fail to meet public expectations and to discharge public mandates that have been established by law or policy (e.g., the inability of EA processes to adequately address cumulative environmental effects)	• Incomplete land use and sub-regional plans • Lack of consensus on the ecological values to be derived from the landscape. • Defined landscape objectives may not be achievable owing to uncoordinated and inconsistent activities on the same land base (e.g., oil and gas or recreational development on forestry land) or on surrounding lands (e.g., external threats to the ecological integrity of protected areas). In most cases, land uses have already been fully committed in the absence of overarching planning and the setting of objectives.	No direction to effectively complete ILM plans. Landscapes are being changed in unforeseen ways as the result of multiple activities and decisions. The outcome of these changes may be undesirable from ecological, economic and social perspectives.

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
Lack of common vision for ILM in Alberta	• There is NOT a universal (or province-wide) agreement of the challenge that ILM is trying to solve. • There is no common vision of how things are done on the land (government, communities, Indigenous Peoples, etc.) to protect values. • We don't have a clear understanding of what we want or how to get there. • ILM definition is not universally understood or accepted.	• Poor implementation of ILM	ILM is often confused and mixed up in strategic land use decisions (Integration of land use components vs. a mitigation tool).
Lack of robust value proposition for ILM in Alberta	• Lack of a value proposition for ILM; viewed as time consuming and requires more resources = Higher cost • Cost of doing – who should pay? ILM, reclamation, road use, restoration etc. • There isn't agreement on what ILM is, its value, or what it is to accomplish. • Reclamation, monitoring, and reporting are costly- who pays? • Value of ILM is questioned seen by some as yet another justification of more disturbances. • Lack of a value proposition for ILM; viewed as time consuming and requires more resources = Higher cost • Lack of belief in ILM: Minimizing disturbance only for a period of time and then the resource gets developed anyway. You can reduce disturbance in winter for a period of time for exploration then a couple years later we have a mine – continued loss. • Don't see the benefits ILM (scale of cumulative development in the oil sands overwhelms any benefits that might be realized by ILM in many ways.) • Want certainty: adaptive ILM management is hard to plan, budget, and make investment decisions (post allocation - "that's not what I bought") • Need a mechanism to distribute costs as a route that benefits one company may not meet another company	• Push for timely decisions- can't wait for collaborative integration. • Support of past economic decisions/allocations- need to maintain certainty and confidence. • ILM is just seen as another threat to resist by some industry and government.	"If it doesn't pay, it doesn't stay" attitude remains- (source LUF). There isn't agreement on what ILM is, its value, or what it is trying to accomplish. Unequal placement of values economic, social, environmental, and Indigenous. ILM is often limited by in-adequate resources or sustained implementation

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
	needs for development because it is not in the optimal location. • Lack of sustained commitment. • Constant change in momentum start-stop-restart- waste of time and $. • What is success? Everyone happy? Everyone not happy?		
Lack of performance measures related to ILM implementation	• [27]Without measuring performance, we're doing no better than guessing. • We can't know if our actions are working or not; if our expenditure of time and money is making the difference we want, no difference at all, or making things worse. • Without measuring performance, we don't do better than mediocre. • Without measuring performance, we can't anticipate and prevent or mitigate problems. Instead, we spend an inordinate amount of time and effort fighting fires and clean up messes. • Without measuring performance, we can't agree on what success looks like. • Without measuring performance, we can't objectively prioritize. Instead, where we spend time and money will be decided by a popularity contest or the squeakiest wheel. • Without measuring performance, we suffer in uncertainty and lack of self-efficacy. Our decisions will be sabotaged by anecdotal evidence, like opinions, hearsay, and biased data. • Without measuring performance, any attempt at using data will be trivial. We won't have the skill to measure, so will choose the wrong data, misinterpret it and misuse it.	• Lack of established measurable targets (e.g. disturbance thresholds, biodiversity, performance targets to monitor) (recent examples are yet to be proven- Livingston, Lake under pressure to change (e.g. 1976 coal policy rescinded to allow development (2020), then reinstated (2021), now undergoing revision Feb 2021 and the Moose Lake disturbance plan.	Lack of measurable outcomes to track success of ILM - see description.

[27] https://www.staceybarr.com/measure-up/what-happens-if-we-dont-measure-performance

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
	• The temporal life cycle of disturbance is not tracked, monitored or reported on.		
Lacking real time data related to land use in Alberta	• We don't have reliable data (as built, timely) to make decisions, track, make improvements, and enable activity • The temporal life cycle of disturbance is not tracked, monitored or reported on. • We haven't modeled what existing allocations and what it will look like when fully developed (e.g. without new allocations) • We have lots of duplication of effort on data collection between government and industry. • We don't utilize TK data in planning: Pattern of Traditional Knowledge (TK) not taken seriously until validated by western science. • Modeling of data doesn't have a temporal function • Traditional Land Use data: The primary strategy has been avoidance or points; However the points (cabins, trap sets, etc.) are interconnected to the larger landscape. In the past when we presented landscape values (e.g. hunting, cultural areas) it was viewed by industry and government as too broad to accommodate. • Who and how will data be maintained, stored, distributed, to support ILM, CEM	• No agreement on what the baseline is • "We don't trust others data" (example of more seismic needed) • We have lots of duplication of effort on data collection between government and industry. • Not all actors are enthusiastic about sharing their data due to concerns about misuse and misrepresentation • In addition, governments may have concerns about sharing data associated with loss of control, privacy concerns, technical issues or resources required. • The siloed structure that exists within large institutions and organizations (e.g. government, industry and universities) may limit data sharing	We don't have reliable data (as built, timely) to make decisions, track, make improvements, and enable activity- ILM is directly impacted. No "one" source of data available to do ILM. Overall a lack of understanding of what is available and limited ability to access hinders plan development.
Human Element	• Communications and how people talk and interacting with each other plays a big part in success or failure. Trust and relationships matter. • How to influence cultural shifts in government and industry necessary to implement ILM as a way of thinking. • ILM thinking doesn't produce a "thing" (outcome) - without an outcome it is viewed as a failure. • People and change management is 50% of it • Poor communication	• Nostalgia paralyzes us! There is sentimental longing for the past – so prefer to remain mired in misery than to head toward an unknown-some need a "cookbook" and prescriptions to be comfortable for change. • There is a lack of transparency – decades of everything is ok messaging – we are sustainable.	ILM and its values are not well understood by the general public and therefore may not be supported. ILM as a way of thinking takes more time to collaborate. Current push

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
	• Lack of documentation of lessons learned implementing ILM • ILM is hard to do and often people at the ILM table don't have the authority to make decisions that materially affect the company. • GoA (bureaucrats) is very risk adverse - creation of inertia and lack of support and belief in land use decision that they have no control over. • Tendency to seek experts and research to refute each other (e.g. industry experts vs. government) as opposed to seeking proactive solutions to meet desired outcomes (us against them) it's common to have a negotiated outcome as opposed to scientific solution. • Past resentments are real. The ghosts of the past are always lying in wait to haunt us. As long as everything is steady state, they remain out of sight. But the minute you need cooperation for something new or different, the ghosts spring into action.	• We are not capitalizing on ILM and tend to focus re-jigging the words. • With other influences at play there is a tendency for risk aversion; need to control, and lack of willingness to try something new.	is for reduction in approval times. Innovation moves too slowly – speed is a currency. Change requires more work – may be viewed as overwhelming.
Roles undefined (who and how each player contributes to ILM practices)	• The role(s) that the private sector, including individual landowners (e.g., agricultural landowners, ranchers, woodlot owners) and resource industries (e.g., forestry, mining or oil and gas rights holders) can and should play in ILM is not defined— and on articulating the benefit and opportunities to facilitate their engagement. • Who is going to lead indigenous engagement – Government, industry? When? Allocation stage or application for development? • Need to identify not only how, but who will do the work to overcome challenges including other GoA departments. • The role of indigenous communities and rights. Challenges include a lack of well-established methodologies for bridging knowledge, the fact that	• Current push is for reduction in approval times. • Innovation moves too slowly – speed is a currency. • We are not capitalizing on ILM and tend to focus re-jigging the words.	Inertia – spin our wheels

Barrier	Description of Barrier	Tangible Examples of barrier in action	Impacts to ILM implementation
	knowledge is often based in different scales, and significant inequities in power among knowledge holders at times, with deference given to Western Science. • Having one company (or sector) doing ILM and CEM is a poor fit.		
Incompatible uses and competing interests and needs on land	• Reality is that there are multiple resources AND multiple companies operating at different times scales and business realities– not able to integrate. • Lack of understanding or unwillingness to address how their specific (singular) activity affects others (opposite of a systems approach) • One operator is expected to practice ILM but has no control over others – not a good fit- "goofy". (FMA plans, EIA's etc.) • Company balance sheets may not capture many of the environmental impacts of their operations, and thus improved environmental management may not always be seen as a priority. • Differences in sector's business needs not well recognized – irritants (TDA, Road use, etc.)	• Some land uses are not just competing but some in this category are not compatible and therefore are handled through tradeoffs not integration. • They are accommodated within overall CEM.	Limited strategic progress on ILM- only practiced where it is viewed as compatible and in businesses interest-limited application

7. Finding Inspiration in Past Success

In order to better understand opportunities to make positive change to and through ILM in Alberta, a review of past Case Studies was completed (see Appendix 5). The following Case Studies were selected primarily because they were cited in other literature reviewed and/or the project team was aware of them from previous experience practicing ILM or through the SME interviews. The project team was unable to find any successful operational and tactical ILM projects in other jurisdictions outside of Alberta. In addition, operational and tactical ILM projects seemed to be poorly documented and lessons learned were likely not shared much beyond the project proponents.

One case study was selected to be reviewed in detail outside of Alberta because it offered some insight into a jurisdiction that had very similar Land Use characteristics as Alberta. The British Columbia (BC) Fort St John (Peace Country) Land and Resource Management Plan (LRMP) was reviewed in detail and was backed up with 3 SME land managers being interviewed to gain some insight into any learnings that could be applied to the Alberta situation (See Appendix 6).

The case studies were organized into three major categories:

1. Operational - This is lower level operational planning usually involving a clear business case for companies to voluntarily cooperate and integrate at a known project level (e.g. sharing access to a common localized area).
2. Tactical - This is characterized as a higher level ILM planning initiative that anticipates and projects how future development needs will occur usually involving several companies on a landscape (e.g. a caribou range).
3. Strategic - This is a higher order ILM planning initiative that seeks to provide guidance for a larger landscape for who, what, where, and how much development may occur.

The following are examples of ILM in each of the three categories:

a. Operational (company to company):
   - Al-Pac and Gulf Surmont: 2006
   - Consolidation of Industrial Access Control on the Chinchaga Road: 2004
   - Al-Pac Opti-Nexen Integrated planning: 2008

b. Tactical (landscape - multiple companies):
   - Chungo Creek ILM Access Pilot: 2001
   - Foothills Stream Crossing Partnership: 2004
   - Kakwa Copton Industrial corridor plan: 2009
   - Canfor/Suncor: 2005
   - Berland Smoky Integrated Industrial Access Plan (IIAP): 2006
   - Berland Smoky Regional Access Development (RAD) Plan: 2011

c. Strategic (landscape level Land Use and ILM plans):
   - Castle River: 1992

- Fort St. John (BC) Land and Resource Management Plan (LRMP): 1997
- USA Roan Plateau Resource Management Plan (RMP): 2016
- Livingston – Porcupine Land Footprint Management Plan: 2018
- Moose Lake Access Management Plan: 2021

You can find a detailed description of each of these case studies and their key attributes of success in Appendices 5 and 6.

7.1 Key Learnings from Case Studies

7.1.1 Operational ILM Projects

The projects listed in this category are characterized by being initiated and led primarily by the forest industry to achieve a clear cost savings by collaborating with other industrial partners. The forest industry, when compared to the energy sector, have a longer planning horizon and generally have less profit margins which causes them to be under more fiscal pressures to find ways to reduce annual operating costs. Energy sector operational planning tends to be much shorter and planners place more emphasis on the fiscal "value of time" for approvals which causes them to not pursue integration as readily. For example, the cost of keeping a drilling rig and personnel on "standby" would likely be more than any savings to be realized with integration.

A revealing fact is that there seems to be a lack of momentum in these types of projects over the past 10 years partly due to the recent downturn in the energy sector's new projects, projects completed but not reported, and perhaps the ones with obvious beneficial business cases have already been completed and poorly reported. If you want to find the opportunities you have to search for them; some may not be obvious or didn't meet timelines between companies and therefore could have been passed by.

Key attributes of success for these projects included:

- A proactive, inspired leader pushing for change and holding subordinates accountable for ILM.
- In at least one case, senior level leadership in pursuing ILM was key to achieving ILM success (e.g. Al-Pac). This resulted in the development of a business case to have dedicated staff that sought out ILM opportunities. At the height of energy sector development within NE Alberta in the 1990's, this became a significant source of revenue[28] for the company (E.g. reducing harvesting costs and selling of vegetation inventory products).
- A clear business case was so compelling it couldn't be ignored.
- A designated leader was established to manage the project, achieve objectives and realize the value.
    - Needs a person to identify and establish a clear business case to collaborate, seek out, and sell the concept to partners for a mutual win/win between two or more companies.

[28] Personnel communications with Alpac staff.

7.1.2 Tactical ILM Projects

> *SME quote: "ILM is not a management system, and it is a misuse of the word "management" to call it such. It does have some potential benefits, and it may buy time, but not if poorly designed and led by a true higher order management system."*

The projects listed in this category are characterized by industry voluntarily leading and reaching out to seek government collaboration and ultimately approval for an access corridor plan. Some projects built on the success of other operational level plans in Alberta to expand the projects to a more strategic landscape level plan to be used for existing and new access. Some projects were driven by companies seeking to benefit from improved road corridor planning and ease of approvals to reduce the risk of losing access in sensitive areas such as caribou ranges. (E.g. Chungo, Kakwa Copton, and Berland Smoky 2006 and 2011).

One project required the partners to seek flexibility in normal punitive actions on individual creek crossings that were not allowing for fish passage to find and prioritize landscape level improvements over time to get the "biggest bang" for the buck. (E.g. Foothills Stream Crossing Partnership).

Key attributes of success for these projects included:

Related to project management and planning guidance

- Clear and measurable objectives
- Early plan development to provide the time to do integration
- Clear Terms Of Reference, governance structure, and objectives (it is best to get Government approval before the project is initiated)
- A dedicated independent project manager
- Documentation of lessons learned implementing ILM
- Demonstration of integration to support project applications/approvals was provided by the independent project manager (FLMF)

Related to roles

- Government support
- A designated leader (usually a third party) to manage the project, achieve objectives, and realize the value
- Dedicated company personnel to seek out and build a business case, demonstrate value, and gain approval of senior management
    - The business case must be compelling enough to take the time necessary to seek out potential partners, sell the concept, develop a relationship, and complete an agreement.
- Senior management endorsement and support – installed staff performance measures to make it happen and achieve the projected cost savings
- Acceptance that development projects to meet industry tenure obligations and rights will proceed with or without integration

Related to data/data management

- To maintain confidentiality, a third party was involved to integrate and manage data from different business entities

- Time was spent developing relationships and trust between participants/sectors to understand each other's businesses (third party managers removed angst between industrial sectors in advancing trust)
- Detailed, up to date, as-built, and accessible data to build the case and be able to demonstrate success. It was stated[29] by some energy companies that having access to a data layer that could be trusted was worth more to them than the cost of membership on the consortium (e.g. FLMF)

Additional learnings from "What didn't work well?"

- Often limited by a lack of resources or sustained implementation
- To be successful ILM planning and management needs to be a "living document" and adapt to changing circumstances such as new technology (e.g. horizontal drilling) and business needs. Plans tend to get developed and sit on the shelf and quickly go out of date and lose momentum
- Industry and government "buy-in" and compliance are difficult to achieve if it isn't backed up by policy and regulatory teeth. For example, some applications for development that varied from the access plan were ultimately approved by government after a proponent lobbied for a one-off business case to vary from the plan which diminished the validity of the planning exercise and allowed for a return to the historical approach for one–off for approvals
- Since inter-industry cooperation generally occurs after resource rights have been issued and after regulatory approvals are in place, flexibility may sometimes be limited[30]
- Original value proposition/objectives beyond clear cost savings for access, such as: ease of approvals hasn't materialized, the approval system is still based on a project by project level and subject to extensive review as non- standard applications under the Enhanced Approvals Process, the regulatory environment hasn't progressed to facilitate and support this type of planning
- Inter-industry cooperation may be frustrated by sectoral fragmentation of management and regulatory authority in government and by the differences in land-use priorities, requirements and timelines among government departments and agencies – it is sometimes unclear who, if anyone, has overall responsibility and authority to manage the land base as a whole[31]
- Many of the tactical planning efforts were within caribou ranges and since the federal government announced the woodland caribou recovery strategies, the government of Alberta has been hesitant to approve landscape level projects without land use and sub-regional caribou recovery plans in place
- The commitment and resources inputs are extensive and take time. The effort required and benefits are hard to justify if they are not realized
- It has been difficult to develop plans in caribou ranges where existing disturbances are already shown to be over the federal recovery strategy's guidance for disturbance thresholds

[29] Personnel communications FLMF members.

[30] Kennett, Steven; Integrated Landscape Management in Canada: Getting from Here to There: A Canadian Institute of Resources Law (2006)

[31] Kennett, Steven; Integrated Landscape Management in Canada: Getting from Here to There: A Canadian Institute of Resources Law (2006)

7.1.3 Strategic ILM Plans

Strategic level or government plans are characterized by having a land use plan in place which provides direction regarding resource development and allows for the establishment of disturbance targets. In the Moose Lake case, Indigenous engagement was a significant factor in development.

Key attributes of success for these projects included:

Related to process

- Defining what is/is not allowed
- Operational and planning alignment
- Transparency
- Consultation with Indigenous communities and collection of Traditional Land Use is a priority
- Single source of data for habitat condition and footprint

Related to content of the plans

- Restoration strategy of historical footprint that is no longer needed to be developed
- Culturally relevant conservation and reclamation plans
- A monitoring program
- Incorporation of recreation management planning
- Amendment process
- Decision Support Tool to build the underlying data architecture to make approvals

Related to integration

- The need for integrated government departments for delivery
- Integrated approval process
- Integration of forestry, energy, tourism, grazing, wildfire and other resources uses

Related to regulatory specificity (getting into the details)

- Regulatory and enforceable thresholds, limits, and targets set for motorized access and human footprint
- Direction for land and footprint management, air quality, water quality and quantity, wetland abundance and health, fish and wildlife management, monitoring, and governance
- Inclusion of a chronological work plan including tasks, resource allocations, and milestones
- The Roan Plateau RMP includes provisions for the buy-back of mineral leases

Note: Not all of these factors are fully implemented to date.

Key shortcomings of strategic Case Studies summarized:

- Roles described are primarily what government agencies role is and do not provide adequate direction or expectations of industry.
- No adequate role of Indigenous communities.
- Was not adequately implemented: Didn't become a "living plan" as contemplated in many of the plans. Lack of momentum and support declines over time.
- Does not address how integration will occur between industries operating on the same landscape to reduce footprint.
- Conflicts including the perception of conflict continue. Competing visions between how the land will be used are not resolved.
- Massive investment is required to properly include Indigenous Peoples.
- Internal government agencies need to get to the place where they get that it's one land and plans need to outlive political timelines (e.g. election cycles).

Government historically has had difficulty in establishing firm disturbance limits as they are influenced significantly by the global forces such as political will, so limits tend to be missing or at best temporary because it may affect economic goals set out by Cabinet. For example, it is not known if the disturbance targets as shown in the Livingston – Porcupine Land Footprint Management Plan will have longevity, achieve desired objectives, or require amendment(s) as shown in the Appendix 5 Case Studies.

Key shortcomings of the Fort St. John LRMP strategic Case Study summarized:

While the Fort St. John LRMP at the time of development was considered a "state of the art" planning process, the ILM project team, through SME interviews with a few BC land managers, observed some shortcomings that contributed to BC's need to revise the plan.

- The primary function of the 1997 LRMP was to set aside 12% protected area to meet National Forest Accord goals but this didn't include things like caribou, energy sector, Indigenous Peoples interests, etc.
- Roles are identified for government agencies but do not provide any description of the roles or expectations of industry.
- There are objectives for access development such as "encourage deactivation and rehabilitation of un-used roads, promote the development of multi-use corridors, and coordinate access," but nothing about the process, regulatory measures, or methods to make reductions in footprint happen. This is viewed as very weak and is not likely to result in successful implementation of ILM between overlapping industrial sectors.
- No role of Indigenous communities.
- Was not adequately implemented: it didn't become a "living plan" as was contemplated within the plan.

A detailed review of this LRMP is provided in Appendix 6.

8. Making Positive Change across ILM Barriers

The first learnings gained for the review of the projects above is that implementation of ILM at the operational, tactical, and strategic level plans are not hindered by a lack of knowledge.

ASSUMPTION - We know enough to act.

The success of the projects outlined demonstrates that we know enough to act. Findings in literature confirm that "The foundation of knowledge and supporting tools related to resource management is sufficiently developed to enable Integrated Natural Resource Management (INRM)."[32]

8.1 Connecting Recommendations to Change Theory

8.1.1 A Few Words About Change

Change is hard for people. Even positive change is hard. Change presents an unknown, different and uncertain way forward – even if it might be a better way forward than what you have right now. And that unknown can cause resistance, consciously and subconsciously. Research has shown that approximately 70% of change initiatives fail.[33] That failure rate has much more to do with people's reaction to the potential change than it does to the problem being resolved.

It's important to note that there are two kinds of change we need to consider when working with ILM:

TECHNICAL CHANGE – This is where we can take a current problem and apply simple, clear, problem-solving processes based on what we already know in order to address the challenge. Problem definition is clear and responsibility for implementation resides with the organization or technical expert.

ADAPTIVE CHANGE - When the problem definition is unclear, or viewed differently from many different perspectives, and when new learning, understanding and options or alternate ways forward must be created. Responsibility for implementation or impacts of change will be distributed to many people or organizations, and will require collective support and contribution to be effective and sustainable. Adaptive change happens for problems not easily solved, where the path forward is uncertain or unclear.

8.1.2 Responses and Reactions to Change

When working with ILM to create positive change for land use planning in Alberta we can anticipate a combination of both technical and adaptive change strategies to be employed.

When the potential for change is presented, there are a number of common reactions:

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[32] Expert Panel **Greater Than the Sum of Its Parts: Toward Integrated Natural Resource Management in Canada** The Expert Panel on the State of Knowledge and Practice of Integrated Approaches to Natural Resource Management in Canada (2019)

[33] Kotter J. Leading Change: Why Transformation Efforts Fail; Harvard Business Review, On Change Management, 2011

1. To deny the problem exists and attempt to marginalize those who have presented the issue or who are supporting it
2. To avoid the problem and situation and disengage
3. To defend the status quo and seek to protect it, sometimes resorting to personal attacks and shifting debate to "good" versus "bad"
4. To become aware of the potential for change and to seek to understand it

Recommendations and changes will need to work with people who are in all 4 reactions to change. However, it is people who are aware of the potential for change and are seeking to understand its implications that may act as early adopters, supporters and contributors to the change process and help us affect change for everyone else.

The following table provides a summary of factors that contribute resistance to change and those that create support for change. It also details examples of where we have found "resistance" to change from the SME interviews.

Table 4. Resistance to Change Relating to ILM in Alberta (from SME interviews).

WHAT CONTRIBUTES TO RESISTANCE TO CHANGE?	RESISTANCE IN ACTION "What we've found during this research"	WHAT BUILDS SUPPORT FOR CHANGE?
Presenting the benefits or opportunities of the change and "selling" the options for moving forward as positive	*Unless it provides a competitive edge or cost saving to the company, why would I consider it?* *To do the "right thing" often isn't a good enough or quantifiable reason to put in the effort.*	Openly acknowledging the impact of change and the potential loss that may be experienced by some
Wholescale, broad and widely impacting change all at once	*ILM will cost more money than one-off approvals – who is paying for this?* *Redundant roads = reclamation = new cost, and monitoring is costly.*	Focused, targeted, priority-based change in manageable pieces over time; clarity of roles and responsibilities.
Distrust in individuals or organizations presenting the change	*Industry doesn't trust government; government doesn't trust industry.*	Relationships and trust in individuals or organizations presenting the change
Sense of isolation or marginalization in terms of negative impacts	*I feel like I'm being attacked for presenting my companies interest. Government should take ownership of the land use decisions made and be accountable to it.*	Mobilization of diverse groups or individuals speaking out about the need for change
Sense of "everyone thinks this" and "we all agree"	*Only one government department has this as their mandate.* *How are the other departments aligned?*	Inclusion and diversity of views and perspectives
Limited information, explanation or opportunity to understand the "why" and "what" is happening	*It is not my responsibility to look after caribou; it is government. Companies optimize their own transport plans for their self-interest to maximize their individual profit and <u>not</u> look after other needs including other companies and the public. Industry quite simply is not geared, equipped, or realistically can be held responsible to practice ILM at a broad landscape scale.*	Transparency and openness with information, including challenges, concerns and potential solutions
Limited, closed or adversarial consultation process	*Government is leading the consultation process and doesn't understand my business. They don't listen. If*	Candid, open, welcoming and constructive conversations

WHAT CONTRIBUTES TO RESISTANCE TO CHANGE?	RESISTANCE IN ACTION "What we've found during this research"	WHAT BUILDS SUPPORT FOR CHANGE?
	it isn't win/win, why would I help a competitor? Goes against the grain of a competitive industry.	
Inflexible, rigid or reactionary responses to concerns or contributions	*I don't always agree with many approval conditions imposed by government decision makers who seldom follow up with effectiveness monitoring but do it anyway for timeliness.* *We can't meet the 65% undisturbed habitat in many caribou ranges without human footprint (e.g. fire) so we shouldn't rely solely on human footprint targets.*	Acknowledgement of limitations. Modeling of behaviors and attitudes you are seeking from others (caring, compassion, understanding, openness) and willingness to change based on effectiveness monitoring
Fear of failure and uncertainty about the future	*What if I'm wrong or the business case or value proposition doesn't materialize? It is easier to do your own thing because I know what it takes; I know how to get approval, in the current business and regulatory environment, why would I change, why would I try new things? Am I willing to take that risk?* *We are trying to implement Integrated Land Management with two different and sometimes conflicting business imperatives (e.g. government and industry) - "poor fit"*	Freedom to explore uncertain options or solutions and to "freely fail"
Loss of control or feeling coerced	*If I share plans, it puts a target on my back.*	Feeling of ownership and being valued
Rapid pace or short timeframes	*ILM takes too long; business needs don't allow and I don't have the time.* *Business plans of different industry sectors and government departments are often at different time scales.*	Pace of change designed to allow for understanding
Personal career success is based on the old system	*I have other things to do that are more important to my personal success.* *Is it worth the effort if government won't accept the outcome in lieu of land use and sub-regional caribou range plans?*	Senior level support and business needs include integration across department as a success factor (e.g. like safety) for Industry and government; and/or mandatory for approval; completed land use and sub-regional plans to provide direction.

We will need everyone to make effective change. It's a violent revolution without those standing in the middle or those who act as guardians of the status quo. If we all stand in the middle it becomes hard to find the future with no guides, and if we all stand in the past, we get stuck clinging to the old ways even when they no longer serve us.

We are in this together. To address the realities, complexities and challenges of ILM in Alberta, we need the courage to work together, to have challenging conversations, so that we can step into the future. The recommendations we've outlined below have also considered supporting positive change; however, this is an ongoing effort to see positive results.

9. Recommendations for Change

NOTE: The following recommendations are purposely listed in order to show how ILM should progress to be successful starting with overcoming resistance to change, employing strategic measures and Indigenous engagement, to supporting more tactical and operational ILM. It is not a list of recommendations that should be "cherry picked" simply because they are easier to do and stop there. The risk of cherry picking has been demonstrated over the past 20 years which shows operational ILM progress and reverts back to the old way of doing things such as one-off approvals, disposition by disposition, as dictated within the regulatory environment. This is a real example of the importance of strategic direction backed up by a regulatory environment to enable progress in operational and tactical ILM.

The ARCKP steering committee asked the project team to document findings that could provide "quick wins" for successful implementation of ILM in Alberta. The literature review and SME interviews did not find any "silver bullets" beyond a clear cost savings that, if implemented alone, would not ensure successful implementation of overall ILM to meet goals.

The system that ILM lives in is very complex and interconnected with high level strategic land use decisions (e.g. tradeoffs of values, allocations, tenure systems, etc.) to operational and tactical strategies employed by industry to develop resource extraction methods to maximize profits while at the same time employing mitigation on other values.

The recommendations are summarized as a spectrum of progressive recommendations Table 5 as follows:

Table 5. Summary of Recommendations for Enabling ILM in Alberta.

ILM Recommendations Spectrum

"Each supports the other"

Recommendations to guide and instill "power" to affect ILM		**Recommendations to enable ILM**		**Recommendations to Practice ILM (based on guidance and enabling recommendations)**	
Overcoming resistance to change	***Strategic***	***Enhance Indigenous engagement***	***Enabling and Bold Actions***	***Tactical***	***Operational***
1. GoA and Industry adopt a common definition of ILM. 2. GoA and Industry concentrate ILM efforts in areas where you have the most control (e.g. Reduce footprint). 3. GoA and Industry define roles and responsibilities for industry and government for ILM 4. GoA and Industry employ change management to support policy/regulations that support ILM and make cultural shifts within industry and government 5. GoA and Industry conduct a critical "effectiveness" review and update the Master Schedule of Standards & Conditions (MSSC 2017) 6. GoA to update the 2012 ILM Tools compendium to reflect advancements in ILM modeling, learnings from pilot projects, ILM steps (recommendation 23), and need for advancement in indigenous engagement (recommendation 14 & 15). 7. GoA and Industry to develop communications strategies (sell the concept) 8. GoA and Industry adopt environmental business performance indicators in business of government and industry (aligned with recommendations above and KPI's in 23.)	9. GoA to accelerate the current Office of "System Transformation" to align regulations to support ILM 10. GoA to accelerate efforts underway to complete land use and sub-regional caribou plans to provide clear direction for ILM 11. GoA to establish and fund formal ILM pilot projects to prove concept (including regulations) 12. GoA to adopt the learnings from the PBR pilot project. 13.Investigate and implement reforming tenure regimes to support ILM	**a. Indigenous engagement:** 14. GoA to develop and support capacity requirements for Indigenous communities to actively and meaningfully participate 15. GoA to bridge Traditional Knowledge (TK) and western science for caribou management	**b. Enabling actions:** 16. GoA to establish a comprehensive resource information system openly shared (see recommendation 3) 17. GoA to establish a process ILM planning tool similar to the AER Landscape Assessment Tool (LAT) 18. GoA, once supported by recommendations 1, 2, 8, 9, 10, 11, 12, 16, 17, 21, 23 & 24, mandate appropriate integration at all levels of the planning and management hierarchy. **c. Bold actions:** 19. GoA to reinvest in the "Resource Road Program." 20. GoA should consider forming a centralized road authority.	21. GoA and Industry formally develop jointly managed and funded regional ILM Working Groups (WG) 22. GoA should take action to provide a level playing field for inter-industry and government department cooperation. 23. GoA and Industry formally adopt process steps to develop ILM corridor plans and provide transparency and supporting actions: -FMA holder collaboration -Investigate energy partnership opportunities -Share business transparencies to support ILM -Federal participation 24. GoA to develop an approval mechanism for ILM corridor plans	25. Industry builds on successes of company to company ILM business advantages and document and report to recommendation 7 as examples of success. 26. Industry forms strategic industrial alliances in areas of alignment and publically report for to support recommendation 7 on progress (e.g. within caribou ranges).

If the recommendations for overcoming resistance to change, strategic level, Indigenous engagement and enabling actions are implemented, tactical and operational ILM will happen on their own! Without this, simply implementing tactical and operational ILM alone could be a fruitless exercise in the sense of a implementing a fully functioning ILM solution.

The details and justification for each recommendation is as follows:

9.1 Recommendations for Overcoming Resistance to Change

Recommendation #	Recommendation Description
Recommendation 1	Government and industry adopt the following definition of ILM: **"Integrated land Management (ILM) is a strategic, planned approach to manage and reduce human footprint on the landscape. It is a collaborative approach to promote responsible use of public lands by influencing human behavior and encouraging ILM as a way of thinking for all land users."** *Source: Alberta Government ILM Tools Compendium 2012*
Recommendation 2	Within the adopted definition in recommendation 1, ILM planners concentrate ILM planning efforts on: • Reducing Human footprint • Supporting and Contributing to Cumulative Effects Management • Influence the need and extent of Conservation goals • Promote the inclusion of indigenous values in ILM planning • Role in a Monitoring program (e.g. human footprint on/off) • Concentrate ILM plans on Resource Access corridors for roads, pipelines, powerlines, etc. • Produce better outcomes than "plan as you go"
Recommendation 3	*****The government and industry should clearly identify and reach agreement on roles and responsibilities for ILM: who is responsible for what components of ILM planning and implementation A Detailed Description in support of this recommendation can be found below as well as an example in Appendix 7 "ILM Working Group" roles.
Recommendation 4	****** Government and Industry must develop, educate, and employ change management strategies for all staff involved in adopting ILM as a way of doing business. Change management strategies would support the necessary cultural shifts for industry and government to support policy change and move to an adaptive management approach. • The GoA must move to an outcome-based mentality vs. the prescriptive command and control culture and; • Industry must move to outcome-based vs. the simple regulatory compliance culture.

***Recommendation 3.** The role of industry and government to implement ILM has historically been poorly understood or defined which creates a huge challenge to overcome resistance to change. Over

the past 30 years, as part of the Ralph Klein era, the Alberta government became very good at off-loading responsibilities to look after competing land use values to industry (after allocations were made) by placing conditions on industry project approvals. This includes consultation with Indigenous communities, usually after land use decisions are made (e.g. allocations), wildlife values (e.g. caribou), and controls on public use of access. This has created a conflict with industry trying to look after values that they ultimately are not responsible for, isn't in their business interest, have limited control or enforcement authority to meet outcomes, and are seldom adequately equipped to handle.

Government has a strong role in ensuring that industry is accountable in both the planning and execution of their resource extraction. More importantly, government is itself accountable and responsible for ensuring that sufficient caribou habitat is protected. [34]

The business of government and industry are fundamentally different but they have common areas of alignment (e.g. risk of loss of access) and the ability to merge the two businesses needs for a common purpose (e.g. reduce footprint) will require mutual agreement on who does what and when. Government business is driven by government policy on behalf of Albertans to meet overall social economic goals. Industry is driven by access to resources, technology, market, capital, and profitability. It is often a poor fit to expect industry to voluntarily practice ILM for the benefit of others, not unlike each government department focusing solely on fulfilling its individual mission.[35] For example, a company develops access for the sole purpose of supporting its individual profitability. Further, a company business advantage is sought to outperform or be out ahead of competitors, not to share in innovations and successes and certainly not to help competitors if they are struggling. An example in the forest sector would be the concept of creating a fiber basket to share in wins and losses if there is an issue affecting access to the resource such as caribou which impacts some companies more or less than others. The fiber basket concept has been tested with individual companies and was outright rejected by industry because it goes against the grain of a competitive free market capitalistic system.

Industry operates within a capitalist system defined as: "*An economic and political system in which a country's trade and industry are controlled by private owners for profit, rather than by the state.*"[36]

One of the challenges is that private owners operate for profit on public (government) lands. Therefore, industry and government managers need to understand, buy-in, and support what ILM is and what it can do to realize success in the areas of reducing cost, reducing risk to their business, ensuring continued access to the land, and looking after other values.

[34] Denhoff E. Setting Alberta on the Path to Caribou Recovery May 30, 2016

[35] Canadian Integrated Landscape Management Coalition: Integrated Landscape Management: Applying Sustainable Development to Land Use. May 2005

[36] Source *Oxford Languages and Google*

Clear roles must be defined: this is no small effort, requiring substantial and expert planning resources. Across Canada, as outlined in the Denhoff mediator report, "government has often functioned best in setting the bar for industry, but rarely in preparing industry's plans for them." [37] (See also Appendix 6)

****Recommendation 4** Policy change as outlined in the strategic level recommendations needs to be supported by change management strategies and cultural shifts to support it. Without efforts on change management and cultural shifts, significant policy change to move to ILM will have limited success. An example of policy implementation impediment is the current Covid-19 pandemic and government's attempts to impose restrictions (policy). The lack of broad acceptance of the restrictions and public resistance is reducing the effectiveness the policy change. Another current example of culture affecting policy effectiveness is the issue of police reform in the United States where it has been reported by media (May 2021) that "culture eats policy." If you don't change culture, policy won't work.

In addition, a more flexible approval and revision process that focusses on outcomes-based management as opposed to adherence to prescription-based approvals is required to allow industry to remain nimble in a large scale, long term development plan and integration. A flexible approach is also needed in early project stage development rather than providing long term approvals that will likely require revision prior to execution.[38]

SME quote: "Change management is 50% of policy change"

Further, because of the complex nature of land use, shifting values, and uncertain outcomes, an adaptive approach to management is required. Shift from "plan as you go" to an adaptive approach to plan, implement, monitor, adjust and re-plan.

Recommendation #	Recommendation Description
Recommendation 5	Government and Industry must jointly conduct a critical effectiveness review of the Master Schedule of Standards & Conditions (MSSC 2017) • To shift from Best Management Practices (BMP) and see what can be moved into mandatory practices vs. voluntary. Test effectiveness and determine what should continue and what should stop
Recommendation 6	The government should update the 2012 ILM Tools Compendium that guides ILM planning to reflect a more active role of Indigenous communities, recent advancements in modeling capability and the learnings found in completed joint pilots, such as: Play Based Regulation of 2016, and the GoA/FLMF Berland RAMP of 2018-19. (See ILM corridor planning steps recommendation 24.)
Recommendation 7	*Government and Industry should cooperate in development of communications strategies for communicating the value of Integrated Land Management for environmental values (e.g. caribou).

[37] Denhoff E. Setting Alberta on the Path to Caribou Recovery May 30, 2016

[38] AER evaluated the PBR Pilot, and issued its findings in a report: Evaluation of the Alberta Energy Regulator's Play-based Regulation Pilot: June 2016

Recommendation #	Recommendation Description
Recommendation 8	**Government and Industry must adopt business performance indicators aligned with recommendation 24 (ILM steps) and standards for ILM and environmental stewardship and embed them into: • ILM Business performance and environmental standards (just like safety is) and • Ensure staff employment contracts and positive performance management systems hold them accountable to the performance standards.

Recommendation 7* There is a need to demonstrate and celebrate successful implementation of ILM in Alberta to reduce footprint to mitigate impacts and mitigate resource development. In addition, currently, little is done by way of public education to inform the public on the history of the caribou, their importance as indicators of overall landscape health, and their tremendous historical and ongoing importance to Indigenous communities. [39]

SME Quote: "The tyranny of small decisions"

Recommendation 8** ILM is often hindered by individual government and company's staff that don't have integration as a performance measure. For example, company staff performance is measured on getting operating approval(s) and meeting regulations, not for cooperating with a competitor for the same products and land base.[40] Government staff performance is measured on meeting deadlines and responding to "information requests" (IR's) in a timely manner and staff seldom have the time required to integrate with other government departments.

9.2 Recommendations at the Strategic Level

9.2.1 Considerations When Thinking About the Big Picture

The overriding concern is that the recommendations for human resistance to change, operational, and tactical ILM will only make incremental advancements to successful ILM implementation. However, that does not mean they shouldn't be done or tried. Some of the resistance to change is best captured by the following quote which is often used to describe a futile action in the face of impending catastrophe resulting from over allocation of land.

"Rearranging the deck chairs on the Titanic"

An article puts this in perspective: *"I was in charge of the deck chairs on the titanic, and they absolutely did need rearranging"* "Did the chairs I so lovingly arranged ever sink beneath the weight of a wealthy, silk-clad bottom? No, they sank beneath the North Atlantic, but that's hardly the point. The point is, I did my duty to the best of my ability and froze to death with a satisfied heart." [41]

[39] Denhoff E. Setting Alberta on the Path to Caribou Recovery May 30, 2016

[40] ARCKP ILM project SME interviews 2020-21

[41] Emily Flake *is a cartoonist, writer, performer, and illustrator living in Brooklyn, NY.* Article "I was in charge of the deck chairs on the titanic, and they absolutely did need rearranging". May 2020

Full realization of the potential of ILM will require a concerted effort to also resolve the strategic barriers which were strongly reinforced by literature, previous pilot projects in Alberta, and the SME interviews. ILM implementation is particularly challenging when considering that many past land use decisions were not integrated at the strategic level and attempts made at the operational and tactical levels raise a level of skepticism. In addition, the values and interests of key non-industry stakeholders may be ignored or under-represented in inter-industry initiatives which suggest that actions be taken first at the strategic level to ensure momentum isn't lost. Decision-making should be integrated along the continuum that begins with strategic policy direction for land and resource use and ends with the details of project-specific regulation. Secondly, decision-making should be integrated across sectors and land uses. Thirdly, decision-making should be integrated over meaningful space and time.[42]

SME Quote: "Politics make bad plans and planning makes bad politics"

Each stage would provide context and lay the groundwork for subsequent stages. Figure 4 [43] below illustrates this:

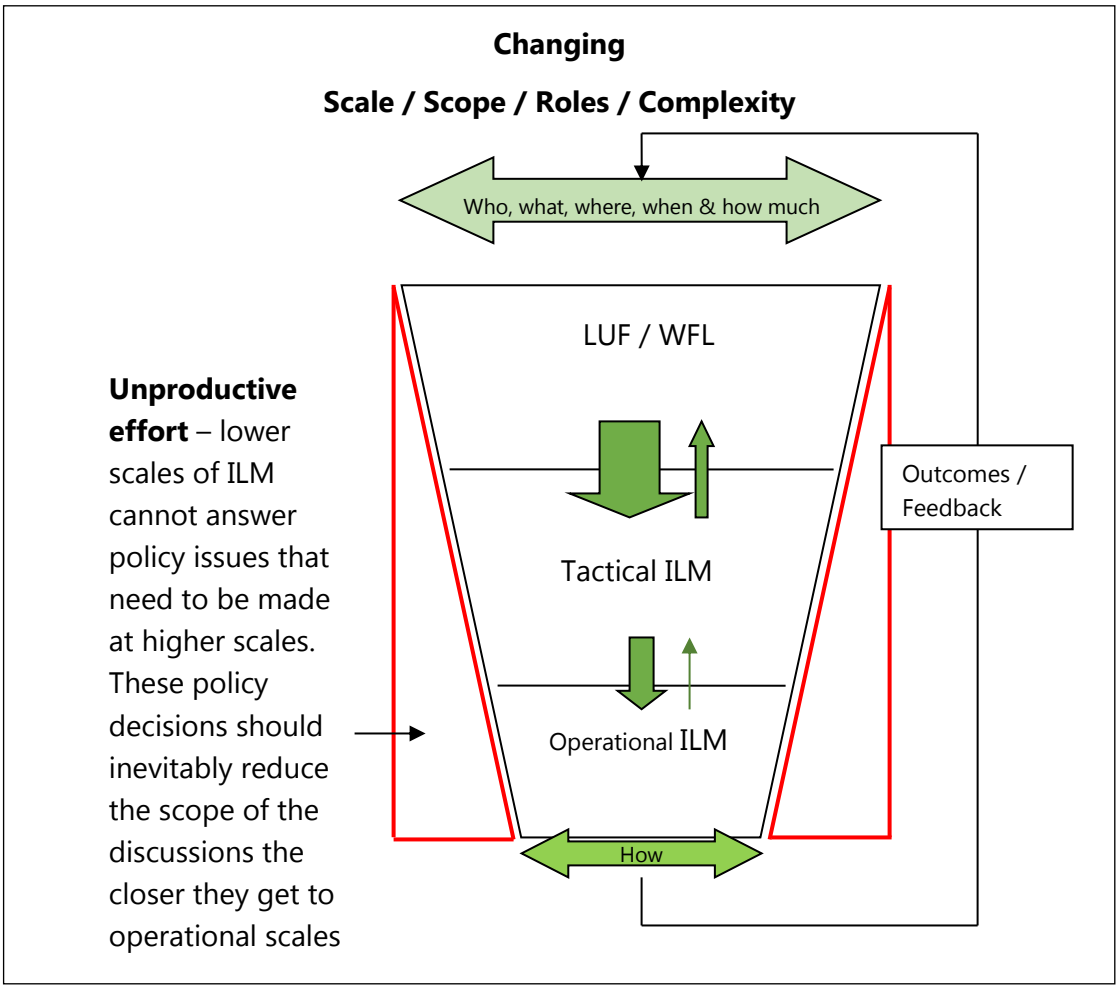

Figure 4. Scales and scope of ILM in Alberta.

[42] Steven A. Kennett, Integrated Landscape Management in Canada: Getting from Here to There, Occasional Paper No. 17 (Calgary: Canadian Institute of Resources Law, 2006) http://hdl.handle.net/1880/47192 working paper.

[43] Demulder B., Thorp W. ACR, AFPA, CAPP (2008) Integrated Landscape Management "Looking Back" 2003-2007

It is understood from SME interviews that the Alberta government is currently conducting a comprehensive review as part of their "Red Tape Reduction" charter through the **"Office of System Transformation"** which includes not just how approvals can become more effective and efficient but also how they can be integrated. This is intended to address conflicting policies within all government departments (an example is Transportation, MD's, and Agriculture & Forestry for approvals)

- The outcome is to transform the regulatory system in Alberta by providing:
  - Business design process
  - Focus and structure
  - A Streamlined, effective, efficient, and responsive regulatory environment
  - Timeline is 2.5 - 3 years
  - Includes Integrated Resource Management, Agriculture & Forestry, Environment & Parks, Alberta Energy Regulator (AER) – pulling it all together to transform the regulatory system in the province.

The current regulatory regime itself has created much of the problem and how industry behaves and interacts on the landscape.

The regulatory environments governing different land users are usually distinct from each other, even though the activities occur on the same land base. Current regulations do not distinguish among the activities of different industries even though the types of impacts depend on the type of industry. Thus, different industries may be accountable to different standards. As well, the application of one sector-specific standard may have a negative effect on another.

SME Quote: "We get ¾ up the hill then fall back when it loses momentum"

Recommendation #	Recommendation Description
Recommendation 9	Government to accelerate the current "Office of System Transformation" efforts to: • Align legislation, regulation and policy to enable implementation of Land Use Plans and **ILM planning hierarchy**. • Develop 'enabling regulations' in order to test new regulatory levers through future ILM pilots. • Align government departments and remove silos. • Develop a one stop data management system to support ILM. • Align operational approvals, such as: Surface Material Exploration, Surface Material Lease and Surface Material Licence as well as variance approvals (borrow pit size and proximity) that are currently processed through different departments. This leads to misalignment of process and permit approval timing.
Recommendation 10	Government to accelerate efforts underway to complete Land Use Plans and sub-regional caribou plans to provide clear direction for ILM and set disturbance targets set within the higher order plans.

Recommendation #	Recommendation Description
Recommendation 11	*Government formally set up and fund ILM corridor pilot projects with Industry immediately for completed (or soon to be completed) caribou range plans that: ▪ Demonstrate, test, evaluate, document, and share learnings to prove it can work and advance ILM within caribou ranges. ▪ Pilot enabling regulations (see recommendation 9)

**Recommendation 11 ***Over the past 20 years, government and industry have established pilot projects (formally and informally) to try to advance ILM in Alberta.

"**It is no longer acceptable to keep doing pilot projects and not learn from them e.g. apply learnings and address challenges.**"

The AER released an evaluation of its Play-Based Regulation (PBR) Pilot (the "Evaluation")[44] in 2016 concerning unconventional resource development in the Duvernay shale play near Fox Creek, Alberta. One of the pilot's stated objectives was to minimize the cumulative effects of unconventional oil and gas activities on land, water, air and biodiversity. The evaluation concluded that progress was made towards reducing, but not minimizing, the cumulative effects of surface disturbances and water management in the pilot area. The evaluation credits the pilot for reducing surface disturbances by increasing the use of fewer, larger multi-well pads.[45]

Pilot projects like the PBR will play a critical role in facilitating the full implementation of ILM in Alberta. Incremental progress can be made to implement resource management approaches that increasingly satisfy the defining characteristics of ILM.[46]

Recommendation #	Recommendation Description
Recommendation 12	Government should adopt the learnings from the PBR pilot project and develop a process: • That incents early and ongoing engagement/consultation that will provide operational certainty for multiple operations and years. Examples of successful multi-operations and multi-year engagement already exist (oil sands) and would be transferable to Unconventional Regulatory Framework/PBR. • Develop concise guidelines as to treatment of stakeholder concerns arising during annual reviews between licensing and operational startup. • To include overlapping conventional development on the same landscape for all industrial sectors.

[43] AER Play-Based Regulation Pilot, and issued its findings in a report: Evaluation of the Alberta Energy Regulator's Play-based Regulation Pilot: June 2016

[44] ibid.

[45] ibid.

Recommendation #	Recommendation Description
	• Pilot projects like the PBR will play a critical role in facilitating the full implementation of ILM in Alberta. Therefore, the recommendations from this project will form an important part of resolving barriers to implementation.[47]
Recommendation 12.1	Additional lessons learned with PBR pilot should not be ignored and must be followed up on to support the steps in the ILM plan to facilitate: • Collaboration among pilot participants on surface development was not evident in submitted applications, • General information about the pilot provided by the AER to stakeholders was insufficient, leading to a limited understanding of the PBR pilot and its outcomes. • Stakeholders did not feel that pilot participants provided them with enough information to fully understand the project plans or their potential impacts over the long term. • Surface-related play-based requirements were not developed and may be introduced in future development of the PBR approach. • The requirements to submit the single applications were not sufficiently detailed and clear, making it challenging for pilot participants to develop their applications. • There needs to be an ability to hold tenure on lands that will allow a logical and efficient development program. • The development of concise guidelines as to treatment of stakeholder concerns arising during annual reviews.
Recommendation 13	Government should investigate and implement reforming tenure regimes that include: • Extending the timelines for resource development in order to facilitate planning and inter-industry cooperation, moving to larger blocks of resource rights with fewer tenure holders, and • Relaxing the "use it or lose it" requirement that applies to the oil and gas sectors.

[46] AER Play Based Regulation Pilot, and issued its findings in a report: Evaluation of the Alberta Energy Regulator's Play-based Regulation Pilot: June 2016

9.3 Recommendations to Enable ILM

9.3.1 Recommendations for Enhancement of Indigenous Involvement in ILM Planning

Recommendation #	Recommendation Description
Recommendation 14	*Alberta government should develop and support capacity requirements for Indigenous communities to actively and meaningfully participate in Land Use planning, sub-regional caribou plans, ILM planning and pilots such as the Play-Based Regulation.
Recommendation 15	Alberta government should (for each caribou range) engage with the local Indigenous communities to co-design strategies to bring together (bridge) Traditional Knowledge and western science for caribou management. • This will inform Land Use Plans, sub-regional caribou plans, and ILM going forward. • Include capacity needs and funding.

Recommendation 14 *SME interviews of stakeholders, ENGO's, including indigenous representatives, see a benefit to having a broader, long-term view of industry development plans that could be achieved with land use and ILM plans. To productively engage Indigenous knowledge in development, we must go beyond the dichotomy of Indigenous vs scientific, and work towards greater autonomy for Indigenous peoples.[48]

9.3.2 Recommendations for Enabling Actions

The establishment of the LUF in 2008 provided hope that government was reasserting its role as Land Manager for the people of Alberta; however, delays in completing LUF plans and subsequent sub-regional plans (e.g. caribou range plans) remains an issue. Delays and the inability to complete caribou range plans predicated the negotiation of a Section 11 agreement under SARA which again commits Alberta to make progress. Experts agree that ILM, if successfully implemented, can contribute to successful caribou recovery but will be challenging without government investment, leadership and direction as opposed to just making ILM mandatory for industry.

It is therefore imperative for the government to **invest in some bold enabling actions** that will enable ILM to be realized at operational, tactical and strategic levels to continue to meet social economic objectives.

Recommendation #	Recommendation Description
Recommendation 16	*The GoA should establish a comprehensive, up-to-date resource information system and acquire and openly share the data necessary with all stakeholders to accomplish its land use, ILM management and stewardship responsibilities (also supports recommendation 3 roles).
Recommendation 17	The GoA should establish a process tool similar to the AER Landscape Assessment Tool (LAT) and modeling capability to support ILM corridor planning that includes:

[48] Agrawal, A. (1995). Dismantling the divide between Indigenous and scientific knowledge. *Development and Change*

Recommendation #	Recommendation Description
	• Criteria for acceptable appended development. • Define what "Grandfathering" of pre-existing infrastructure is and how life cycle will be monitored and reported. • What constitutes restored caribou habitat that defines when habitat is no longer considered disturbed in the calculation of "65% undisturbed habitat." • Should categorize and report on permanent vs. temporary disturbance to demonstrate progress on meeting goals. • Clearly define what constitutes a "standard" application and what is required if it is a "non-standard" application. • Creation of a rule set and reporting system to demonstrate the transition to a more efficient road plan over time. • Development of a linear density metric to track and report. • Set minimum distances between long term access (e.g. EAP Class 1 & 2). • Establish a clear set of rules which enable development to occur again (e.g. in places where deferral has been employed). • Define the criteria that would "trigger" the need for ILM plan amendments/revisions, processes required, and expectations.
Recommendation 18	*The GoA should mandate appropriate integration at all levels of the planning and management hierarchy within government and industry plan development.

Recommendation 16. * In order to implement land management planning effectively and fulfill its role as land steward, the GoA should establish a comprehensive resource information system with quality information/data. Quality information is critical in the delivery of informed decisions, good land use planning and management of human footprint (ILM), and, at present, the Province lacks the quality data required.

Greater collaboration between land users, sharing of information and a sound system of monitoring, evaluation and reporting is needed for proper ILM and land management. Additionally, it will require the following:

- Investment in technology (time and resources) to develop a robust data management system and process
- The data would be openly shared with all ILM planners and industry so that plans can realistically be made and reported on.

Recommendation 18 ** Once other recommendations are implemented (e.g. especially 1- 8 and 16-24), integrated management should be a mandatory requirement of all resource managers in government and industry. The goal of integrated management must be to have full integration at all levels of the planning and management hierarchy (policy to operations). The current planning model allows competing and often conflicting users to plan independently. Under the proposed planning model, all resource users would be required to plan within the relevant land use plan for a particular region and caribou range, providing each land user common policy direction. All land users should be

accountable for operating within and jointly delivering management objectives. This should be supported by the alignment and integration of government departments and their administrative and management functions. This alignment of resource users would foster more efficient operations and enhance environmental performance, through a reduction of the industrial "footprint". Examples include joint access planning, coordinated access management, joint approaches to addressing aboriginal issues / opportunities, forest reclamation, data management and information sharing.

- The legislative, regulatory and policy framework should be designed to deliver integrated management and enable optimal alignment and cooperation.
- The GoA should consider organization and structural changes to integrate all departments. A dispute resolution mechanism should be designed to address conflicts and resolve policy issues.

Government should establish a long-term, sustainable funding mechanism and governance structure to support integrated landscape management. Funds collected from all forms of Crown land use dispositions within the current royalty system would address new or enhanced requirements for jointly operating on the land base. The structure could be similar to other delegated administrative organizations already supported by the GoA (E.g. Forest Resource Improvement Association of Alberta), with funding made available to a broad range of landscape managers for various integration activities.

While none of the recommendations are meant to stand alone, mandating ILM as a solution to the challenges should not be attempted without first developing enabling regulation(s), defining roles, investing in data, ILM planning processes and funding, modeling, and enhancing Indigenous participation.

9.3.3 Recommendations for Bold Action to Support ILM

As discussed earlier, Alberta's economic model is based on natural resource extraction which is supported by providing a "safe and efficient transportation system to support Alberta's economic, social and environmental vitality."

The Alberta Ministry of Transportation supports Alberta's economic growth and recovery by connecting Albertans and job creators to markets within the province, across Canada, and the world. The ministry promotes the province's interests and harmonized standards and regulations to remove barriers to trade, investment and labor mobility, and enable long lasting economic growth.[49]

Transportation supports economic development and job creation through the construction of key infrastructure projects that improve mobility and market access for industry, and enhances the quality of life for Albertans and communities through seamless connections to critical services and each other. The ministry focuses on improving transportation safety through driver safety, training and oversight programs as well as ongoing monitoring and maintenance of roads. As well, Alberta Transportation promotes resilient, connected, and healthy communities by supporting the construction and

[49] Alberta Ministry of Transportation website

maintenance of critical infrastructure for local communities, including roads, bridges, public transportation and water and wastewater infrastructure.[50]

The following recommendations extend the principles of Alberta's transportation ministry and investment to include primary resource roads which would ensure ownership and accountability for all land use decisions in the past and future, as well as fully implementing ILM for "smart development" as described in the LUF.

Government would take over and establish a **centralized corridor access authority** to own, develop and manage resource corridors just like other major infrastructure development such as an orderly provincial transportation network. This would be for primary infrastructure (e.g. EAP class 1 and 2 roads) to support development in an orderly fashion. An example is Municipal District's (MD) in Alberta, whereby the MD develops road access and the proponent develops his own access for development according to MD guidelines.

The following is recommended to solve the basic access primary infrastructure needs while at the same time keeping business interests, tenures, and need for profit intact, practicing ILM for the good of the environment, and meeting government's overall land use objectives.

Recommendation #	Recommendation Description
Recommendation 20	The GoA should make necessary resource road infrastructure investments. The government should facilitate primary infrastructure development by reinvesting in the "Resource Road Program" to improve public and industry access, environmental management, integration and cooperation between sectors, public safety and forest health by providing capital funds for construction and upgrades of resource roads in Alberta. Government should consult with industrial resource users when determining construction and maintenance priorities; however, construction responsibility should remain primarily with the government based on need as outlined in ILM corridor plans developed by landscape Working Groups (see recommendation 21). When the industry constructs or upgrades primary roads that follow the ILM corridor plan, they should be eligible for cost recovery based on a proportionate basis for public use.

To further facilitate successful ILM, consideration should be given to the establishment of a centralized resource road authority responsible for the planning and development of primary resource access throughout the province (see recommendation 21 below).

[50] Alberta Ministry of Transportation Business Plan 2021-24

Recommendation 21	The GoA should take over the development, ownership, and maintenance of all primary resource access (E.g. EAP Class 1 & 2) and form a centralized corridor access authority.

Based on an ILM access corridor plan developed by the "formalized" ILM Working Group(s) and approved by government, the government (similar to an MD road infrastructure) will take over ownership of all existing EAP Class 1 & 2 resource roads and undertake the construction and maintenance of the roads identified in the ILM plan and as needed by industry. This new road authority would also promote the use of common corridors for roads, pipelines, powerlines, and other supporting infrastructure.

The following would have to be worked out:

- In the case of pre-existing primary access owned by a company which was identified in the corridor plan, the government will reasonably negotiate the value and terms of taking over ownership to purchase and transfer the asset to government or an agency on behalf of government. (A timeframe and industry owners selling the asset would be mandatory).
- The industry would continue to own and develop their own access needs for all secondary (EAP class 3 & 4) and tertiary (EAP class 5 and below) access needs building out from the primary infrastructure to meet business needs.
- Road use and maintenance agreements for users (on a prorated basis based on use) would be designed to pay back capital cost of construction (e.g. over a 20 year period). This should also include a road-use fee and maintenance charges. A portion of funds collected should be set aside and held in a distinct interest-bearing fund for future development, restoration, environmental liability, and future reclamation of redundant access that is no longer needed as the ILM corridor plan is implemented.
- If a company has a significant timely need (e.g. active log haul or rig move), a detailed and specific road maintenance agreement may be required to ensure safety and any remediation, if needed.
- The government would control the use of resource roads (as well as secondary and tertiary access) by the public through regulation (not physical barriers), followed by enforcement.
- The government would engage with Indigenous communities in the planning, development, and implementation of the ILM corridor plan.
- GoA approves the plan and enforces its use (within reasonable parameters) for industry and government departments (e.g. one approval system).
- Disturbance targets set by GoA.
- Performance metrics set when the plan is approved and enforced by Government.

Using the ILM corridor planning steps as a guide (recommendation 23 and detailed commentary starting on page 63), this concept would ensure that:

- Users of the developed access would pay into a road use fund that could be used for maintenance, reclamation, weed control, erosion, culvert and bridge maintenance
- Road use is controlled
- Public use and controls are managed by government.

- Roads built and maintained by making the right investment is made at the right time in the right location over the long term

Benefits of this concept include:

- Meeting ILM principles
- Improved coordination of resources
- Proactive identification of need
- Reduced labor costs
- Economies of scale
- Standardized processes

An annual evaluation of the corridor asset would include:

- Physical condition – condition of the physical infrastructure that allows it to meet the intended level of service
- Demand/capacity – the capacity of the physical infrastructure and its ability to meet the service needs
- Functionality – the ability of the physical infrastructure to meet business delivery needs
- Public involvement in decision making
- Meets forest protection infrastructure needs
- Quantifying environmental liabilities and remediation planning

9.4 Recommendations at the Tactical Level

Recommendation #	Recommendation Description
Recommendation 21	The industry and government should formally develop jointly managed and funded ILM Working Groups (WG) for each caribou range to develop an ILM corridor plan (and as approved and formalized by government) at a regional scale as presented in the steps in recommendation 23, ensuring compliance with caribou range recovery plans as they are developed. The WG would have a maximum 3-year membership cycle driven by inputs from stakeholders. WG will be driven by moral and ethical principles to: • Allow transparency and protect confidentiality (but isn't the decision maker) • Quasi-judicial land use plan authority • Confidential resource development information • Could deal with complex issues • Public interest, be honest and transparent • Meaningful Indigenous engagement • Incorporation of feedback loops – were the promises that were made kept and/or realized – was the development still worth the damage caused? Must have Key Performance indicators (KPI's), reporting, and monitoring (land, wildlife, habitat, etc.) see recommendation 8. This needs to be audited based on well-established KPI's that include sustainability measures. The purpose would be to provide a corridor plan to meet established performance metrics, submit it to government for approval, and implement. Transparently report on progress annually. **See additional notes in Roles - Appendix 7*
Recommendation 22	*Government should act to provide a level playing field for inter-industry and government department cooperation.

Recommendation 22 *Often government departments have uneven power and the opportunities for stakeholders to participate in decision-making processes are also not equal. The final result is a fragmented land use regime that can be vulnerable to inefficiencies and conflicting decisions.[51]

SME quote: "Everyone at the table has to be equal
- *There is unbalanced power in government*
- *There is unbalanced power between government departments*
- *There is unbalanced power between stakeholders"*

[51] Canadian Integrated Landscape Management Coalition. Integrated Landscape Management: Applying Sustainable Development to Land Use. May 2005

Recommendation #	Recommendation Description
Recommendation 23	*Government and industry (e.g. ILM Working Groups) formally adopt the process steps to develop ILM corridor plans (Appendix 7). The success of a planning initiative as described must include not only a willingness to cooperate but allow for full **transparency** (see supporting recommendations 23.1 – 23.4). This also should be used to update the ILM Tools Compendium - recommendation 6. A detailed description in support of this recommendation can be found later in the report starting on page 63.
ILM Steps supporting Recommendation 23.1	Overlapping FMA's within a caribou range should develop a **transparent** collaboration process and report on alignment of access development needs that are adjacent to each other (Part of the ILM corridor steps)
ILM Steps supporting Recommendation 23.2	Overlapping energy companies within a caribou range should investigate co-mingling (sharing extraction and development within the same pay zone) and partnership opportunities (**transparency for a common goal**) to allow for maximization of well spacing for pay zones. Develop a collaboration process and report on alignment of access development needs that are adjacent or within the same local surface area to each other (Part of the ILM Corridor steps), support the development of education and communication strategies (recommendation 7), and could include water use.
ILM Steps supporting Recommendation 23.3	For planning purposes, energy companies should consider disclosing land ownership held by holding companies on their behalf to support **transparency** to meet ILM principles and steps outlined in Table 6.
ILM Steps supporting Recommendation 23.4	Alberta should request that Canada provides representatives to support **transparency** within caribou range planning areas to participate on ILM Working Groups and include a request for funding assistance.
Recommendation 24	The government must develop an approval mechanism for ILM corridor plans and stakeholder engagement processes within caribou ranges, including: • Direction and process for approvals for industry and all government departments, • Accountability standards, • Criteria for amendments, • Describe what adherence to the plan means? (e.g. ease of approval), • Amendment process tool (e.g. similar to the LAT tool for AER), • Timelines for re-planning and review, • Monitoring and reporting of progress to defined criteria established within Land Use Plans and sub-regional plans, • Adaptive management principles

9.5 Recommendations at the Operational Level

Recommendation #	Recommendation Description
Recommendation 25	Industry should build on the lessons learned from past company to company ILM business initiatives and designate a staff member to seek out future collaboration opportunities, especially within caribou ranges. Outcomes of these arrangements

	should be documented and reported as part of future communication strategies (recommendation 7) as examples of success for others to learn. This could transcend into multi-company tactical plans as an extension to successful company to company plans (see recommendation 26). • Provide input to an integration process (as outlined in the ILM governance structure). • Follow all the steps outlined in the ILM planning steps below in the revised ILM Tools Compendium as per recommendations 6 and 23. • Participate in the formation of ILM Working Groups (see recommendation 22).

As found in the historical Case Studies discussed earlier, successful operational and tactical ILM happened as a result of a company or group of companies taking the initiative to pursue ILM because of common risk of access or a potential cost saving opportunity.

As the larger land base holder, the FMA holder should:

- Designate a staff member (could be FRIAA eligible) to:
    - Identify and quantify other disposition holders in a defined landscape and initiate contact.
    - Early identification (at the planning stage) of any company to company opportunities to collaborate in order to reduce respective costs and footprint.
    - Make contact with all disposition holders adjacent or within a reasonable proximity of the intended landscape location and understand their plans in the near and intermediate terms.

As part of the development of each forest company's General Development Plans (GDP), initiate contact with overlapping gas and oil operators and invite them to a meeting/workshop to identify and discuss areas of alignment and publically report to support recommendation 7 - communications.

Areas of alignment include:

- Mitigation strategies to minimize the effects of industrial land use on caribou (e.g. ILM);
- Beneficial and effective Management Practices to support Government policy objectives for caribou;
- Monitoring programs;
- Data use and availability;
- Cost-effective reclamation and restoration;
- Seek senior company support to reach an understanding or agreement to seek partners in developments.

As guidance, the following list of potential business drivers and potential constraints is offered for practicing ILM to determine how they can be dealt with within a new "sharing" environment:

- Commercial: i.e. costs/fees for use
- Road integrity: concerns or history of negligent or poor road use
- Operational control: wanting the ability to control the road and/or not having projects/ operations subject to control/restriction by others

- Regulatory issues: provincial and municipal - conditions or regulations that impede shared planning and use
- Environmental liabilities
- Safety and H&S liability: requirements for use, timing, equipment requirements.

Additional areas that may stimulate further discussion for the identification of mutual business opportunities, such as:

- Development plans and timing
- Common access
- Sharing of road use and construction
- FMA consent and Timber Damage Assessment (TDA) use
- Road use agreements
- Public access controls
- Indigenous consultation processes
- Synergies to help each other (e.g. reclamation and reforestation expertise and seedling supply),
- Data sharing
- Caribou concerns
- Stream crossings
- Identify any interest in long term corridor planning
- Capacity building

Recommendation #	Recommendation Description
Recommendation 26	Industrial sectors (Primarily Gas and Oil and Forestry, service providers) operating in a common landscape (e.g. a caribou range) should form strategic alliances to identify areas of alignment and gaps in their respective businesses and report annually to support ILM communications - see recommendation 7.

Note: there are initiatives in both west-central and north-east Alberta that have successfully worked on some components of this (see Case Studies).

Recommendation 23: A Detailed Explanation

The first step in designing an ILM planning process is to understand that one process for all of Alberta will have to incorporate regional differences. Regional differences must include an understanding of such as the type of tenures that government has allocated to industry, geographic, how development will occur, terrain, soil condition, amount distribution, caribou condition, and extent of treed and un-treed wet areas, other uses, and pre-existing human footprint and infrastructure (e.g. processing facilities).

The following outlines some of the regional allocation differences that must be understood and how the structure of the plan must respect the existing tenures that industry owns.

9.6 Understanding Regional Differences

From an ILM perspective, access development is highly influenced by the energy sector business needs, which, dependent upon the type of extraction method, may require a higher standard of access than the forest sector. However, the forest sector that has suitable landscapes for summer harvesting may dictate a higher standard of road as well. The regional differences in type of disturbance, longevity, and site conditions (e.g. adverse grade maximums for log haul) for the region is an important consideration when preparing ILM plans between the primary industrial sectors. The following provides examples of the energy sector regional differences which must be well known when initiating ILM planning.

9.6.1 North-East Alberta Region

The oil sands allocation model for in-situ (oil sands deposits that are greater than 75 meters below the ground surface are usually extracted without removing the overlying rock and dirt). Steam Assisted Gravity Drainage (SAGD) is the usual method of extraction but oil can be removed by cold gravity as well.

The allocation method was to sell larger tracts of land that was used to enhance and provide stability to make substantial capital investments. This has resulted in:

- creating large capital investments by larger companies resulting in fewer players on the landscape
- Similar energy tenure to forestry – large land base(s) with one owner
- Lease areas are relatively larger; however, development within the lease is usually much smaller and localized.
- Progression of development is more predictable
- It is not as important what happens in the progression of development in the lease area but how to get there
- Work within that area for anywhere between 30-60 years - so longer range planning occurs and activities are more stable
- Different approval process than conventional energy projects
- May be easier to do ILM
- In relation to roads, it's how to get to a location vs when

SME quote "It's easier to do ILM when operator's business systems are closer to apple to apples?"

Note: Oil Sands surface mining disturbance produces high human footprint concentrated in specific areas where bitumen is located less than 75m from the earth's surface. In-situ extraction results in a footprint that is smaller (in terms of total area) but much more widespread, which can have ecological consequences such as the loss of interior habitat. This type of disturbance provides for some integration for access and coordination of harvesting trees to allow for mining to occur.

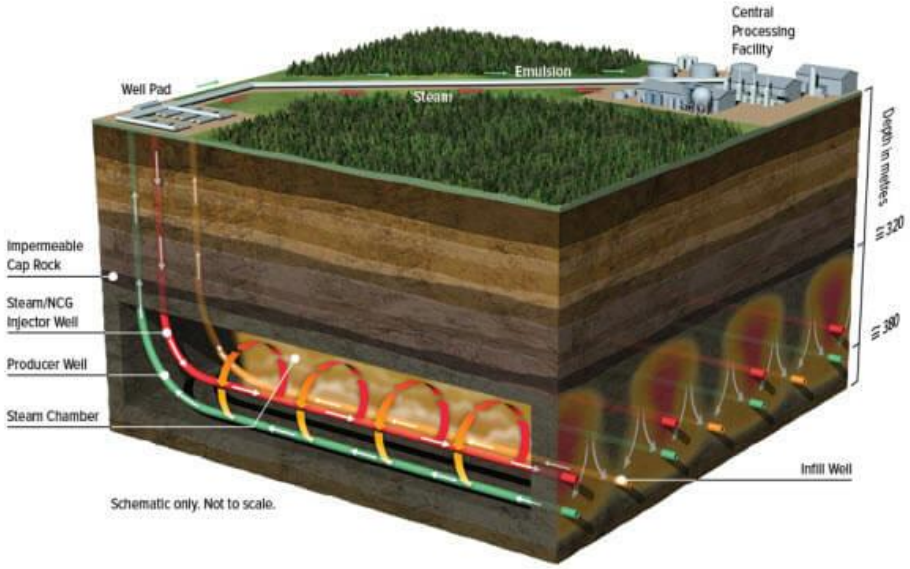

Figure 5. Image of Steam Assisted Gravity Drainage (SAGD).
Source: internet.

9.6.2 West-Central Alberta Region

The relatively new unconventional developments of shale gas plays like the Montney and Duvernay, which are found across west-central Alberta, are quite different from traditional oil and gas development in Alberta. Companies require access to huge amounts of water as well as roads and well pads distributed throughout a large area, subject to many different levels of government oversight and approval. Investments in capital are higher than historical conventional energy development but lower than in-situ or surface mining of bitumen in northeastern Alberta. Historically, the type of drilling used was for access development and a well for each ¼ section of land, followed by pipelines which can be result in an extensive surface disturbance.

The recent horizontal drilling technology changes for the Duvernay and Montney energy plays requires a higher standard of access (to allow for more continuous drilling and hauling water for fracking). Larger well pads are required to allow for multi-wells that can be spaced dependent on drilling and fracking success. The overall surface footprint required to extract the energy plays is generally less than conventional but is offset by a higher standard of access requirements.

This type of allocation used (usually sold by a section of land) and the overlapping energy plays (pay zones) results in smaller companies and more diverse ownership than in the oil sands. Overlapping ownership, historical vertical wells still producing, and higher standard of access each present a significant a challenge for integration implementation in west-central Alberta. [52]The energy sector involves over 100 companies in this area, most operating independently of each other. Certainly, they take advantage of shared efficiencies when the opportunity presents itself, but there is no overarching coordinated effort to make this happen.

[52] Denhoff E. Setting Alberta on the Path to Caribou Recovery May 30, 2016

Key characteristics:

- More stakeholders
- More allocated and overlapping subsurface pay zones
- Many small operators on smaller land bases that don't have capacity for ILM
- Development is less predictable and is more extensive on a landscape because of many owners and the type of drilling (the extent of footprint required may not be known until after drilling and fracking occurs as it is dependent on the reaction of the pay zone to each well)
- More difficult geography
- Postage stamp dispositions (sections of land sales)
- More diverse allocations (forestry and energy)
- Higher proportion of productive contributing forested lands than other regions
- Generally smaller caribou ranges
- More pre-existing disturbance (e.g. seismic density within the Little Smoky caribou range)
- More historical vertical wells that are still in production that may co-mingle and overlap new horizontal pay zones plays

West-central Alberta illustration of allocation and development complexity: pay zones, existing vertical wells, seismic lines, ownership (shown by color), and current footprint within west-central AB.

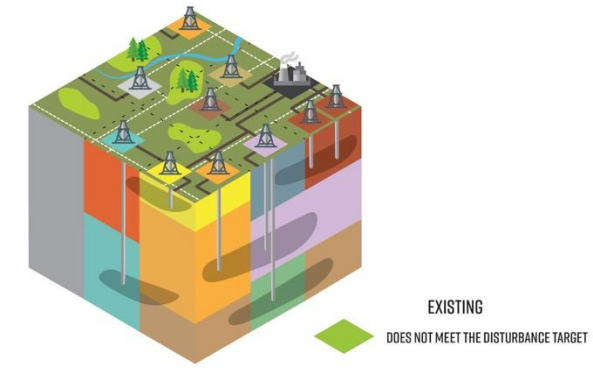

Figure 6. West-central Alberta Illustration of Overlapping Energy Plays.
Source: FLMF RAMP project of 2018-19.

The steps shown in recommendation 24 and detailed in Table 6 are provided as a guide for the design and implementation of an ILM plan for access corridors.

Many of the steps outlined below were tested in the west-central region of Alberta with a joint industry/government informal pilot project on 7 townships within the Little Smoky caribou range in 2018-19: the Regional Access Management Plan (RAMP). The results of the pilot project were deemed successful in that the development of an aspirational corridor access plan that met caribou habitat needs could be achieved over time while still allowing industry to fully develop existing allocations. This project showed some promise and some barriers to implementation remained to be solved before the learnings could be applied to the whole caribou range. In the summer of 2019, the government decided that rather than moving forward with this type of access planning on the whole Little Smoky caribou range they wanted to wait until a caribou range plan was completed. It is worthy

to note that this project was the culmination of 15 years of industry (FLMF) and government access planning initiatives within west-central Alberta so a new initiative area would have to spend more time up front in the development and reaching agreement of the business case and enhancing inter-company/sector relationships.

9.6.3 North-West Alberta Region

This region is characterized by having a higher proportion of treed and un-treed muskeg which requires forest harvesting to primarily be accessed during frozen conditions. For the most part, the energy sector still uses conventional drilling which can be completed in frozen conditions as well; however, as the energy sector develops, access requirements may need to be upgraded to higher standards to access processing facilities.

The following is a guide to what detailed steps (11) should be followed to develop an ILM corridor plan based on SME interviews, literature review and the project manager's experience in west-central Alberta.

Table 6. Steps for ILM Corridor Planning in Alberta.

ILM Corridor Planning Steps	Recommended Actions to complete each Step
Step 1. Develop the business case and value of doing access corridor planning.	a. Scope out if this is a pilot area within the caribou range or the whole range. Dependent on level of pre-existing plans (LUF, Sub-regional caribou plans) it may be necessary to reduce complexity to select a smaller pilot area. b. Determine who should be engaged in development of the ILM corridor plan (e.g. Indigenous communities, industry, federal and provincial governments). This is the initial formation of ILM corridor Working Group and specific task groups. c. Describe process to seek engagement (including capacity needs). d. Select a group of representative stakeholders for access corridor planning. e. Clearly outline the business case, desired outcomes to achieve (in alignment with higher order plans (e.g. Land use, sub-regional caribou plans).
Step 2. Initial Planning and Setup	a. Gather initial data (e.g. boundaries of planning area, existing lineal and other disturbances) b. Develop a Terms of Reference, including a structure to govern operations, roles & responsibilities, and formalize a working group to do ILM planning. Note: Specific Task forces may be developed for certain components. c. Define objectives and goals for access management (part of the Terms of Reference) d. Seek senior government approval (at least ADM level) of the Terms of Reference and project charter e. Determine who is managing (independent contractor, companies, GoA?) f. Define roles and responsibilities (see recommendation 3) g. Build a Planning Team and potential advisory task groups (regional and sector specific experts) h. Approve a project charter, work plan, and budget (secure adequate funding and source) i. Describe within the charter and TOR how this ILM plan aligns with higher order plans (e.g. LUF, Sub-regional caribou plans)
Step 3. Outreach, education, and Communication	a. Develop a planning team communications plan (internal and external) b. Communicate objectives of the plan to outside groups
Step 4. Data: **A comprehensive data set available for planning.**	Example of data requirements: Third party data management is recommended to support the working group and maintain confidentiality. The third party should have spatial modeling capability.

ILM Corridor Planning Steps	Recommended Actions to complete each Step
Identify data needs, source, and collection methods; acquire data, set up necessary sharing agreements with owners. **Develop a plan for data storage, security, backup, governance and policy.** (A third party is recommended to overcome confidentiality concerns). **Determine and document required data types and supporting resources** • **Data types** • **Data formats and structure** • **Data currency**	a. Government base layers b. Current disturbance layer (an up to date "as built layer is desired) e.g. Well sites, pipelines, seismic lines, powerlines, railways, roads by class. c. Relevant Traditional Land Use (site and values)data (if available) d. Open route requirements (e.g. trapline, traditional use, and recreation trails etc. e. Recreation or other plans if available. f. Caribou intact areas g. forest company active land base maps h. No go areas: E.g. class A streams, buffers, TLU, Protected notations, etc. i. Grizzly Bear Watershed units (current open route density is desired) j. Slope index (for forestry log haul = <8%, 8-13%, >13%) k. Vegetation inventory, l. Biophysical habitat status m. Wet Areas Mapping ((WAM) predicted stream channels and depth-to-water index) n. DEM o. SPOT satellite imagery p. LiDAR q. Ortho-photos or any other imagery r. Caribou GPS and VHF collar points s. Rivers, lakes, streams t. Water: Codes of Practice (for Class A streams) u. DIDs v. Caribou RSF w. Grizzly Bear RSF x. Planned and approved dispositions but not accessed presently
Step 5. Identify new data requirements and timelines.	a. An "as-built" data layer for all footprints: e.g. Access type and class as per EAP classes. *Note: As-built data is not absolutely necessary, but, should be collected for analyzing suitability for retaining future corridors in later steps, possible cancellation and replacement of approved but not built LOC's.* b. Regionally specific criteria: Sharing development plans: Project future disturbance by type: (e.g. harvest, 3D, SAGD, horizontal wells, vertical wells and infrastructure requirements such as pipelines, processing plants, powerlines etc.) as this will dictate well spacing and access corridor needs. Note: Given the degree of variability and uncertainty associated with early energy exploration and appraisal stages, a process for greater confidentiality is required. This would likely result in a narrower scope of required information for exploration or appraisal approvals. As a development play matures (early-stage commercial or commercial) and as the competition for land title reduces, play scale plans and collaboration can occur without "anti-competition" concerns. c. Collect TLU if not available (requires Indigenous community agreement). d. Identify all approved dispositions that are planned but not built. e. Determine surface disposition overlaps and target pay zones needing access. f. Do access densities or disturbance thresholds exist? g. Inventory of planned and completed restoration. h. Vegetation inventory of seismic lines and other relevant historical footprint (this is required for managing footprint-off statistics and for planning routes). i. Conduct tests against local and adjacent sub-range access plans to determine footprint trajectory and so on.
Step 6. Develop a current state assessment of footprint	a. Using the as-built layer by type of human footprint and access classes by EAP standards, develop a baseline disturbance layer as a starting point including the projected life cycle.

ILM Corridor Planning Steps	Recommended Actions to complete each Step
	b. Project future disturbance by type: (e.g. spatial harvest sequence, 3D, SAGD, horizontal wells, vertical wells and infrastructure) as this will dictate well spacing and access needs (while respecting confidentiality). c. Assess the type, size, and potential overlap of dispositions that exist on the landscape and the effect it has on planning infrastructure. d. Ownership of dispositions (overlapping zones).
Step 7. Modeling, assessments, and scenario planning	a. Select or develop modeling capability in a GIS-based system (software exists to do this). b. Develop regional modeling criteria (e.g. unique regional development constraints for access: slope, wet areas, creek/river crossings, adverse grade, soil condition, buffers required, TLU data and protection requirements if available, no-go areas, etc.). c. As recommended by the Play Based Pilot project (2012), completion of a Regional Strategic Assessment (RSA) to identify the constraints (high value attributes) in terms of cumulative impacts assessment for a region, the triggers or thresholds in relation to the constraints (e.g. analysis using aspirational outcomes for all resource values and use need) and a method for proponents to identify how the proposed project(s) would contribute to cumulative impacts, so that the regulator can render decisions. d. Develop Performance Indicators to track and report on. e. Industry provides resource flow information (e.g. timber flow within the Little Smoky caribou range goes to Grande Prairie, Grande Cache, Fox Creek, Whitecourt, and Hinton to mills, Energy processing facilities and pipeline flow and trucking of products and water) as this will effect access requirements. f. Lock in pre-existing access that should remain (E.g. existing all-weather access EAP Class 1 & 2). g. Identify minimum "expert's best estimate" of minimum well spacing and access requirements. • Subject to confidentiality requirements. • Subject to technology (e.g. horizontal drilling constraints) • Subject to sub-surface rock mechanics and geology as drilling occurs • Subject to reaction of the well to drilling and fracking (not known before it is drilled) Update assumptions accordingly. • Subject to sub-surface ownership issues (may require co-mingling agreements within a pay zone or partnerships) h. Definition of what constitutes "temporary" disturbance (e.g. harvest areas, inter-block harvest access, pipelines, historical access, seismic lines, gravel pits, campsites, etc.) and how to track and report. i. Run initial "base line" model with constraints. j. Overlay base line model outputs on pre-existing infrastructure. k. Identify alignment/gaps in pre-existing infrastructure to model outputs – re-run model to which pre-existing infrastructure should be used rather than new build or upgrade. l. Assess potential candidates for reclamation and future redundant roads once corridors are planned for development including funding mechanisms (some will require resolution to remove redundancies and impacts on existing operations). m. Develop an objective ranking system if more than one option exists for access to a land area. n. Test scenarios (could be several runs). o. Select desired scenarios and test to performance measures (including how the plan will be implemented, such as what flexibility vs. locked in will be dealt with, grandfathered access criteria and life cycle, adaptive management principles, appended development allowance, width of corridor allowances, locations variances allowed, footprint life cycle etc.) – openly report to GoA, public. p. Field verification is required to validate desired scenarios – re-model as needed. q. Assess if the proposed access development is "over/under" accessing an area?

ILM Corridor Planning Steps	Recommended Actions to complete each Step
	r. Determine an estimated amount of stranded resources (should be a metric). s. Identify existing or newly created access redundancies that should be scheduled for reclamation, determine who pays and when? This would also support future restoration planning. t. Rerun model if necessary to develop a final corridor plan. u. Prepare annual reports for the planning area relative to performance indicators (e.g. footprint current vegetative status and projected Footprint on/off and how to report (e.g. temporary footprint). v. Delivers, tracks and reports on "net positive footprint" for all industry development. (Potential for banking of credits and withdrawals as a mechanism to reward good behavior and discourage bad. Reclaim a road, get credits you can use yourself or sell to others, etc.) w. Management of and reports on consolidated "as-built" status of footprint annually to government. x. Inform and/or develop restoration plans.
Step 8. Risk Assessments	Evaluation of the potential risks should be conducted in all the planning stages.
Step 9. Mitigation	a. Effective mitigation of impacts should be employed in all planning and implementation steps. b. Should consider including persons with mitigation skills on the planning team or a task group. c. Set priorities for road removal and reclamation. d. Conduct a joint industry/GoA critical review of the Master Schedule of Standards & Conditions (MSSC 2017) (see recommendation 5) ▪ *To shift from Best Management Practices (BMP) and see what can be moved into mandatory practices vs. voluntary.* ▪ *Test effectiveness and determine what should continue and what should stop.*
Step 10. Approval and Amendment criteria	a. Development of a "process tool" (similar to the Land Assessment Tool (LAT) outlining criteria as used within AER). b. Information Letter, or other approval process directive that applies to all users, and outlines what approval means (e.g. If followed, provides for ease of approval as a standard AER application, moves away from one-off approvals, aligns government departmental approvals into one). c. Process developed for applications that comply with the plan and/or require amendments. d. Amendment criteria should be developed to define amendment requirements for simple corridor route change only vs. complex (requires full plan amendment).
Step 11. Monitoring and reporting criteria to meet collective goals (communication plan)	a. Establishment of Performance Indicators is a must. b. Define what triggers an amendment and re-planning with a supporting process and criteria. c. Thresholds and/or disturbance targets. d. Identify quick wins to share with other ILM planning initiatives. e. Develop and implement the communications plan for public and others. f. Adaptive management. g. Track footprint on/off over time and report. h. Identify the kinds of monitoring to be used. i. Compare (if possible) to a plan as you go approach without integration to demonstrate reduction in footprint and value of ILM.

10. Conclusion, Considerations, and Looking Ahead

Land Management in Alberta is extremely complex and changes to the ILM approach are necessary to support a simpler "planned outcome" approach of reducing human footprint compared to the non-integrated "plan as you go." Actions and recommendations outlined above will support incremental advancements in operational and tactical ILM. However, actions must be connected to a strategic level ILM system which requires substantial commitments to action, funding, communications, Indigenous engagement, and strong leadership supported by aligned policy and regulations.

Long-term success and a move away from the tipping point will require much higher resource inputs and "buy-in" for a truly well-functioning relationship between operational, tactical, and strategic ILM to support goals for other values (e.g. caribou recovery).

The first step will be to establish a common belief in the level/need of the "problem" in Alberta from the political level down to tactical and operational levels. Without appreciation of both the benefit and needs of a fully functioning ILM in our complex land use system, there is a significant risk of wasting time, money and resources and NOT creating positive change. More concretely, people, organizations and politicians have different expectations of the level/need of a solution to the "problem," which directly correlates to their expectations of anticipated outcomes of ILM, the need for change, and its relationship to land use.

Like many complex problems that require adaptive change – this is a people, process and tool problem. Each of these aspects interacts and interfaces with one another, and, in many cases, are difficult to pull apart. We need to give equitable attention to stressors, such as: what types of disturbances different industries place on the landscape and how long those disturbances last as well as how organizations influence the behaviors and actions of its people. The solutions are as complex as the problem.

The reality is that the Government of Alberta has committed to finalize sub-regional plans that consider all land uses, including footprint, recreational and access management plans, but this commitment was not fully embraced by some ministries. We need **sustained management systems and bold actions supported by investments** (funding) to implement functional ILM systems. Alberta has the tough job of balancing precautionary measures necessary for the protection of caribou, with a duty to be cautious in implementing radical change that might inadvertently exacerbate economic challenges. Failing to protect enough caribou habitats could ultimately result in dramatic federal intervention through SARA. It is in the province's economic interest to ensure it exercises its responsibility to protect caribou habitat.

Alberta decision makers can no longer kick the difficult land use and caribou conservation decisions down the road to implement real solutions to the environmental impacts of the more-or-less stand-alone economic land use decisions. Despite the magnitude of the problem, and after a lot of thought, **we believe it's possible** for ILM to contribute to positive change by implementing the recommendations offered.

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Appendix 2: List of interviewed Subject Matter Experts (SME's)

1. Garth Davis (Energy sector)
2. Michael Cody (Energy sector)
3. Dwayne English (Energy sector)
4. Rick Bonar (Forest sector)
5. Elston Dzus (Forest sector)
6. Margaret Donnelly (Forest sector)
7. Remi L'Heureux (Forest sector)
8. Bob Christian (Consultant)
9. Paula Bentham (Consultant)
10. Matt Carlson (Consultant)
11. George Duffy (GoA)
12. Cynthia Chand (GoA)
13. Kevin Quintilio (GoA)
14. Sarah Froese (GoA)
15. Glen Gache (GoA)
16. Ken Greenway (GoA)
17. Paul Radchenko (GoA)
18. Jeff Smith (AER)
19. Stan Boutin (Academia)
20. James Cuell (BC government)
21. Shayla Blue (BC government)
22. Ian Curtis (BC government)
23. Kecia Kerr (ENGO)
24. Tara Russel (ENGO)
25. Gillian Chow- Fraser (ENGO)
26. Simon Dyer (ENGO)
27. Matt Munson, Dene Tha' First Nation
28. Ryan Abel, Fort McKay First Nation
29. Findlay MacDermid, Cold Lake First Nation
30. Paul McLauchlin (Rural Municipalities)
31. Maryann Chichak (Rural Municipalities)
32. Frank Oberle (retired GoA Minister)

Appendix 3: March 18, 2021 ILM Workshop

Workshop Notes

Review of Alberta's Integrated Land Management policies, practices and legislation

"Consulting Services" workshop with ARCKP & SME interviewees

March 18, 2021

Participants:

Bob Christianson	Bob Mason	Michael Cody	Rick Bonar
Elston Dzus	Shayla Blue	Wendy Crosina	Findlay MacDermid
Sarah Froese	Kristy Burke	Richard Briand	Paul Radchenko
Gillian Chow-Fraser	Laura Finnegan	Ian Daisley	Matthew Piper
John Stadt	George Duffy	Eric Nielson	Maryann Chichak
Wayne Thorp	Kim Hyshka	Craig Dockrill	Chantelle Bambrick
Cynthia Chand	Matt Munson	Dwayne English	

Feedback on the draft infographic:

1. Political will is missing (it is the mortar keeping the bricks/barriers together)
    a. Missing in policies – Land Use Plan eluded to this, but no political will to move this forward
    b. Government wants everything at once – to have everything at once to make the most money
2. Who oversees ILM, we need a governing body that can set policy and have accountability. It shouldn't be the GOA, they should sit at the table, but it doesn't need to be led by the GOA, it needs to organize, approve and monitor
3. There are not shared objectives – we need to have a common ground and common objectives. The people on the call could disagree on how/where the balance is tilting – where is the "right" spot for the teeter-totter leaning
4. What is the most efficient way to use/extract the resources of the land? We need to do some research on the approaches to land management. People making decisions don't understand what they are working with and the implications
5. More creative action – the actions are the inverse of the barriers. It is more complicated than that and we need to find different actions
6. Integrated = shared, Land is regulated through policy/legislation, Management is the decision-making
    a. Agriculture footprints, Indigenous lands, resource development
    b. Is ILM something politically is desirable or is this something land users can do on the side
    c. Government holds the key and it is up to them if it will work or not
7. Integration processes – government and clients are not playing nice in the sandbox – advocating for their own benefits
    a. Dropped by the political will, didn't carry it forward in specific regions

8. One barrier missing – no one pays for non-development – reality is government needs money and no one is willing to pay for non-developed land use activities

Feedback on the draft "Third Party Integrator" (TPI) idea:

- What kind of power would the TPI have?
- Will they be available on a daily basis?
- Not reinventing regulations already in place
- Has to be timely
- The groups are accurate and their capacity and feedback is needed
- TPI and the value proposition for that body & the value of it being independent
- Don't see value if there is a group already doing this work and it's environmental benefits
- Clearly outlines of the power of the TPI
- Want the GOA to be the regulator
- Is it a capacity issue for the GOA?
- GOA should be determining thresholds and limits for disturbance
- See lots happening at the sub-regional level

What problem will this solve?

- There needs to be a larger audience (not just the government and the proponent)
- We still don't have the shared objective – for the TPI
- This adds another level for us to go through
- We have the bodies in place already, they just need directives vs putting another tier on
- Annual evaluation or third-party audit of plans
- Three years unworkable for some industries
- Companies have confidentiality clauses and this might help – must be part of the terms of reference

PROS

- GOA is set to complete land-use plans
- Sub-regional plans should include the disturbance projections by decade
- Having indigenous community is great and increasing their capacity is important
- If TPI is taking care of the database, there is not added resource requirements from the other companies involved
- If you are satisfied with the status-quo and want small changes – this would do it
- Keep it at a high-level

CONS

- Clarity on what the gap the TPI is filling
- I don't see the government handing over the decision-making power over to another body like the TPI

- If you want large changes, this will do nothing for you
- Need to have clear objectives to follow – this doesn't address objectives or the measures you are defining
- Concerned about the time added to response or work flows
- Concerned about the funding – it is a GOA function and should be paid for by the GOA
- Too detailed in the process
- How conflict is addressed
- Red tape reduction – could be a barrier for this government

Breakout room "Group 1" notes:

General comments

- The siloed structure is a problem
- Other species are involved; there is massive complexity
- There is a lack of an common vision
- Defining ILM – we need to come up with a strategic vision to guide approaches, and change in mindsets.
- Major difference in values however there is a positive step in completing caribou range plans.
- Question whether there really is political will to do anything.

Top Barriers:

- Focus barriers on what sites, lines, and polygons are to be avoided to develop ILM plans and share footprint. – no go areas
- Need to change and revamp approvals and regulatory – is this bridge too far?
- It needs practicable solutions – this hangs us up on moving forward.
- How will we evaluate?
- Need to use the steps in the sub-regional plans to develop ILM plans.
    - Thresholds to be developed
    - Objectives and measurement criteria
    - Smart objectives
    - Evaluation
- Need to create a vision
- We tend to think too high- "we can have everything everywhere all the time" – we all have to give up something.
- Identify elements that outline what can I do?
- Need to focus on elements that contribute towards the vison
- Identify the steps to come together.

Breakout room "Group 2" notes:

Discussed in more detail:

1. "Complex and competing regulatory/policy environment" barrier
    - Directly competing values – something good for Caribou might be bad for bears

- Mineral land piece (in O&G) contradicts the goals for ILM
- Change is needed in regulations and applications and these take a lot of time in a government setting
- Existing agreements
- A fresh development (geography too) worked well in the past
- A common regulator – government or non-government
- Mineral land tenure needs to be reviewed
- To have longer term plans put in place – larger scale
- Each sector needs (required or regulated) to work together – integration with others for their plans
- Needs to be flexible and adaptable – reviewed on a regular basis
- Certainty in plans

2. "Lack of common vision for ILM in Alberta" barrier
    - We may never get to an agreed upon definition
    - There are different values and overlap
    - We don't have a goal linked to the vision – no clear understanding of the goal
    - Each group is tackling it differently
    - Who else is involved and what are their values and goals
    - Makes sense to start with the Caribou focus – a common goal
3. "Lack of performance measures related to ILM implementation" barrier
    - We don't have an agreement on where the performance measures come from – federal government, provincial government, joint
    - Driven from population, habitat, or is there more
    - Track on disturbance already

<u>Breakout room "Group 3" notes:</u>

- Wouldn't add any major "bricks" that are missing in the draft infographic
- Have done a good job of listing out barriers, could add more info to each but this is a good start

Discussed in more detail:

4. "Human element" barrier
    - Might want to "unpack" this one a bit… it's the trust, the respect, lack thereof, etc
    - Nobody respects each other's reports and data – what is acceptable information, what is fair, peer-reviewed, etc
        i. Is there opportunity for an organization to take those reports, look at them carefully from a neutral perspective and try to identify where the connections are?
    - Dueling science – arguments of what is valid, the spin that is put on it
    - The public does not trust the information that is available to them regardless of the source – this is a barrier that needs to be resolved
    - There's a big group of people that are stakeholders in this discussion around ILM but are not actually stakeholders in the local area (shareholders that companies have a duty to). Executives of these multi-national companies don't have an interest in relinquishing tenure

or managing it differently or deferring profits or revenue. Their primary obligation is to their shareholders.

- The economic development that occurs on the landscape is not done for the benefit of the people in the region
- The government has the power to regulate big companies and they elect not to use that power. Elston's point about level of political will. Regulating the ability on multi-national companies to make profit on a land base when they have iron-clad leases in their hands that they are booking their company value by – that's the core problem that will always be the inhibition to ILM
- Need to include elected officials at these tables as they are responsible for ensuring their municipalities are well maintained, sustainable and viable and a lot of rural municipalities are supported by renewable and non-renewable energy. Have to be conscious at the bottom level of the decisions being made
- There can be some areas where we have no development and some areas where we have thoughtful development. Society can make decisions about what will/will not be allowed (human uses) in different parts of the land. Will be controversial but make the decision and then move to the next stage which is given the decision, how best can we do it? That's where ILM can shine
- Pendulum conversation (in relation to government command & control vs multi-stakeholder everyone has their voice heard). Use concept CHAORD chaos – order/structure. Is there something in the middle we can use? Can this work for you?
- How do you get more engagement from First Nations/Indigenous and Metis communities? And get more respect for Traditional Knowledge? Needs to be a Nation to Nation (government to government) conversation.

5. "Complex, competing regulatory & policy" barrier
    - Good details in the table for this one
    - Need government to buy in that it's all stakeholders at the table, not just industry
    - Government absolutely needs to be leading the process to the point to where they say the decisions will be made, we want you to agree and if you can't agree we will make the decision. It has to come to a decision at the end. Whether people like it or not is going to be about quality of opportunity to participate and quality of process.
    - There is a lot of common ground
    - We "pretend to participate" and look at this as a negotiation. If we don't get something we agree on, we will go political behind closed doors. We need to stop those kinds of behaviors and government needs to not be susceptible to them
    - Every stakeholder thinks they trump all of the others at the table. Everybody is competing for a piece of the pie as opposed to saying how can we work together
    - Still trying to defend values from old IRPs (early stages of effective land use planning – has not been effective)
    - Can't manage what you don't plan – need to do planning upfront – thoroughly, collaboratively, effectively, and integrated – we wouldn't be in these situations
    - Industries need to talk about and understand one another's business and what regulations they might need changed in order to work together and come to consensus in a smaller area (region)

- Would be tough to implement policy changes that might work for smaller regions across the whole province
- Most legislation has a back door if you go to the right level of government you can do variances, you can innovate with case studies/pilot projects with little risk

OTHER:

- We should use technology to do scenario planning – look at potential futures, do we like it? Do we want to make changes? Look at alternative futures in relation to alternative actions. Trade-offs are going to have to be made. Add temporal scale
- Is the TPI an approval agency or just an integrator? How do you bring in other users?
- First Nations can be grouped into 3 – those with multi-million dollar budgets and lawyers on staff (high capacity), medium capacity, and low level capacity. Third party regulators may not claim to be agents of the Crown but when it comes to Indigenous issues, the courts view is that they are actually agents of the Crown and they are making decisions on behalf of the Crown (eg. High River decision Supreme Court). So the idea of a TPI in some areas of AB (eg. Athabasca) would instantly set some of these communities off because they only take defensive positions and they are extremely effective at adversarial processes. First Nations never win except through the courts. They won't collaborate because it will weaken any future legal argument. You will likely only get participation from the medium capacity communities. TPI would be similar to AER, correct?
- TPI questions – identifying values, are these resource values from old IRPs? Tourism doesn't fit in with industry as far as footprint. But it is a viable industry. Tourism requires a buffer but there's very little conversations with recreation and tourism happening (eg. Golden Triangle trails near Whitecourt with clearcut)
- We could integrate by doing some forecasting for various users
- Upcoming Trails Act might help with there not being legal disposition on trails right now

Breakout room "Group 4" notes:

Notes on barriers overall:

- Scales that are different, genuine challenge, linking back to educational knowledge, if you only look at issues at small scale, can't get anywhere
- Knowledge and vision is something that links all of these – this is needed across the board
- Lack of shared vision
- Completely different problem – people know what it is, know what to do, what they DON'T have is the value, not good research on the cost benefits, not clear that it provides a benefit
- You would look at others examples
- This is something that's needed for the political will
- End of the day the government is squarely at the center of land management and we need some hard evidence for government to work with, otherwise will continue to be just a nice idea
- Really hard to put a value or price tag, we aren't going to worry about the fiscal part, we are going to decide that this is something that we value
- Ton of advance in valuing "non-market" values, recent swell of interest in ESG

- Need to put in terms that connect to balance sheet – most likely way it will happen – important question of "what will we miss" if we do it this way
- At crossroads at industry right now – belief in science will come back, strong evidence in the climate crisis and we need to confront this – need to highlight how government has ignored the climate crisis – it's getting way more costly the more we go done this path
- FN you get rights involved with intensive development, if you don't balance ILM & Land use planning you create regulatory delays and litigation in court, last few decades fighting to protect an areas moose lake area to get some protection in place, development comes right up to the edge of reserve land, there was a SAG D – we need a place to practice these rights safely – asking AB to meaningfully protect it – this is likely what's going to happen – speaks to responsibility and need – gets expensive, not building trust, Fort McKay has had lots of success in working with companies directly – there likely will be lines drawn in the sand
- Moose Lake Access Management plan – will allow for some development
- There is a value decision – this will always impact – you decided to protect something or you aren't going to protect it
- Independent body to decide how this work – can't leave these decisions to politicians- they are looking for middle road, making the public happy
- Lower Athabasca regional plan – that was implemented and then in 2015 there as an expert panel to review – actually determined that this plan has done harm, recommendations have been put forth
- ILM was all the rage in 1980's everyone knew about it, everyone was talking about it, it's a real missed opportunity, how much time has been invested and ultimately ends up in court which is REALLY inefficient
- Evidence-based management needs to drive policy and NOT the other way around
- Land use planning is implementing ILM principles
- People know things need to be updated but got spurred on because of court cases – this needs to change – stop going all the way to the courts – this is expensive
- Environmental Social Governance (ESG) and relationship to obtaining capital – this is growing and this language has come back in – this is REALLY starting to matter, 18 months ago we didn't see it – we've seen lots of companies mentioning this – that's a big shift to push people to participate
- Acknowledge we have to do something but when it comes to individuals or individual companies but then "I had to do" – all good in theory, impacts to actions and bank accounts – this is going to take time for ESG to make its way through the whole system
- We ask people – tragedy to look at individual interest rather than looking common good, as soon as it's going to impact them, politician
- Cultural shift is happening but devil in the details – is the values are real if they don't translate in dollars then it's easy to ignore
- Signing of Section 11 was huge – this takes us from grey to much more black and white – it's absolutely clear and combine that to access capital – people are much more willing to come to the table to find solutions – I see this as a positive shift – set a boundary and then provide incentive

Feedback on TPI idea:

- We need to get away from trade off thinking

- Fixed production function
- Need to look at how do we "add" to the landscape
- The challenge – we've all been grazing 4, someone else wants 8 – science tells us we can handle 6 – here's ILM in a nutshell – if we all pay the extra 5% and then we get to 7
- If this is the case then the economic challenge gets greater
- We need a full balance sheet with no externalities – ILM will always cost us money but if we look at the "full" balance sheet we can see how ILM will actually save money – social license relationships also have a cost – this needs to be included
- Is education the issue?? There is lots of value, judgement around those values
- What's the way to transcend this thinking – the I only, for two long in the ILM space we have equated this to the tug a war of hectares – zoning to offer efficiency on the industry side
- Lever where we have better integration – ESG – boundary and incentive we need both of these – this stops the hand waving, having clear guidelines and goals
- Need to get to more certainty – clearly defined – you will always be pushed with political pressure – we want MORE certainty will connect to process this – this is important to moving forward
- TPI – this has some merit – way that we are tracking the access plan, has some merit
- TPI has a role BUT we also need a long term plan that rests with government
- TPI – on the fence – would need to see the details, worried about adding additional red tape and additional barriers
- TPI – could NOT be needed because of some of barriers that could be addressed via data

Appendix 4: Compilation of SME Commentary on Barriers

Barrier 1: Lack of performance measures

- If you don't have thresholds and zones, success is unlikely.
- Set disturbance limits (ground surface). Layer cake fashion allocation of forestry, oil, diamond mines, and gravel all on the same surface area, so need to set ground surface limits.
- Minimize disturbance and Mandate restoration to happen in a timely fashion (amount, distribution and duration)
- Has to be operating within thresholds (evidence-based)
- Tight and enforceable timelines for restoration (proof) before you disturb more
- Need to amalgamate disturbance and decrease footprint
- Need to define what condition we want the land in over long periods of time
- Then decide what kinds of interventions are allowable/desirable?
- Thresholds then monitor
- Need government to give clear guidelines (thresholds)
    - Address multiple sectors working on the same land
    - Can't surpass thresholds (will motivate companies to work together)
- Might be more rules, not incentives
- Enforcement, auditing, monitoring – need all 3 to do ILM right.
- Monitoring; essentially is a living report card for the province and is required. Also needs to be analyzed as we are under a false assumption that one road is always better than 4 roads. This depends on scale, road class, and use.
- Key Performance Indicators (KPIs) – need to be set up.
    - Temporal and spatial thresholds (eg. Coal Policy).
        - Must transcend political timelines
        - Must be landscape level (e.g. Sword or shield)
        - Need to be science-based
        - Iterative, constantly improving
        - Maybe "threshold" isn't the right word? This is needed to maintain a working landscape. Needs to be science based with good data, interactive, and have institutional pieces behind it. Must be landscape level thresholds vs. project thresholds.
- KPIs, reporting and monitoring (land, wildlife, habitat, etc.) This needs to be audited based on well-established KPI's that include sustainability measures.
- Performance based standard (don't have regulatory system that values ILM)
- Create the zones and different targets for each zone
- Company performance often doesn't have environmental performance as a business success measure.
- Be adaptive and flexible
- Explicitly Lay out rules, goals, and objectives at the start
- Reach a compromise vs fighting it out
- Track it and report

Barrier 2: Data

- Make data transparent and available using tools that weren't available before (like ArcGIS online) the key is to be able to show how objectives are being met through transparency
- To ground it, data is key (Alberta Human Footprint Monitoring team, ABMI, partners). Track activities on the land, what GOA approves vs what happens on the ground. Track the life cycle – status etc. The as built data is a foundational piece without it how can we track, make improvements, and enable activity.
- Common information to a user is also very important. We can't expect good planning if information is not available
    - More active management and tracking of footprint. Trying to get and capitalize on info from industry that they already have (e.g. spatial shape files). Manage the data better and track all activities in a consistent manner. This could be a policy or legislation change for particular activities.
- Coordinating road access (investing in a data system)
- Data sharing (live, real time changes that are provincial in scale that all regulators can see/view) – and industry
- 1 entity managing the data system that all regulators can see (AER, AEP, AgFor). Being worked on by Service Alberta like a Landscape Assessment Tool (LAT) that AER uses
- Common set of info that is rapid and up to date that is accessible to all players in the game (AER had this in mind but didn't figure it out). We have the technology to do this with GIS.
- Investment in technology (time and resources) to develop a robust data management system and process.
- Level of protecting intellectual property / companies interests is required

Barrier 3: Undefined roles

- It should be community based: Very excited about convening and establishing a Community Leaders Forum made up of elected First Nations and communities. This would be an oversight advisory group of elected government and Chiefs/Council that is advisory (not a decision making body). This provides opportunity for conversations to happen as well as building relationships.
- Users are all fighting for the same thing (forestry, energy, commercial, etc.) Everyone wants their piece. And Regulators attempt to manage ILM outcomes based on those relationships but the rules are not clear or defined.
- We are tripping over each other and attempting to manage for multiple species individually, when the outcomes could be better aligned.
- Has to be more than coalition of the willing but it's not fair to progressive companies to carry the load of change
- A lot of GOA staff working on ILM are not dedicated 100% timewise to ILM (they are pulled in various directions so they don't have much time to really invest in it)
- We need to create trust by working together – no one department, sector, or company can do this alone
- Power imbalance between GOA and industry- need to put more weight on users of the land to collectively sit down and develop solutions. (command and control)

- Everyone at the table has to be equal
    - There is unbalanced power in government
    - There is unbalanced power between government departments
    - There is unbalanced power between stakeholders
- Some believe they have more of a right to be on the land base than anybody else. It's a fight for power. Examples of not accepting research and knowledge unless it is peer reviewed. There is a constant fight of the experts
- Put forward collectively to get clear understanding of one another's issues with all 3 levels of government.
    - Need time and a facilitator (lots of hand holding initially) to get to a common ground.
    - Have to understand that it is dynamic and changing.
- High performing companies should be enabled and encouraged to move forward. Shouldn't be "fair to all". "Coalition of the willing" Focus, encourages, and incents this and make change.

Barriers 4: Human elements; 7: Lack of accountability within the system; 10: Lack of common vision; 11: Lack of robust value proposition

- Until you get a common vocabulary amongst stakeholders, it's a difficult process.
- Communication of intent needs to be better executed so the public can have an understanding of the Alberta approach that can be measured and qualified over time. It's OK to get it wrong. The important thing to do is to start trying and building the foundation of this. It took us decades to get here. We cannot expect results in 5 yrs.
- The government needs to provide oversight to ground it and manage human footprint
    - Open up the Master Schedule of Standards and Conditions (MSSC) and review what we need to address – we tend to rely on them working, however, if they are not, there is a gap that needs to be addressed in order to implement plans and policy effectively.
- Any meaningful change needs an education and awareness component.
- We make progress on ILM when it is urgent then we have a change in government, policy, department priorities, and spend time on other issues.
- Not knowing the rules makes everyone unhappy. Industry says "tell me the rules and I'll live by them." They however need to know beforehand – if you change from what they thought they had they are mad. It's viewed as useful to not know what the rules are.
- Nobody gets what they want all the time; we have too many people and finite land.
- Need to overcome the trust factor. Can get consensus if you take the time to get common understanding.
- The everyday Albertan doesn't hear this term. The term lacks education from a public perspective.
- Commit to understanding other resource values. Much of this was done with previous processes and plans e.g. IRP's.
- Reach a common understanding among stakeholders.
- Open collaboration among industrial stakeholders
- Public education and perception on ILM
- Nobody will achieve this out of the goodness of their heart. Pressure points to allow them to play in the market will incent change – forestry has had to be innovative to maintain market share (e.g. certification) – It's hard to track where a molecule of oil came from – not as

transparent. I believe it will come and the energy sector is constantly trying to demonstrate leadership but not there yet.
- ILM is hard to do and often people at the ILM table don't have the authority to make decisions that materially affect the company

Barrier: 5. Incompatible uses

- Some uses are incompatible with integration and requires accommodation through trade-off with other uses.
- We still have conflicting ad hoc issues that will come up such as: Stresses the importance of have an adaptive living process.
- Need to decide "what are we going to have (E.g. Working land, protected areas, etc.) and once land use is decided must make choices about "how do you do it?".
- It boggles my mind that approaches are done independently (I.e. Caribou). What's the next issue on the changing list? Need a multi-species approach. I believe ILM can bring this together.
- Land use plans must be completed to seek balance and trade-offs

Barriers: 6. System structure; complex, 8. competing regulatory & policy (include economic grow only); 9. Land use

- Land use planning opportunity to bring multiple First Nations together which is greater than any independent outcomes
    - Equitable, balanced and mutually beneficial to multiple people
    - Providing capacity funding from government for each First Nation to participate in the process which usually involved funding 1 full time equivalent to participate at the table, keep chief and council informed, seek decisions etc.
- Full evaluation of and optimization of values (this is integration at the broad scale beyond sharing of roads).
- Mechanism of – Alberta has lost its way a bit (AER, AB Energy, AAF, AEP) all have different mandates and are addressing specific pressures to their ministries. Are we all managing to appropriate outcomes? Probably not. Too many opportunities to do our own things which may be misaligned. Agencies need to be singing from the same song sheet. Not connected on things like water, wetlands, etc. Getting under the same tent might be helpful (i.e. super ministry
- There is not enough of a linkage to outcomes in land use plans to on the ground at the project level. Outcomes inform project level. There is a need to have a feedback loop. Need to monitor how decisions effect values though time. Change and adapt.
- Need coordination between large scale planning to operational on the ground action
- Current approaches to land management rely on decision-making based on a disposition-by-disposition or project-by-project basis.
- The whole system and approval mechanisms are designed that way and they are not aligned with ILM and cumulative effects management. Until the tenure system is fixed / aligned to higher level goals, not going to work. AEP view the disposition system as an ultimate line of land use control, but again this occurs at too fine of a grain, and frustrates higher level plans.
- Regional basis, not project by project

Appendix 5: Case Studies of ILM Success

App 5.1 Case Studies: Operational Projects

Case Study Description	Key Attributes to Success
Al-Pac and Gulf Surmont Alberta: 2006 Company to Company Coordinated planning and operations reduced the road requirement by 47 per cent and saved the companies more than $3 million. They are now working together on reclamation and research.	*Value:* there was a business case identified - Money saved = $3 million in phase one alone Al-Pac provided leadership and built the business case: *Improved stewardship:* reduced road levels leading to less disturbed forest thus reducing impact on fiber supplies and other forest values (ecological function) *Reduced approval times:* access (LOCs) and harvest plans were approved in a shorter time frame than had they been applied for separately - how much was not quantified. It was noted that although the approvals occurred more quickly, it did take more preplanning between the two companies prior to the regulatory application *Governance undertaken by the companies involved with management buy-in and designated point personnel for each company to identify synergies and implement the actions*: there was a business relationship established at senior and operational levels as well as a willingness to try a different approach by both companies *Incenting collaboration:* waiving Timber Damage Assessment payments on seismic lines less than 2.5 m in width *Publishing a map* of planned permanent haul roads as a basis for integrated planning
Consolidation of Industrial Access Control on the Chinchaga Road Alberta: 2004 In 2004, Manning Diversified Forest Products (MDFP) was developing a new access road off the Chinchaga Road in northwestern Alberta that infringed on a caribou habitat zone. As a result, one of the regulated conditions was the installation of a 24/7 manned gate at the access point from the main Chinchaga Road. Although this condition was consistent with seven other similar energy-sector spur roads that split off from the main trunk road, it was difficult for MDFP to justify economically or operationally. The main issues were the effectiveness of access controls on caribou and the cost. The costs alone for a manned gate were estimated at $30,000 per month or $120,000 for the haul season.	*Value:* there was a business case identified - Money saved - roughly $1 million/winter access season shared by all involved. *Improved traffic management*: the main gate provided better vehicle flow management & safety for all road users. *Stewardship conditions required for caribou protection were met*, although any actual effect on the species was not proven. *Governance undertaken by the companies involved with management buy-in and designated point personnel for each company to implement the actions*. MDFP had to build business relationships with the other companies and the county to move this forward.

Case Study Description	Key Attributes to Success
With these motivators, MDFP began a discussion with other spur road operators as well as the county that managed the Chinchaga Road to explore options to consolidate all seven manned access gates into one robust manned 24/7 gate. The Chinchaga Road represented a unique opportunity to do this, as it is the only main access road into the region. All parties rapidly accepted the concept and details were worked out to develop a high-quality gate that could handle the traffic flow at a point on the road prior to the spur roads. The proposal was ultimately approved by the regulators and in the 2005-6 winter season the first main gate was put into operation. The action reduced the average cost of maintaining and staffing gates from roughly $8,000 per day per company to $1,500 per day per company - an 87 per cent cost reduction.	
Al-Pac Opti-Nexen Integrated planning Alberta: 2008 A forest company (Al-Pac) initiated and led the planning project. Once the dedicated Integrated Land Management specialist at Al-Pac reviewed the Opti-Nexen EIA and saw opportunities to integrate access and harvest operations with oil sands development, the result was that Al-Pac was able to adjust their harvest plan to remove trees ahead of the oil sands developers. In addition, Al-Pac applied for and constructed the access that both industries could use.	Al-Pac had a *dedicated manager* on staff to lead ILM, develop business case, and seek out partners. *Reduce* the amount of planned harvest through integration. *Reduced footprint* by using the same access with significant cost savings. *Business benefit:* the energy companies advanced their project by several months. *Data* was shared between companies.
Over the years, Al-Pac also innovatively provided incentives for continued cooperation with an emphasis on reducing width of seismic lines	Al-Pac estimates 2500 km of narrow seismic lines were developed between 2001-2003 and that integrated planning could reduce road development by 34% over 30 years with a cost savings of $1 million. Al-Pac made a business case to reduce impacts to productive forest land within their FMA Al-Pac (later joined by others) worked with the Canadian Association of Geophysical Contractors to greatly reduce forest disturbance due to seismic lines. Incentives: Al-Pac agreed to waive Timber Damage Assessments if geophysical companies reduced seismic line width Seismic Line Width Reduction.

App 5.2 Case Studies: Tactical Projects

Case Study Description	Key Attributes to Success
Chungo Creek ILM Access Pilot Alberta: 2001 Although there were numerous company-to-company coordination efforts between specific energy and forestry companies that arose as business relations between the two sectors gradually improved, and mutual needs identified, the first ILM tactical pilot involving multiple companies and sectors on the same land base was the Chungo Creek. This pilot represented the first real attempt to coordinate the access interest of multiple resource companies in a defined area. The number of participants increased the complexity of the ILM process, but at the same time increased the real potential to collectively reduce the industrial footprint on the landscape.	*Value:* there was a business case identified - Save money through reduced duplication of infrastructure and data sharing *Improved stewardship* reduced amount of roads led to less forest disturbance, thus reducing the impact on fibre supplies and other forest values (ecological function) *Regulatory requirement*: EUB cumulative effects request provided the catalyst to pursue a joint industry sector effort *Information:* although primarily supplied by the forest companies, additional resources were required Lornell Consulting was retained to do additional sensitivity analysis and to act as the *third party dealing with any confidential information* from the energy sector. This was funded by the resource companies. *Baseline data* and harvest plans were provided by the forest sector. Future energy development plans were shared confidentially through Lornell Consulting. *Governance:* Alberta Chamber of Resources provided project management and Lornell Consulting gathered data and environmental impact analysis *Government Approvals:* this project required SRD to endorse the corridor plan and direct other users to consider it in their access planning. Tools to do this included an Information Letter for energy lands posted in the region and a requirement that the forest companies include the access plan in their forest management plans.
Foothills Stream Crossing Partnership Alberta: 2004 In 2004, the Foothills Stream Crossing Partnership (FSCP) [formerly the Foothills Model Forest (FMF) stream crossing association] was launched as an ILM-related stewardship project with the assistance of the ACR ILM Program. It is intended to develop a cross-sectoral systems approach to stream crossing inspections and maintenance that ultimately will improve long-term crossing performance on a watershed scale. This approach makes it consistent with the principles of the Water for Life strategy.	*Value:* there was a business case identified - Save money through standardized inspection protocol. Potential to save additional costs through watershed maintenance coordination *Improved stewardship*: reduced impact on water quality and fish passage. The FSCP spent a lot of time negotiating with Government to provide *flexibility in regulatory enforcement* to allow for a systematic improvement process of prioritizing remediation of creek crossings at a watershed level. *Risk Management* for employee and public safety and company infrastructure *Information*: West Fraser provided most of the base data (water features, crossings) while the FMF provided the fisheries and water data and expertise as well as access to aquatic researchers and reports. *Governance*: paid voluntarily by the participants FMF administration, aquatic research and data. The FMF's excellent reputation also assisted with the building of trust among the various members. In addition, it served as the third party to manage confidentiality issues Third party consulting provided management

Case Study Description	Key Attributes to Success
Kakwa Copton Industrial corridor plan Alberta: 2009 Collaboration between 13 resource companies and the Government of Alberta is expected to reduce the cumulative effect of resource development in the Kakwa Copton region by up to 45 %. This unique effort resulted in the development of the Kakwa Copton Industrial Access Corridor Plan, which will also be used by other companies who require access to the area in the future.	*Value*: there was a business case identified - the potential to save money through reduced duplication of infrastructure and data sharing *Improved stewardship:* reduced road requirements leading to less forest disturbance, thus reducing the impact on fiber supplies and other forest values (ecological function) Potential to improve regulatory approval times Clear objectives were established up front with detailed roles, expectations and commitments for action for both industry and government that covered all aspects of the plan from start to finish, including enforcement, communications and dispute-resolution options. This ILM project contained some of the most robust and detailed process controls, expectation and responsibility protocols of any ILM project to date. *Information:* baseline information was primarily supplied by Weyerhaeuser Canada through Silvacom. The confidentiality of future energy development plans were maintained through an independent contractor – Silvacom *Governance:* an independent facilitator facilitated this project (Bill McMillan) with voluntary participation. Silvacom provided web-based data transfer options that facilitated meetings. The trust of the participants was earned over time by assurances that there was a business case to pursue this. The costs were shared among participants. Managed by a third party to get around the confidential nature of the gas and oil industry to share plans.
Canfor/Suncor Alberta: 2005 The Canfor/Suncor ILM agreement is a more comprehensive and formalized company-to-company arrangement: The companies will integrate their planning and operational activities in a 650,000 hectare area near Grande Prairie where they share the land base by collaborating on: Resource management planning Emergency planning Road and bridge construction Caribou habitat and restoration work Classification and protection of fish-bearing streams Identification and protection of archeological and heritage resources Sharing of resource data Monitor the results	*Value*: there was a business case identified - Save money through reduced duplication of infrastructure and data sharing This integration will reduce duplication, improve stewardship and facilitate regulatory approvals *Improved stewardship*: reduced road levels leading to less disturbed forest thus reducing impacts on fiber supplies and other forest values (ecological function, fish, caribou) Regulatory streamlining archeological & heritage resources, reduced regulatory approval time (in general) *Information*: companies will be sharing information and looking for ways to reduce duplication, further reducing costs for both parties *Governance*: undertaken by the companies involved with management buy-in and designated point personnel for each company to implement the actions and report on the results There was a business relationship established at senior and operational levels as well as a willingness to try a different approach by both companies
Berland Smoky Integrated Industrial Access Plan (IIAP) Alberta: 2006	*Value*: there was a business case identified - the potential to save money through reduced duplication of infrastructure and data sharing

Case Study Description	Key Attributes to Success
Industrial partners operating within the Little Smoky and A La Peche caribou ranges prepared an access plan that identified permanent access corridors.	*Improved stewardship*: reduced road levels leading to less forest disturbance, thus reducing impacts on caribou, fiber supplies and other forest values (ecological function) Potential to improve regulatory approval times Part of the solution towards caribou conservation and maintaining resource industries social license to conduct business on Crown lands Secondary benefits include: Some member companies have been able to turn over roads to other users and save on reclamation costs Coordination of high concentration activities to reduce conflict on remedial access routes, which has a road-use safety benefit for employees and the public With relationships developed as a result of the Caribou Landscape Management Association (now FLMF), some companies have been able to partner on other activities outside the original area Pooling of resources to undertake projects and lobbying has had more impact on regulators than would have been the case had individual companies operated in isolation Sharing risk of environmental concerns accessing sensitive areas Clear objectives were established: Provide a coordinated multi-sectoral industrial with a common voice. Mitigate the future industrial footprint on the home ranges of the Little Smoky and A La Peche caribou herds Improve management techniques with an aim to reduce the existing footprint to improve caribou habitat Be the support mechanism for ILM in the target area Develop an Integrated Industry Access Plan for the Little Smoky and A La Peche caribou herd Longevity: it was agreed that there was a need for ongoing monitoring, reclamation and annual updates and submissions dependent upon the results achieved Information - Accurate resource data. The Foothills Model Forest Geographic Information Systems (GIS) staff spent nearly a year collecting, verifying and assembling a data set that could be trusted for planning and monitoring purposes. The FMA holders willingly shared their Alberta Vegetation Information and land-use GIS data layers. Governance Structure and independent contractor was been retained to manage the project through a steering committee made up of collaborating companies. Independent management that provides administrative, GIS, data and communications support The trust of the participants was earned over time by an established business case to participate. It is a voluntary organization, with the participants covering the overhead costs

Case Study Description	Key Attributes to Success
	Data was managed by a third party to get around the confidential nature of the gas and oil industry to share plans.
Berland Smoky Regional Access Development (RAD) Plan Alberta: 2011 FLMF industrial partners operating within the Little Smoky and A La Peche caribou ranges collaborated with the Government of Alberta to prepare and enhance the previous plan (Berland Smoky IIAP) to include secondary roads, an access plan that identified permanent access corridors.	Built on the success of the Berland Smoky Integrated Industrial Access Plan – 2006 Clear terms of reference approved by government at ADM level prior to initiating the project and partnership with government As-built lineal disturbance data set developed and managed by the FLMF A vegetation inventory for historical lineal disturbances (primarily seismic lines) was collected to assist in corridor planning and restoration Continued third party management (FLMF) and facilitation Contained a tracking and reporting program to measure lineal disturbance levels for caribou and open route density for grizzly bear values Note: this plan never achieved full approval because "the GoA couldn't approve a landscape level plan until a sub-regional plan for caribou recovery was completed"- which continues to this day 10 years later.

App 5.3 Case Studies: Strategic Plans

Case Study Description	History
Castle River Alberta: 1996 The Castle Access Management Plan is the earliest access initiative in Alberta. Although a Forest Land Use Zone (FLUZ) was imposed on the area in 1998, a 2003 review commented that: "five years after it received legal status, there remains widespread concern in some government agencies and among a broad range of stakeholders that the Government of Alberta is still not effectively managing motorized access in the Castle." The Castle has gone through many iterations of protection cumulating with the latest 2018 Castle Management Plan. The column on the right shows a chronological summary.	**1921** Castle is removed from Waterton Lakes National Park and transferred to Alberta Government. The region becomes a Provincial Game Reserve. **1953** First road, a fire road, built along the South Castle River. Recreational use of the Castle region begins to expand. **1964** Timber Management Branch of Alberta Forest Service outlines concerns over harvesting timber from the high value watershed of the Castle District. **1974** A study by the Government of Alberta recommends that a park be established in the headwaters of the Castle River, "because of its scenery, natural history and potential for supporting extensive and intensive recreation interests." Capacity constraints force the Park to divest itself of more than half of its territory. 1979 Integrated Resource Plan The Integrated Management Plan for the Castle River is released. **1984** The Government of Alberta unilaterally changes its 1977 Eastern Slopes Policy; originally produced following a substantial public input process. Changes include allowing regional management

Case Study Description	History
	committees to change zoning to allow industrial activity, changing Prime Protection (Zone 1) to allow "step out" drilling and other "geophysical activity", and redefinition of the General recreation (Zone 4) to allow oil and gas activity. **1996** <u>Access Management</u> The Government of Alberta approves the Castle River Access Management Plan, created to regulate off-highway vehicle use. Environmental groups continue to oppose a plan that does nothing to address needs of non-motorized users, or wildlife such as grizzly bears. **1999** <u>Integrated Resource Plan</u> The revised Castle River Sub-Regional Integrated Resource Plan is released for public comment. Revised plan is intended to incorporate recommendations from Special Places report 2018 The Government of Alberta approves the *Castle Management Plan*. This plan mark historical progress for wilderness conservation, in response to decades of concern by locals and environmental organizations over the Castle's critical wilderness areas.
Land and Resource Management Plan (LRMP) Fort St. John, BC: 1997	See Appendix 6
Roan Plateau Resource Management Plan (RMP) Colorado, USA: 2016 The purpose of amending the existing RMPs for the Planning Area was to provide an integrated land use plan that guides future site-specific analysis and decisions in accordance with specific goals and objectives based on the direction provided by laws, mandates, policies, and plans.	Development of management prescriptions intended to limit surface disturbance, implement active management, and mitigate effects of resource development Land use plan decision monitoring is a continuous process that occurs over the life of the RMP The aim is to maintain a dynamic RMP that reflects current conditions and trends. Monitoring data are collected, examined, and used to draw conclusions on: (1) whether planned actions have been implemented in the manner prescribed by the RMP (implementation monitoring); and (2) whether RMP allowable use and management action decisions, and the resulting implementation actions, are effective in achieving program-specific desired outcomes (effectiveness monitoring) Identified desired outcomes, allowable uses, and management actions that restore and maintain the health of the land; preserve natural and cultural heritage; reduce threats to public health, safety, and property; and provide for environmentally responsible recreational and commercial activities The most important ecological values would have been protected through the development of management prescriptions intended to limit surface disturbance, implement active management, and mitigate effects of resource development Buy back provisions: canceled 17 of the 19 existing oil and gas leases that allowed drilling on top of the plateau, and refunded about $47.6

Case Study Description	History
	million that Denver's Bill Barrett Corp. (NYSE: BBG) had paid for those leases
Livingston – Porcupine Land Footprint Management Plan Alberta: 2018 The plan was developed as a sub-regional plan under the South Saskatchewan Land Use plan under existing legislation (Public Lands Act, Water Act, Forest Act, Parks Act, Environmental Protection and Enhancement Act). Driven by recent rapid growth and expanding human development that were impacting the area's natural biodiversity and values. The plan outlines a system that minimizes the extent, durations, and rate of cumulative footprint to achieve landscapes with heathy and functional ecosystems and to provide a range of benefits to communities and all Albertans.	Supported by a higher order land use plan Could build on and revise a previous plan in place developed in 1987: Livingston- Porcupine Hills sub-regional integrated resource plan - Approved by the economic development committee of Cabinet Regulatory and enforceable thresholds Limits and targets set for motorized access and spatial human footprint Operational and planning alignment Integrated government departments for delivery Recognition of the importance of including the development of: Integration of forestry, energy, tourism, grazing, wildfire and other resources uses Recreation management planning Chronological work plan needed including tasks, resource allocations and milestones Eastern Slopes restoration strategy to be developed Consultation with indigenous communities and collection of TLU is a priority Performance management targets Integrated approval process Decision Support Tool (DST) to build the underlying data architecture to make approvals Single source of data for habitat condition and footprint Transparency Amendment process Monitoring program in development Note: Most of the above were to be completed within one year - it is not clear if that has been completed at the time of writing this report. *Key dates and current status:* Government completes the South Sask Land use Plan - Sept 2014 Sub-regional plan Livingston Porcupine draft plan ask for input - April 2018 Released land management plan - May 2018 Disturbance targets timeline less than 1 yr. from release. Other within 2 yrs. New developments: Government cancels AB coal policy - June 2020 (to the knowledge of the writer this change was not vetted through a planning process) to allow for a Sept 2020 exploration approved for 2 companies Government made a Lease offering Dec 2020-followed by public outcry. In reaction to the public concerns the Government decides to reinstate the 1976 coal policy Jan 2021.

Case Study Description	History
	Government announces they reinstated the 1976 coal policy and prohibited Feb 9 new coal development – however the previously approved exploration will continue Government announces in Feb 2021, that they are waiting for a "new" coal policy with public input to determine next steps regarding coal development in the area.
Moose Lake Access Management Plan Alberta: 2021 The Moose Lake 10km Zone Access Management Plan (Moose Lake Plan) identifies management actions that are intended to support the achievement of three outcomes: • Ecological integrity, • Exercise of Section 35 rights and traditional land uses, and • Well managed development of resources This area has been identified as a place of importance by Fort McKay First Nation (FMFN) who see this as their last meaningful place to practice Treaty rights and traditional uses. The area is also considered important by the Fort McKay Metis and other Indigenous groups for traditional uses. The Moose Lake Plan distinguishes the 10Km Zone from other mixed-use lands within the Lower Athabasca Region and encompasses a comprehensive, integrated approach to management that acknowledges and seeks to protect unique features of the landscape that are important to FMFN. The Moose Lake Plan is the culmination of an extensive planning effort pursued by FMFN since the early 2000's to address concerns regarding resource development and associated environmental impacts on the exercise of Treaty rights, traditional land uses, cultural practices and associated interests on and near their Moose Lake reserves.	Extensive engagement with Indigenous groups and other stakeholders. Direction for land and footprint management, air quality, water quality and quantity, wetland abundance and health, fish and wildlife management, monitoring, and governance. Limits the total amount of buffered footprint allowed for industrial resource development in the 10km zone to 15 percent or 15,537 ha. The allocation of the disturbance limit will be by resource sector and will enable sector-specific project planning to occur. Defining what is/not allowed: • Dispositions for coal and metallic and industrial minerals will not be issued in the 10km zone • the construction and operation of central processing facilities, aerodromes, landfills, and permanent work camps are not permitted within the 10km zone • No new surface resource development will be permitted within 1 km of the boundaries of the Moose Lake Reserves or the ordinary high-water mark of Buffalo (Namur) and Moose (Gardiner) Lakes • Surface disturbance on new leases issued for sub-surface agreements will prohibit active resource production and be limited to lower disturbance activities such as access, monitoring, and exploration Culturally relevant conservation and reclamation plans will be required for all approved developments. Reclamation and monitoring data will be collected and reported through a transparent and publicly accessible process. Restoration of legacy seismic lines throughout the 10km zone. Alberta Environment and Parks will develop lake-specific fisheries management objectives for Moose (Gardiner) and Buffalo (Namur) lakes based on the principle that First Nations and Métis traditional land use and cultural practices are an important component in the development of those objectives. Performance Management and Monitoring: A monitoring program, including community-based monitoring, will be established through the activities of the Technical Advisory Committee. Monitoring includes: • Surface and groundwater • Wildlife • Air • Reclamation, and • Resource development footprint tracking

Case Study Description	History
	Linkage to Land Use plan: This plan will initially be implemented as policy prior to its recommended incorporation into LARP as a component of a sub-regional plan (which may include regulatory details for specific components of the plan).

Appendix 6: Case Study from a Similar Jurisdiction

Why was this selected as a Case Study?

The Fort St. John planning area in BC is uniquely similar to the land use situation in Alberta, for example:

- Oil and gas exploration and development has occurred throughout most of the planning area over the past few decades.
- The southern and southeastern portion of the planning area is predominantly used for agriculture and has a high concentration of privately-held lands.
- Forest harvesting and management, although a major part of the current local economy, is relatively recent with many areas yet to be developed for timber harvesting.
- Recreation and tourism is significant in the region.
- Is under Treaty 8.

Fort St. John Land and Resource Management Plan (LRMP): 1997

Background:

The Fort St. John Land and Resource Management Plan (LRMP) was initiated in 1993 to ensure sustainable management of land, resources, water and ecosystems within the Fort St. John Timber Supply Area. The plan is an outcome of the deliberations of the Fort St. John planning table comprised of private citizens, stakeholders (industrial sectors, environmental groups, etc.), and government agency representatives. First Nations chose not to participate in the planning exercise.

The management direction put forward by the plan is without prejudice to Treaty or Aboriginal rights, and ongoing and/or future treaty negotiations. The plan recommendations were approved by government in 1997.

The Northeast Region has experienced significant growth since the plan was approved in 1997. In 2018, the B.C. government committed to undertake a process to update the Fort St. John LRMP. This process includes partnerships with interested First Nations, collaboration with local governments, and extensive engagement with local communities, industry, stakeholders and the public.

The Land and Resource Management Planning process is an integral part of the Province's Land Use Strategy. This process differed from previous or other land use planning processes in BC in that:

• The general public and a wide selection of interest groups were invited and encouraged to participate in the planning process.

However, despite BC government's sincere attempts to involve local First Nations, they chose not to participate in the planning exercise. First Nations were kept informed through regular mailings of meeting agendas and minutes.

BC 1997 LRMP key characteristics summarized:

- **Roles defined:** Interagency Management Committee, Government Agencies, First Nations (commitment to work with), Public (important contributor),

    - The Omineca Peace Interagency Management Committee is charged with ensuring that the plan is implemented, monitored and reviewed.
- **Principles adopted:** The Fort St. John Land and Resource Management Plan (LRMP) incorporate the principles of integrated resource management into a long-term plan for Crown land and resource development within the planning area, the Fort St. John Forest District.
- **Planning Framework developed:** The Fort St. John LRMP provides a stable strategic planning framework for resource development industries and ensures continued access to these natural resources outside of Protected Areas.
- **Policy development to support:** The Fort St. John LRMP is an organized set of approved policies which will be applied to the management of Crown lands and resources in the planning area. These policies include: resource management zone boundaries, Protected Areas, and resource management objectives and strategies. Policy changes were recommended for those issues that the Table wished to send a strong message to government.
    - The Fort St. John LRMP developed policies for a number of resources including; energy, forestry, recreation, agriculture, range, minerals, fish, wildlife, transportation, heritage, culture and water resources. In addition, this plan has developed a comprehensive set of access management objectives and strategies to address access concerns on Crown lands. The plan provides strategic direction to land and resource planning, management and development for a period of ten years.
- **Land Zonation:**

  In summary, the planning area was subdivided into broad Provincial Land Use Categories as follows (percentages approximate only):
    - Agriculture/Settlement 12%
    - Enhanced Resource Development 20%
    - General Resource Management 46%
    - Special Management 14%
    - Protected Areas 4%
    - Major River Corridors 4%
    - One of the major aspects of the LRMP is the subdivision of the planning area into Resource Management Zones (RMZ's). The boundaries for each zone were determined by the Working Group based on a number of considerations including topography, existing land use and access, Agricultural Land Reserve (ALR) boundaries, environmental concerns and resource values. Each of the zones has a unique set of resource values, objectives to maintain or enhance those values and a number of strategies to be implemented to achieve the objectives. Along with the General Management Direction adopted by the LRMP Table, the Resource Management Zones provide geographically focused, strategic direction for all land and resource development in the planning area.
- **Monitoring indicators** were developed by for the majority of the strategies in the General Management Direction and within each RMZ. The indicators are considered to be a draft and may be refined by the resource management agencies responsible for implementing the plan. They have not been updated with the current management objectives and strategies.
    - The Fort St. John LRMP Table recommends that the LRMP Working Group be used as the plan's monitoring committee and assist the interagency management committee (AMC) with reviewing an annual monitoring report. The monitoring report will indicate

how the objectives and strategies outlined in the Land and Resource Management Plan are being met through agency-specific resource management activities, more detailed planning processes and resource development plans or permits.
    - Monitoring included a strategy for each zone, list of indicators, methodology and data sources, such as:
        - Access
            - Encourage shared access, deactivation, and winter access, minimize new access with indicators of KM of unused roads not deactivated, number of temporary roads, quantify trends, and data sources.
- **Plan amendment process:** Commitment to have Scheduled, minor, and major amendments.
    - Local or operational planning processes may, through more detailed mapping, research or public involvement, recommend changes to the Land and Resource Management Plan. The outcome of LRMP Monitoring Committee meetings may also be recommended amendments to the plan. These would be communicated by the LRMP Chairperson (or IAMC designate) to the Omineca-Peace Inter-agency Management Committee for their consideration.
- **Annual reporting:** Preparing an annual monitoring report on plan implementation, preparing an implementation matrix and action plan to ensure that strategies and objectives are implemented,
- **Audit process:**
    - An audit process should be developed so that the success of implementing the LRMP can be measured
- **Interpretation and Appeal process**

ILM and Access Management attribute(s) that contributed to success:
Each zone had established objectives and strategies for access and other values. Access objectives and strategies include:

- Maintain existing access, coordinate industrial access development including linear development to minimize negative effects on other resource values.
- Maintain existing access including provisions for upgrading.
- Encourage consistent road construction standards between industries.
- Establish and maintain a permanent road infrastructure to facilitate long term integrated resource management.
- Encourage shared access.
- Minimize negative effects on other resource values.
- Maintain existing access including provisions for upgrading.
- Encourage consistent road construction standards between industries.
- Where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat).
- Plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
- Encourage deactivation and rehabilitation of unused roads, particularly within visible areas.
- Where appropriate, require winter access unless a need for all season access can be conclusively demonstrated through more detailed planning.
- Minimize new access development.

- Promote the development of multiple-use corridors for resource extraction activities.
- Where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat).
- In consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems). • upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, re-contouring, bridge removal and where possible, native species.
- Coordinate access at the Coordinated Resource Management Plan (CRMP) level
- In consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems).
- Public access controls:
    - The Table has concerns that the use of gates for purposes other than public safety may lead to further complications if not used or monitored correctly. Problems in the past have been noted where certain individuals have gate privileges while others do not. To this end, the plan recommends the following with regards to the use of gates as an access control mechanism: Land managers should use alternate access control measures where they are feasible. When gates are chosen as the tool to control access, it must be advertised with sufficient time for public concerns to be addressed.

1997 Plan Shortcomings:

While the plan at the time of development was considered a "state of the art" planning process, the ILM project team and interviews with some BC land managers observed some shortcomings that contributed to the need to revise the plan.

- The 1997 Land Use plan primary function was to set aside 12% protected area to meet National Forest Accord goals but didn't include things like caribou, energy sector, First Nations interests, etc.
- Roles are primarily what government agencies and do not provide any description of the roles or expectations of industry.
- There are objectives for access development such as "encourage deactivation and rehabilitation of un-used roads", "promote the development of multi-use corridors" and "coordinate access" but nothing about process, regulatory measures, or methods to make reductions in footprint happen. This is viewed as very weak and is not likely to result in successful implementation of ILM between overlapping industrial sectors.
- No role of Indigenous communities.
- Was not adequately implemented: Didn't become a "living plan" as contemplated in the plan. (see below)

Learnings as described by SME interviews:
The Land Use plan is 20ish years old (1997) that didn't include First Nations or energy sector so we have a new mandate to include them. (Source SME interviews) The current planning process is underway with a completion timeframe of completion by 2023.

Key considerations:

- We still have conflicting ad hoc issues that come up such as: E.g. Government wants to proceed with the site C dam; we want caribou plans completed; etc. We have created an un-implementable web of expectations. Stresses the importance of have a living process.
- Land Use plan – opportunity to bring multiple First Nations together which is greater than any independent outcomes
    - Equitable, balanced and mutually beneficial to multiple people
    - Providing capacity funding from government for each First Nation to participate in the process which usually involved funding 1 full time equivalent to participate at the table, keep chief and council informed, seek decisions etc.
- The plan is not to do it over; we need however, to go through a process to update the plan.
- Long process as land use planning in BC was functionally extinct for 16 years (wasn't a living plan)
- The first step is to review the 1997 Land Use plan. We don't want to throw out the baby with the bath water.
    - The review of the existing plan entails an analysis of;
        - What does the existing plan do?
        - What needs to be fixed?
        - What are the new objectives?
        - What is not meeting the objectives?
        - What requires amendments?
        - What are the new considerations for them (from 1997 to now) were unconventional oil & gas, forestry, First Nations never brought their values (cultural use, tone of plan, moose habitat, and SARA etc.)

The BC Fort St. John planning team hopes to address the following in the next iteration (revisions) to the 1997 plan:

- Reduce constant conflict including the perception of conflict.
- Reconcile competing visions between how the land will be used.
- Massive investment is required to properly include First Nations. Now we need to reopen the discussion with a new mandate. We need to recognize that the involvement of First Nations takes time so we have to allow enough space to complete this which is time consuming. As an example, the Terms of Reference (version 0.4 is about to be released within their group for feedback) has to be established as a first step. When you have multiple groups involved this has taken a lot of time. A strong factor in the change in tone was direction from above that First Nations had to be involved through collaboration and partnerships processes for BC land use planning. It is no longer an option; we must try to avoid litigation.
- The plan has to speak to the local community and FN's equally that tries to avoid distinguishing a definition or difference between partnerships and collaboration.
- A clear TOR that includes scope is critical.

- It should be community based:
    - Very excited about convening and establishing a Community Leaders Forum made up of elected First Nations and communities. This would be an oversight advisory group of elected government and Chiefs/Council that is advisory (not a decision making body). This provides opportunity for conversations to happen as well as building relationships.
    - This forum should exist even without an active land use planning process and would outlive change in governments.
- Aligns other initiatives.
- Marry the expectations / interests between government, industry, and First Nations.

Challenge: Internal government agencies need to get to the place where they get that it's one land. Changing and different BC government regimes that drive decisions: For example in 1990s under NDP vs 2000s under Conservative were significantly different as follows:

- First land use plan in the 1990's was driven NDP wanting establishment of protected areas;
- In early 2000's Liberal government formed the Ministry of Sustainable Resource Management and wanted to finish land Use plans which were essentially a transactional tool. In 2004, all the commitments expired and some questioned updating it.
- Now we have other factors such as Ecosystem Based Management, climate change, First Nation interests, caribou, etc. What do the old plans mean? How can we deal with the trade-offs? We can't solve all the problems and conflict.

The ever evolving process and change in direction is a problem in implementing meaningful sustained land use plans.

Appendix 7: ILM Working Groups

Roles and Responsibilities for a ILM corridor planning Working Group			
Government of Alberta (GoA)	**Indigenous communities (IC)**	**ILM Working Group (WG)**	**Disposition Holders (DH)**
Barriers solution: ILM Vision, Accountability, Performance measures, real time data, Indigenous values incorporated, defined roles, regulatory alignment, and Value proposition. • Defines planning area • Completes Land use Plan, Caribou recovery plans (sub regional plan) • [53]Government should work with the Alberta Energy Regulator to develop an area-based approach for energy companies with mandatory participation inside the caribou ranges that enables companies to combine interests and integrate development plans • Formally delegates authority for access management planning contract with WG members on a 3 year cycle. • Sets SMART management objectives (e.g. land use and caribou range plans) • Sets out engagement with indigenous communities. Establish roles, capacity, TLU funding. • Establish caribou range plan Range Management and Monitoring Board or Committee for the caribou ranges, to provide oversight for range plan implementation, monitoring and assessment, and to provide annual reports and make recommendations to government on adaptive management. • Outlines expectations: sets out and approves a Terms of reference for ILM planning For WG.	**Barriers Solution:** Indigenous values incorporated into plan, defined roles, performance measures, and real time data. • Engage with WG as per GoA/IC direction • Shares relevant non-confidential data to WG: E.g. TLU values to incorporate into plan development. • Identifies values, protection/ mitigation requirements • Identifies lineal disturbances that must remain open (e.g. trails, trap lines). • Participates in GoA objectives and WG planning	**Barriers Solution:** Defined roles, performance measures, ILM vision, and real time data. • As per delegated authority: Provides a service that demonstrates integration for companies to submit disposition applications to Environment & Parks, Forest Management, Energy, and AER. • Manages shares and maintains data for the planning area. • Liaison with industry within the planning area to set access criteria/constraints (e.g. slope, crossings, wet areas) • Use access planning tools, conducts assessments • Identifies values and protection measures (including IC) Note: The tool will be used to guide "hotspot area" access plans coordinated with restoration plans and work. • Provides opportunity for all disposition holders to participate in the access design, model criteria, and assessments	**Barriers Solution:** Roles, Value proposition, accountability, vision, real time data. • Fulfills consultation project level requirements • Shares relevant non-confidential data to WG • Prepares applications for WG assessments • Defines business needs (e.g. location, well spacing, harvest plans AOP's) • Funds and participates with WG assessment including amendments • Annually reports on "as built" footprint • Maintains and reports to WG on life cycle of all owned access including vegetative state. • Reclaims footprint • Restores footprint • Moves away from compliance centric orientation to outcome based management

[53] Denhoff E. Setting Alberta on the Path to Caribou Recovery May 30, 2016

• Incorporate relevant government departments (e.g. energy, forestry, parks, tourism objectives • Engages communities, MD's, to incorporate values and objectives from LU and sub-regional plans. • Shares relevant GoA data to working group. • Develops an approval mechanism for landscape level ILM/Access plans • Sets performance indicators • Ensures mandatory participation (e.g. Mandatory ILM) • Sets reporting standards • Funds WG for roles in ILM & data management (not assessments or corridor identification) • Maintains a provincial based data set for all planning areas as delivered by WG • Aligns approval authorities (e.g. EAP, Forest Management operations) • Sets review and approval timelines • Best Practices development & effective monitoring protocols • Policy alignment • Sets data standards and openly shares all relevant data • Develops incentives for disposition holders for achieving objectives • Develops criteria for plan review, re-planning, and amendments (including proposed new allocations) • Moves away from command and control and supports outcome based management • Sets/enforces access regulatory controls on use (e.g. public access) • Sets designated trails as needed. • Sets "as built" verification requirements (e.g. GPS, photo verified (incent- not surveyed) • Public education and consultation. • Develops and funds restoration – consistent with ILM plan outputs. • Sets out criteria on footprint recovery for annual reporting. E.g. in transition, recovered, open access. • Set out clear process for disposition applications. (e.g. EAP LAT tool revisions)			

Benefits provided by an ILM Working Group (WG) (as per above)		
GoA	**Indigenous communities**	**Disposition Holders**
• Access complies with Range plan, as well as other plans as they are needed (grizzly etc.) • Demonstrated adoption and implementation of caribou task force recommendations • Landscape scale plan with continual monitoring – showing the progression to goals e.g. 65% undisturbed Section 11 obligations • Effective and efficient plans meet environmental social governance (ESG). • Ability to demonstrate progress on ILM, meeting disturbance thresholds, progressive planned development, identification of redundant access for reclamation, etc. • Data management systems • Ability to report progress live • Practice mandatory ILM • ILM system linked to an overall integrated CEM management system and adaptive management • GoA retains ultimate authority for decisions and approvals	• Active meaningful participation in all stages of ILM planning. • Values are adequately considered in development plans	• Predictable access and approvals • Better grade access when business need requires • Flexibility to design access within the corridors and vary if the other metrics required can be maintained • Move to standard approvals under EAP process • Understand the integrated planning requirements • Up to date and comprehensive data (one stop data set) • Provide analysis based on best information that no resources are stranded as a result of poor placement of access • Stewardship reporting to GoA, indigenous – public etc.

Appendix 8: Compilation of SME Interview Notes by Category

Definitions of ILM:

- Common vision of how things are done on the land (government, communities, First Nations, etc.) to protect values.
- It's a good tool to address conflicting mandates – protection of land, First Nations reconciliation; economic interests are met while trying to support other values.
- In its truest sense, ILM is an approach. A high level, paradigm. However, it can be applied at various levels in space and time (i.e. at a high level it is an approach, at lower level it is a tool.)
- Where all things that occur on the land (allocation, use, reclamation, protection of resource values, etc.) occur in alignment and all users (industrial, municipal, recreational, etc.) work together and be respectful of other uses/users. A lot of working pieces to be aware of. Includes ecosystem management and resource values (wildlife, water, etc.) and protection of these.

SME Quote: "Without ILM we have resource development shooting up and there is no balance with other values. Industry doesn't do it on purpose to degrade the environment but can happen as it isn't in their primary interest when developing."

- ILM is a living thing. Allocation decisions are subject to ILM principles but these need to shift accordingly to accommodate allocation decisions.
- ILM is an attempt to decrease impacts on ecological integrity and services and sustain the natural world (e.g. biodiversity), while still supporting uses of the land and resources. Reduce the footprint, reduce the impact.
- Concept of finding balance of how land is being used among different land users.
- Help industry, communities, Metis, and Indigenous get along on the land.
- Often been branded as a way of thinking/being.
- ILM is to minimize footprint.
- Looking to integrate managing life cycle of footprint inclusive of stakeholders.
- How do we get what we want (resources) through the way we conduct our activities.
- Alberta practices ILM like more of a tool than a process to reduce footprint. I believe it should be more of a process but we aren't there in Alberta; as we use LUF plans as the way to manage multiple demands, and so use ILM as a 'tool' to deliver LU Plans. Thus for us ILM is a 'thing' inside of land use planning
- Everything (resources) is awarded piece by piece on the land, not at a landscape level. ILM helps achieve ecological objectives (like Species At Risk, maintaining wildlife travel corridors, etc.).
- Cumulative Effects Management (CEM) can achieve biodiversity objectives more efficiently when we all work together.
- Trying to reduce footprint (and keep undisturbed habitat) for species at risk and other values (such as caribou, grizzly bear, and some song bird that all are effected by lineal disturbances).
- ILM reduces impacts

SME Quote: "We have created an un-implementable web of expectations"

SME Quote: "Stop packaging ILM as a thing- remove this artificial lens- erase the lines"

- ILM is a systematic and coordinated approach to managing footprint.
- ILM is a tool that can help Alberta manage cumulative effects.
- Coordinated approach to management of industrial footprint (on/off):
    - Roads and
    - Access management
    - Restoration
- ILM supports the concept of "Working landscape" and keep other values – we can have economic development and other value.
- You can't have one actor making all the decisions; this allows all actors to be involved.
- However, in its current state, ILM is not a management system, and it is a misuse of the word "management" to call it such. It does have some potential benefits, and it may buy time, but even at that it is possibly poorly designed.

Key message: "ILM cannot solve the over allocation issue in Alberta; it can only mitigate the impact."

- Groups working together on the land to have a reduced footprint on the land.
- Lower level of disturbance with same level of development.
- ILM is a process, everybody buys in. All stakeholders work collectively on the land base to reduce human footprint over time. It's a way of making things happen together and to minimize footprint over time.
- ILM when done well, there is a planning process that considers larger spatial and temporal scales including multiple government structures and Indigenous governments (e.g. Co-management)
- Integrated Land Management (ILM) provides a space for a technical approach to incorporate Indigenous values.

SME quote: "ILM: It's a dream"

- When companies work together with the Government to reduce footprint which can be for terrestrial or water use.
- Cumulative Effects (CE) – exercise of dilution (and/or delusion)
- Combined footprint is affecting other values (like caribou). Possible to develop more efficient footprint
- Grand scheme – dealing with Cumulative Effects Management (CEM)

Thinking carefully about ecological and social interests with resource extraction limits - can we maintain?

Appendix 9: Compilation of SME Commentary on Solutions and Process

SME Suggested Solutions: Design and test an ILM process

- Start with a smaller land base (compartments like sub-regional plans), not whole regions
    - Less people
    - Localized issues
    - Clear objectives (what are we managing for?) Species identified water issues etc.
    - Outcomes
    - Needs to be implemented in various systems (higher sanction – so it can't be ignored). What is the tool to make that happen? People need to know what is expected if they are making an application in that area.
    - Bring people to the table
        - Public needs
        - Indigenous values
        - Plan forward
        - Allocations/use
        - Thresholds
        - We have lots to work with
    - Implemented (multi-decisions)
    - Must abide by it. (New law?)

- Need a pilot (probably won't get it right the first time but try it)
  Don't worry about it being perfect. Just try something. Get some GOA from various departments to participate.
- When or if ILM is implemented, process needs to be simple, process to manage issues/questions and be time sensitive for approvals.
- Create a simple spatial tool for most of the province to see what development would look like (ideal footprint). Demonstrate what the effect of ILM is- be transparent.
- To make it manageable, use systems approach in anything we do. We need to have a space where we can try things. Doesn't need to be approved everywhere else. Put guidelines and parameters.
    - Have better processes to test, evaluate, document, share learnings then advancing. Often there are a lot of initiatives going on, trying to do similar things. We need a better way to approach adding learnings. This needs a systems approach. There could be some basic things that could be done to advance this.
- Has to be a process
    - Establish a clear TOR defining roles and responsibilities, etc.
    - Everyone at the table has an **equal voice** including GoA. GoA people need to quit being threatened by the process and give up control.
    - Dynamic and review it regularly
    - Will be based on changes in technology, values, etc.
    - All pillars (environment, economy, social) need to balance on a 3 legged stool.
    - Look at government regulatory changes to accommodate it

SME answers to: How would you design an ILM process?

- Governments are concentrating on deregulation and efficiency for approvals but ILM is complex, involves many parties (Government Agencies, Industry and the Public) and requires clear intents and defined objectives to implement. Off-loading a problem to a 3rd party, doesn't solve the problem. It just off loads it.
- Be more systematic in understanding how our policies, legislation changes impact on the ground. Examples of poor changes and large impacts.
- The way to plan is:
    - Identify no go areas (e.g. water buffers)
    - Identify pre-existing roads and classify by use and road standard determine which should remain and;
    - Use best data (e.g. high resolution LIDAR) to define where primary and secondary access should be within areas of new development and lay out the primary roads
    - Start deactivating redundant roads which could take decades and costly.
- Zoning and integration are both important parts of ILM, as compatible values can be grouped into zones, creating an efficient landscape.
- We need to move to outcomes vs. Prescription/cook book mentality; but this is hard with a government bureaucracy that prefers "command and control" it is easier and safer to have a measuring tape than work towards an adaptive outcome.
- Has to be mandatory, has to be a condition of operating on public lands
- Collaboratively model the best location of long term access within a 600 meter corridor.
- All roads on the landscape required for decades using modeling with stakeholders and industry (identify long term roads vs short term roads).
- Then put in rules - Can't build new infrastructure along short term temporary roads as this would extend the life of the access. Phase short term roads out over time. Ensures progress.
- It's easier to get a road approved if it's within the plan. Can deviate up to 2km from center line in RAMP but still need to meet similar outcomes for the long term permanent roads. (Provide proof).
- Work with GOA to participate in independent ILM process
    - Independent doesn't mean that they are the decision making body – that stays with government but, the body carries out the ILM plan according to the measurement criteria.
- An independent body that could oversee ILM (fair and equitable) to mitigate past disturbances and future footprint.
- Create arms-length agencies funded by 1/3 federal government, 1/3 provincial government, and 1/3 industry.
    - Allows transparency and protects confidentiality but isn't decision maker.
    - Quasi-judicial land use plan authority
    - Confidential resource development info
    - Could deal with complex issues
    - Public interest, be honest and transparent
    - Conduit to others: Indigenous

- Requires 1 approval system to approve all roads under this plan (regardless of industry, sector, municipality, etc.) that all agencies would use (Alberta Energy Regulator (AER), etc.) Need to remove the conflicting approval agencies and rules.
- The problem is how to deal with the pre-existing roads and infrastructure without this it is not possible!
- Given where we are now, coming up with what access should look like and start working towards that plan over a long period of time. Can't bankrupt companies. Has best chance of success.
- Provide clear set of rules enables development to occur again (in places where deferral has happened) (e.g. Amendment process)
- ILM provides opportunity to continue operating
- Need plan in place to continue to operate
- Fear and nobody stepping up to the plate. Show ENGOs that conservation is a priority somewhere; Show them a win!
- Map out major infrastructure and road networks ahead of time/ long term planning will be valuable
- We need to recognize that the involvement of First Nations takes time so we have to allow enough space to complete this which is time consuming.
- We are trying to wrestle with the issue of functional vs. restored habitat for things like historical seismic lines for caribou.
- There has to be the ability to say "no" development.
- E.g. Alberta Innovates (Dallas Johnson) – was working on ILM related initiatives, AER, AEP, AgFor – all working on ILM type initiatives.
- If we could monetize an outcome it would likely happen – the primary driver is $. If access management made good business sense everywhere it would happen without direction. If everyone saves $ it will happen. Key is that even $$ may be seen as differently valuable. The fact that is costs money to have two roads, if both roads can be rationalized within each owner's world, both will be built if even it looks twice as expensive as it could have been. $$ are more than the costs of the road (for example).
- Restoration is a huge part but it's not happening at the pace it needs to be in order to keep operating now
- Prioritized restoration (has to be planned and meaningful)
- Was the risk to our environment worth it? 100% of habitat was destroyed but economic returns were not what was promised; We need these feedback loops – were the promises made kept and/or realized – was the development still worth the damage caused?
- Issue created by not accepting fundamental limits on development. We need to agree on a trajectory then budget and allocate.
- Not convinced that most Indigenous communities can engage (not enough capacity)
- Bureaucracy is unaccountable and unconstrained – need to accountable to an outcome not rule based. – We need to have sustained accountability.
- GOA has demonstrated a lack of progress on a number of initiatives
- Irritant – energy sector needs consent of Forest Management Agreement (FMA) holder because they are removing land from the land base. The need for that consent is an opportunity for extortion. There is opportunity for reform there to generate more cooperation. What is paid in road use is high. Arbitration timeline is too long. Creates unnecessary conflict.

Not the same with every FMA holder. This creates a sense of lack of trust thereby removing cooperation.

SME Quote: "ILM seldom works as industry and government performance measures require them to act quicker than integration

- Identify the "no go areas" such as waterways, lake buffers, could be other values to protect, etc.
- There are 3 categories of access: Long term permanent roads, shorter term access needs E.g. AOP for forestry, and new builds.
- Different parts of AB require different planning. (Stable vs rollercoaster).
- **Money** – greed or company and government wants to make money (e.g. MD charging company to run a water line in the ditch so they can charge- company clears land alongside instead to save $). This is about the desire for $ which makes us do the wrong thing.
- **Money:** charges for road use are sometimes more than building their own road.
- **Time** – different temporal aspects of development – tons of approved development on the land. Companies just hold onto undeveloped dispositions rather than give them up and reapply.
- **Liability** – sharing use of something – who's responsible? Reclamation.
    - E.g. pipelines, ground disturbance dis-incentivizing
    - Don't want to assume others liability. Easier to do my own thing than have to negotiate an agreement with other users.
    - Establish penalties if you go beyond – offsets.
- Need changes to the regulator and they can't be soft aspirational goals; Try some things and see what happens.
- Establish some rules: Development should occur beside each other when possible. Common corridors.
- Remove silos on projects.
- Incentivize ways to follow.
- Integrate working spatially together in a simple way
- Need benchmarks that are reviewed periodically. Sometimes the goal posts have to be adjusted to reflect the changes of priorities.
- Everyone needs to work together.
- Iron fist – it comes down to being a requirement of approval or a company wanting to avoid interjection (lack of approval) – only then then companies do a better job.
- Golder has developed and used a product that is capable of demonstrating how the connection can be made and how to analyze environmental and economic synergies.
- Winners and losers in decisions always impede improvement.
- Need integration and certainty beyond ideology.
- One problem is the continual turnover in government – loss of knowledge
    - Optimize land use (random and chaotic)
    - Monetize visitation
    - Need better management and incorporation of technology (e.g. Fisheries)
- Social and environmental assessment led by 3rd party? Is this the best approach? Trade off discussions is best done by Government.
    - Do we have the metrics identified?
    - What are the incentives?

    - Example of 10 years energy vs 100 years tourism. (e.g. short term thinking of what we know now vs. plan for the long term) Can't forgo long term values because of short term decisions.
    - Maybe we manage CEM by high impact / low impact areas
- Industry can be creative if it is necessary.
- Need to manage cumulative effects where industry is not as well.
- We continue to put on timing restrictions, manned gates - all ineffective mitigation or Band-Aids
- Restoration based on historic disturbance (40 years). Opportunity is huge. Running out of time to have somebody pay for it. Will see companies renege on their commitments
- We don't have a regulatory system that matches
- Need to assign a value to ILM.
- Put caribou objectives right into the company's business plan –manage to an objective; in the absence of an objective it becomes "0".
- Example of zoning within a city whereby there are rules about where industrial development can occur (e.g. not beside residential). GOA needs to do this in the province.