INTERMUNICIPAL TRAILS MASTER PLAN

M.D. OF BONNYVILLE & CITY OF COLD LAKE

APRIL 2023

MUNICIPAL DISTRICT BONNYVILLE NO. 87

City of Cold Lake

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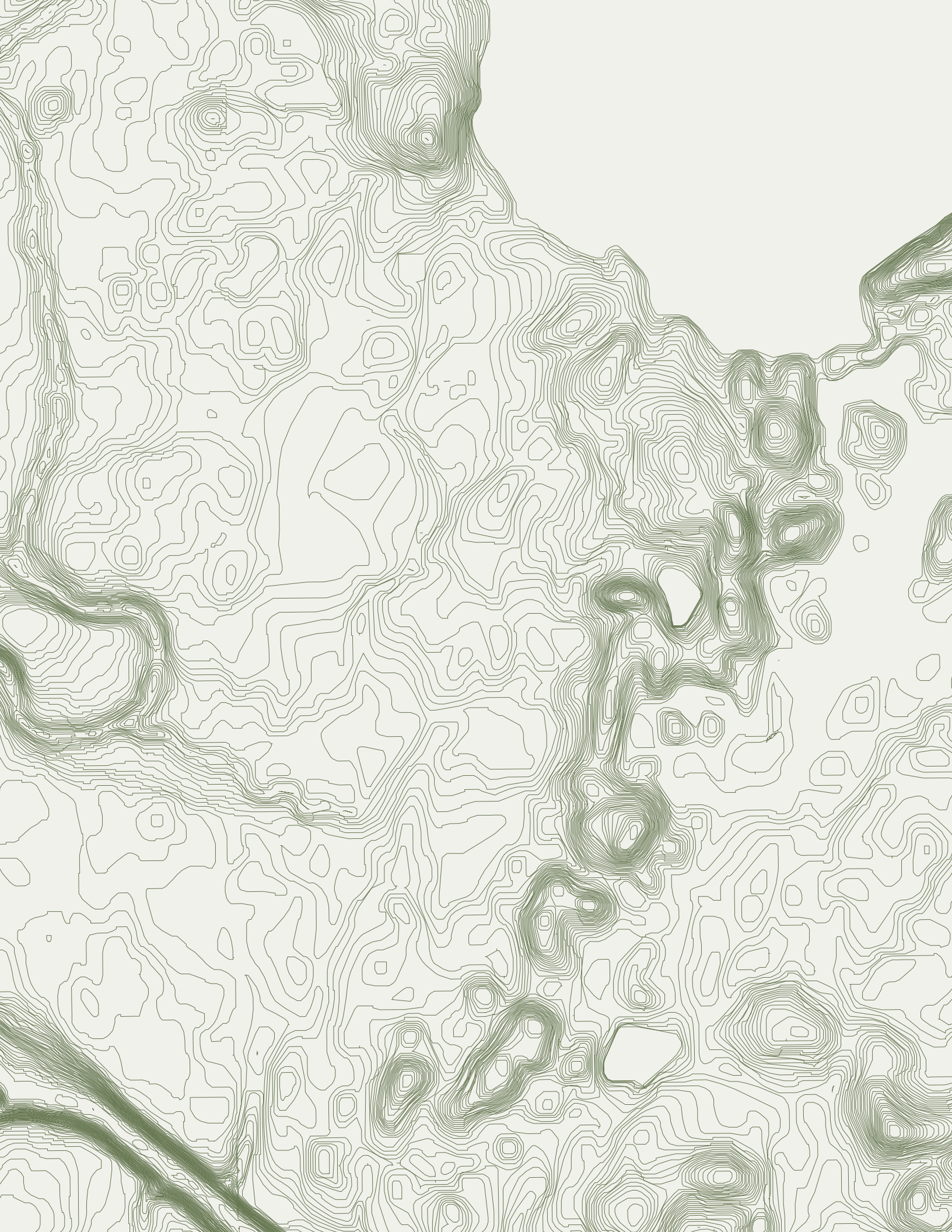

TERRITORIAL ACKNOWLEDGEMENT

The lands and waters associated with this plan straddle both Treaty 6 and Treaty 10 territory and fall primarily in Métis Nation of Alberta Association Region 2. These lands have been occupied, used, and loved by Indigenous Peoples for many thousands of years. The observations and recommendations contained within are offered in good faith, with the intent to respect and uphold treaty obligations, and with the hope that trails in the region are sustainable, respectful, and that they serve the interests and aspirations of the region's Indigenous population.

ACKNOWLEDGEMENTS

Development of this plan was a collaborative undertaking and would not have been possible without the significant involvement and expertise from the staff of the M.D. of Bonnyville and the City of Cold Lake, as well as the advice and counsel of area residents, elected officials, organizations, recreationists, and Government of Alberta officials who are passionate about the future of sustainable, desirable trails in the region.

We're also grateful for the sound ideation, technical support, and detailed contributions of the talented team at McElhanney for several of the recommended interface routes contained within.

Thank you!

RC Strategies

EXECUTIVE SUMMARY

The Intermunicipal Trails Master Plan is a collaborative effort of the M.D. of Bonnyville and the City of Cold Lake to guide improvements to the connectivity and quality of the region's trails and trail experiences for residents and visitors. These efforts are intended to function as a foundation and as a catalyst for the administrations to achieve their respective quality of life, community, environmental, and economic goals.

The region's diverse geography, cultures, and existing trail systems (both legacy and recent) represent a remarkable starting point for an integrated trail system that is uniquely appealing and functional, and that is well-positioned to gain and retain a highly respected position in Alberta's rapidly evolving array of available trail experiences.

This plan considers trails for their recreation, active transportation, and tourism purposes. Using contemporary trail and visitor management practices, it purposefully and realistically considers the current state and future potential of non-motorized and motorized trail activities on municipal and provincial land in the region.

Before efforts can be made to realize the full potential of the region's trails, full consideration is warranted of the region's mosaic of trail-related administrative approaches, Indigenous values, environmental values, existing trail experiences and functionality, and current trail conditions, as well as their comparative readiness and attractiveness of trails for visitors.

Unsurprising for a region as large, busy, diverse, and complex as it is, many significant "bright spots" exist in the region's trail network (e.g. recent trail investment in both administrations; Iron Horse Trail). Significant and unsustainable challenges also exist (e.g. condition and management of the region's popular public land trails).

As a master plan, the opportunities and recommendations presented within are conceptual and borrow heavily from the ideas and input of the project's public and stakeholder engagement efforts. They are also intentionally aspirational, realistic, and translatable into practice. Wherever possible, trail and visitor management approaches are aligned with leading municipal, provincial, and national best practices. Some recommendations, like the proposed interface connections near Cold Lake, are purposefully detailed to expedite potential implementation.

Achieving and sustaining the desired conditions of a future trail system will require some shifts in regional approaches and would be most effective with the adoption of common trail management concepts (e.g. common classification system). Timely and coordinated implementation of six strategies, supported by 24 actions, will enable the region to realize a trail system that can accommodate and support a growing, thriving, and changing demographics and interests over the next 5-10 years and beyond.

1 Harmonize Trail Foundations

2 Address Key Sustainability Issues

3 Develop a Connected and Diversified Trail Network

4 Enhance User Experiences

5 Actively Manage Use & Impacts

6 Animate & Activate Community

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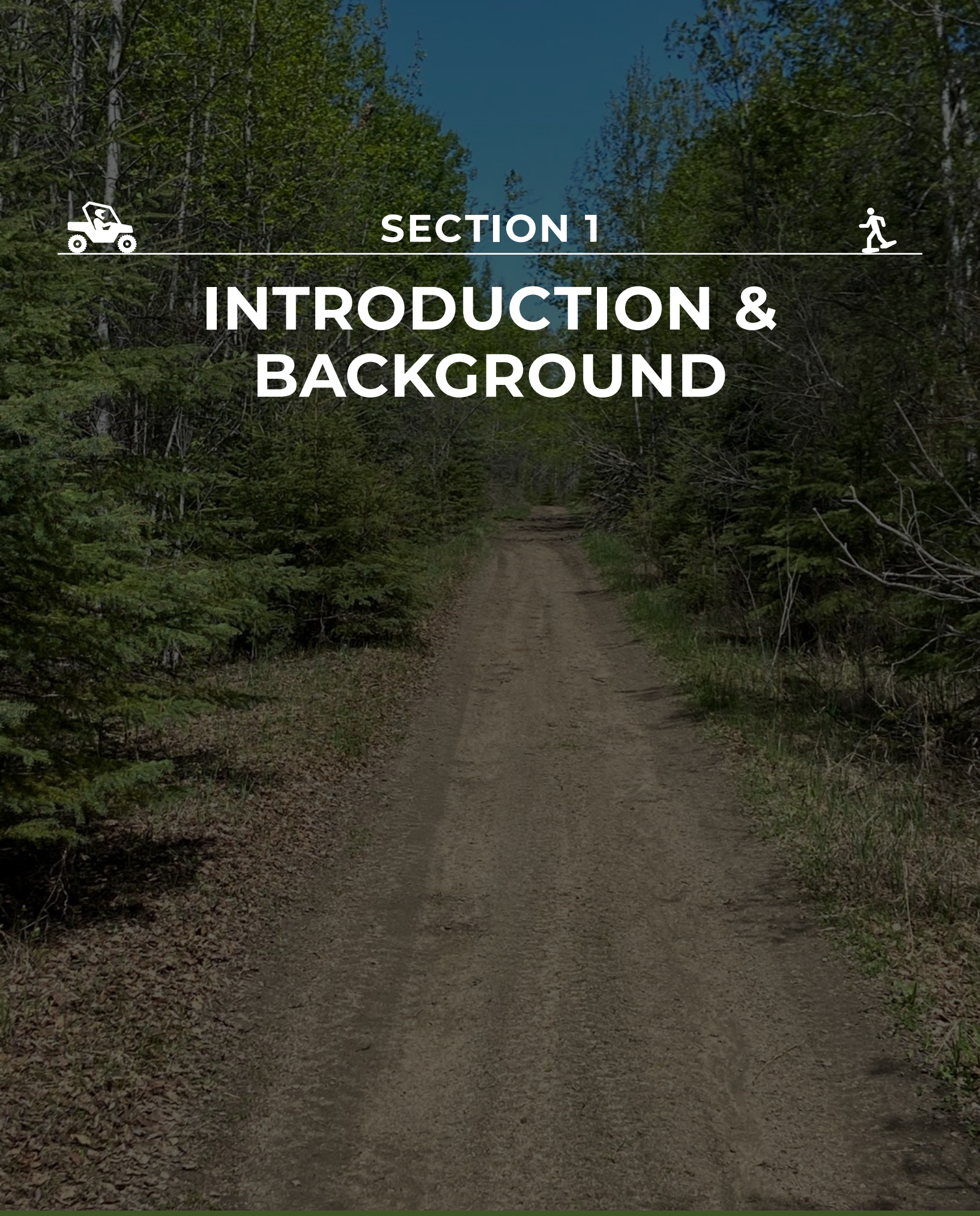


SECTION 1

INTRODUCTION & BACKGROUND

Residents and visitors to the region are active outdoor enthusiasts and the variety of trails found here are foundational assets to the wellbeing and the outdoor lifestyle that they enjoy. Our trails support a broad diversity of outdoor recreation activities including off-highway vehicle (OHV) use, snowmobiling, walking, hiking, running, equestrian activities, leisure cycling, mountain biking, snowshoeing, Nordic skiing and more.

Like other recreational infrastructure, trails enable our residents to lead healthy, active lives. They provide opportunities to move between homes, services and amenities without need for vehicles and they provide a venue to deepen our relationships with each other, our history and the land and wildlife in the region.

Our trails also provide a foundation for many residents and businesses to help grow a trail tourism economy. Some of our trails are becoming capable of attracting people from afar to share the region's unique attributes and beauty.

Our trails have a storied past that has been evolving for thousands of years. Our earliest trails were corridors to sustain and connect day-to-day life of the many Indigenous peoples living and travelling in the region. European explorers used and connected some of these routes and settlers followed with means of transportation not previously seen on the landscape. The routes of some trails have evolved into roads we use now.

Our region's current trail network is an extensive array of both purposeful and unintentional routes. Some of the region's primary trails, including the Iron Horse Trail, are legacy alignments of historical transportation. Other routes now used for recreation were established originally for industrial exploration and development. Still others, including localized, dedicated recreation and active transportation trails in the area's parks and settlements, have been purpose-built by municipal and provincial governments, and/or local volunteer organizations.

With varied histories and purposes, the region's trails have organically evolved into a highly valued mosaic of routes, but they have not yet benefitted from a shared vision and plan.

1.1 PURPOSE

This plan is a cooperative effort of the M.D. of Bonnyville (M.D.) and the City of Cold Lake (City) as an extension of the Intermunicipal Collaboration Framework process. It is intended to provide a common foundation for enhancing recreation, trail tourism, and active transportation service delivery in the region for residents and visitors based on leading practices for the next 5-10 years. This plan is responsive to:

- Growing popularity and participation in outdoor recreation activities, including recent intensification during the COVID-19 pandemic.
- Population growth and changes in settlement patterns in the region.
- Interest in providing opportunities for active transportation and active lifestyles.
- Provincial interest in planning, formalizing and improving trails on Crown Land.
- Municipal, provincial and federal interest in growing the region's tourism industry.

This master plan provides a unified, common framework to guide decision making about the design, development, enhancement, management, and investment in the trail system in the region over the next 10-15 years. More specifically, the purpose of the plan is to:

- Provide a summary inventory, assessment and classification of the region's existing formal and informal trail system (including non-motorized, motorized, mixed-use and basic water trails), trail infrastructure and key visitor amenities.
- Describe the recreational activities and patterns of use on the existing trail system.
- Provide an objective overview of conditions, sustainability issues, visitor experiences, and management challenges associated with the current trail system.
- Articulate desired outcomes and resource conditions that the region can work cooperatively to achieve.
- Identify priority visitor experience and management issues that should be addressed.
- Consider the region's trail tourism readiness and to identify priority tourism markets and their interests.
- Outline the strategies and actions that can be taken over the next 10 years to improve and manage the system, the visitor experiences it provides, and mitigate impacts to environmental, Indigenous, historic resource and land use values.
- Suggest a framework to improve cooperation and coordination of the region's trails ecosystem.
- Identify a conceptual trail system and priority routes, particularly those connecting the M.D. and City.

The vision and concepts of this initiative are intended to serve as a comprehensive, overarching guide to proactively approach the region's trails in a way that addresses environmental and land management matters, enables active transportation, anticipates and influences changes to recreation and tourism visitation, and positions the region to sustain and capture economic benefits from that visitation.

1.2 PLANNING AREA

The administrative boundary of the M.D. of Bonnyville was used for planning purposes with land under the administration of the M.D. of Bonnyville and the City of Cold Lake being the primary consideration.

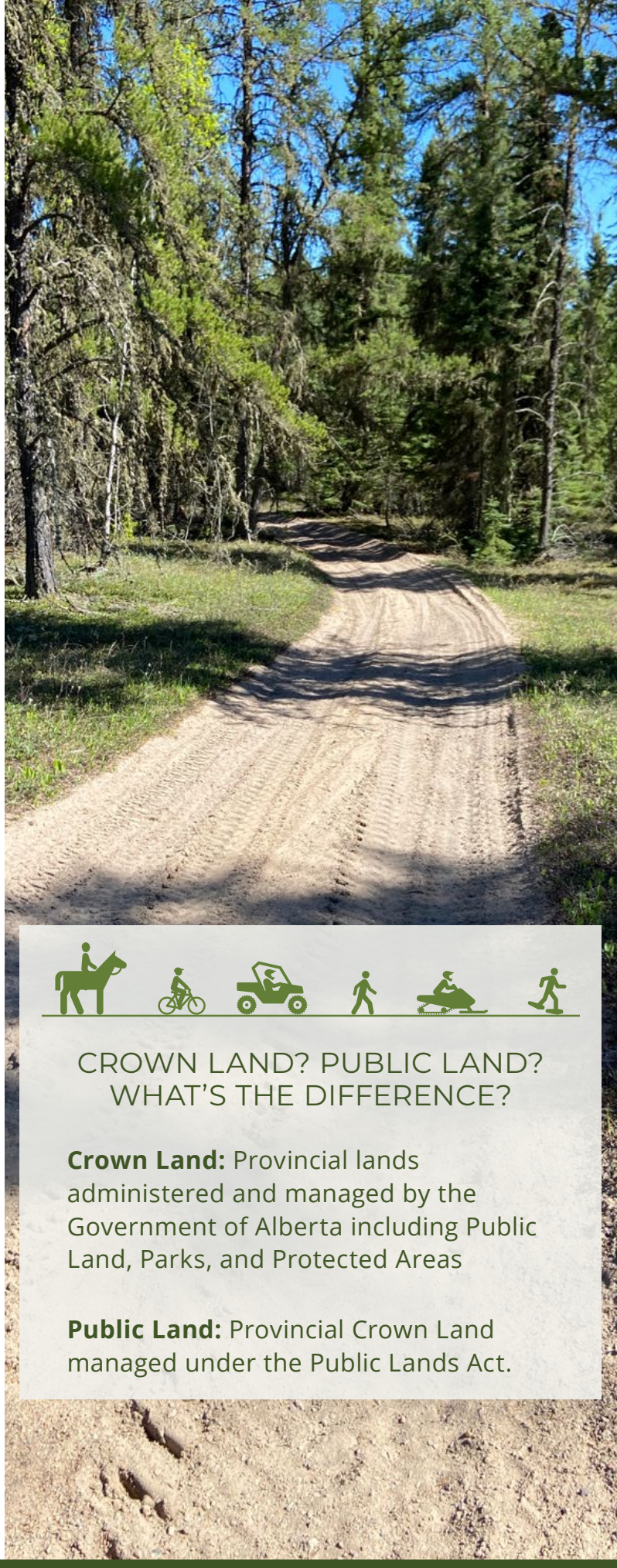
Trail opportunities on Crown Land under provincial administration were also considered because:

- The area's provincial parks, recreation areas, and public land serve as significant destinations for the area's residents and visitors.
- Recent provincial land-use planning initiatives (e.g. Cold Lake Subregional Plan) call for the development of trail plans in the area.
- The recent establishment of the Alberta Trails Act presents new and enhanced opportunities for municipalities and non-profit organizations to collaborate on development and operation of trails on Crown Lands.
- Some of the more pervasive recreation management challenges in the area are occurring at the interfaces between municipal and provincial administrations.
- Several Crown Land areas have significant recreation and tourism value and, when planned for in an integrated approach, could help ensure that their benefits are accessible to the M.D. and City.

Connections to the following lands were considered for connectivity but were out-of-scope for direct inventory, assessment and planning.

- Land administered by First Nations and Métis Settlements
- Private land
- Federal land (e.g. Department of National Defence)

See Figure 1 for an overview of the planning area. The total area of the planning area is 7236.8 km2.



CROWN LAND? PUBLIC LAND? WHAT'S THE DIFFERENCE?

Crown Land: Provincial lands administered and managed by the Government of Alberta including Public Land, Parks, and Protected Areas

Public Land: Provincial Crown Land managed under the Public Lands Act.

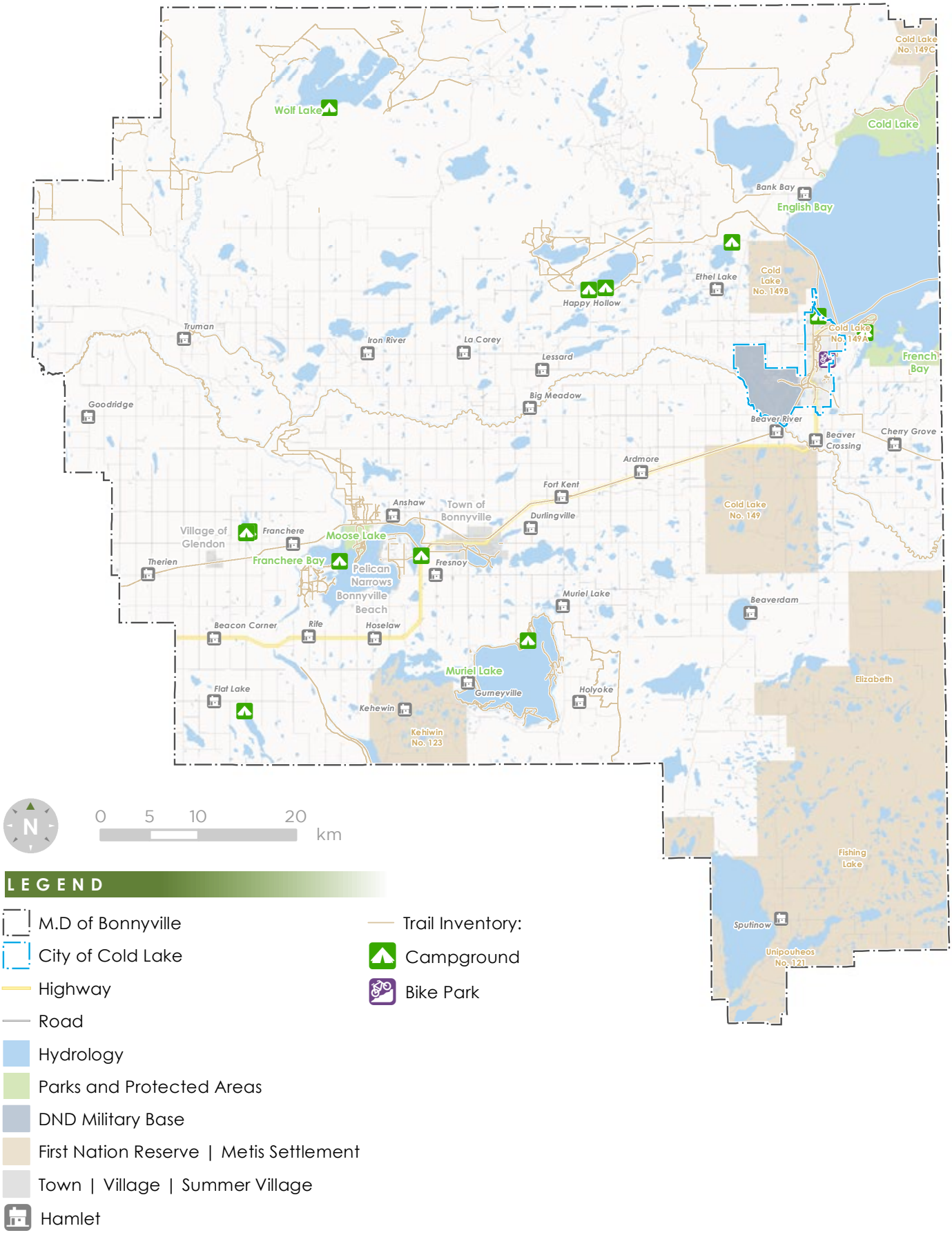


Figure 1: Planning Area Basemap

1.3 HOW WAS THIS PLAN DEVELOPED?

Development of this plan was divided into three phases.

Phase 1

Information & Data Assembly

What?

- Assembly and initial review of policy, procedures, maps, data & related information
- Spatial basemap assembly
- Field assessment & inventory
- Literature review

Why?

- Build spatial, policy and operational understanding of study area

When?

- February – June 2022

Phase 2

Primary Engagement

What?

- Preparation of engagement plans, processes and tools
- Public survey
- Crowd-sourced online mapping
- "Pop-up" trail interviews, kiosks and sounding boards
- Stakeholder interviews
- Indigenous community conversations
- Development and presentation of "What We Heard" report

Why?

- Build understanding of patterns of recreational uses, satisfaction with current opportunities, issues and concerns, and vision for future of trail opportunities
- Summarize learnings and feedback to inform plan development

When?

- July – October 2022

Phase 3

Plan Development

What?

- Detailed review and analysis of available data and information
- Development of key concepts and recommendations
- Development of draft report
- Engagement on draft
- Edits and refinement of draft
- Presentation to counsels

Why?

- Generate and validate strategies and actions
- Consolidate components into single document

When?

- November 2022 – Spring 2023

Figure 2: Plan Development

ENGAGEMENT SUMMARY

A variety of tools were used to gather resident perspective, interests, and suggestions about the region's trails including a detailed public survey, an online crowd-sourced mapping tool, interviews, and pop-up field engagement.

Figure 3: Word Cloud of responses to survey question "What do you like most about area trails?"

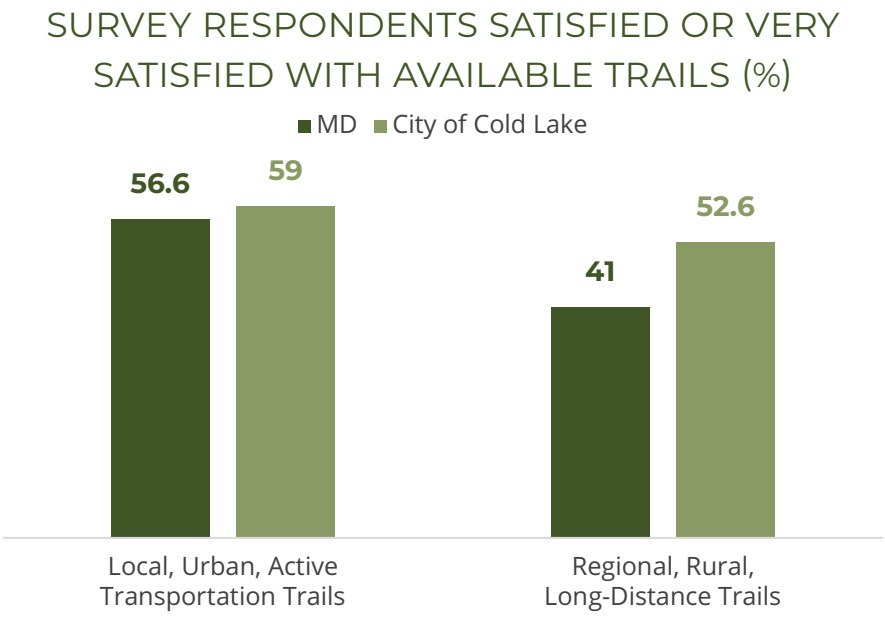


Figure 4: Satisfaction with Available Trails

When responses were aggregated for residents of the M.D. and City, only 57% of respondents indicated they were satisfied or very satisfied with local urban and active transportation trails. Satisfaction rates for regional, rural and long-distance trails was even lower at 47%. (Figure 4)

Collectively, input received affirmed the region's strong interest in a variety of trail activities and in improving opportunities. When summarized, the following themes and priorities emerged. *Please see the project's stand-alone "What We Heard" report for additional detail.*

1. Residents enjoy trails in a range of settings and are interested in continuing to improve **connectivity** of urban, local, rural and long-distance trails.
2. Residents are **somewhat satisfied with local and urban trail efforts**, particularly recently built specialized facilities (e.g. Cold Lake MTB Park) and paved multi-use trails.
3. Residents are **less satisfied with current rural and long-distance trail options** but are proud of the unique opportunities associated with the Iron Horse Trail.
4. Significant interest exists to improve the **quality of trail experiences** for both motorized and non-motorized activities.
5. Respondents indicated that good trails are important contributors to their **quality-of-life** and to the health and vibrancy of their communities.
6. **Safety and security** concerns emerged in some key areas, particularly where motorized and non-motorized activities mixed.
7. **Sustainability** concerns, particularly for water-related impacts, are prevalent in the region and there is strong interest in ensuring that future trails are well-designed.
8. The need for trails and trail users to demonstrate **respect** was heard in several forms, including respect for Indigenous values, for private land, and for how trail users conduct themselves.
9. Orderly investment, effective implementation and community activation are seen as important.
10. As much as possible, **collaboration, partnerships and harmonized approaches** should be considered for planning, developing and operating trails in the region.

1.4 TRAILS CONSIDERED

This plan recognizes that trails can be viewed through recreation, tourism, and active transportation lenses.

To simplify engagement, trails were broadly grouped into three categories when conducting the public survey:

1. **Urban Trails and Active Transportation Trails –** Trails primarily within the region's more densely developed areas.
2. **Rural, Regional and Long-Distance Trails –** Trails in less developed areas.
3. **"Water Trails" –** Routes on rivers and lakes that can be connected by motorized and/or non-motorized watercraft.

Only a fraction of current trails and routes in the region fully conform with the provincially accepted definition of trail (Figure 4). However, as a starting point for this plan, both sanctioned trail and unsanctioned trails (including pre-existing linear industrial access in use for recreation) were inventoried and considered.

Trails used for both non-motorized and motorized activities were in-scope for the project.

Municipal sidewalks and public roadways were out-of-scope unless they were formally included and designated in a trail alignment.

WHAT IS A TRAIL?

A "trail" is type of recreation infrastructure that is purposefully designed, constructed, and used to facilitate travel for one or more recreation or tourism activities.

To be a recognized trail, the route must be:

- Approved by landowner / manager
- Mapped
- Marked (signage)
- Actively managed and maintained

If one or more of the above criteria are missing, the route is not a trail; it is "linear access".

Trail Development Guidelines for Public Lands in Alberta

1.5 ASSUMPTIONS & LIMITATIONS

No trail plan can perfectly anticipate how trail interests, use and other factors will change over time. This plan acknowledges and anticipates the following.

- Worldwide trends and interests in improving connectivity for non-vehicular conveyances will continue and will be mirrored in the region.
- Technology, particularly electrification, will continue to be adopted across all modes of mechanized trail conveyance and new modes of travel will be invented. Implications of this technology will include:
  - » Greater range for trail users
  - » Greater diversity in size, capabilities, specializations and configurations
  - » Potential for higher power and speeds
  - » Potential for decreased noise and emissions
  - » Potential for interest in new and not yet contemplated experiences
  - » Demand that trails and trail services accommodate the changes above.
- Both provincial and federal trail planning, policy and legislative contexts are very active. Both levels of government are likely to continue to show interest in working to develop, build and promote trails for community and tourism benefits. Best efforts were made to identify initiatives likely to have influence on trails and to position this plan to be practical and useful under these initiatives.
- The Government of Alberta will continue to have significant interest in improving trails and trail services and will present opportunities for project partners to be more directly involved and to benefit from trails on Crown Lands.
- Detailed understanding of First Nation and Métis interests and concerns will be needed when considering detail planning, development, and operation of trails. Adjustments may be required to strategies and actions to respond to emergent learnings.

Active transportation is using your own power to get from one place to another. It:

- gives us an opportunity to be physically active on a regular basis
- is accessible to Canadians and increases social exchanges
- reduces road congestion
- contributes to reducing greenhouse gas emissions
- saves money on gas and parking

Government of Canada Active Transportation

Changes in climate can have significant impacts on nearly all aspects of trail design, management and experience. This is especially true for winter trails and associated activities. Trends related to climate should factor into management decisions for regional trails, however this plan does not make specific assumptions or predictions for how a changing climate could affect the region.

Finally, many of the proposed alignments and connections proposed in this document are conceptual only. Additional, detailed study and planning will be required to assess feasibility and determine fine-scale routing.

SECTION 2

BENEFITS OF TRAILS & TRAILS TOURISM

Successful trail destinations demonstrate that trails can be drivers of positive economic, social, and environmental change, particularly for smaller, rural communities. If carefully planned, developed, maintained, and activated, trails can directly benefit residents and be a driver for tourism. Additionally, when planned and delivered collaboratively with Indigenous peoples, trails can also be a venue to support and advance truth and reconciliation, traditional practices and the celebration of Indigenous culture and heritage. Some of the benefits associated with trails are shown in Figure 5.

Environmental

Appropriate and sustainable trails can:

- Function as a powerful, system-level land management tools to influence how and where human disturbance and impact occurs on the landscape (e.g., attract visitors to areas where they are desired and / or by routing visitors out of, off of, or away from sensitive areas or wildlife habitat).
- Solve specific environmental issues (e.g. erosion, sedimentation, invasive species transfer) when tactically implemented with proven design and engineering approaches.
- Foster and enhance the rationale for conservation and preservation of natural assets by increasing the social and economic benefits that rely on the integrity these assets (i.e., attracting sustainable and responsible visitation).
- Nurture and grow a strong culture of conservation, appreciation, and stewardship as residents and visitors learn about and appreciate the wildlife, ecosystems, and ecosystem processes through use of the trail network.

Community, Social, and Cultural

Appropriate and sustainable trails can:

- Help to preserve community heritage as places where stories can be shared and be woven into memorable trail experience as foundational assets.
- Elevate resident's awareness and pride in the community through the sharing of amenities with visitors and the facilitation of quality visitor experiences.
- Provide the setting for community events and for formative family experiences and memories.
- Attract, retain, and even help re-populate communities with residents and skilled workers as new employment becomes available and the potential for an outdoor recreation lifestyle attracts new residents.
- Stimulate investment in community infrastructure, amenities and facilities that benefit both residents and visitors alike.
- Help appropriately showcase and/or protect Indigenous values and heritage.

Quality of Life and Well-Being

Appropriate and sustainable trails can:

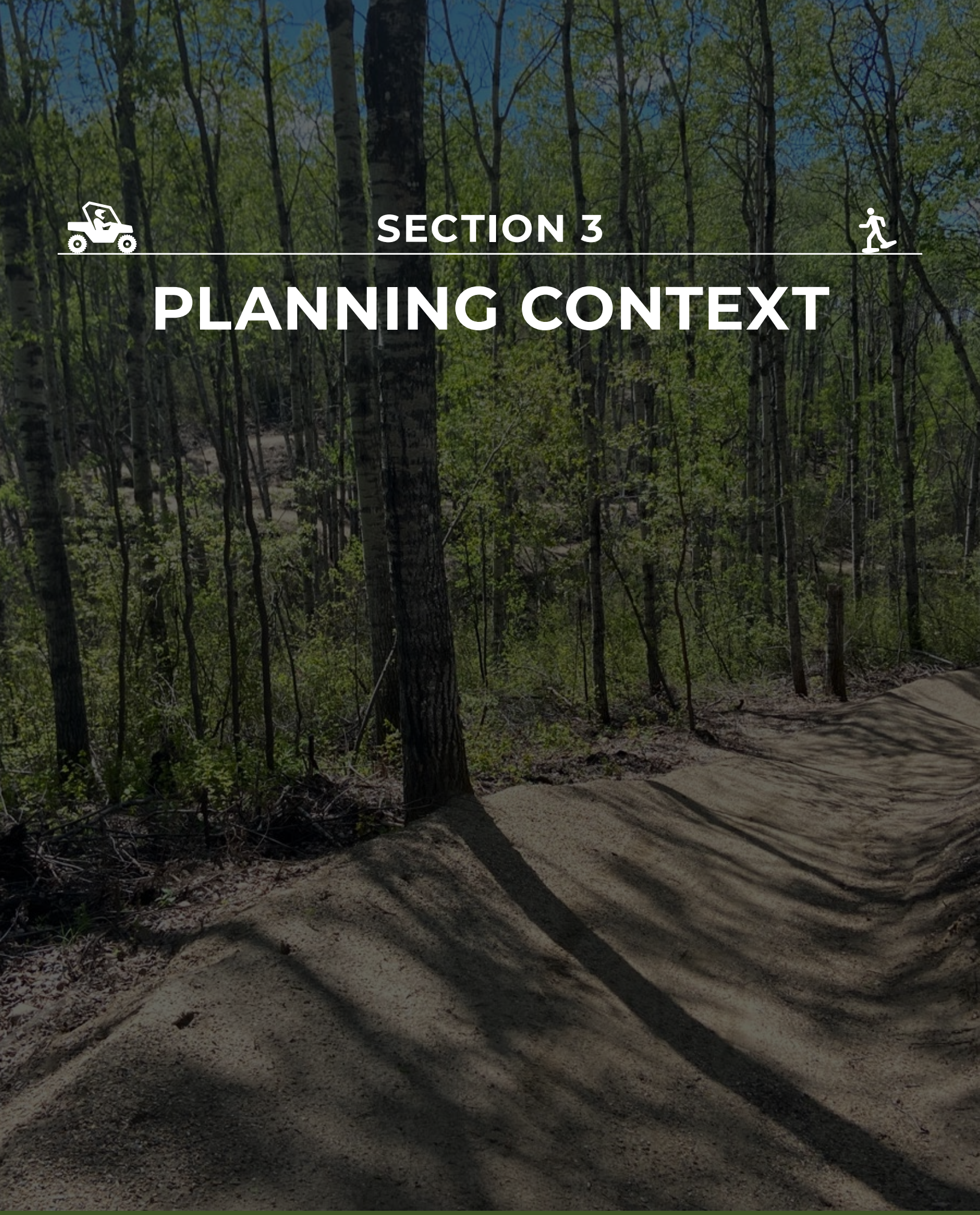
- Encourage greater physical activity and improve physical health.
- Improve mental health.
- Enhance an individuals' sense of achievement, self-esteem, and confidence.

Economic Benefits

Appropriate and sustainable trails can:

- Help diversify local economies (particularly where high reliance on other industries exists and where limited efforts have been made to activate existing outdoor recreation potential).
- Foster conditions where new and existing enterprises can grow and create potential for additional direct and indirect employment as a trails-based visitor economy is established.
- Stimulate increased visitor spending, especially in rural areas with few alternatives.
- Create potential for greater local and provincial taxation revenues.
- Be managed in ways that does not deplete or exhaust associated resources.

Figure 5: Benefits of Trails and Trail Tourism



SECTION 3

PLANNING CONTEXT

The region is a busy and complex mosaic of administrations, land-uses, and initiatives guided by a range of policy, values, and plans that have bearing on trails in the area. The planning, management, and operation of our region's is linked to several other initiatives. The sections below summarize key connections and opportunities.

WHAT IS TOURISM?

Tourism is the activities of people travelling to, and staying in places, outside of their usual environment for leisure, business, or other purposes for not more than one consecutive year.

WHO IS A TOURIST?

Tourists are anyone who stays one or more nights away from home; or anyone who does not overnight but travels at least 40km one way from their home to their destination.

Statistics Canada

3.1 LEGISLATION, POLICY & PLANS

3.1.1 NATIONAL/INTERNATIONAL

At the time of this plan's preparation, several national and international initiatives provide useful guidance (Table 1).

Table 1 Related National/International Initiatives

Initiative	Relevance and Opportunity	How This Plan Aligns
National Active Transportation Strategy (2021-26)	• Promotes integration and implementation of Active Transportation efforts in communities across Canada	• This plan considers and supports related strategies and activities, including suitable alignments and access.
Trans Canada Trail National Guidelines for Classifying Multi-Use Trails in Canada (2021)	• Establishes a common, visitor-centred approach to trail classification and associated design parameters	• Recommendations, classifications, design parameters, and amenity standards of this plan consider and conform to the TCT guidelines.
Trans Canada Trail/ Destination Canada - Exceptional Trail Experiences (ETE) Initiative (2022)	• Establishes a pathway for accessing dedicated tourism development support for unique, high-quality experiences.	• Concepts, terminology, and recommended actions align with potential program requirements. • With effort, some recommended trail experiences could potentially qualify as candidate ETE trails.
Interagency Visitor Use Management Council's Visitor Use Management Framework (US)	• Provides cohesive guidance and planning processes for managing visitor use and impacts. • Used by leading North American agencies to address emergent and persistent visitor use impacts.	• Concepts and language within align with VUMF principles and actions.

While no specific statutes exist at the federal level for developing trails, some legislation such as the federal Fisheries Act, Navigable Waters Act, and the Species at Risk Act have a significant influence on where, when, and how recreation related development and activities can occur.

3.1.2 PROVINCIAL

Alberta municipal governance legislation requires that municipalities adopt intermunicipal planning frameworks and develop individual municipal development plans (M.D.P). Alberta's Guidebook for Preparing a Municipal Development Plan (2018) includes supportive general guidance and beneficial practices to connect residents and amenities using trails safely and efficiently.

In addition, development and management of trails and trail infrastructure affecting Crown land and resources, like other land uses, must be undertaken in accordance with established provincial legislation, regulations, policies, and plans. Key statutes influencing trail development and management in the area include:

- Public Lands Act
  - » Public Land Administration Regulation
  - » Recreation Access Regulation
- Provincial Parks Act
- Land Stewardship Act
- Trails Act
- Water Act & Code of Practice for Watercourse Crossings
- Wildlife Act
- Fisheries Act
- Environmental Protection and Enhancement Act
- Historical Resources Act

Other key provincial initiatives currently influencing trails are outlined in Table 2.

Table 2 Relevant Provincial Initiatives

Initiative	Relevance and Opportunity	How This Plan Aligns
Ministry of Alberta Forestry, Parks and Tourism mandate (2022)	• This new ministry is a significant departure from previous structures, combining forestry, recreation, land management, and tourism responsibilities while transferring environmental management responsibilities to other ministries. • New ministerial mandate identifies clear priorities for developing high-quality outdoor recreation opportunities, including trails.	• Potential sites and areas capable of supporting high-quality trail services are identified. These recommendations are well-positioned for consideration in future GOA trail planning.
Alberta Trails Act	• Will enable trail designation, third-party partnerships, and operating agreements of provincial trails on Public Land. • Is expected to lead to development of clear planning tools and standards. • Funding opportunities may be accessible	• This plan identifies potential sites and areas capable of supporting high-quality trail services. • Proposed strategies and actions in this plan are consistent in approach and terminology,
Travel Alberta Tourism Development Zones (TDZ)	• Much of the area falls within NE Lakeland TDZ (one of 10 priority TDZs in the province). • Some trail experiences within the region are well-positioned to be (or be aligned with) priority initiatives.	• Land and water outdoor recreation and tourism opportunities in this plan can be used to support TDZ recommendations.
Cold Lake Sub-Regional Plan (CLSP)	• The southern boundary of this plan extends into this planning area. • Establishes priority tourism areas and provides guidance on legacy industrial disturbance, unauthorized access and water crossings for public land in region. • Calls for active restoration of legacy seismic lines. • Calls for establishment of a recreation management plan and a trail network. • Lakes within the plan have been ascribed a 200m tourism development zone. • Calls for management of unauthorized human access.	• This plan's recommended strategies and actions pertaining to trails on Crown Land are responsive to environment and management concerns within the plan.
Alberta Parks Master Development Plans (M.D.P)	• Establish infrastructure development priorities for provincial parks and provincial recreation areas in the region. • Articulate recreation and tourism opportunities and priorities.	• While details, priority focuses, and timelines for the area's M.D.P. are not yet available, trail initiatives and infrastructure within provincial parks and recreation areas that could support residents and visitors is identified in this plan.

3.1.3 REGIONAL

The region has a history of initiatives that have guided and supported the development of trails and related infrastructure including those in Table 3.

Table 3 Relevant Regional Initiatives

Initiative	Relevance and Opportunity	How This Plan Aligns
Beaver River Integrated Watershed Management Plan (2022)	• Recommends water and land management practices including watercourse crossings	• This plan's recommendations are generally consistent.
Intermunicipal Development Plan (Draft, 2021)	• Provides opportunity for collaborative linkages and services between the municipalities. • Will help ensure that future subdivisions incorporate right-of-ways.	• This plan identifies priority connectivity alignments between the M.D. and City.
M.D. Bonnyville Recreation Master Plan (2021)	• Identifies trails as a priority infrastructure need.	• This plan considers, supports and fulfills elements of the strategy including classification, standards, routing, connections and other actions.
City of Cold Lake Municipal Development Plan (2021)	• Identifies trail and open-space goals and objectives for city.	• This plan considers, supports and fulfills trail and active transportation objectives related to connectivity, standards and accessibility.
Iron Horse Trail: Master Plan (2020)	• Establishes desired vision, outcomes and priorities for the trail.	• This plan shares, supports and reinforces direction.
M.D. of Bonnyville Trail Masterplan (2019)	• Sets priorities for recent expansion of non-motorized multi-use trails.	• This plan acknowledges and incorporates these trails and their type into classification typology.
Bonnyville/Moose Lake Region Recreation Trails Master Plan (2013)	• Identifies connecting corridors in the immediate area for multi-use non-motorized connection.	• Many of these connections have been built.
Moose Lake Watershed Management Plan (2007)	• Calls for planned and appropriately designed trails in proximity to the lake.	• This plan's strategies and actions align with call for well-situated and well-designed trails.

3.2 INDIGENOUS VALUES AND TRADITIONAL USE

The planning area includes the Cold Lake, Kehiwin and Frog Lake First Nations, as well as the Elizabeth and Fishing Lake Métis Settlements. The area straddles both Treaty 6 and Treaty 10 territory and falls primarily in Métis Nation of Alberta Association Region 2. It has been the traditional home of many Indigenous peoples through the ages and trails here have been used for thousands of years. Many trails continue to be actively used today.

It is acknowledged that trails can create and bring undesirable impacts to sites and areas that hold special significance to Indigenous peoples. Although not formally inventoried in detail as part of this initiative, the strategies and actions contained in this plan should be considered and implemented with the understanding that undesirable impacts to Indigenous values are possible.

Management and development of trails in the area must consider these potential impacts. Trail development processes should actively engage Indigenous interests to avoid and mitigate concerns.

Processes should also explore potential for positive impacts and benefits for Indigenous communities. These can include:

- Acknowledging the land and its Peoples.
- Building awareness and understanding of Indigenous history and values in the area.
- Incorporating strategies and tactics to actively encourage visitor conduct and behaviour that are respectful of values.
- Avoiding areas of concern and reducing other unwanted concerns.
- Integrating aspects of personal and non-personal interpretation related to local Indigenous themes (i.e. sharing of stories).

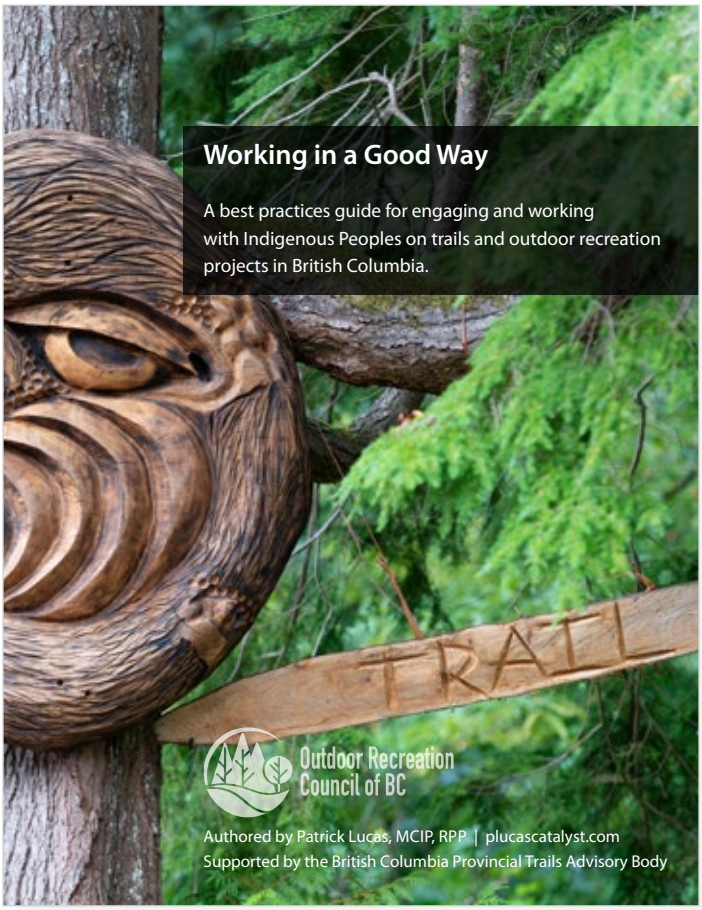


Figure 6: A guide for involving Indigenous Peoples published by the Outdoor Recreation Council of British Columbia.

Done well, trails can help to build and rejuvenate communities. Trail visitation can also be a powerful and effective way of recognizing and communicating the proud and storied histories of local peoples.

3.3 ENVIRONMENTAL VALUES

Like other land-use and recreation planning initiatives that occupy land, environmental values are priority considerations in this document. Trails must be sustainable. Their presence and their use should not unduly impact the area's ecology.

Planning trails requires contextual and detailed information and expertise about local ecological conditions, values, and risks. How and where other environmental considerations such as wildlife and fisheries plans, policies, legislation, and/or regulation intersects with trail development and maintenance must also be understood. Each of these things can shape, limit, direct, and influence trail development.

Moving forward, it is critically important to understand that the trail system that exists today is not necessarily what should exist in the future. The information in the following sections is an overview of key environmental matters associated with the current trails system, including both sanctioned and unsanctioned trails. Recommended strategies and actions presented later in this document are intended to address current realities and issues.

3.3.1 WATER AND THE BEAVER RIVER WATERSHED

The region is known for its water and often referred to as “Lakeland” in promotion, marketing, and planning initiatives. It falls, in its entirety, within the Beaver River Watershed and watershed management is now guided by the Beaver River Integrated Watershed Management Plan (LICA Environmental Stewards, 2022).

In general, the strategies and actions of this plan (Figure 7) are in alignment with this plan, however it should be noted that stringent adherence to the Beaver River plan’s recommendation to use existing linear disturbance is generally not considered a recreation industry best practice for reasons that will be expanded on.

Challenges with water quantity, water quality, and riparian impacts in the area are well-documented for many land-use activities in the region, but are comparatively less well documented for recreational routes in the area. This is particularly true for informal and unmanaged routes and trails outside of the settled areas of the M.D. and City on public land.

It is important that current and future trails are developed and used in ways that minimize or eliminate undesirable impacts to the watershed. Findings and recommendations related to watercourse crossings are also presented later in this document.

KEY TRAIL-RELATED RECOMMENDATIONS FROM THE 2022 BEAVER RIVER INTEGRATED WATERSHED MANAGEMENT PLAN

1. Avoid sensitive & ecologically important species-at-risk and bird habitat, and culturally significant areas.
2. Make use of existing linear disturbance.
3. Have interpretive signage.
4. Be equipped with proper washroom facilities at trailheads and tamper-proof garbage cans.

3.3.2 LINEAR DISTURBANCE AND FOOTPRINT

Recreational activity currently occurs on a combination of sanctioned, purposeful trail as well as unsanctioned linear disturbance such as legacy industrial access, as well as on user-created "social" trails. These alignments are not sanctioned, built, maintained, or intended for recreational travel and caution should be exercised when considering them for ongoing use. However, routes that are used regularly for recreational purposes should be considered when gauging the region's current overall recreational footprint.

> *"While some legacy seismic lines provide access routes for Indigenous peoples, hunters, trappers, recreationists, and commercial users of wildlife, the vast majority of these areas are not used for access."*
>
> *Cold Lake Subregional Plan*

The total footprint of trail and linear footprint known to be travelled routinely for recreation purposes, including some of which is adjacent to roads, is shown in Figure 7. It is likely that the amount of Undetermined/Unsanctioned trail and linear disturbance is underestimated as there are several other areas in the region may experience use (e.g. periodic use of OHVs for hunting).

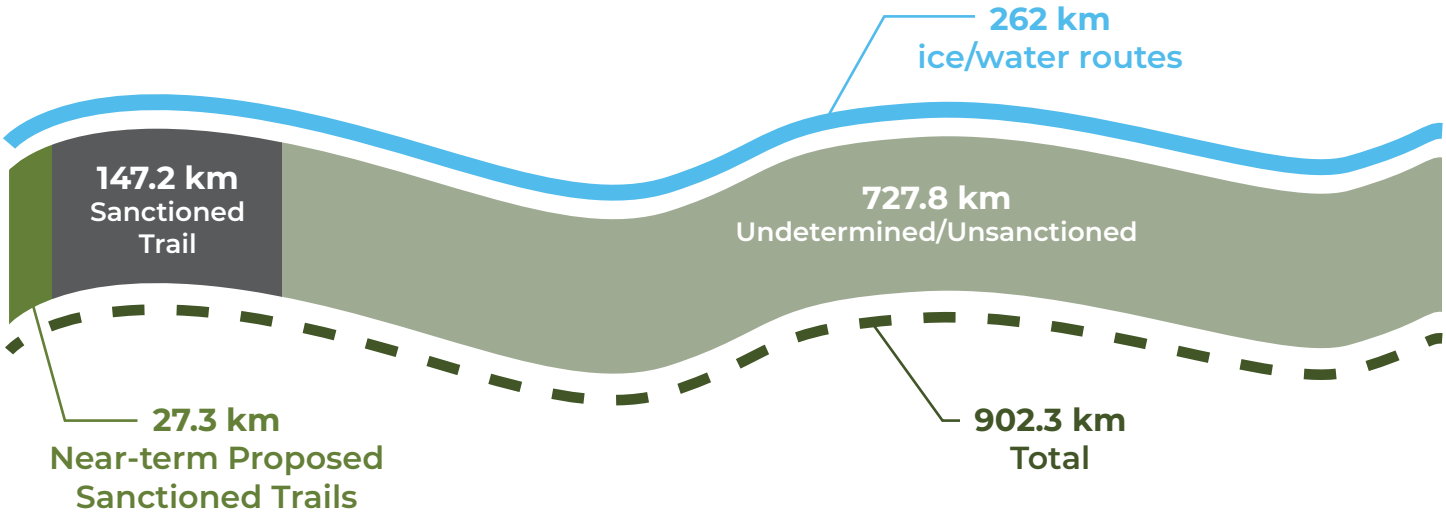


Figure 7: Trail Footprint by Sanction

For comparison, spatial analysis suggests there are an estimated 6750 km of roads, highways, streets and driveways in the region.

The Cold Lake Subregional Plan calls for active restoration of legacy seismic lines within Caribou range, but it does allow for the inclusion of seismic lines suitable for trail use into the area's trail plan. For future detailed planning, in the region's north, this recommendation will need to be actively considered and reconciled with the BRIWMP's recommendation to utilize existing industrial disturbance. These two recommendations are somewhat at odds with each other. In general, due to exceptionally poor visitor experience and environmental outcomes, the use of industrial disturbance for recreational purposes is often not successful and is generally not considered to be an industry-leading practice (see examples in Figure 8 and Figure 9). However, with appropriate measures, it is possible that some existing linear disturbance can be improved and upgraded to enable recreational use, such as the alignment shown in Figure 10.

Figure 8: Typical cupped and failing seismic line following recreational use

Figure 9: Typical cupped and failing seismic line following recreational use

Figure 10: Effort to repurpose industrial disturbance for recreational use

3.3.3 WILDLIFE, ECOSYSTEMS AND INVASIVE SPECIES

Poorly planned, designed, constructed, and/or managed trails and trail infrastructure can lead to a wide range of undesirable impacts on wildlife and plants, as well as their habitats and their ecosystem services. Uninformed, uncaring, unskilled, and irresponsible visitor behaviours can exacerbate these undesirable environmental impacts.

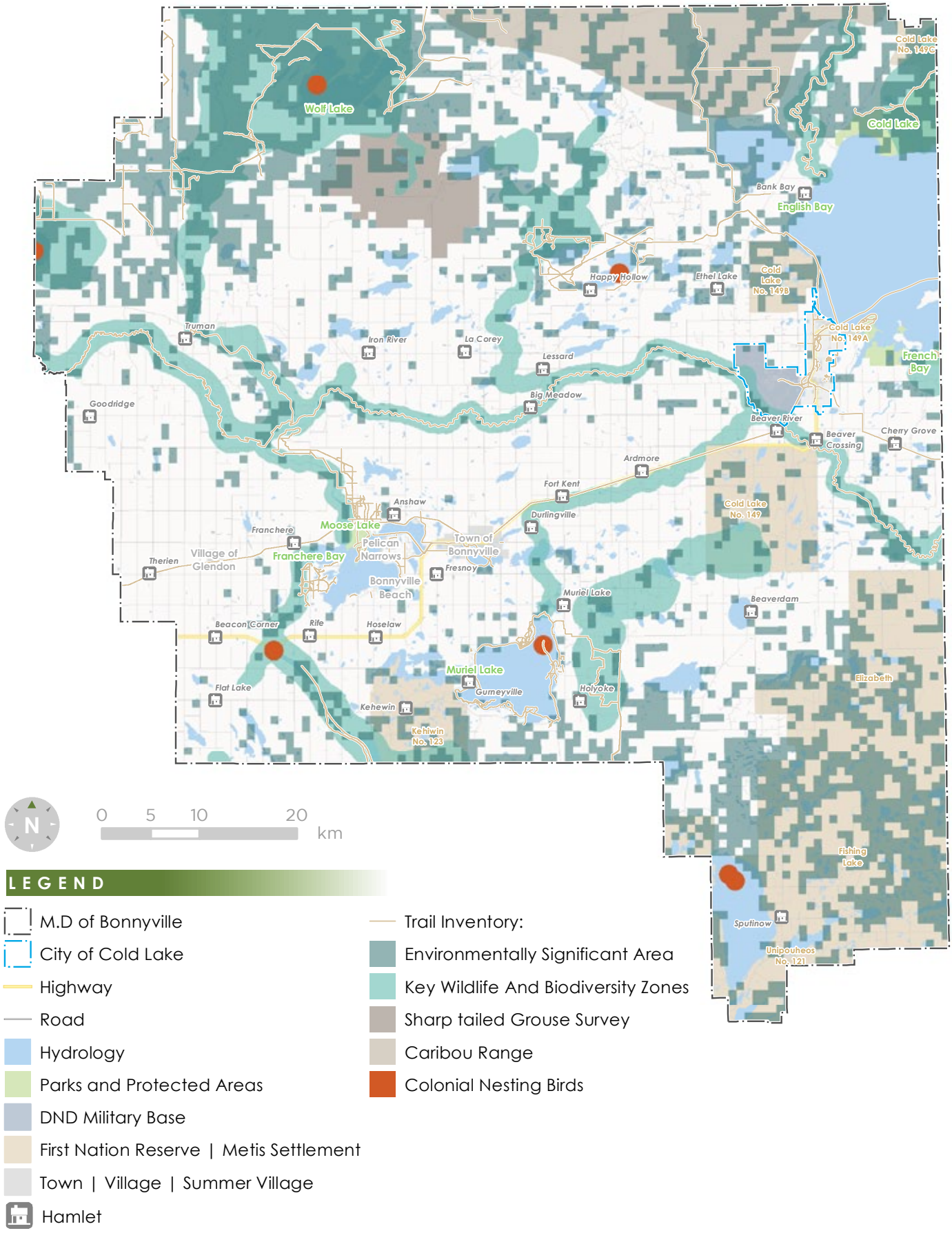
Recreation has the potential to impact wildlife including their behaviours, movement patterns, and mortality. Irresponsible recreational use can result in the habituation of wildlife and alteration of natural behaviours (e.g. food conditioning).

Recreation can disturb wildlife during their normal patterns, resulting in increases in stress responses and hormones. In other cases, recreation activity can displace wildlife, forcing them to relocate from preferred or more optimal habitats and food sources to less preferred and optimal areas. Displacement also increases energy consumption which can be particularly problematic in sensitive seasons such as winter, when access to food is challenging, or during birthing and rearing periods.

In worst case scenarios, recreation can result in the direct mortality of wildlife. While trails can facilitate the movements of some species, they can fragment habitat which is problematic for some large mammal species that depend on large intact habitats (e.g. grizzly bears) or are wary of crossing openings. Trails can make it easier for predators to hunt along long corridors with good sightlines, and they also make it easier for humans to hunt wildlife – all of which can increase wildlife mortality.

Forest openings created by trails can result in microclimatic changes (e.g. increased sunlight, increased rainfall due to reduced canopy interception, increased wind, decreased humidity, altered temperature regime, etc.) that can affect the site composition of plant species and wildlife, such as decreased nesting, altered bird species composition, and increased predation. Trails can both facilitate the movement of wildlife and impede the movement and dispersal of animals that are reluctant to cross openings.

While research shows that some wildlife can adapt to well planned trails and effectively managed visitation, predictability of the visitation, including the spatial distribution and timing, are necessary for these adaptations.



LEGEND

- M.D of Bonnyville
- City of Cold Lake
- Highway
- Road
- Hydrology
- Parks and Protected Areas
- DND Military Base
- First Nation Reserve | Metis Settlement
- Town | Village | Summer Village
- Hamlet
- Trail Inventory:
- Environmentally Significant Area
- Key Wildlife And Biodiversity Zones
- Sharp tailed Grouse Survey
- Caribou Range
- Colonial Nesting Birds

Figure 11: Key Environmental Values

Few environmental concerns were directly observed with trails under M.D. and City administration and management. However, recreation impacts were commonly observed and reported in the broader region, particularly on public land. These included:

- Wildlife disturbance and displacement due to human presence and noise.
- Wildlife predation and mortality made possible by easy predator movement on trails and linear disturbance (e.g. wolf predation on snowmobile-packed seismic lines).
- Fish mortality and sediment loading in fish bearing watercourses and spawning areas caused by inappropriate watercourse crossings and trail erosion. (Figure 19)
- Human-wildlife friction and conflict (e.g. wildlife attractants, surprising wildlife).
- Vegetation damage, removal and trampling from unsanctioned activities (e.g. unsanctioned trail construction, campfires, off-trail travel, building of structures, prolonged camping), especially in sensitive riparian areas. (Figure 14, Figure 15, Figure 16, Figure 17, and Figure 18)
- Soil compaction and erosion from poorly situated or maintained trails, off-trail travel, and random camping. (Figure 13)
- Water contamination (e.g. lubricants, human waste).
- Introduction and transport of invasive plant and aquatic species.
- Introduction and spread of disease (e.g. from domestic animals).
- Wildfire risk due to inappropriate fire placement / attendance / extinguishment / abandonment, fireworks and non-compliant OHV exhaust systems.
- Dumping or abandonment of garbage and refuse. (Figure 12)

It is also important to note that existing trail alignments in the region intersect with Caribou range and other known environmental values (Figure 11).

Figure 12: Dumped household refuse (SW Muriel Lake)

Figure 13: Trail building and vegetation removal (south of Muriel Lake)

Figure 14: Unauthorized structure (Tucker Lake)

Figure 15: Vegetative trampling and compaction; early stages (north Tucker Lake)

Figure 16: Vegetative trampling and compaction; advanced stages (west Tucker Lake)

Figure 17: Vegetation removal and storage of private property adjacent to lakeshore and informal trail (Muriel Lake)

Figure 18: Vegetative trampling (West Muriel Lake)

Figure 19: Crossing of fish bearing/ spawning stream (Muriel Lake)

3.4 HISTORIC RESOURCES

A historic resource is any work of nature or of humans that is primarily of value for its palaeontological, archaeological, prehistoric, historic, cultural, natural, scientific, or esthetic interest including, but not limited to, a palaeontological, archaeological, prehistoric, historic, or natural site, structure, or object. Historic resources in Alberta fall into one of four categories:


Archaeological sites


Palaeontological sites


Indigenous traditional use sites of a historic resource nature


Historic buildings and other structures

Historic resources are protected and governed by the *Historic Resource Act* (HRA). Trail development, maintenance, visitation, and use have the potential to negatively impact historic resources including potential:

- Destruction or damage during construction or maintenance (e.g. dirt moving, tree removal etc.)
- Theft
- Defacement or vandalism

Historic resources must be proactively considered in trail planning and design, construction, maintenance, and visitor management. While the "Listing of Historic Resources: Instructions for Use" bulletin does not specifically identify trail development as an activity, most related groundwork in areas with known (or high potential of) historical resources will require HRA approvals and, potentially, a Historic Resources Impact Assessment before work can commence.

Table 4 Historical Resource Values

HRV by Category	Total Area (km^2)	% Of Study Area
1	**0.67**	**0.01**
	0.67	0.01
3	**0.33**	**0.00**
	0.33	0.00
4	**148.77**	**2.06**
	21.28	0.29
	8.92	0.12
	0.16	0.00
	117.09	1.62
	0.32	0.00
	1.00	0.01
5	**745.74**	**10.30**
	432.75	5.98
	0.35	0.00
	198.86	2.75
	2.79	0.04
	110.99	1.53
Grand Total	**1791.02**	**24.75**

 - archaeological
 - palaeontological
 – cultural
 – historic period

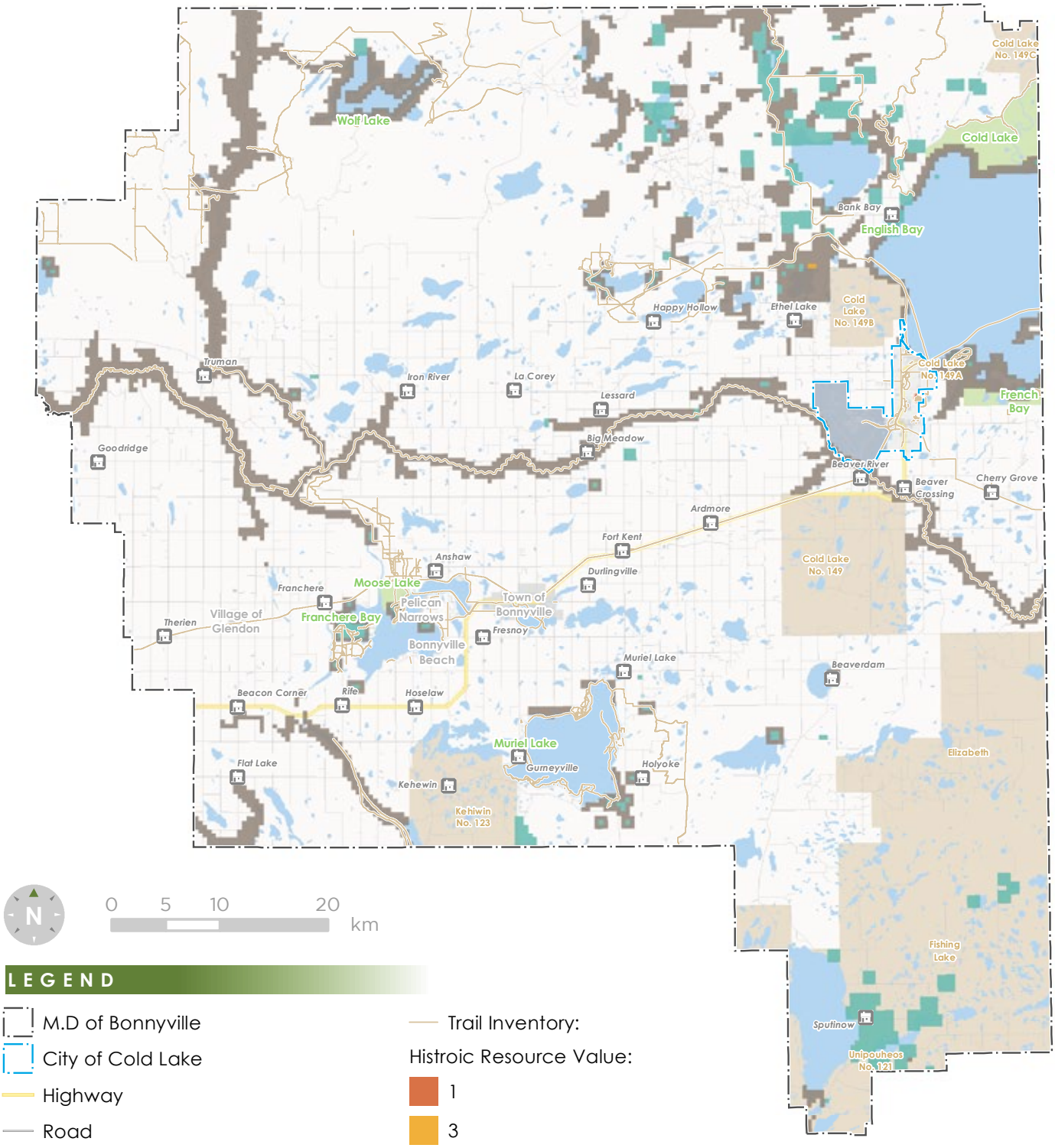


Figure 20: Historic Resources

The provincial “Listing of Historic Resources” identifies lands that are known to contain or have a high potential to contain historic resources and assigns a historic resource value (HRV) to the lands. The listing also identifies the primary historic resource category of concern (archaeological, cultural, geological, historic period, natural, palaeontological). As illustrated in Table 4 and Figure 20.

- 0.01% of the planning area is rated as HRV 1 – Land contains a World Heritage Site or Provincial Historic Resource.
- 0.33% of the planning area is rated as HRV 3 – Land contains a significant historic resource that likely require avoidance.
- 2.06% of the planning area is rated as HRV 4 – Land contains historic resource that may require avoidance.
- 10.30% of the planning area is rated as HRV 5 – Land has a high potential to contain a historic resource.

3.5 LAND OWNERSHIP & USE

Detailed land ownership data was not available for this project, but a partial summary of land ownership and the relative amounts of existing trail on these lands is summarized below in Table 5.

Table 5 Land Ownership and Trails (*Detailed land ownership data was unavailable)

	Relative Amount of Inventoried Trail by Land Ownership	
	Length	Percentage
City of Cold Lake	64.8	6%
M.D. of Bonnyville	16.9	1%
Villages	1.6	0%
Summer Villages	0.1	0%
First Nations	0.0	0%
Métis Settlements	0.0	0%
GOA (Provincial Parks)	30.7	3%
GOA (Provincial Recreation Area)	4.7	0%
Federal Department of Defence	6.2	1%
Other*(including GOA Public Land, NE Muni-Corr, MD, private)	~1040	~90%

3.6 PUBLIC LAND USE

A significant portion of the planning area is provincially administered public land, including areas deemed suitable for recreation and tourism development. Much of the area's public land, however, is already allocated, is used intensively for a range of purposes, and is subject to existing agreements and dispositions. All future trail development in these areas must consider and integrate with these existing land uses. Complete data was not available to support a spatial analysis of the study area for dispositions by industrial, commercial, agricultural, and recreational type, but existing footprints of both industrial and agricultural land allocations is extensive. The region's dense pipeline development footprint, for example, is illustrated in Figure 21.

The following important Crown Land management considerations are outlined in Figure 22 and Table 6.

Forest Protection Area – This area is provincially monitored and actioned for wildfire control.

Crown Land Reservations – These designations are assigned to identify and provide notice to users that a specified management intent, as supported by policy and government programs, applies to a parcel of Crown land. Trail planning, development and management decisions need to be aware of and integrate with the direction established in crown land reservations.

Recreation/Tourism Areas - These areas represent 200m buffers around the major lakes in the planning area that are identified in the Cold Lake Subregional Plan (CLSP) that are prioritized for recreation and tourism outcomes. Very little purpose-built recreation and tourism infrastructure currently exists in these areas, and it should be noted that many existing dispositions (e.g. industrial, grazing) also exist there. The CLSP outlines general requirements for some of these land uses to be compatible with recreation and tourism objectives in these areas.

Table 6 Crown Land Management Considerations

Crown Land Reservation Type	Area (km^2)	% of Area
Forest Protection Area (Provincial wildfire control)	3204	44%
Crown Land Reservation	1934	27%
Cold Lake Subregional Plan Tourism Areas	994	14%

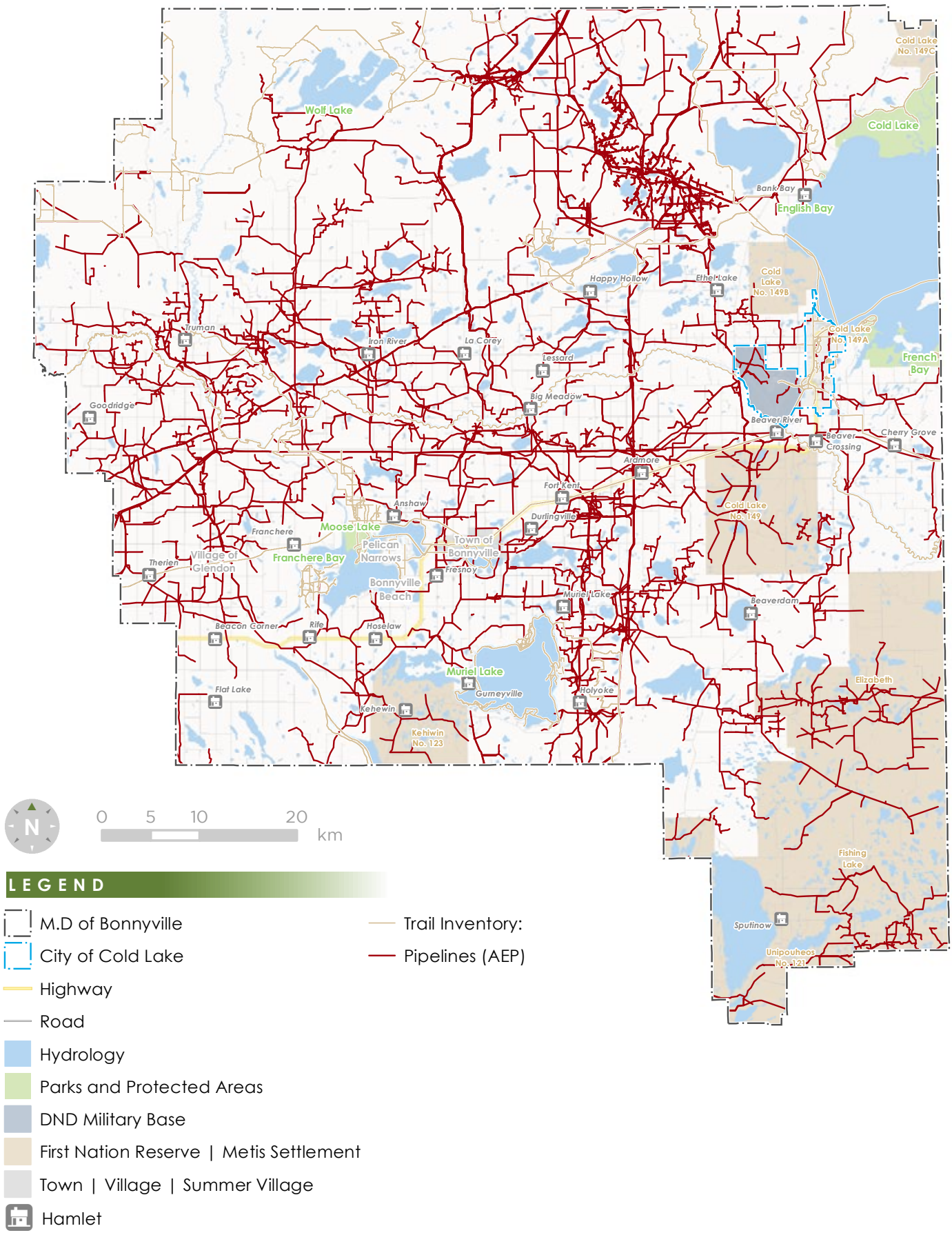


Figure 21: Regional Pipeline Development

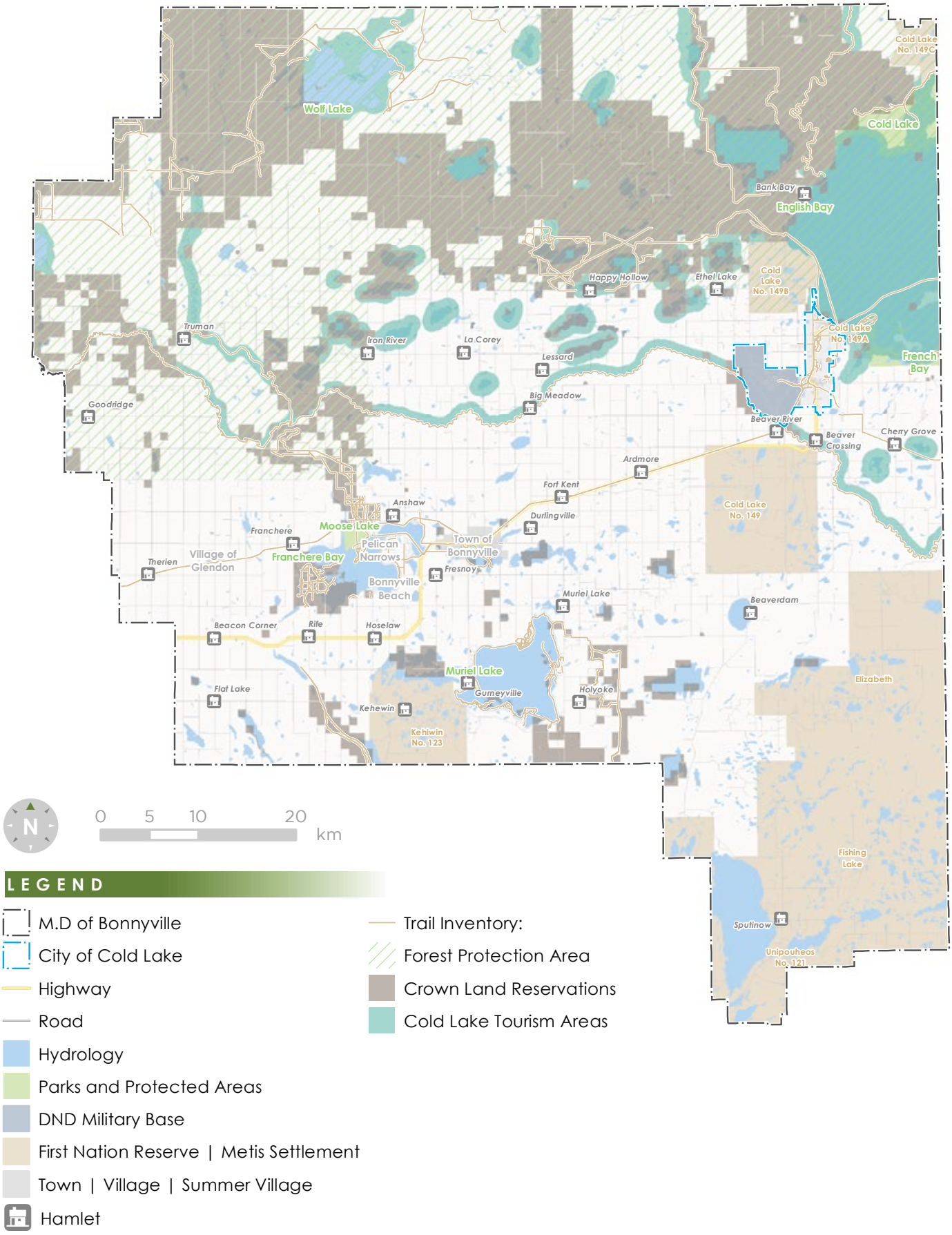
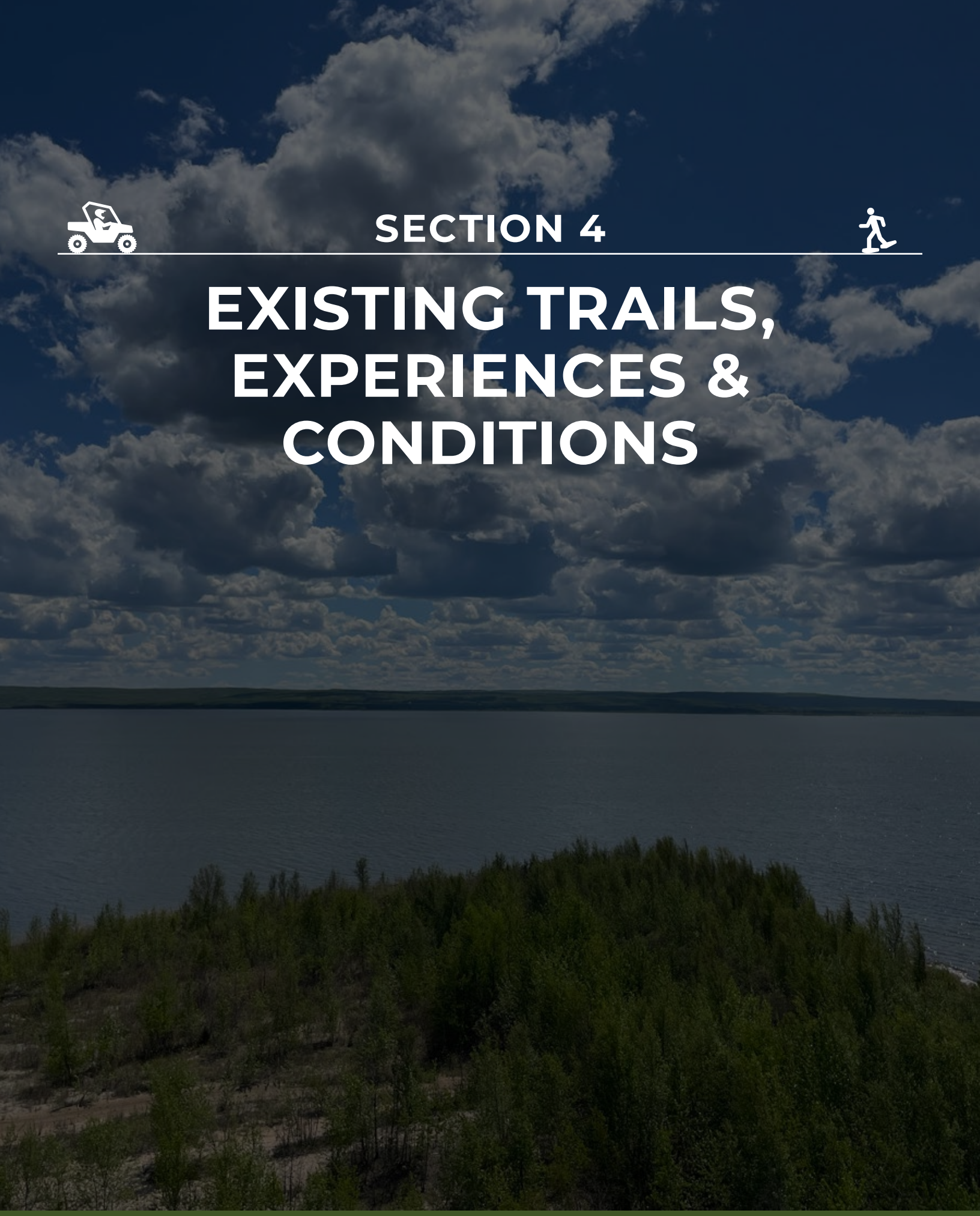


Figure 22: Crown Land Management Considerations



SECTION 4

EXISTING TRAILS, EXPERIENCES & CONDITIONS

Planning for the future of trails in the region requires a good understanding of the current supply of trails, available trail experiences, trail conditions, and the amenities that are available to support trail visitation.

To date, the region has lacked a single, consistent inventory and classification of trails. As a starting inventory for this initiative, trail data was compiled and then merged into a single inventory to understand the availability of trail experiences and amenities, and to provide a reasonably accurate understanding of the current conditions and management issues associated with the trail system.

While a full, detailed assessment of the full length of every trail was beyond the scope of this project, the consulting team traveled extensively through the area and assessed representative segments of each localized trail network. Although the inventory can be considered relatively complete, some trails and routes in the region may have been missed and should be considered in future trail planning initiatives.

The assessment was conducted in the summer months and provided a good understanding of the physical surface conditions of the trails, patterns of use, and how recreation was impacting local ecology at these times. It should be acknowledged, however, that the team's understanding of the conditions of trails during winter months is based primarily on input received from others.

Table 7

Inventory Approach	Primary Sources / Methodology
1. Spatial data research and assembly	• City of Cold Lake • M.D. of Bonnyville • Government of Alberta • Iron Horse Trail • Alberta TrailNet • Popular trail apps (e.g. AllTrails, Strava, Gaia, FatMap, Trailforks)
2. Non-digital research and digitization	• M.D. of Bonnyville • Government of Alberta • Local trail websites and social media • Provincial recreation organization websites
3. Field Inventory and Assessment	• On-ground assessment and verification (June – July 2022)
4. Crowd-Sourced Information	• Trails and connections identified from the project's interviews, public survey, and online mapping tools.

4.1 DEMAND, ACTIVITIES, TRENDS & VISITATION PATTERNS

The region's trails support a broad range of activities throughout the year.

4.1.1 VISITATION AND USE

Limited objective trail use information (e.g. trail counter data) is available to accurately support detailed trail-use analysis in the area, but many trails see significant use by both residents and tourists. The project's engagement efforts and analysis of trail platform data (e.g. Strava, GAIA) suggests that, in general:

- OHV use is very prevalent throughout the region.
- Summer OHV use is primarily concentrated on the Iron Horse Trail and in informal sandy jackpine areas, selected long-distance routes, the Cold Lake MX track, the shoreline of some lakes, and near populated areas.
- Winter snowmobiling is more dispersed than summer OHV use and includes several long-distance and over-ice routes.
- Non-motorized, self-propelled activities are popular, but are generally confined to the developed trails classified for non-motorized use near settled areas, specialized/optimized areas, and provincial parks.
- Popular summer terrestrial activities include hiking / walking and cycling, as well as some equestrian use.
- Electrified conveyances (e.g. e-bikes) are growing in popularity.
- Both walking and cross-country skiing are popular in winter but are also confined to specialized/ optimized non-motorized areas.
- Informal paddling occurs on the Sand and Beaver rivers, as well as on several lakes.

Survey respondents indicated a preference for separation of motorized and non-motorized use, with only 30% of participants strongly or somewhat agreeing to the statement "Motorized and non-motorized trail activities should use the same trails".

Popular trails in the area, as identified in the public survey and from online platforms, are outlined in Table 8.

Table 8 Popular Trails and Networks

Inventory Approach	Primary Sources / Methodology
City of Cold Lake	• City urban trails (e.g. Millenium trail, Kinosoo Beach waterfront) • Cold Lake MTB Park • Mason Watt Memorial Raceway (operated by Cold Lake Motocross Club)
M.D. of Bonnyville	• Moose Lake/ Vezeau Beach • Muriel Lake M.D. Park • Hamlet of Ardmore
Government of Alberta (Parks)	• Cold Lake Provincial Park • Moose Lake Provincial Park
Government of Alberta (Public Land; undesignated)	• Tucker/Crane lakes area • African Lake • Cold Lake area snowmobile trails (maintained by Cold Lake Snowmobile Club) • Bonnyville area snowmobile trails (maintained by Bonnyville Snowdusters club) • Moose Lake area (north, east) • Borque Lake area • Marie/May lakes area • Wolf Lake area • Beaver River
Northeast Muni-Corr (and partners)	• Iron Horse Trail
Other	• Town of Bonnyville trails; CFB Cold Lake trails (formal and informal)

Survey participants showed strong interests in motorized and non-motorized trail activities in both summer and winter activities.

Most Popular Activities in Warmer Months

1. Walking / hiking
2. Cycling: Road or Leisure
3. Nature / wildlife viewing (accessed by trails)
4. Jogging / running
5. Swimming or beach activities (accessed by trails)
6. Cycling: Mountain Biking / Fat-Biking
7. OHV: Quad/ATV
8. Motorized boating (water routes)
9. Non-motorized boating: Paddling (water routes)
10. Camping (accessed by trails or to use trails)
11. Picnicking (accessed by trails)
12. OHV: Dirt biking/ Off-road / dual-purpose motorcycling
13. Fishing (accessed by trails)
14. OHV: Side-by-Side (SxS)
15. Cycling: E-biking
16. Hunting (accessed by trails)
17. Non-motorized boating: Sailing (water routes)
18. 4x4 / Truck Use
19. Small-wheeled transport (e.g. skateboard, kick scooter)
20. Special events (e.g. rallies, races on trails)
21. Horseback riding

Most Popular Activities in Colder, Snowy Months

1. Walking / hiking
2. Nature / wildlife viewing (accessed by trails)
3. Fishing / Ice Fishing (accessed by trails)
4. Snowshoeing
5. Nordic Skiing / Touring
6. OHV: Quad/ATV
7. Jogging / running
8. Hunting (accessed by trails)
9. Picnicking (accessed by trails)
10. OHV: Snowmobile
11. 4x4 / Truck Use
12. OHV: Side-by-Side (SxS)
13. Special events (e.g. rallies, races on trails)
14. Cycling: Mountain Biking / Fat-Biking
15. Camping (accessed by trails or to use trails)
16. Cycling: Road or Leisure
17. OHV: Dirt biking / Tracked motorcycle
18. Horse drawn sleighs
19. Dogsledding
20. Horseback riding
21. Cycling: E-biking

Figure 23: Most Popular Activities

Survey respondents indicated that they use trails for a range of reasons (Figure 24), that they preferred easy "green" and intermediate "blue" trails (Figure 25), and they appreciate trails in a variety of settings (Figure 26).

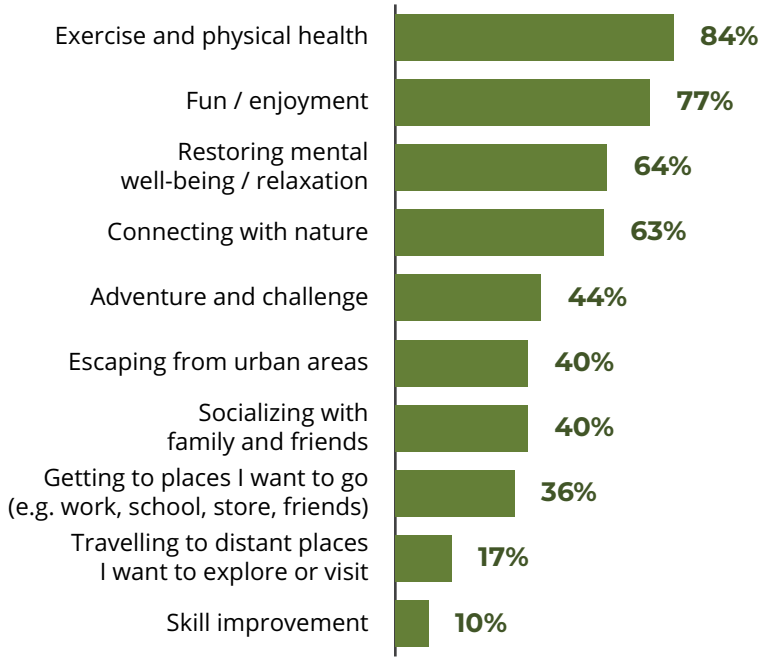


Figure 24: Reasons for Using Trails

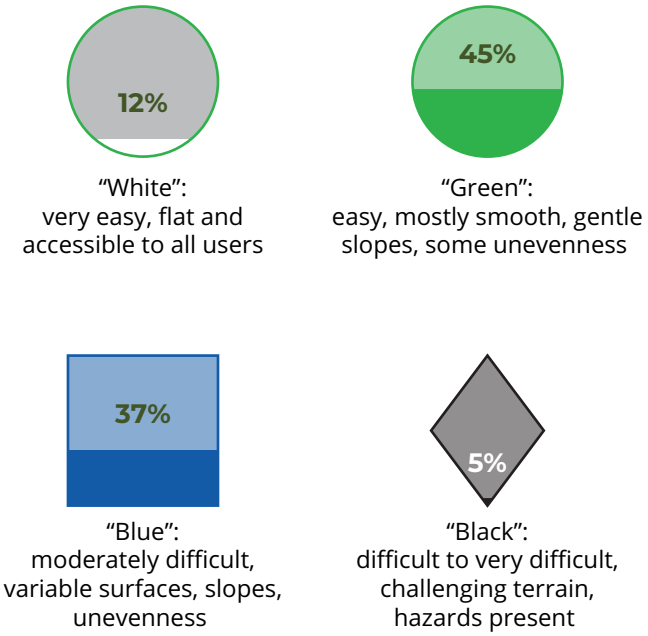


Figure 25: Preferred Trail Difficulty

51%
Backcountry (I/II): wilderness setting with few to no people, no motorized vehicles, very little trail infrastructure

58%
Mid-country (III/IV): wooded or natural setting with little infrastructure, but where motorized machines are present

58%
Front-country (IV/V): rural or wooded setting where some residences, roads and infrastructure is present

40%
Developed (VI): greenery is present among roads, buildings and human infrastructure

Figure 26: Preferred Trail Settings

4.1.2 TRAIL-BASE EVENTS AND PROGRAMMING

Trail-based events can help build community, attract visitors, and catalyze economic activity (e.g. incite demand for accommodation, food, beverages, and other services). Similarly, trails used for programming (like other recreation infrastructure like pools and arenas) can provide a broad range of individual, family, and community benefits.

In addition to informal groups and meet-ups, some of the events and programming known to be occurring in the region are shown in Table 9.

Table 9 Examples of Trail Related Programming and Events

	Warmer Months	Colder Months
Non-motorized Programming & Events	• School programming (Cold Lake MTB Park; Muriel M.D. Park trails; Bonnyville town trails; M.D. trails; Cold Lake town trails; Glendon trail) • Cold Lake MTB programming	• School programming (Muriel M.D. Park trails) • Bonnyville Nordic Ski Club programming and events (Muriel M.D. Park trails, Moose Lake Provincial Park, Jessie Lake Park)
Motorized Programming & Events	• Cold Lake Motocross Club races and events • 4 Wing MFRCS Quad Poker Rally	• Bonnyville Snowdusters programming • Cold Lake Snowmobile Club programming

M.D. Bonnyville

4.2 EXISTING TRAIL SUPPLY

At a fundamental level, a trail experience can be thought of as the ability for visitors to participate in their preferred activity, at their preferred difficulty level, within their preferred recreation setting, in their preferred natural region. (Figure 27)

As example, a flat dry and dusty beginner level OHV experience in the grasslands is a much different experience than a slow, rugged, chunky, and off-cambered OHV experience in mountainous terrain. Both are different from a quiet, narrow, rolling, and secluded path through the foothills that a birding enthusiast might want to hike on.

Understanding that different experiences are likely to attract different user interests is a powerful starting point for understanding the "supply side" of recreation management.

These fundamental experiential factors were cross-referenced against the inventory of trails in the region to create a starting picture of the region's current "Supply of Trail Experiences".

With knowledge and understanding of trail supply, existing trail experiences can be assessed for future management, development, or reclamation based on sustainability, environmental impacts, risks to human safety, as well as the needs and demands for front-country and backcountry recreational opportunities for desired enthusiasts in the future. This supply of trail experiences can, and should, change over time to align with demand.

The region's trails and linear access being used for recreation activities were also partially classified and inventoried using the existing Government of Alberta Trail Classification System (Figure 28).

Figure 27: Trail Experience Factors

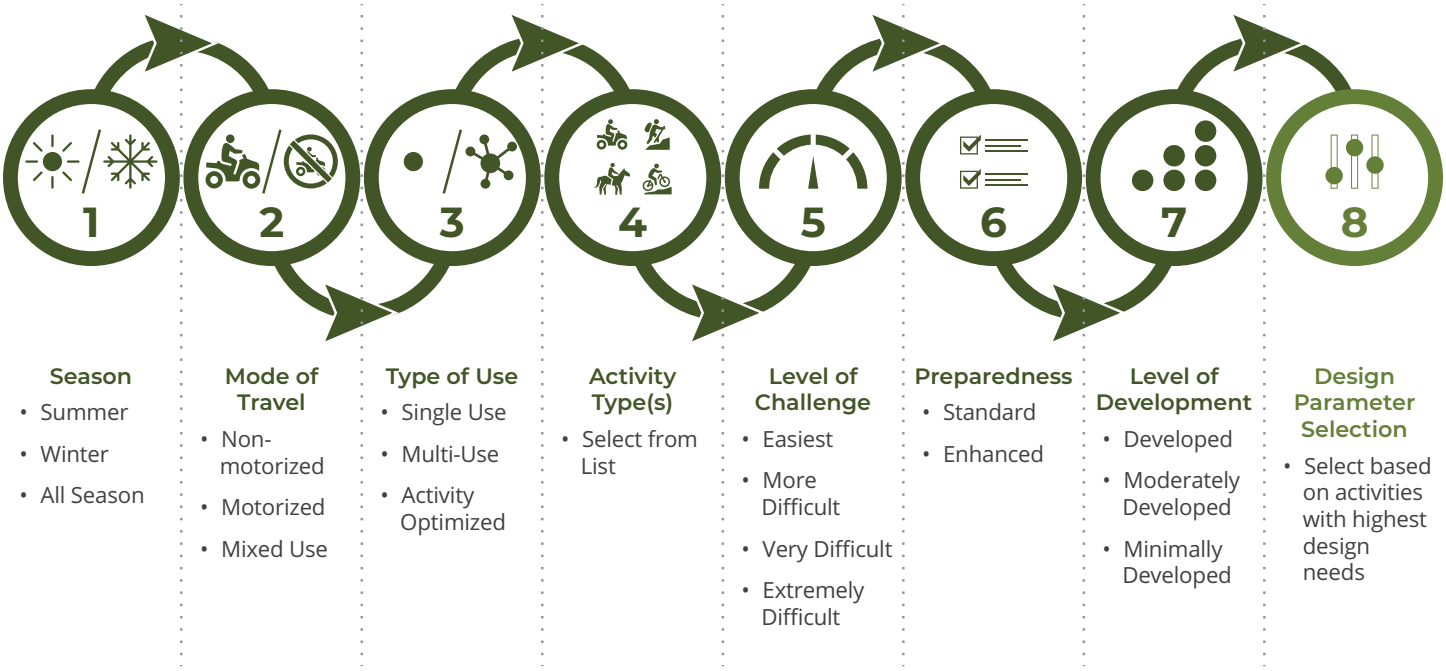


Figure 28: Trail Classification - Excerpt from AEP Trail Development Guidelines for Public Lands (Alberta Environment and Parks, 2019)

The sections below summarize some key trail supply findings.

4.2.1 TOP-LINE SUPPLY

The area has at least 902km of terrestrial trail and linear access in use for recreational purposes. Of this, only about 10% is confirmed to be sanctioned and actively managed.

Table 10

Trails and Linear Disturbance By Sanction	Distance (km)
Proposed Trails (near-term builds)	27.3
Sanctioned Trail	147.2
Undetermined/Unsanctioned	727.8
Total Terrestrial Trail	**902.3**
Routes on water/ice	262.2
Grand Total	**1164.5**

Only about 10% of the region's trails in use are sanctioned and actively managed.

Most are informal, undesignated, and not actively managed.

4.2.2 BY PERMITTED ACTIVITY TYPE

With the exception of some road right-of-way connections, most designated trails under M.D. and City administration do not permit motorized OHVs and snowmobiles and are, therefore, considered non-motorized trails.

The mixed-use segments of the Iron Horse Trail in the region allow both non-motorized use and some types of motorized travel (e.g. OHV and snowmobile), but exclude all motorized vehicles licensed for highway use, including dual-purpose motorcycles.

All current trails within the region's provincial parks and recreation areas are considered non-motorized.

Currently, the Government of Alberta has not officially designated or classified public land trails within the region. However, based on local knowledge and analysis, most regional trails and linear access on public land can be considered "mixed-use" trails as both motorized and non-motorized activities are permitted on them. The new Alberta Trails Act and other planning initiatives may provide greater direction and clarity on this in the future.

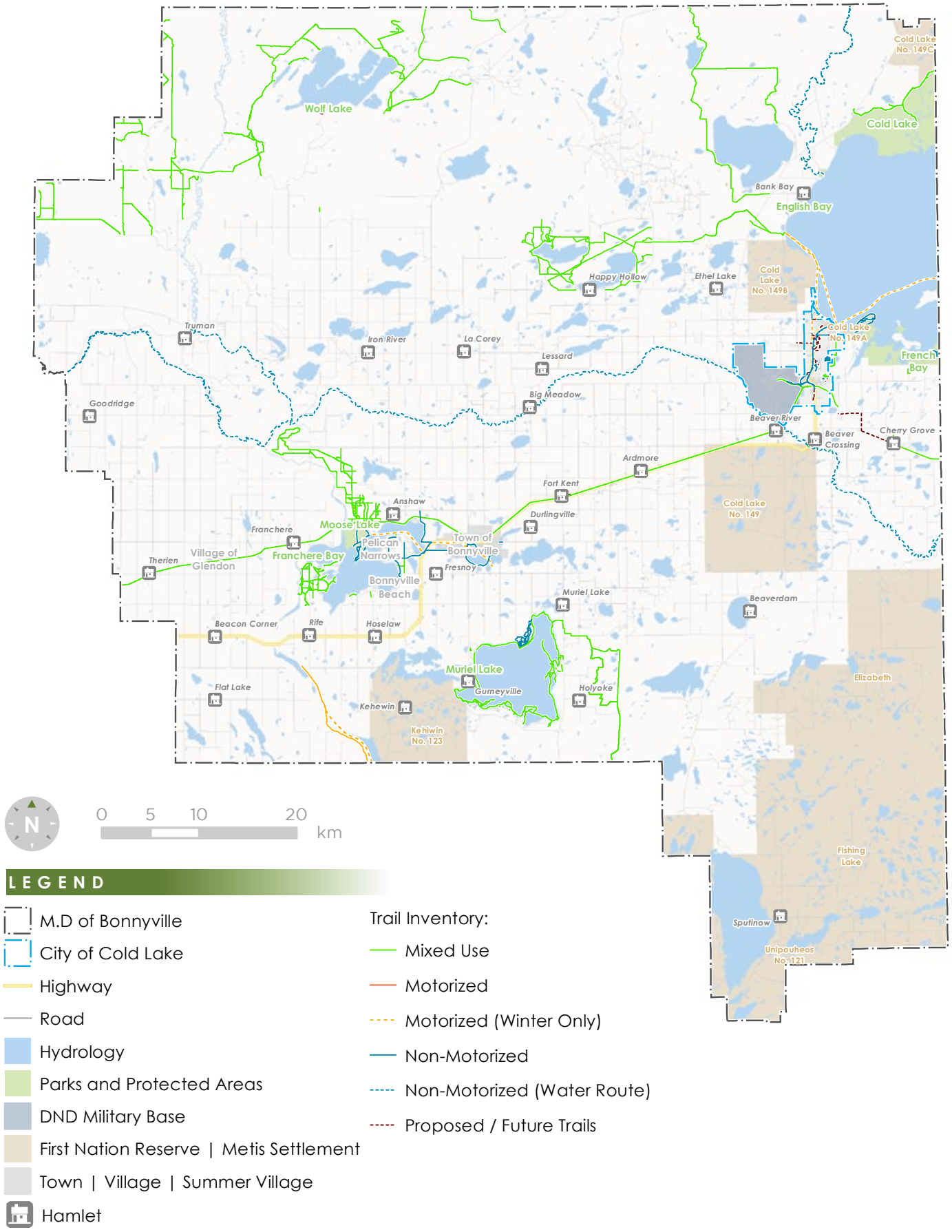
The region's current trails and linear disturbance mostly permit mixed use of motorized and non-motorized activities (Figure 30). More specifically:

Table 11

Trails and Linear Disturbance by Activity	Distance (km)
Proposed Non-Motorized (2022-23 builds)	27.3
Non-motorized	105.2
Total Non-motorized Trail	**132.5**
Mixed-Use Trail	791.2
Routes on water/ice	240.8
Grand Total Trail	**1164.5**

It should be noted, however, that while non-motorized activities like hiking, walking, running and mountain biking, gravel biking or fat biking are permitted on mixed-use trails, the impacts of off-highway vehicles such as noise, speed, rutting, erosion, cupping, standing water and large cobble can severely detract from the quality of experiences for non-motorized users.

As such, unless they are exceptionally well-designed and actively maintained, the suitability of mixed-use trails to support non-motorized activities can be quite limited. This fact is often reflected in how trails are referred to in promotional materials and in conversation. Very often, as example, popular mixed-use trails are often referred to as motorized trails (or quad trail, snowmobile trail etc.).



LEGEND

- M.D of Bonnyville
- City of Cold Lake
- Highway
- Road
- Hydrology
- Parks and Protected Areas
- DND Military Base
- First Nation Reserve | Metis Settlement
- Town | Village | Summer Village
- Hamlet

Trail Inventory:

- Mixed Use
- Motorized
- Motorized (Winter Only)
- Non-Motorized
- Non-Motorized (Water Route)
- Proposed / Future Trails

Figure 29: Trails and Linear Disturbance by Activity Type

4.2.3 BY RECREATION SETTING & SCENIC VALUE

Recreation settings are one of the most interesting and crucial aspects of understanding trail experiences. Perhaps more than other factors, setting influences which trail enthusiasts and market segments will be attracted to a trail.

The region is diverse in its vegetation and land cover. Most of the area's communities are located near settled croplands, but deciduous forest cover dominates in the south, and mixed forests are prevalent in the north Figure 30). In general, except for the Iron Horse Trail, most of the region's rural and long-distance trails are located in forested areas.

Some trail enthusiasts (and, more broadly, some market segments) prefer trail experiences in remote backcountry areas where encounters with people are uncommon and where comfort and convenience amenities are minimal. Other market segments prefer trail experiences in more urbanized front country environments that are bustling with people and where a range of creature comforts and amenities are available. Others seek a balance between the two experiences.

Given varying market preferences, it is important to understand how the region's trail inventory is distributed across these recreation settings. This information, when paired with desired market audiences, can provide powerful insight into future trail development opportunities and direction.

LEGEND

- M.D of Bonnyville
- City of Cold Lake
- Highway
- Road
- Hydrology
- Parks and Protected Areas
- DND Military Base
- First Nation Reserve | Metis Settlement
- Town | Village | Summer Village
- Trail Inventory:

2015 Canadian Landcover Database:

- Temperate or sub-polar needleleaf forest
- Sub-polar taiga needleleaf forest
- Temperate or sub-polar broadleaf deciduous forest
- Mixed forest
- Temperate or sub-polar shrubland
- Temperate or sub-polar grassland
- Wetland
- Cropland
- Barren land
- Urban and built-up
- Water

Figure 30: Vegetative Cover

The region's trail inventory data was overlaid with the Government of Alberta's Recreation and Tourism Opportunity Spectrum (RTOS) inventory (Figure 31). Although somewhat dated, the RTOS is currently the most suitable tool for understanding and assessing recreation setting. It classifies the region's land base into one of four categories:

RECREATION SETTING DEFINITIONS:

Developed: This setting is found within our urban environments and is dominated by human development and easy vehicle access. Recreation and tourism infrastructure and management controls are extensive, elaborate, and desired. Large volumes of users are expected and the sights and sounds of humans are expected. Many modern conveniences are available.

Front Country: A vehicle accessible area that is naturally scenic though evidence of human development is obvious. Encounters with other visitors are frequent and parking lots, trail heads, trails, visitor buildings, full-service washrooms, and other visitor amenities are common and expected by visitors.

Mid-Country: A natural but not backcountry area. Motorized and non-motorized uses occur, and vehicle access may be available. Evidence of human development may be visible but does not dominate the area. Encounters with other visitors may or may not occur and are not frequent. Visitor amenities such as parking lots, trailheads, trails, washrooms, and campsites may be available but are of a basic design.

Backcountry: A natural area where evidence of human development is limited to non-existent. Access occurs via non-motorized modes of travel and encounters with other visitors are minimal to non-existent. Basic visitor amenities such as primitive trails and rustic campsites may be available. Signage is limited to non-existent. In this setting, visitors can expect to experience solitude, isolation, closeness to nature and higher levels of risk and personal challenge.

Figure 31: Recreation Opportunity Spectrum

Analysis of the trail inventory and the Government of Alberta's Recreation and Tourism Opportunity Spectrum inventory (Figure 32 & Figure 33), found that the region is predominantly front country setting but does also has some mid-country and backcountry settings where trails are situated far from settlements.

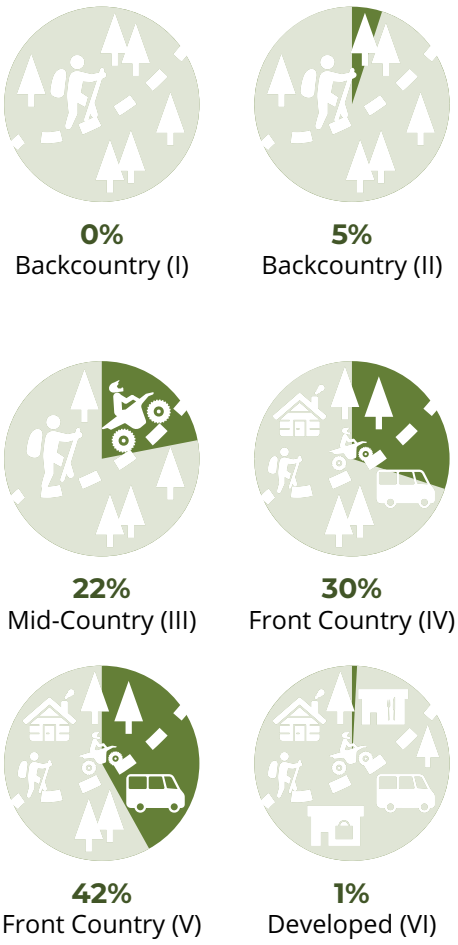


Figure 32: Trail Settings in Region

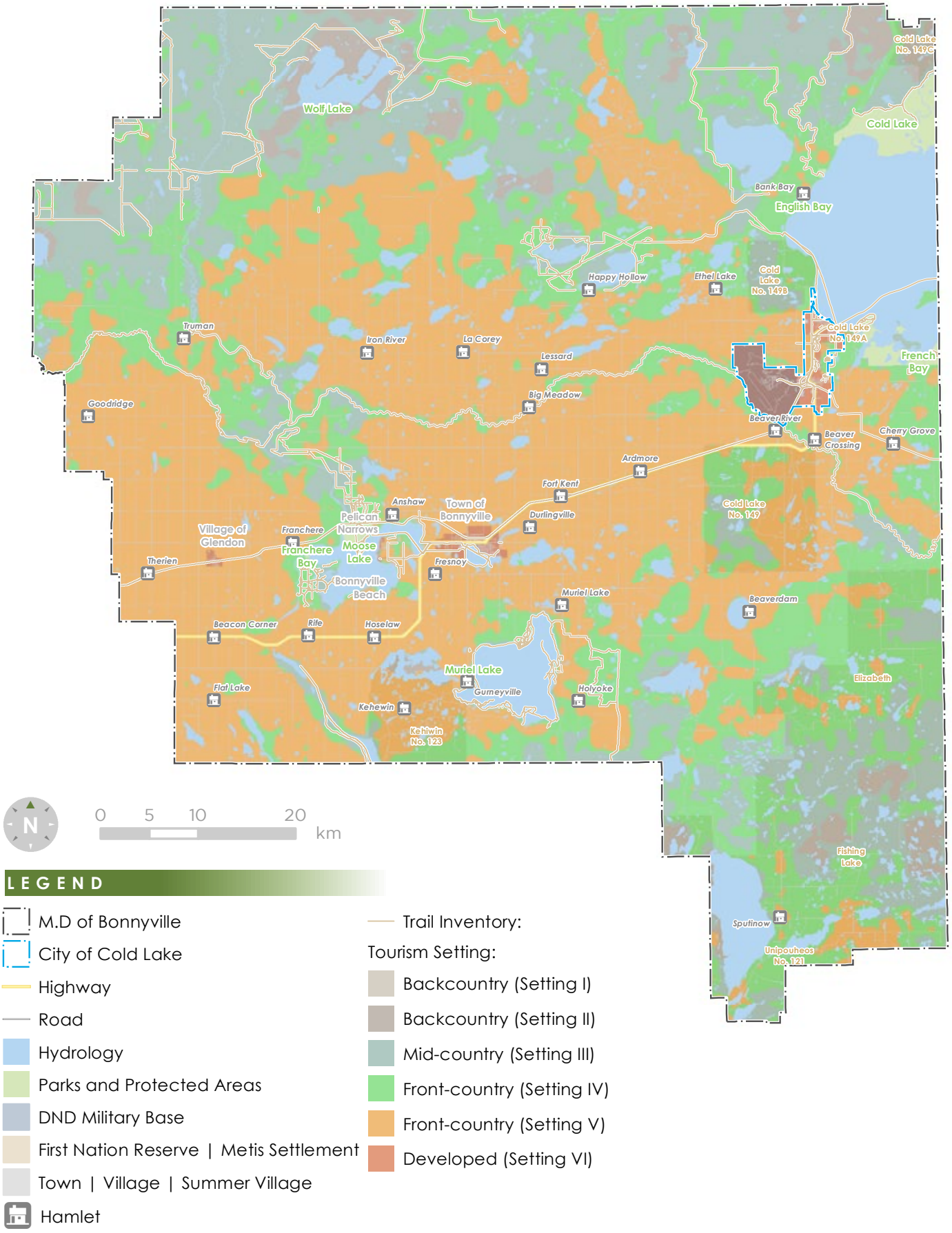
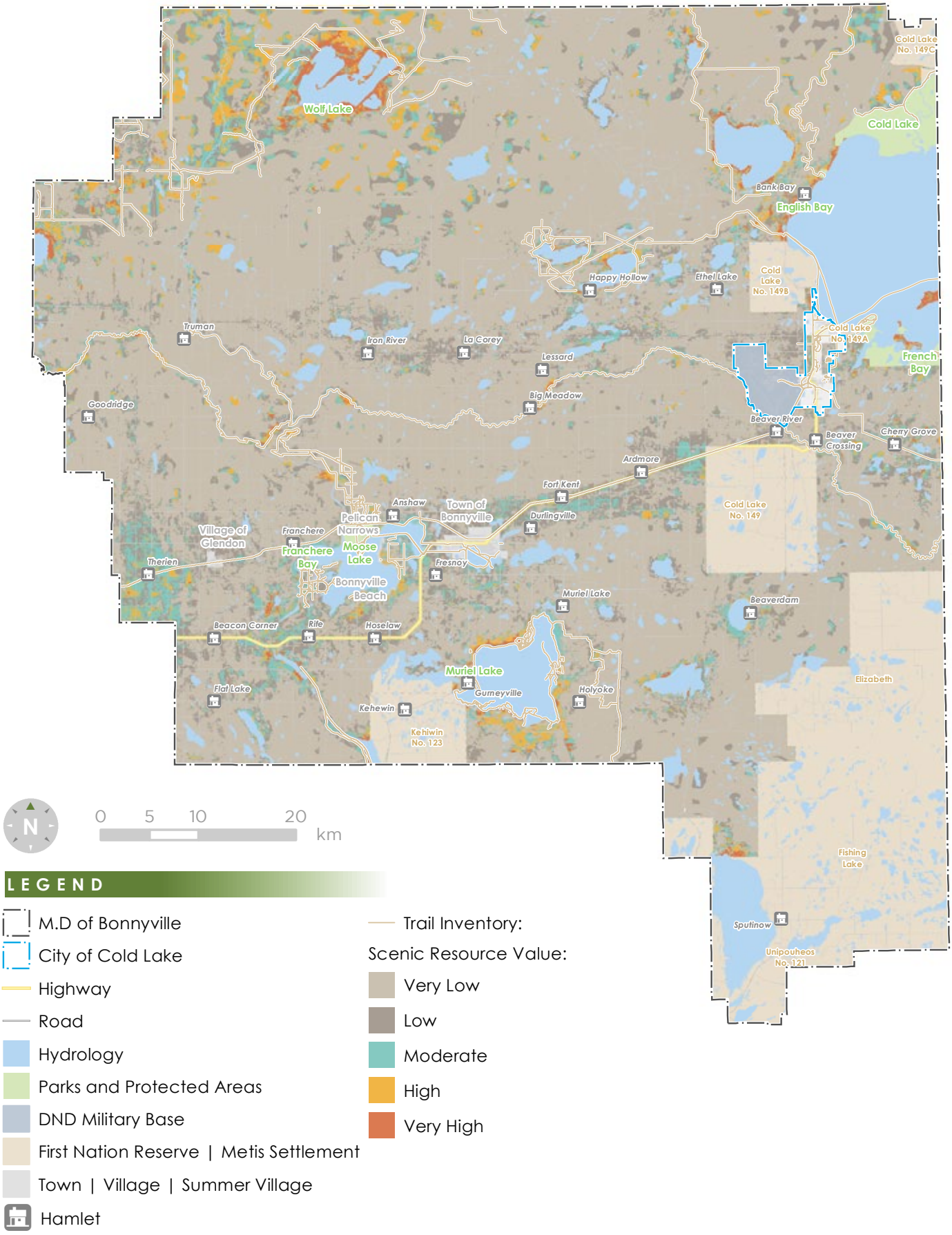


Figure 33: Trail Settings (RTOS)

Using provincial datasets, the region's scenic values were modeled and are shown in Figure 34. Compared to some other parts of Alberta, the region's flatter terrain yields fewer vistas and other scenic attributes that can be assets to attracting visitation. However, while much of region's topography doesn't lend itself to the same broad visual appeal as some other areas of the province, 20% of the region qualifies as having "high" or "very high" scenic value which provides considerable opportunity to offer high-quality, attractive trails on extended routes or for spectacular local viewscapes, such as at the Beaver River Trestle.



LEGEND

- M.D of Bonnyville
- City of Cold Lake
- Highway
- Road
- Hydrology
- Parks and Protected Areas
- DND Military Base
- First Nation Reserve | Metis Settlement
- Town | Village | Summer Village
- Hamlet
- Trail Inventory:

Scenic Resource Value:

- Very Low
- Low
- Moderate
- High
- Very High

Figure 34: Scenic Values

4.2.4 BY NATURAL REGION

Like recreation settings, the type of natural surroundings (i.e. natural regions) influences the trail experience and the trail users that may be attracted to a particular area or trail.

Some visitors may prefer trails in the high mountains, while others may seek the more forested landscapes of lower elevations. As illustrated in Figure 35, the region overlaps just two natural sub-regions.

Understanding the distribution of trails throughout the area's natural regions can help inform visitor management decisions. However, because recreation impacts vary between natural regions (e.g. travelling on soft, wet soils results in very different impact than the same activity on hard, dry or sandy soil), this information is also important to consider in assessing possible impacts to ecological values.

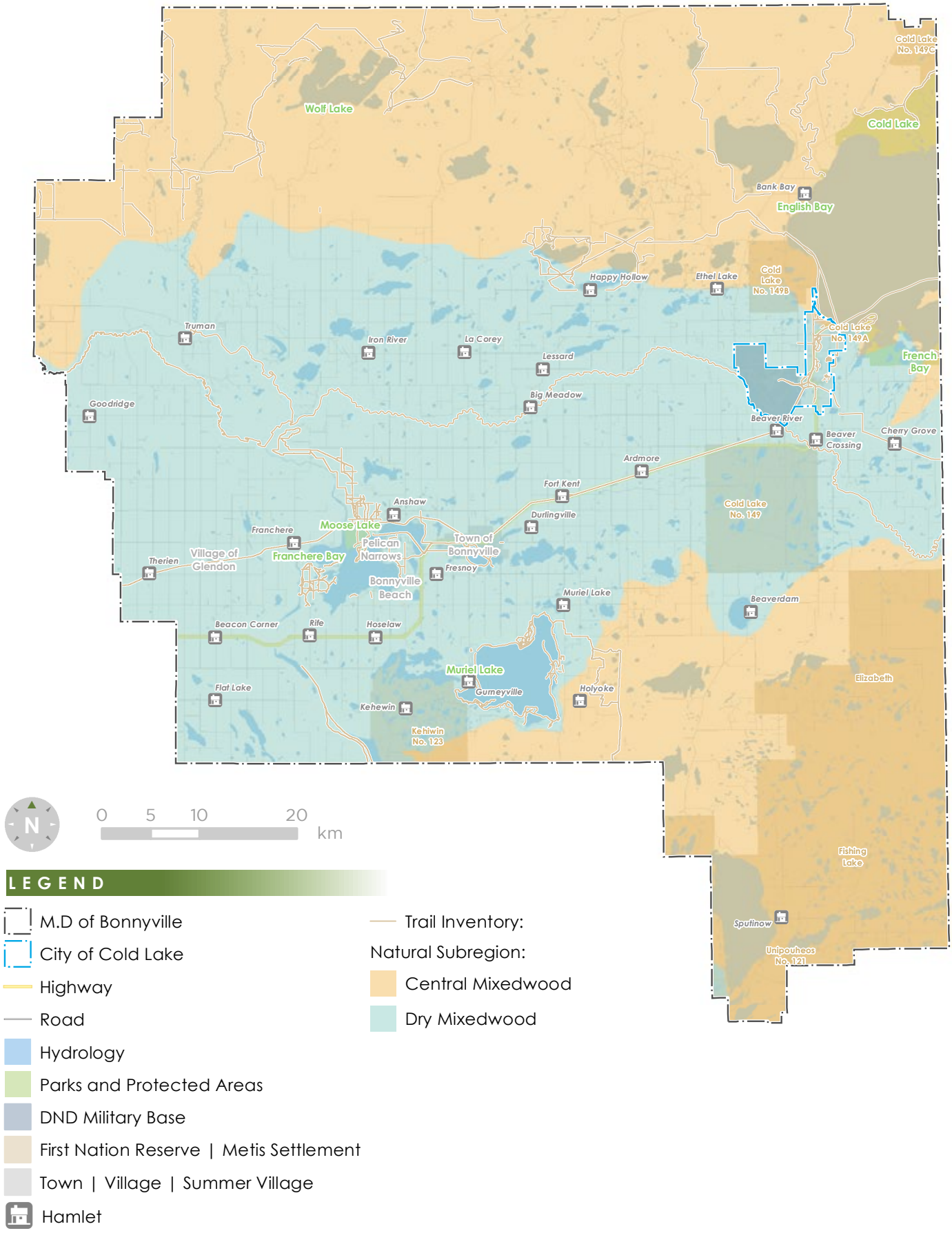


Figure 35: Natural Regions

4.2.5 BY SEASON

The region's trail enthusiasts are active in both summer and winter. Future trail development should consider how both year-round and specialized seasonal non-motorized and motorized activities can be accommodated.

A specific challenge identified by both motorized and non-motorized winter trail enthusiasts was the undesirable impacts on preferred trail surfaces by other activities. Snowmobile enthusiasts, for instance, noted considerable frustration and concern with damage to groomed snow surfaces and underlying soils from wheeled OHVs. Similarly, Nordic skiers expressed concern with pedestrians, dogs and other users degrading the surfaces of trails specifically groomed for skiing.

KEY FINDINGS:

All observed trails in the area are currently considered "all-season" trails and permit year-round access. Some, however, are optimized for seasonal activities and experiences, including:

- Muriel Lake M.D. park's trail network maintained for Nordic skiing.
- Cold Lake's Mason Watt Memorial Raceway for motocross racing and riding.
- Cold Lake MTB Park's features and trails for mountain biking.
- Terrestrial and over-ice mixed-used routes maintained in winter for snowmobile use (Cold Lake and Bonnyville clubs).

4.2.6 BY DIFFICULTY

Some enthusiasts seek trails that are relatively easy and suitable for beginners. Others seek trails that are more challenging and suitable for higher skill levels and greater experience. Leading practices from other trail jurisdictions indicate that, regardless of activity, trails at all levels of difficulty (white, green, blue, black diamond, double black diamond) should be available.

Typically, most trails in trail networks should be in the green (beginner) and blue (intermediate) levels of difficulty, with some at a black diamond (highly skilled) level of difficulty, and a few at white circle and double black diamond levels. Providing this distribution helps ensure the trail system caters to the broadest range of visitors while enabling trail users to continue to progress their individual abilities and skills. This also aligns with project survey results, which showed that residents were primarily interested in green and blue trails.

KEY FINDINGS:

Except in localized locations with challenging water crossings, embankments, highly degraded trail conditions, or purposefully built features (e.g. MTB jumps), nearly all the trails observed in the region would be considered green or blue level of difficulty. Some very easy, accessible trails were also observed in the City and M.D. in developed areas (e.g. Cold Lake waterfront).

4.3 EXISTING TRAIL CONDITIONS AND SUSTAINABILITY ISSUES

Understanding, monitoring, and addressing trail condition issues is a critical component of trail management and is necessary to derive the benefits of trails and to avoid risks and costs. Trail managers should understand that:

1. Visitors and residents expect enjoyable trails that are suitable for their desired activity and their preferred level of difficulty. The condition of trails is primary influence on whether they attract use and whether they provide a quality experience.
2. Trail condition is closely related to impacts to ecological and historic resource values. A trail in good condition, for instance, has little impact on water quality, but a failing trail can have severe detrimental effects with real ecological and financial costs.
3. Degraded trails frequently induce risks to public safety and liability exposure for managers and operators.

There is often a direct correlation between trail conditions, quality of trail experience, and the previous history of the trail. Alberta's extensive resource development history has been a mixed blessing for trail development in many areas.

Recreational access to some areas has been made easier on the region's extensive network of seismic lines, access roads, and pipelines. However, legacy industrial access that is regularly used for recreational travel often exhibits poor or failing trail conditions. Usually, they also provide lower quality visitor experiences than trails that have been deliberately planned, designed, and constructed for recreation purposes (e.g. they're often straight, uninteresting, and don't directly connect with interesting features).

Where policy exists that requires recreational trail to use pre-existing disturbance, a challenging conundrum emerges for trail planners and managers. Is it a wise and prudent decision to forgo an enjoyable and sustainable trail alignment for a sub-optimal existing alignment that is likely to be problematic and costly?

The region's current trail networks are a mix of purpose-built trails (e.g. M.D., City and provincial park) and legacy industrial access that was not intended for long-term recreational use but has been modified or "ridden in" by repeated recreational use over the years (e.g. most trails on public land).

While some trails in the planning area have been purposefully planned, designed, and constructed to provide a deliberate recreation experience, it is clear from field observation and spatial analysis that many others have not and have not been designed in accordance with accepted trail design principles. When coupled with limited maintenance, these trails are generally experiencing deteriorating conditions, growing trail sustainability and visitor experience issues and, in some cases, also have significant public safety concerns.

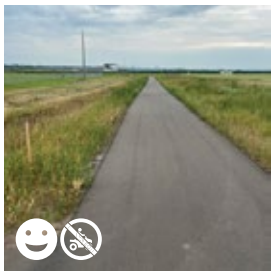
A detailed trail condition assessment has not been undertaken on all trails in the region, but general findings are outlined in the following sections.

4.3.1 PHYSICAL TRAIL CONDITIONS

Trails observed were assessed on a 5-point scale relating to their ability to fulfill their intended function and degree of maintenance required (Figure 36).

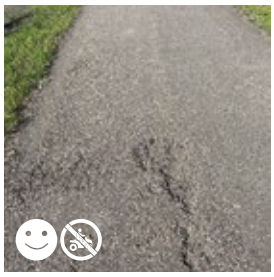
Very Good

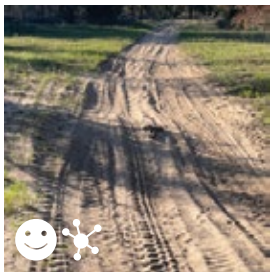
- fully functioning as intended
- no immediate maintenance necessary



Good

- fully functioning as intended,
- minor maintenance imminent



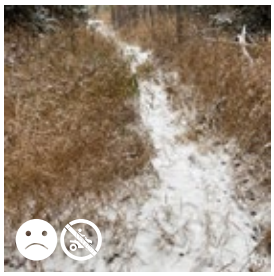


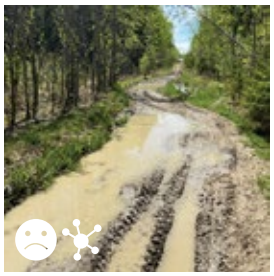
Fair

- partially functioning as intended
- maintenance required

Poor

- partially functioning as intended
- immediate work required or failure is foreseeable





Failed

- non-functional or inaccessible
- closure and/or major work is required

= Non-Motorized = Mixed-Use

Figure 36: Trail Condition Ratings

Most M.D. and City trails were found to be in “Good” to “Very Good” condition with a few exceptions. It is also evident that most of these trails in both jurisdictions are receiving routine maintenance.

Other trails in the region were in variable condition and trails that were receiving little to no maintenance were often in poor or failing condition.

A summary of observed conditions is shown in Table 12.

Table 12

Primary Manager/ Administrator	Worst Observed Trail Conditions	Typical Trail Conditions	Best Observed Conditions
City of Cold Lake	Fair (one short section of paved trail)	Good to Very good	Very good (common)
M.D. of Bonnyville	Failed (Jessie Lake Trail)	Good to Very good	Very good (common)
GOA (Parks)	Fair	Fair to Good	Good
GOA (Public Land)	Failed (common)	Poor to Fair	Good (uncommon)
Northeast Muni-Corp	Fair	Fair to Good	Good

It should also be noted that trail condition and suitability can vary for different activities on the same trail. Sections of a heaving cobbled trail that are easily navigated on an OHV, for instance, can be difficult to ride on a bicycle. This challenge is a very real consideration for the region’s mixed-use trails. The Iron Horse Trail’s 10 Year Strategic Plan (Iron Horse Trail, 2022) found that most of the trail in the region was in Fair to Good condition for OHV use but was in poor condition for cycling. Understanding this differential is particularly important when addressing supply and demand considerations, coordinating services, and marketing.

Figure 37: Condition of Iron Horse Trail for OHV Travel (2021, used with permission)

Figure 38: Condition of Iron Horse Trail for Cycling (2021, used with permission)

4.3.2 COMMON TRAIL ISSUES

Trail sustainability issues were uncommon on M.D. and City trails but were prevalent in some other locations. The sections below illustrate common issues affecting trails and how they occur.

4.3.2.1 CUPPING, DRAINAGE & EROSION

As illustrated in Figure 39, all trail treads will become cupped over time with routine use. The rate that cupping occurs is expedited on trails that support motorized use, experience higher volumes of use, are poorly designed, and/or have limited to no regular maintenance. As trail treads become cupped, the displaced tread materials form berms at the margins of the tread which prevent water from escaping the trail tread, leading to puddling. Cupping can also channelize water on the trail and, where adequate grades exist, erosion channels can begin to form.

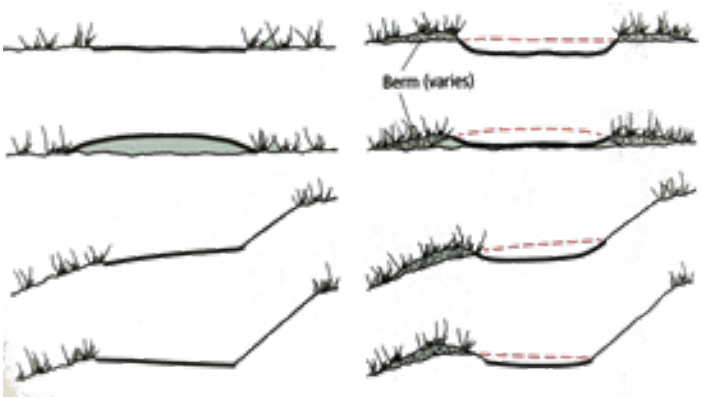


Figure 39: Evolution of a Trail Tread Leading to Cupping, Erosion and Puddling on Flat, Raised Tread and Bench Cut Trails

Locations of trail cupping, puddling and erosion were observed in several locations, particularly on provincial public land. Puddling is the most frequent trail sustainability issue. Where ponding and puddling occur, trail tread widening, and braiding are common as visitors attempt to avoid the puddles. Trail tread erosion is occurring where trails are located on steeper grades and the tread is cupped. In many cases, observed issues associated with ponding and erosion can be addressed through basic management practices such as removing berms and / or re-establishing proper outslopes. In other cases, trails will need to be re-routed to achieve accepted design guidelines and water management techniques (e.g. outsloping, grades, half-rule, grade reversals).

Standing water and erosion channels on trails are NOT technical trail features. They should be viewed as urgent liabilities that should be addressed as quickly as possible to prevent them from growing into significantly more costly problems and threats to trail sustainability.

EXAMPLES OF TREAD CUPPING WITH PUDDLING

Figure 40: North of African Lake

Figure 41: East of Cold Lake

Figure 42: North of Cold Lake

Figure 43: East Muriel Lake

4.3.2.2 TRAIL ALIGNMENTS & GRADES

Trail alignments and their ensuing grades greatly influence the sustainability and the enjoyment of a trail. While steep grades can be a desirable and deliberate feature that can deliver some user objectives (e.g. challenge) for a trail, grades must be designed and managed carefully to limit costly and ongoing tread maintenance. Compared with other areas in the province, most trail grades in the planning area are relatively low and, in general, issues typically associated with steeper slopes (e.g. Figure 44) were not prevalent in the region. More sophisticated trail construction techniques (e.g. Figure 45) to manage water runoff were not observed except in the Cold Lake MTB Park and Muriel Lake M.D. Park, but techniques like these should be considered wherever steeper terrain occurs to avoid tread deterioration and failure.

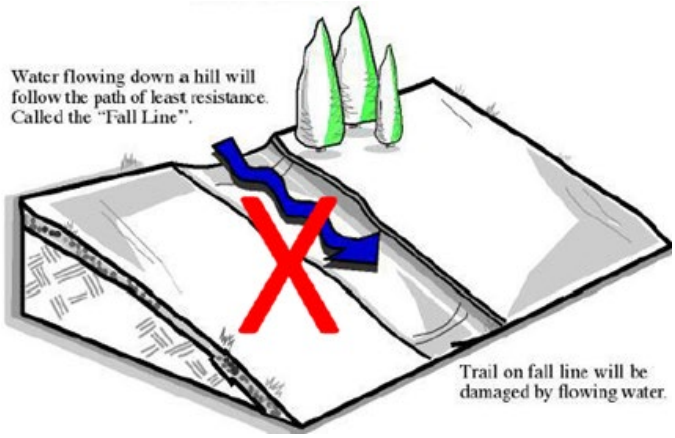


Figure 44: Fall Line Trail

4.3.2.3 WATERCOURSE CROSSINGS

A watercourse is a river, brook, stream or other natural water channel and the bed along which this flows. Crossing of undesignated watercourses and operation of motor vehicles on a shoreline is generally prohibited by the *Public Lands Administration Regulation* (PLAR) unless it is explicitly designated. Watercourse crossings are also required to follow **Alberta's Code of Practice for Watercourse Crossings** (Code).

A detailed count of water crossings was not conducted for the region's trails. However, spatial analysis, observed crossings, and public input on the inventoried trail network (Figure 44) suggests that there are at least 173 watercourse crossings that intersect the region's current trail network, with most of these on provincial public land.

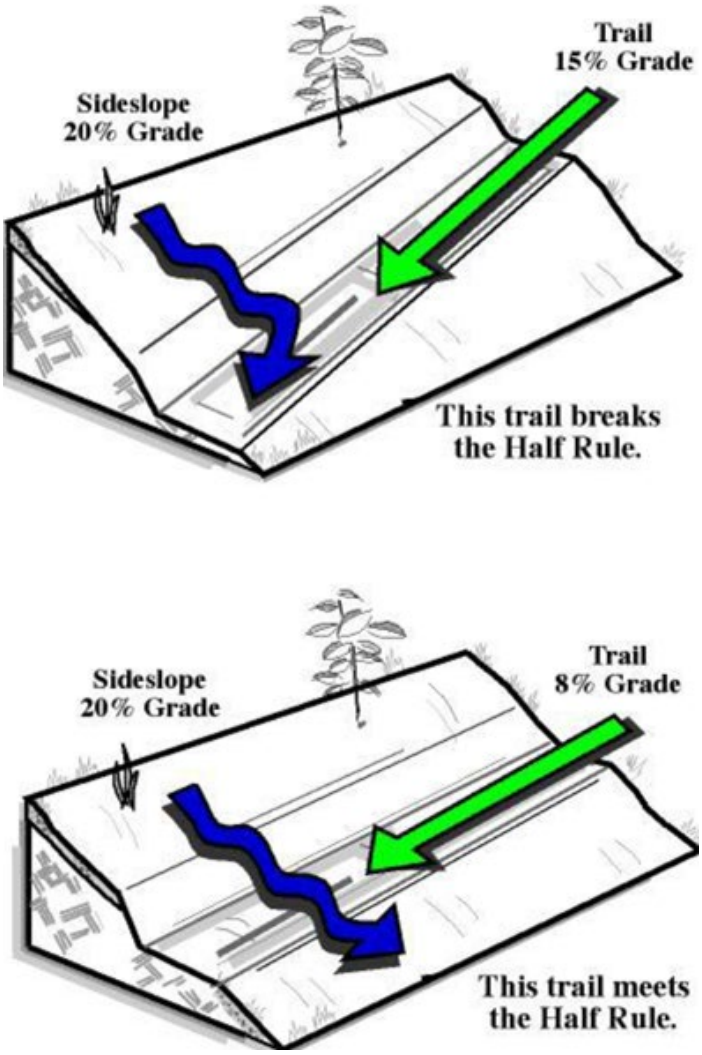


Figure 45: Half Rule of Trail Design

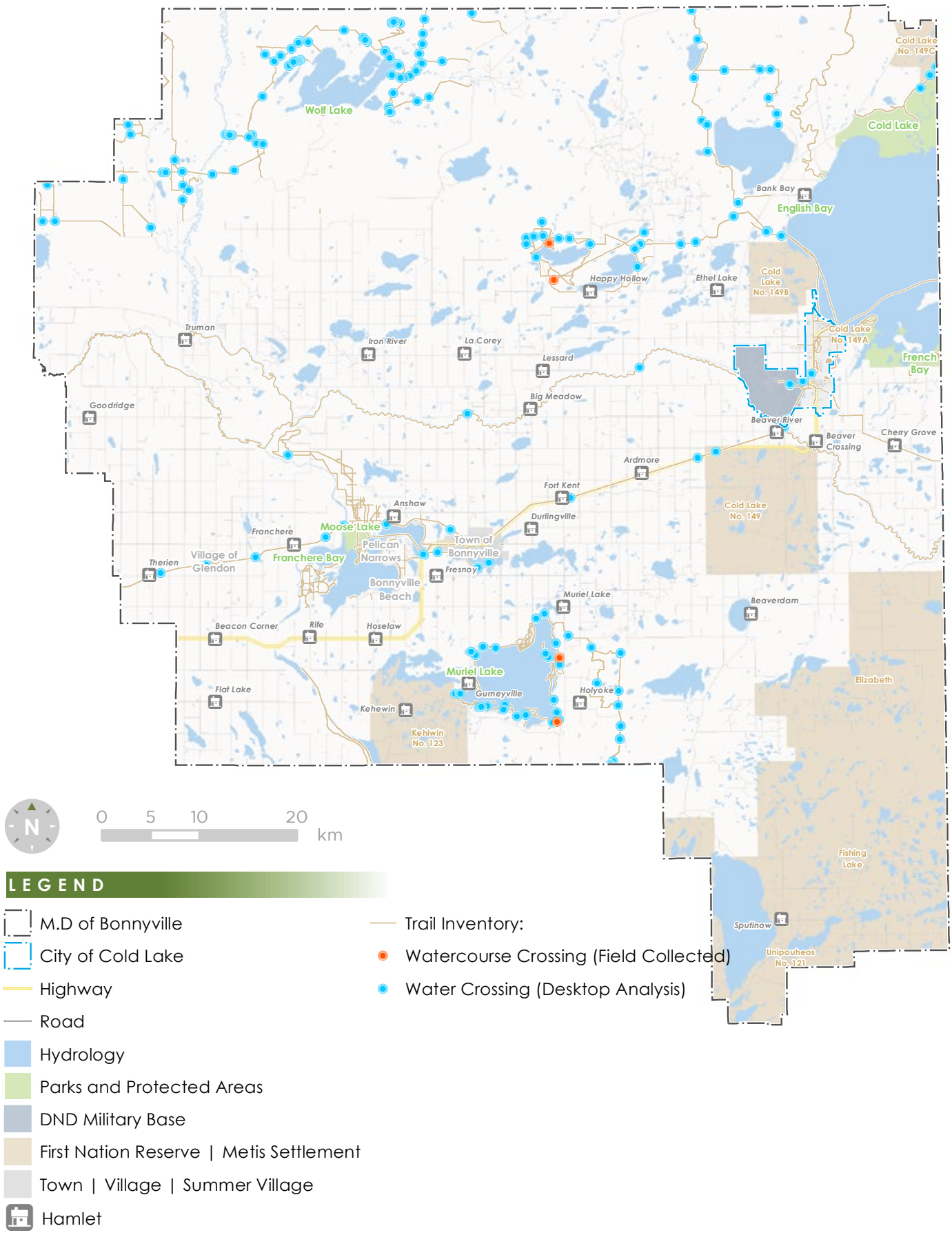


Figure 46: Water Crossings

Many waterways in the region are considered Class C and have the following characteristics:

- Are of moderate sensitivity,
- Are sensitive enough to be potentially damaged by unconfirmed or unrestricted activities within the water body and
- Are broadly distributed habitats supporting local fish species and populations.

While the Code of Practice permits types 1, 2, 3 and 4 crossing treatments to be applied to Class C watercourses, the code clearly states a preference for bridging rather than fords. While most crossings on the region's sanctioned trails are bridged, most crossings on unsanctioned public land trails are fords. While some fords have been hardened with cobble by local volunteers, most have not. Some crossings were observed to have user-added small log bridges or stacked logs. Where these structures exist, most are damaged and/or are unsuitable for the type of use occurring on the trail.

In summary, since few existing trails on public land have been sanctioned or designated under the Trails Act, few have suitable crossing infrastructure, and few meet the lawful requirements for crossings of *Alberta's Public Land Administration Regulation* (PLAR, sections 33 and 43), most crossings on public land should be regarded as unlawful. Future trail development must be highly attentive to crossing location, design, and designation to ensure compliance and full consideration should be given to promoting use of trails with crossings.

Water Crossing Class	Permitted Code of Practice Crossing Types (In order of preference)
A	Type 1
B	Type 1, 2, 3
C	Type 1, 2, 3, 4
D	Type 1, 2, 3, 4

Table 13 Watercourse Crossing Types - Code of Practice for Watercourse Crossings

Watercourse Crossing Structure Type	Definition
Type 1	Single span bridge or similar structure that does not result in a disturbance or alteration to the active channel of a water body.
Type 2	Multi-span bridge, open bottom culvert or similar structure that does not significantly narrow the width of the active channel and that maintains the nature bed of the waterbody.
Type 3	Culvert, pipe, box, or similar structure that covers or replaces the natural bed or the water.
Type 4	Ford, low-level crossing, or similar structure that covers or alters the natural bed of the water body and is located below the surface of the water.

Figure 47: Trail crossing unnamed creek (south Muriel Lake)

Figure 48: Trail crossing unnamed creek (east Muriel Lake)

Figure 49: Trail crossing unnamed creek (north Tucker Lake)

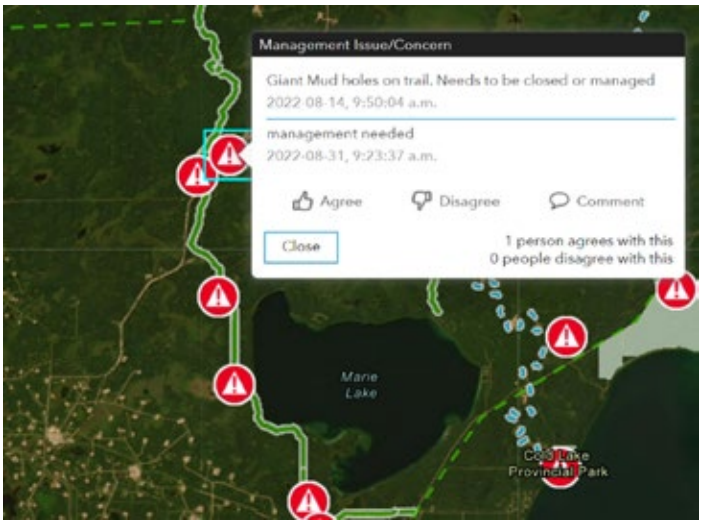


Figure 50: Locations of crossings and water issues brought forward in public engagement (May Lake trail)

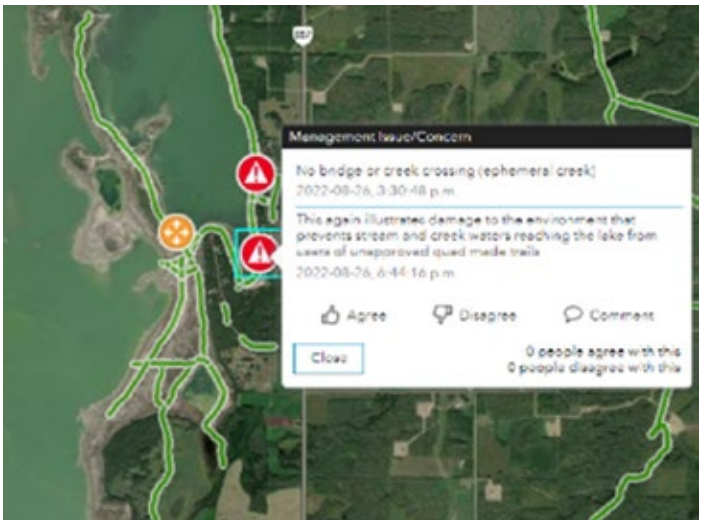


Figure 51: Locations of crossings and water issues brought forward in public engagement (Muriel Lake)

4.3.2.4 TRAILS IN WET AREAS

It is common for legacy industrial disturbance to cross wet areas where water is just below the surface. Recreationists using these routes during frozen winter conditions (e.g. with snowmobiles) are relatively unimpeded by these conditions and generally leave little to no impact. But when wheeled vehicles, such as OHVs, use these same routes during summer conditions, rutting and mucking are often the result. Without management intervention in these locations, undesired impacts will intensify until the trail becomes impassible and fails. These types of conditions are relatively common in the region. Best practices in designing and managing sustainable OHV trails do not allow soft, wet trails to be used unless there is deliberate intent to see these areas used for "mudding".

Figure 52: South of Muriel Lake

Figure 53: May Lake Trail

4.3.2.5 ROAD AND HIGHWAY CROSSINGS AND USE

The way that trails integrate and interact with roads and road right-of-ways has a significant influence on connectivity, user safety, and user experience. This is particularly pronounced where uninterrupted, contiguous trail corridors do not exist and trail users are required to frequently cross or use roads, such as on the Iron Horse Trail where crossing range roads is often needed at one-mile intervals.

POLICY

How road crossings and recreational use of roads occurs is a matter of jurisdictional administrative control. Trail placement (i.e. designated corridor) and trail activities (e.g. OHV, pedestrian, cycle) are generally guided in a combination of land use, park, and traffic regulation policy. No fewer than eight administrations (not including land administered in First Nations and Métis settlements) have jurisdictional control of roads and right-of-ways in the region. A jurisdictional summary of applicable policy and regulation is presented in Table 14.

Table 14 Summary of Jurisdictional Policy and Regulation

Primary Manager/ Administrator	Summarized Policy Position Regarding		
	Designated Trails and Crossings in Road Right-of-Ways	OHV use (including road & right-of-ways)	Non-motorized use (including roads & right-of-ways
City of Cold Lake	Permitted where designated as per Bylaw #536-PL-14 (June 7, 2022). No specific crossing guidance.	Permitted on roads as per Section 5 of Bylaw #540-PL-14 (Most direct route; preferably ditch or approved route, not on non-motorized pathway). Prohibited in parks.	Permitted as per Bylaw #536-PL-14 (June 7, 2022) and #539-PL-14
M.D. of Bonnyville	Permitted where designated as per Bylaw 1338. No specific crossing guidance	Permitted in most ditches (M.D.) and in hamlets of Ft. Kent & Ardmore as per Section 5 of Bylaw 1610. Not permitted on Moose Lake trail. Not permitted in parks or campgrounds as per Bylaw 1624.	Permitted as per Bylaw 1610.
GOA (Transportation; primary and secondary highways)	Permitted as per Trails in Right of Ways Manual if approved by municipality & province.	Direct crossing only (as per Section 120c AB Traffic Safety Act) or if explicitly permitted	Permitted as per Use of Highway & Rule of Road Regulation
GOA (Parks)	Permitted where designated as per department policy	Regulated under Provincial Parks (General) Regulation. Permitted only where designated as per department policy	Regulated under Provincial Parks (General) Regulation. Generally permitted. as per department policy

Primary Manager/ Administrator	Summarized Policy Position Regarding		
	Designated Trails and Crossings in Road Right-of-Ways	OHV use (including road & right-of-ways)	Non-motorized use (including roads & right-of-ways
GOA (Public Land)	No specific policy but public use generally permitted under PLAR. Defaults to guidelines in Trails in Right of Ways Manual where permitted.	Regulated under Public Land Use Administration Regulation and Recreation Access Regulation. Situation dependent depending on land-use authorization.	Generally permitted, but situation dependent depending on land-use authorization Regulated under Public Land Use Administration Regulation and Recreational Access Regulation
Northeast Muni-Corp (Iron Horse Trail; IHT)	M.D. Bonnyville Bylaw 1338 applies	OHVs generally permitted. Highway licensed vehicles (including dual-purpose motorcycles) are not permitted	Permitted
Town of Bonnyville	Permitted where designated as per Bylaw 1160-00. Snowmobile access to Jessie Lake on designated routes.	Permitted as per Bylaw 1160-99 in most alleys and lanes only, unless crossing a street or avenue Not permitted in parks. Snowmobile access permitted onto Jessie Lake only on designate routes.	Permitted as per Bylaw 1160-99
Village of Glendon	Directs OHV use to IHT. (Bylaw 437-14)	Prohibited except for loading and on M.D. and IHT corridors	Permitted as per bylaw 437-14.

Some jurisdictions have identified specific corridors for trails and trail activities. Others are silent on where preferred corridors are. Most are silent on how trails are to cross and interact with roads in right-of-ways.

Non-motorized trail activities across all jurisdictions are generally permitted and handled similarly. Policy and regulatory guidance generally exists for pedestrians and cycling but does not exist for other non-motorized uses (e.g. equestrian, small-wheeled vehicles).

Off-highway vehicles are regulated with considerable variability across jurisdictions. OHVs are permitted on some types of roads and right-of-ways and excluded in others. This variability can be confusing and challenging for motorized users, such as those invited to use the Iron Horse Trail.

VOLUME AND FREQUENCY

Objective data detailing the number of trail users using crossings and road right-of-ways is not available, but based on observations and physical evidence of "ditch banging", an estimated relative volume and frequency of motorized and non-motorized activity is outlined in Table 15.

Evidence suggests that OHVs use of some road and highway alignments was common in the region, but was variable between locations. This suggests a potential gap between trail supply and trail demand for motorized use and should also be assessed for associated public safety and environmental concerns.

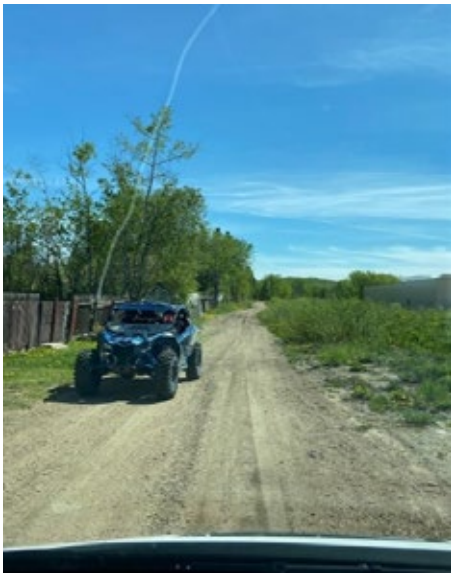


Figure 54: OHV in Cold Lake

Figure 55: OHV use in Cold Lake adjacent to Highway 28

Figure 56: Evidence of OHV Use adjacent to Highway 897

Figure 57: Evidence of OHV use near Moose Lake

Figure 58: OHV use adjacent to Highway 55 near Cherry Grove

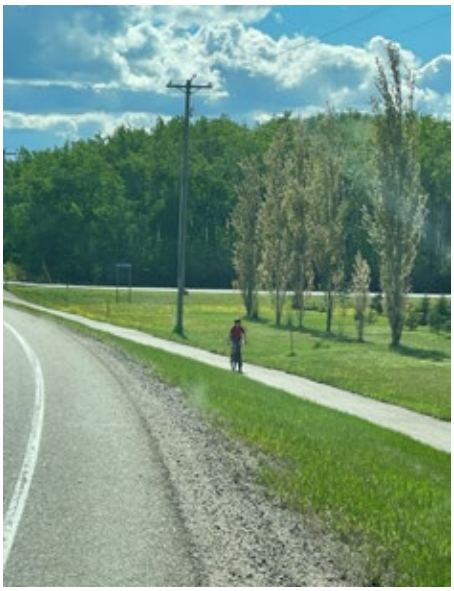


Figure 59: Non-motorized use on Moose Lake ROW trail

Table 15 Observed Use of Roads and Right-of-ways

Primary Manager/ Administrator	Observed Activity and Evidence of Use (e.g. tracks and observed active users)		
	OHV use of road surfaces	OHV use of ditches and right-of-ways	Non-motorized use of roads & right-of-ways
City of Cold Lake	Occasional	Frequent	Occasional
M.D. of Bonnyville	Occasional	Frequent	Occasional on road surfaces; frequent on ROW trails
GOA (Transportation)	Crossing only	Frequent	Occasional
GOA (Parks)	Not observed	Occasional	Occasional
GOA (Public Land)	Frequent	Frequent	Occasional
Northeast Muni-Corp	Frequent at crossings	Frequent at crossings	Occasional at crossings
Town of Bonnyville	Occasional	Occasional	Frequent
Village of Glendon	Directs OHV use to IHT. (Bylaw 437-14)	Prohibited except for loading and on M.D. and IHT corridors	Permitted as per bylaw 437-14.

CROSSINGS

Road and highway crossings are common in the City, within the M.D.'s network of range and township roads, and on industrial access roads. Some newer crossings in both the City and the M.D. have been designed with safety of trail and road users in mind, and these show efforts to conform to guidance in **Alberta Transportation's Trails in Highway Rights of Way** manual. Unsanctioned trails on public land have no crossing notifications or improvements. Most Iron Horse Trail and sanctioned snowmobile trail crossings only provide crossing signage for the trail users only.

The variability and inconsistency of crossings across the region introduces challenges and safety risks for both drivers and trail users.

EXAMPLES OF CHALLENGING CROSSINGS AND ROAD INTERACTIONS

Figure 60: Abrupt trail transition to sidewalk before terminating at 55 Ave (Cold Lake)

Figure 61: Unmarked crossing of Iron Horse Trail (Range Road 63)

Figure 62: Identified safety concern crossing of commercial area (Millenium Trail, north of 16 Ave, Cold Lake)

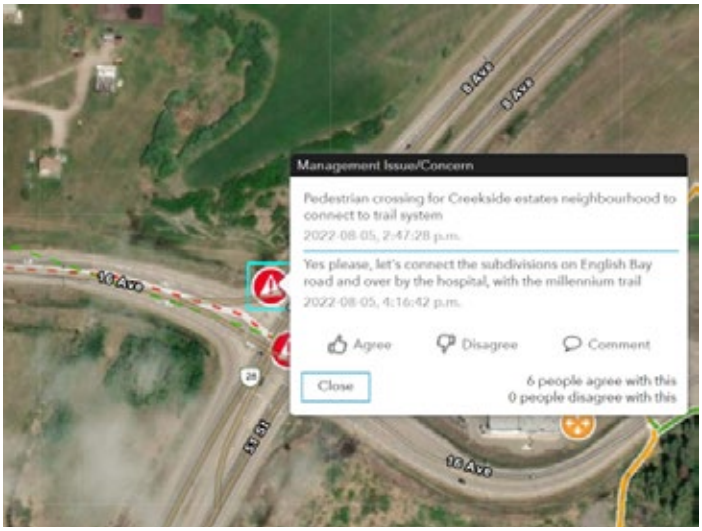


Figure 63: Identified safety concern crossing Highway 28 at 16th Avenue, Cold Lake

EXAMPLES OF ENABLING CROSSING & INFRASTRUCTURE

Figure 64: Signalled crossing of City Millenium trail (16 Ave)

Figure 65: Signalled crossing of M.D. trail (Range Road 461)

Figure 66: Signalled crossing of M.D. trail (Range Road 63)

Figure 67: New Bridge with Pedestrian/Trail Provisions north of Franchere Bay PRA

Figure 68: Underpass below Highway 28 connecting Bonnyville to Vezeau Beach

Figure 69: Underpass below Highway 28 connecting Bonnyville to Vezeau Beach

4.4 SIGNAGE

As front-facing public infrastructure, signs present an early opportunity to convey appropriate information, establish user expectations, and to shape visitor's perception of the area.

Trail signage was highly variable in its presence, condition, and purposes throughout the region. Efforts to incorporate common branding, style, and consistency was evident within some jurisdictions, however little consistency in intended purpose, design, siting, or messaging between jurisdictions or operators was observed. A jurisdictional summary of observed sign locations, condition and purposes is presented in Table 16.

Overall, most signs are regulatory in nature and are intended to convey specific information about rules pertaining to the trail and trail use. Welcoming kiosks, maps and wayfinding information was available at some sites (e.g. Muriel Lake M.D. Park), but the considerable sign variability and inconsistency across the region likely makes navigation and understanding expectations difficult and confusing for users and visitors. Only a few signs with education or interpretive intent were observed.

Age and condition of signs was also highly variable. Most signs observed in the City were relatively new and in good condition. Some M.D. signs were older, but still in generally good condition. Signs within Alberta Parks were relatively new and generally consistent with the agency's current sign guidelines. Except for some newer education signs, signs on public lands were mostly in poor to fair condition and had been installed by a variety of organizations (e.g. departments, non-profit organizations, corporations). Signs were plentiful on the Iron Horse Trail but were quite variable in their design. Clutter was evident in some areas with many signs of different styles and on different posts.

Table 16 Summary of Observed Signage

Primary Manager/ Administrator	Location & Presence	Observed Condition	Observed Purposes
City of Cold Lake	Variable	Good to Very good	Wayfinding, education, advisory, regulatory, interpretation
M.D. of Bonnyville	Variable	Fair to Very Good	Wayfinding, education, advisory, regulatory
GOA (Parks)	Consistent	Good to Very Good	Gateway, wayfinding, advisory, education, regulatory
GOA (Public Land)	Inconsistent, uncommon	Failed to Very Good	Advisory, education regulatory
Northeast Muni-Corp	Variable, common	Fair to Good	Gateway, wayfinding, advisory, regulatory, education, interpretation

GATEWAY / KIOSK

WAYFINDING

ADVISORY/ CAUTION

EDUCATION

REGULATORY


MOTORIZED VEHICLES PROHIBITED
MAKE TRACKS NOT TRASH
NO OFFROAD TRAFFIC


STOP


MULTI USE TRAIL
RECREATION TRAIL ONLY


USE TRAIL AT YOUR OWN RISK


WARNING
USE OF OFF-HIGHWAY VEHICLES IS PROHIBITED ALONG HIGHWAY RIGHT-OF-WAY


NO OFF HWY VEHICLES PERMITTED


STOP
CYCLISTS DISMOUNT


STAY ON TRAIL OR PERMISSION REVOKED

INTERPRETATION / COMMEMORATIVE

KEY FINDINGS

- **Kiosk and Gateway Signage –** Many sites do not use prominent signage to attract and focus user attention on information needed or useful for the area.
- **Wayfinding Signage –** Most networks lacked maps and directional signage to help users orient themselves and navigate within the trail system.
- **Caution / Warning Signage –** Caution and warning signage is generally absent on highway and roadway crossings, trail intersections, and near other hazards.
- **Interpretive Signage –** Interpretive signage is generally absent. Enhancement of interpretive signage at viewpoints, rest areas and other key locations could enrich visitor experience, increase "trail time", and help build awareness and understanding of pertinent cultural, historical and natural topics.
- **Sign Presence and Location –** Sign locations are not consistent and signs are often not present where they would be expected. There is opportunity to bring consistency to locations to improve visitor experience and effectiveness and to adjust locations to better match the locations of the actual trails and starting points.
- **Age and condition –** Signs on some trails, particularly on public land and the Iron Horse Trail, are old and worn. Others are nearing the end of their useful life or have been vandalized or damaged.
- **Activity and Classification Symbology –** Trailhead signs should always clearly communicate the activities that are permitted and prohibited on each trail. Significant variability and inconsistency exists across the region's jurisdictions with how this information is conveyed.

- **Level of Difficulty Rating Symbology –** Trailhead signs should also convey basic information about the kind of trail that users can expect. This type of information was only present at Muriel M.D. Park trails and Cold Lake MTB Park. Current signs do not incorporate industry accepted level of difficulty symbology (e.g. white circle, green circle, blue square, black diamond, double black diamond, proline) or terminology.
- **Trail Naming –** Trail names help connect users with place and provides an opportunity to help connect the area or trail to a particular sentiment, idea, concept or thing of significance. Trail naming also provides and opportunity to support truth and reconciliation with Indigenous peoples and should reflect local interests. Opportunity exists to review and establish trail names in the area for purpose and consistency.
- **Other Missing Information -** The following useful information could also be included.
  - » Territorial acknowledgement
  - » Amenities & services available on trail
  - » Technical trail features locations
  - » Trail conditions slider (Figure 51)
  - » AdventureSmart preparedness information
  - » Emergency information (e.g. 911, 310-FIRE, 310-LAND contacts)
  - » Trail manager and/or trail operator contact information
  - » GPS coordinates
  - » QR code to online mapping information (e.g. Trailforks, local information)
  - » Exclusion of liability and assumption of risks notification

Figure 70: Example of a Trail Condition Slider

4.5 TRAIL & TRAILHEAD AMENITIES

Trailheads and visitor amenities such as outhouses, waste receptacles, benches, shelters and emergency shelters are not necessary to use a trail, but providing them supports safe, high-quality visitor experiences and can drastically improve the appeal for a trail or system as a destination.

Well-designed trailheads help physically manage access to the trail and they set the stage for specific types of trail experiences. They establish the expectations for trail users and the first impressions they leave with visitors strongly influences opinions about the trail's owner, manager, and operator. Welcoming, helpful, and appealing trailheads help to leave a positive impression. Disjointed, ad hoc, and neglected infrastructure does the opposite.

A jurisdictional summary of observed amenity locations, condition and types is presented in Table 17.

In general, most trail related amenities in the region were associated with the Iron Horse Trail or found in municipal and provincial parks and playgrounds. Design, construction, and condition were variable from jurisdiction to jurisdiction. Where provided, most parking areas seemed to accommodate visitors. Notable exceptions were north of the Beaver Trestle on the Iron Horse Trail and random parking areas on public land. Some parking areas, such as Muriel Lake, may be oversized.

No formal infrastructure or amenities were found that supported river access and few were found that supported OHV activities outside of the Iron Horse Trail, the Cold Lake MX track, and snowmobile club facilities.

No functional visitor-focused public infrastructure or amenities were found on public land.

Table 17 Jurisdictional Summary of Amenities

Primary Manager/ Administrator	Location & Presence	Observed Condition	Typical Amenities
City of Cold Lake	Infrequent, occasional. Typically associated with parks and playgrounds.	Good to Very good	Parking, benches, tables, waste receptacles, shade structures, portable toilets, marina.
M.D. of Bonnyville	Infrequent, occasional. Found typically in parks and campgrounds.	Fair to Very Good	Parking, benches, tables, waste receptacles, shade structure, vault toilets.
GOA (Parks)	Day-use areas and campgrounds only.	Fair to Very Good	Parking, benches, tables, waste receptacles, vault toilets.
GOA (Public Land)	Very infrequent, often user-built	Failed to Poor	No typical amenities
Northeast Muni-Corp	Variable, only at settlements.	Fair to Good	Parking, benches, tables, waste receptacles, shade structures, loading ramps.

EXAMPLES OF AMENITIES

Figure 71: Day-use toilet, Muriel Lake M.D. ParkSlider

Figure 72: Shade structure and tables at Kinosoo Beach.

Figure 73: Day-use tables, Cold Lake Provincial Park

Figure 74: User created bench, Cold Lake

Figure 75: Day-use Garbage Receptacle, Muriel Lake M.D. Park

Figure 76: Garbage receptacle and water station, Vezeau Beach Park

Figure 77: Day-use table, Muriel Lake M.D. Park

Figure 78: User-built table, west Muriel Lake

Figure 79: Very large parking area at Muriel Lake M.D. Park

Figure 80: Staging/parking area at Mason Watt Memorial Raceway

4.6 VISITOR INFORMATION, TRIP PLANNING & MARKETING

Effective marketing, promotion, trip planning and information tools and approaches are essential to ensure prepared and responsible visitors, and for supporting a strong trails tourism economy.

Trail visitors, whether local or from away, move through similar processes when planning and preparing for their trail outings. Successful trail destinations are mindful of how visitors prepare and actively make helpful information available for visitors through each step of their preparations and visit (e.g. Figure 81 Pathway to Purchase). Ideally, information sources are easy to find and convey the right information at the right time.

A web search undertaken to identify what online information and trip planning resources are readily available for the region revealed that the top website trail related information in the region were:

- M.D. of Bonnyville (**https://M.D..bonnyville.ab.ca/491/Municipal-Trails/**, **https://www.M.D..bonnyville.ab.ca/257/Outdoor-Adventures**)
- City of Cold Lake (**https://coldlake.com/en/play/trails.aspx**, **https://coldlake.com/en/play/cold-lake-mountain-bike-park.aspx**)
- AllTrails (**https://www.alltrails.com/canada/alberta/bonnyville**, **https://www.alltrails.com/canada/alberta/cold-lake**)
- SnoRiders (**https://snoriderswest.com/bonnyville**, **https://snoriderswest.com/coldlake**)
- Trailforks (**https://www.trailforks.com/region/cold-lake/**)

WEB SEARCH TERMS USED:

- Trails / Adventure / Ride
  - » Bonnyville
  - » Cold Lake
  - » Lakeland
- OHV / ATV / Quad / Ski / Snowmobile / Cycle
  - » Bonnyville
  - » Cold Lake
  - » Lakeland
- Long trails Alberta

- Go East of Edmonton (**https://goeastofedmonton.com/places/bonnyville/bonnyville-cold-lake-winter-adventures/_**)
- Travel Lakeland (**https://travellakeland.ca/play-lakeland/spring-summer-adventures/**)
- Iron Horse Trail (**https://ironhorsetrail.ca/**)
- Cold Lake ATV Trail Guide (**https://atvtrailsguide.com/**)
- Riderswest Magazine (**https://riderswestmag.com/alberta/article/cold_lake_alberta_is_a_quading_paradise**)
- Kinosoo Ridge (**https://www.kinosoo.ca/**)
- Alberta Parks

KEY FINDINGS

- Several organizations and websites promote the region.
- The region does not yet have a single, cohesive trails destination brand identity.
- The unique experiences and selling proposition(s) for the region's trails are not clear or consistent across various information sources.
- Available information sources provide highly variable (and sometimes conflicting) information about trails in the region, including mapped locations.
- The region's "one-stop travel and tourism site" has activity specific links for many activities, but many of these are dated, inaccurate, dead or only partially relevant to the activities.
- Only M.D. of Bonnyville's and Go East of Edmonton sites directly cross-promoted other visitor services and amenities (e.g. accommodation, food and beverage).
- Online searches did not directly return any trail tourism operators using any of the search terms. This suggests that local businesses are minimally involved in trail tourism and/or promotion by DMO's and marketing by tourism operators is not particularly effective at reaching trail enthusiasts.
- The diversity of available websites and information sources, when combined with poor signage and wayfinding information, likely makes it very challenging for independent visitors to find and navigate area trails and supporting services.
- With so many information sources and such varied content, the risk of visitor confusion and frustration is high, which may contribute to visitors to considering other destinations.

Frustrations and challenges associated with trail information were also directly reflected in survey results. Accurate maps, information and signage were cited as the most important things that could be done to ensure people can navigate and make informed choices about trails in the region.

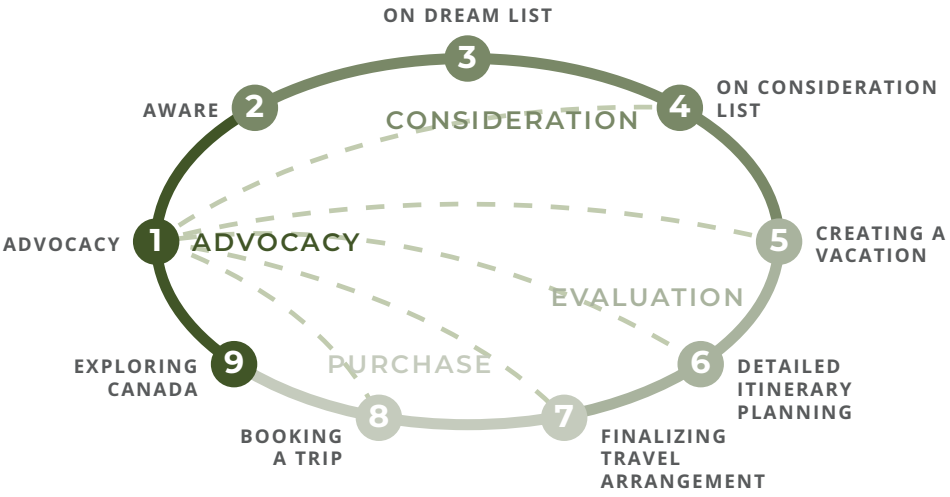
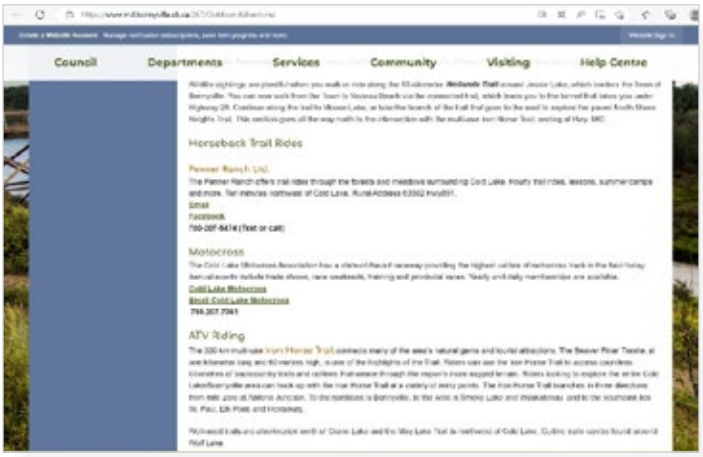
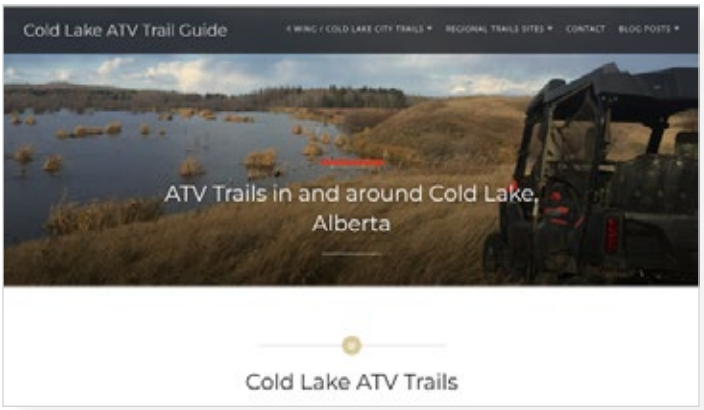


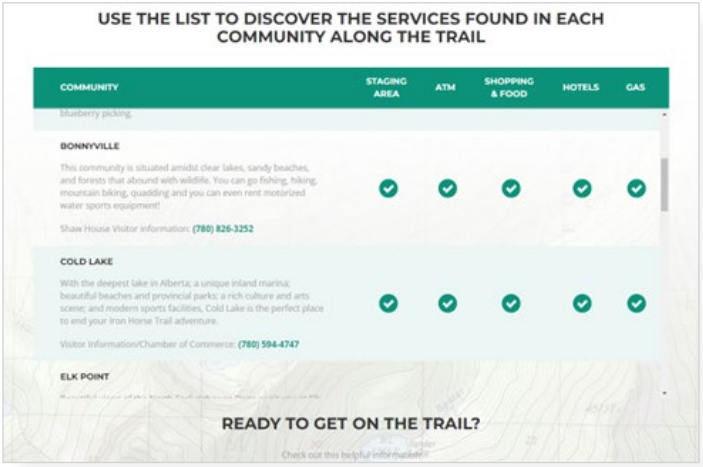
Figure 81: Pathway to Purchase

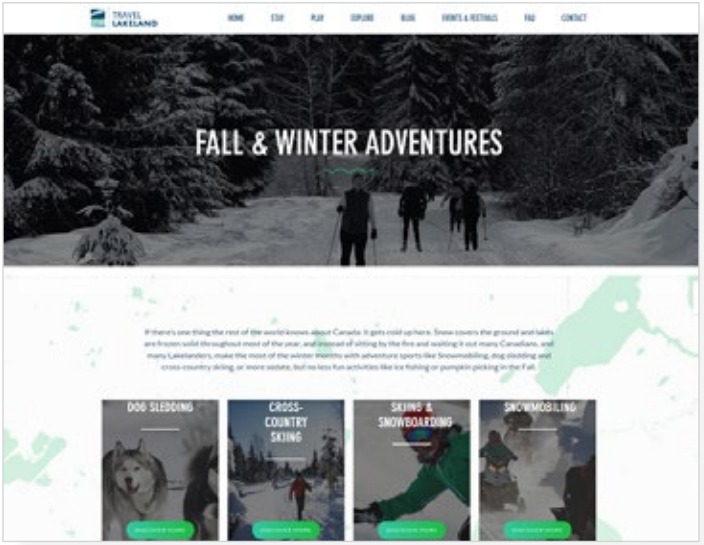
> *"There is no information on any of our rural trails, how to access them or where to go / not go. This is what causes many of the complaints mentioned earlier such as land ownership disputes and environmental damage. Most of our rural trails are big "secrets" and not accessible to most residents, let alone visitors or potential new residents."*
>
> *Survey Respondent*

REPRESENTATIVE ONLINE INFORMATION









4.7 TRAIL DEVELOPMENT STANDARDS

Standards for trail design and development are highly variable across the region and responsibilities are often spread across different departments. The primary policies and standards guiding trail development are summarized for the region's jurisdictions in Table 18.

Table 18 Primary Trail Development Policy

	Department(s) Responsible for Services	Primary Trail Development Standards
City of Cold Lake	Parks; Planning; Engineering	**Municipal Engineering Servicing Standards** (2020) Trails and Sidewalks Winter Maintenance (2019)
M.D. of Bonnyville	Parks, Recreation & Culture; Planning	**Trail Development Standards Policy** (2019)
GOA (Parks)	Ministry of Forestry, Parks & Tourism (Parks Operations Division)	No specific current provincial trail standards. (These are understood to be in development.)
GOA (Public Land)	Ministry of Forestry, Parks & Tourism (Lands Division)	**Trail Development Guidelines for Alberta's Public Land** (2019)
Northeast Muni-Corp	Shared with municipalities	No specific standard.

A review of the trail development standards revealed a high degree of variability across jurisdictions for trail intent, type, and construction details. In general, these standards also offer insufficient consistency and specificity to guide the development of a variety of trails suitable for various activities and experiences. Significant opportunity exists to streamline and align trail standards within the region.

SECTION 5

TRAIL TOURISM READINESS & POTENTIAL

Given the interest in cautiously and responsibly growing regional trails tourism, it was important to evaluate the region's trails tourism readiness.

Tourism is the activities of people travelling to and staying in places outside their usual environment for leisure, business, or other purposes for not more than one consecutive year. Trails tourism is tourism that is primarily motivated by a visitor's desire to experience a trail and / or a trail destination.

Achieving the benefits of trail tourism is dependent on the region's ability to support and enable reliable, high-quality experiences, including appropriate trail conditions, visitor amenities and the services that visitors expect.

The most successful trail destinations recognize that growing a strong trail tourism sector is about much more than the physical condition and quality of the trail itself. These destinations understand their trails tourism ecosystem (Figure 82). They understand the interconnectedness and interdependencies between each component of the system, the role that each entity in the system plays, and they deliberately work to collaborate, coordinate and align the entire ecosystem.

TRAIL FRIENDLY COMMUNITY...

A community in immediate proximity to a trail system or longer distance trail. The community recognizes the trail as an integral and important element in the community's character. It allows visitors to easily and conveniently venture off the trail to enjoy its scenery, services, and heritage with its own character and charm. It is a place where trail users can find the goods and services they need.

Figure 82: Trails Tourism Ecosystem

5.1 TRAIL TOURISM READINESS

The degree that a destination's trail ecosystem can reliably and confidently support quality experiences reflects its "tourism readiness". Tourism readiness is a rating of how "ready" a trail destination is to welcome visitors, to be promoted as a travel-motivating tourism destination, and to provide the ingredients for positive visitor experiences.

1. **Visitor Ready —** A legally operated trail that is ready to support local visitors. These trails support relatively undeveloped trail experiences, are typically known primarily by locals, and can potentially support the needs and interests of short-haul domestic travelers. These trails are not usually actively promoted beyond local markets (nor are they successful in attracting them), because one or more elements of their supporting ecosystems is not available or developed.
2. **Market Ready —** A trail that meets the *visitor ready* criteria and supports refined trail experiences and visitor amenities. The trail has a brand, is known regionally and provincially, and is being actively marketed to potential visitors in domestic short and long-haul markets.

TRAILS TOURISM READINESS

Tourism readiness is a rating of how "ready" a trail and its surrounding community is to welcome visitors and serve as a travel motivating tourism attraction.

The higher the tourism readiness rating, the higher the quality and consistency of the trail experience and the appeal the trail will have with longer-haul markets or even international markets.

3. **Export Ready —** A trail that meets criteria for both *visitor* and *market readiness*, these trails are the best of what Canada has to offer and are uniquely positioned among the best trail destinations in the world. They contain a critical mass of on and off-trail services that can support enjoyable and remarkable multi-day experiences. As primary travel motivators, these trails provide for refined and fully integrated experiences. They offer exceptional quality infrastructure and amenities, dependable support services, and excellent trip planning information. Visitors typically have access to knowledgeable staff (e.g., trail operator, Destination Marketing Organization) and trip planning tools.

   Export ready trails are ready to meet the needs and expectations of the more experienced trail tourist and/or those with more nuanced needs and expectations. The broader tourism industry surrounding export ready trails serve as knowledgeable ambassadors for the trail because their efforts are integrated with it, and they share aligned goals. The trail is regularly maintained, and visitation is actively managed. This ensures the desired trail experience can routinely be achieved and undesirable impacts to the host community are mitigated or avoided.

Trans Canada Trail's newly released *National Guidelines for Evaluating Trails Tourism Readiness* was used as a framework to assess the tourism readiness of the region as a trail tourism destination. The elements of tourism readiness, as well as their relation ship with potential benefits are reflected in Figure 83.

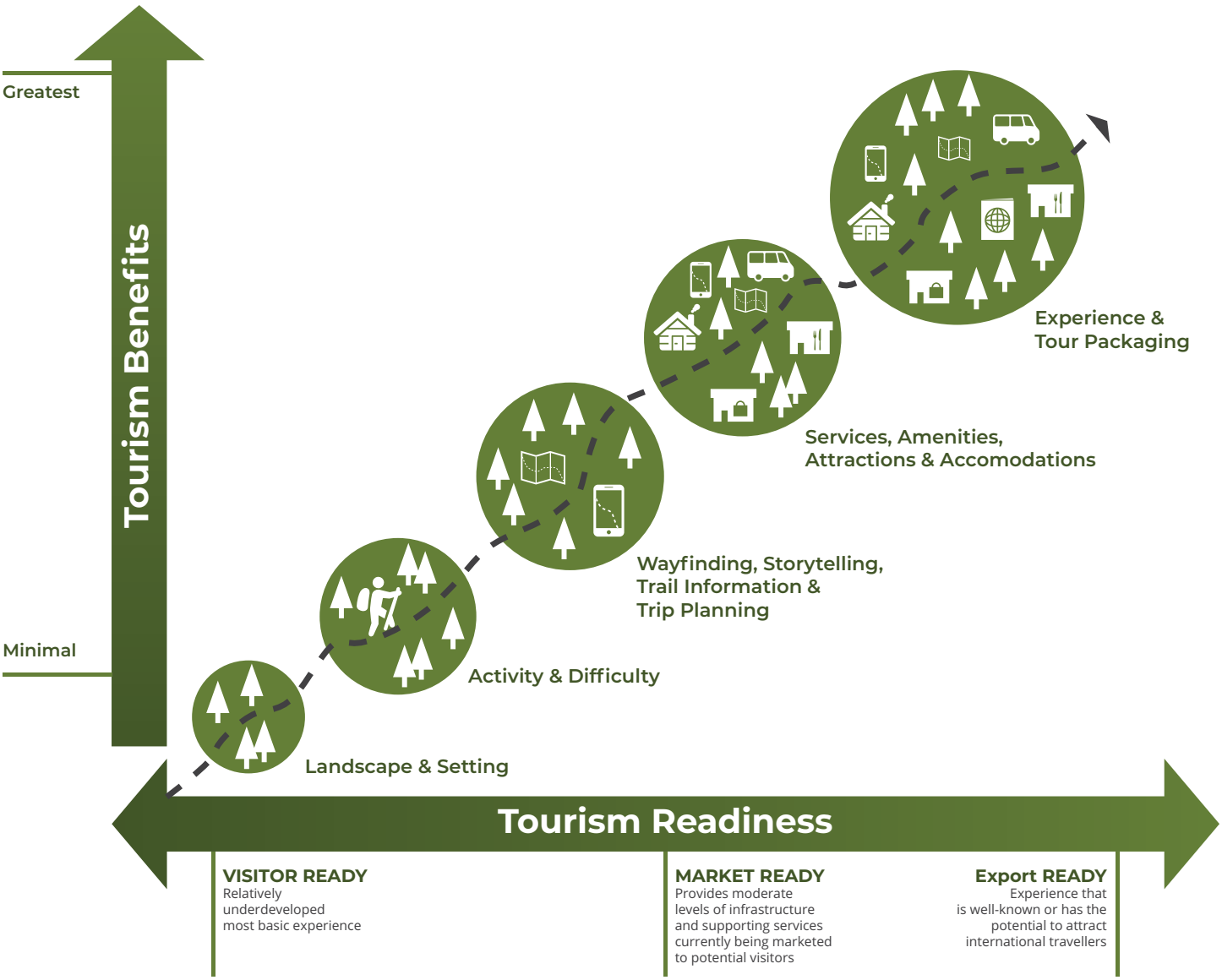


Figure 83: Tourism Readiness

Based on the input from stakeholder engagement, local expert opinions and field assessment, evaluation of the guidelines indicate that trails in the region vary between being "Not Visitor Ready" and early stages of being "Market Ready". A jurisdictional summary of relative tourism readiness is presented in Table 19.

Table 19 Relative Tourism Readiness

	General Level of Trail Tourism Readiness
City of Cold Lake	**Visitor Ready;** some elements near Market Ready (e.g. Kinosoo Beach, MTB Park)
M.D. of Bonnyville	**Visitor Ready;** some elements near Market Ready (e.g. Vezeau Beach, Muriel Park)
GOA (Parks)	**Visitor Ready;** some elements are Market Ready (e.g. Cold Lake Prov. Park)
GOA (Public Land)	**Not Visitor Ready;** some winter snowmobile trails have Visitor Ready elements
Northeast Muni-Corp	**Visitor Ready;** some trail segments are Market Ready but are aging

In general, many of the M.D. and City trails are in the initial stages of becoming “Market Ready” on the trail tourism readiness continuum. Much of the Iron Horse trail is as well, but its potential is somewhat hampered by its aging infrastructure. Trails on public land in the region, however, should be considered “Not Visitor Ready” because they have one or more significant deficiencies.

There are currently no trails in the region that are “Export Ready”.

In summary, although the region is still early in its trail tourism destination lifecycle, there is strong potential for it to become a market ready trail tourism destination capable of attracting visitors from local, short-haul and mid-haul source markets.

Taking steps to adopt and implement the key concepts, strategies and actions in sections 6 and 7 will allow the region to advance its state of tourism readiness.

Except for public land trails in the region, all trails approved and recognized by land managers are “Visitor Ready” and many have some “Market Ready” characteristics.

No trails in the region are “Export Ready”.

All summer public land trails in the region are “Not Visitor Ready” and should not be marketed until their deficiencies are addressed.

Some winter-oriented trails on public land are approaching “Visitor Ready” status.

5.2 UNIQUE QUALITIES AND SELLING PROPOSITION

The region is ecologically, culturally, and socially unique in the province. Recognizing the region's unique qualities and attributes can help to differentiate it from other destinations and ensure that it can become a trail destination unlike anywhere else.

When compared to other trail destinations in Alberta, the region:

- Is varied in its ecology, settings, and locally scenic values (including large sandy pine areas).
- Has extensive lakes in a variety of sizes.
- Is relatively flat and accessible.
- Is bisected by an existing long-distance trail corridor (Iron Horse Trail).
- Has a variety of related recreational infrastructure including parks, campgrounds and formal and informal trail networks that cater to both summer and winter recreationists.
- Has a diverse Indigenous population with thousands of years of history on the land.
- Has a unique settlement history and a diverse set of economic drivers.
- Has a relatively young population with strong interest in outdoor activities and adventure.
- Has a strong affinity and interest in motorized recreation.
- Has very few formal, approved trails on public land.
- Is partially covered by a land use plan for public land that identifies priority areas for tourism and calls for development of recreation and trail plans.

Alberta's outdoor recreation economy is growing and the region has an opportunity to position itself to take advantage of its unique attribute through deliberate steps that leverage its strengths. Conversely, potential benefits of trail tourism may be unrealized if unmanaged recreation activity is allowed to erode and degrade the area's potential. For this reason, the region's administrations and trails ecosystem should work diligently and deliberately to protect and responsibly grow its unique trail potential.

In particular, the area's strongest potential for high-quality, unique trails that would be capable of serving residents and attracting visitors lies on provincial public land within the region. With opportunities presented under Alberta's new Trails Act, the region's municipalities have an opportunity to lead, coordinate and facilitate the provision of trail services that were previously impractical, inaccessible and/or cost prohibitive.

As a destination, the region has a highly unique opportunity to cooperate in the support, development, and provision of short, medium and long-distance trail adventure opportunities for both summer and winter recreation activities that are well-supported by services in adjacent communities.

5.3 MARKETS OF GREATEST POTENTIAL

Good trail planning needs to be grounded in an understanding of current usership, the needs and expectations of visitors that are most likely to be attracted to the region's trails, and where future interested visitors are found.

5.3.1 TARGET MARKET SEGMENTS

While insights on local trail interests and demands have been established through recent community engagements, insights on target markets have been obtained from Travel Alberta's Ultimate Travellers and the Adventure Travel Trade's Adventure Traveller market segmentation tools.

ULTIMATE TRAVELLER MARKET SEGMENTATION

Travel Alberta's "Ultimate Travellers" personas represent the market segments whose expectations best match Alberta's tourism offering. They are also the segments that hold the greatest potential to advance tourism spending in the province. Ultimate Travellers personae provide the region's trails ecosystem with insights on who these segments are, where they come from, why and how visitors like to travel, and better enables the region to ensure that it is providing the trail experiences that target visitors are expecting. While Travel Alberta has identified two Ultimate Traveller personas (Curious Adventurers and Hot Spot Hunters) as being a priority for Alberta's tourism industry, it is the "Curious Adventurers" that are the primary target market segment for the region's trails tourism sector.

Curious Adventurers are…

- Drawn to rural communities.
- Open to all season travel, but most interested in summer.
- Fuelled by a sense of adventure, want to experience the destination like a local and seek authenticity.
- Energized by exploring new places and want to learn all they can bout a destination.
- Thoughtful planners, they enjoy and invest time before their trip, planning it and learning about the destination.
- Likely to consider less expensive accommodations like budget hotels, camping, Airbnb, and VRBO.

Further insights on Curious Adventurers is available here: **https://industry.travelalberta.com/resources/brand-and-marketing/alberta-ultimate-travellers**.

ADVENTURE TRAVELLER MARKET SEGMENTATION

The Adventure Travel Trade Association (ATTA) has developed an adventure traveller market personas tool which is similar to the Ultimate Traveller types but focused more specifically on the Adventure Travel industry. The ATTA has identified four adventure traveller personas:

- Up and Coming / Pre-Adventurers,
- Adventure Grazers,
- Adventurers, and
- Adventure Enthusiasts.

Given the remoteness, challenging access, need for greater technical skills, and specialized equipment to travel existing and potential trails in the region safely, the Adventurers and Adventure Enthusiast market segments are the primary market segments for the region's trail tourism sector.

Adventurers and Adventure Enthusiasts are:

- Motivated to explore new places.
- Drawn by higher degrees of adventure and thrills and accept higher risks.
- Often repeating or dedicated to a specific activity.
- Actively looking to improve and enhance their skills.
- More technically skilled in their activities and perform at an intermediate to expert levels.
- More equipped to undertake their activities.

More information on the ATTA's Adventure Traveller personas is available here: **https://www.adventuretravel.biz/**.

THE REGION'S DESIRABLE PRIMARY MARKET SEGMENTS ARE:

- Curious Adventurers
- Adventurers
- Adventure Enthusiasts

5.3.2 SOURCE MARKETS

It is also important to understand where the region's existing users are coming from and where target markets are most likely to originate from.

Visitor data for current users of the region's trails does not exist. However, anecdotal evidence from prominent trail leaders and stakeholders in the region suggests that a significant majority of users are local to the region or hyper-local (living in very close proximity to the trail). For reference purposes, the relative population density within the region is shown in

Observations that most current users of the region's trails are residents is supported by PRIZM data for the region. PRIZM segmentation is a tool used within the marketing industry to understand customers and markets based on demographics, lifestyles, and values of residents.

Analysis of PRIZM data shows that regional residents are relatively young, affluent, and interested in the outdoors. It also shows that the most prevalent PRIZM segments (Figure 85) within a one- and two-hour drive from Bonnyville are associated with PRIZM's:

- "New Country" market segment and have a strong affinity for hunting, fishing, boating, camping, snowmobiles and ATVs.
- "Down to Earth" segment who enjoy connecting with nature and have outdoor oriented pursuits and interests.
- "Suburban Sports" segment with active sports-oriented families.

Approximately 163,000 residents reside within a two-hour drive of the center of the region and many of these residents have interests that are strongly connected to trails. Within a three-hour drive, 1.7M people reside but are proportionately less interested in the types of experiences the region's trails can provide. In short, beyond a two-hour drive the proportion of residents with relevant outdoor interests declines.

This correlates with the strong local interest and connection residents have with regional trails and helps reinforce that much of the regions current visitation is "hyper-local" from very nearby.

For more on PRIZM segmentation visit: https://environicsanalytics.com/en-ca/data/segmentation/prizm.

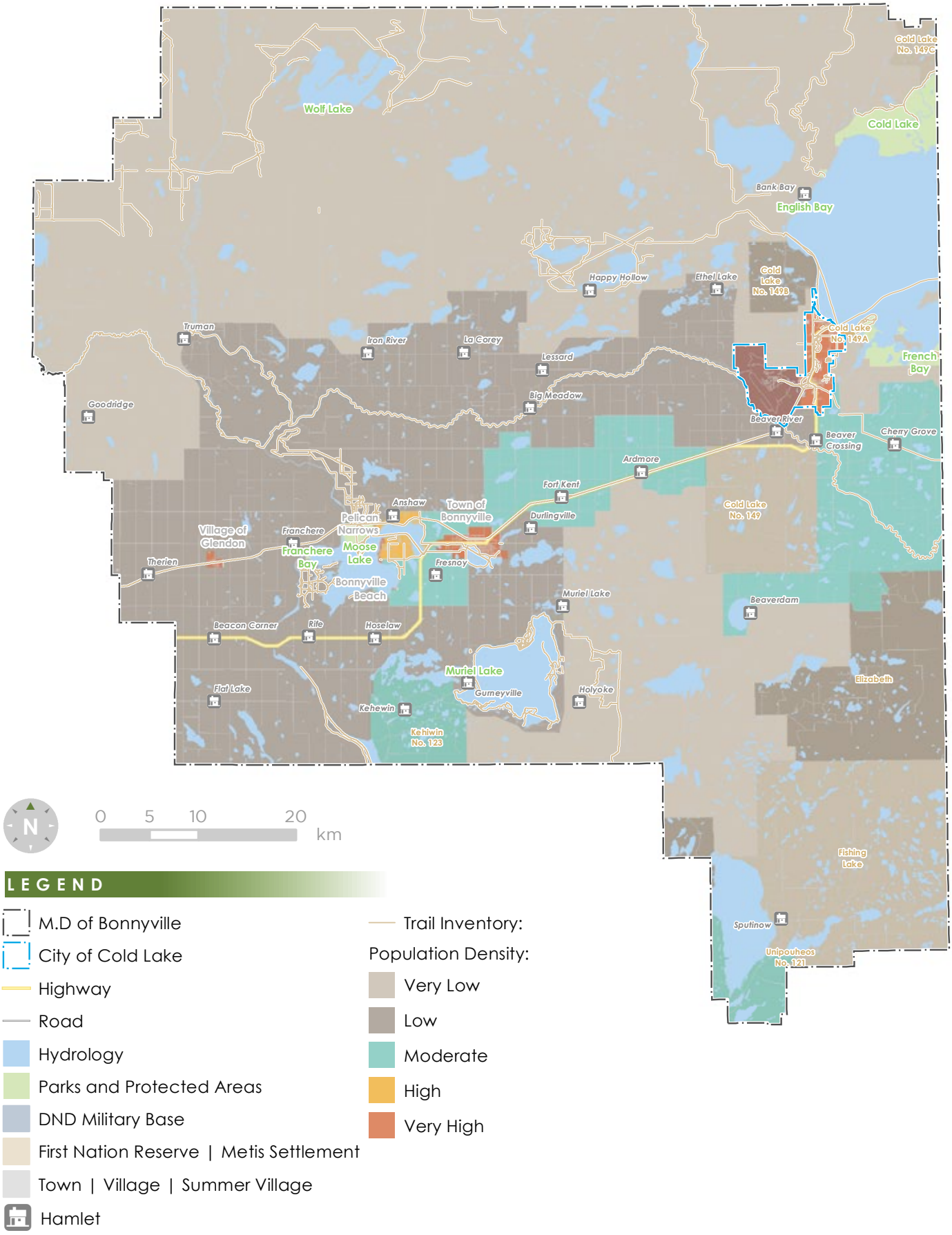


Figure 84: Population Density

PRIZM SEGMENTS FROM BONNYVILLE

WITHIN ONE-HOUR DRIVE | WITHIN TWO-HOUR DRIVE | WITHIN THREE-HOUR DRIVE

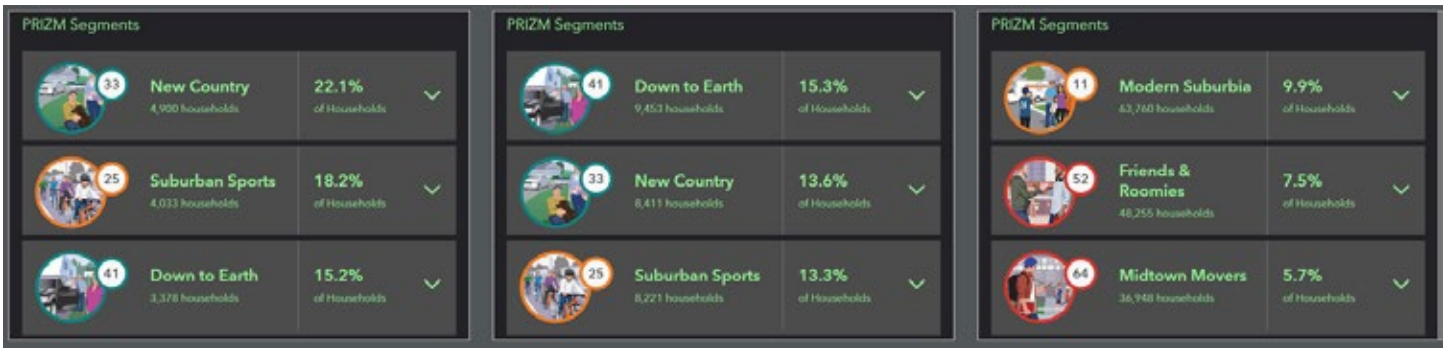


Figure 85: PRIZM Segments in the Region

The Iron Horse Trail was noted as the one current local trail known to attract a modest proportion of users from outside of the region and the trails extensive length means that 45% of Albertans live within a three-hour drive from it.

Recognizing the above, and the distance of the region from major population centres, it's recommended that the region approach developing and marketing with the following primary market in mind. The opportunity to grow visitation from other source markets exists but will largely be dependant on whether decisions are made to improve the trails offered, deliberately leverage the provincially unique trail opportunities that the region could offer, and to enhance the marketing trail opportunities in the region.

PRIMARY MARKET:

- Northeastern Alberta residents with aligned market segmentation attributes

SECONDARY MARKETS:

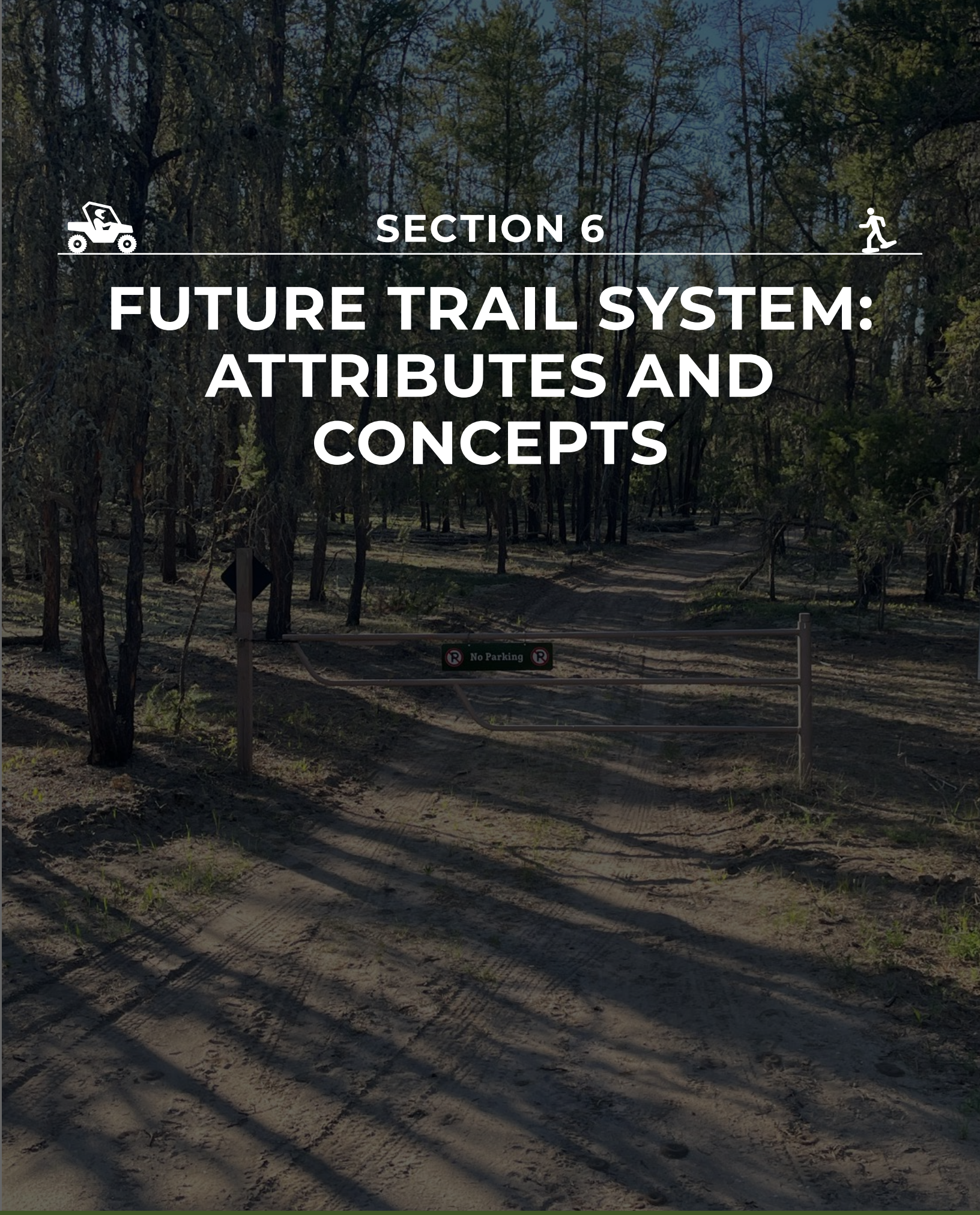
- Edmonton and beyond
- Remainder of Alberta; Saskatchewan

LOW PRIORITY EMERGING MARKETS:

- Remainder of Canada, International Markets

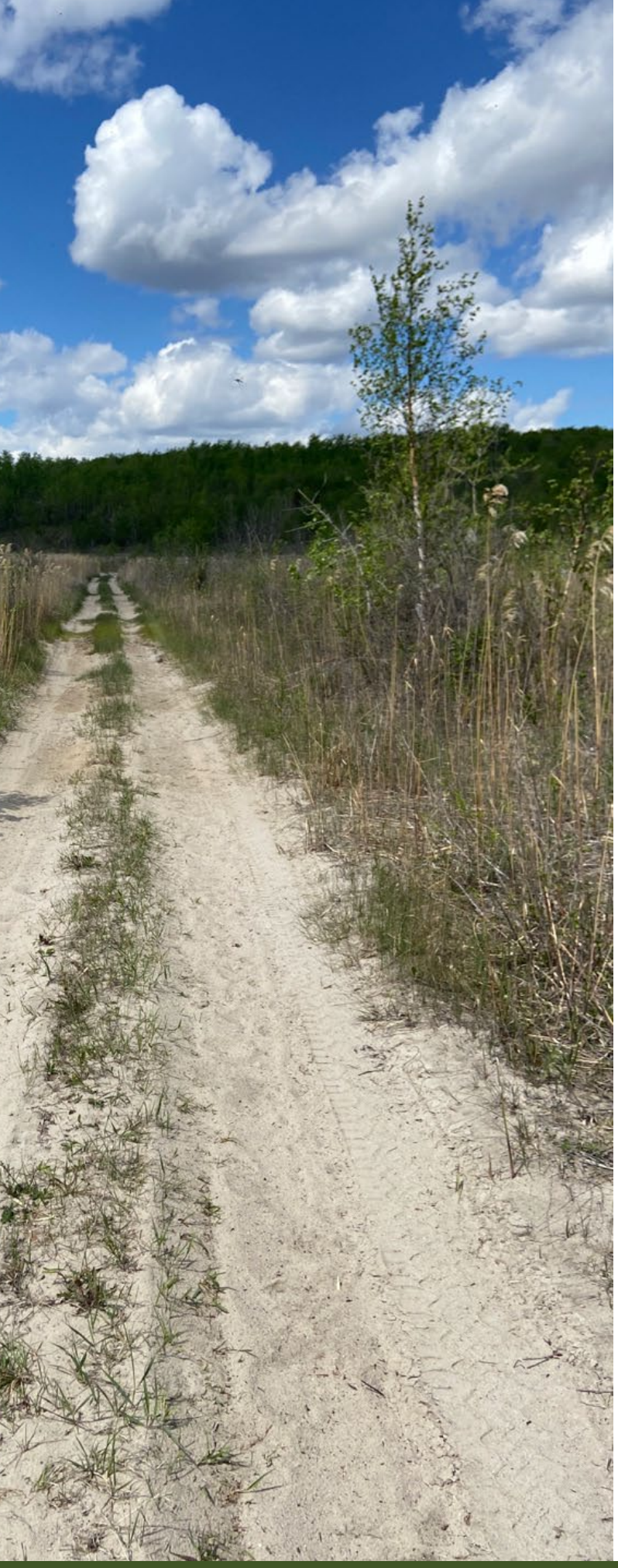
SECTION 6

FUTURE TRAIL SYSTEM: ATTRIBUTES AND CONCEPTS



The region's existing network of trails and amenities provide a solid foundation to build from. As reflected in engagement input, however, the full potential of a regional system for both residents and visitors has yet to be fully realized. The recent addition of quality trails with connectivity focus (e.g. Moose Lake) and optimized focus (e.g. Cold Lake MTB) have been welcomed and well-received by residents, and they are functioning well. They are good examples of how quality, purposeful trails can serve the region as recreation and tourism assets. But as also reflected in the public engagement, unmet interests and trail management issues exist that should be considered and addressed.

This section provides a broad overview of the shifts, desired conditions, and key planning concepts that will underpin the specific strategies and actions that follow in Section 7.



6.1 KEY SHIFTS

The desired conditions, strategies and actions that follow flow from the opportunity for the region's communities to embrace a way of approaching trails and trail services as a "trails ecosystem". This plan's best chance of success will depend on the extent that the region's ability to:

- View and develop the region's trails as an interconnected system.
- Provide the foundation to view, manage and celebrate trails as key community assets.
- Adapt and develop the trail system to take advantage of the region's unique strengths, including its public land potential.
- Adopt an aligned, structured, and intentional approach to trail development and management.
- Balance, and be attentive to, providing trails for residents and for visitors.
- Prioritize quality of experience and trail sustainability.
- Intentionally diversify trails and trail services to accommodate motorized activities, water-based, and other emergent activities (e.g. electrified conveyances).

6.2 DESIRED CONDITIONS

Desired conditions are clearly articulated aspirational statements that define the visitor experience and the environmental, cultural, community and economic conditions that the trails ecosystem in the region is working to achieve.

Taken together, they paint a vision of what the trail system and trails tourism is intended to look like. The strategies and actions outlined in this plan have been deliberately developed to help achieve or maintain these conditions and the status of each should be monitored over time.

A UNIQUE AND INCLUSIVE "MUST EXPERIENCE" TRAILS DESTINATION

- The region, including the Crown Lands outside of its settled areas, is recognized by residents for its high-quality trails.
- The region's trail system has seamless connections to the area's more densely populated communities, settlements and service centres that allow residents and visitors to move easily through the system.
- The trail system consists of a diverse network of all-season mixed-use, non-motorized and activity- optimized trails that provide managed opportunities to enjoy all-terrain vehicles, side-by-sides, off-road / dual-sport motorcycles, hiking, trail running, mountain biking, fat biking, equestrian, snowshoeing, and Nordic skiing activities in front- and mid-country recreation settings.
- The region's reputation for trail quality underpins a growing awareness that it is one of Alberta's "must experience" trail destinations for long-distance trail enthusiasts and adventure lovers.
- Without compromising ecological integrity, the trail system supports a reasonable range of technical skill levels for each permitted trail activity and provides opportunity for visitors to progress their technical abilities.

ONE TRAIL CAN REVITALIZE AN ENTIRE REGION...

"If you do it right. If you transform that simple path into a place people want to stay, explore, and spend, you will move every community on your trail forward. The success is all connected: as your trail's communities strengthen, you'll attract even more visitation. And when your economy is thriving, your communities will keep investing in your growth, so the success lasts long-term"

Trail Town Guide

- The quality of trail experience (trail, amenities, services etc.) meets or exceeds visitor expectations.
- Visitors have access to comfort and convenience amenities, to services that support their desired trail experience, and to self-guided and guided opportunities to learn about and appreciate the area's Indigenous peoples, wildlife and wildlife habitats, ecosystem processes, geomorphology, and other natural and cultural heritage topics.
- The trail system is regularly activated, in all seasons, through a mix of programming, special events, festivals and races.
- Trail related visitors arrive in the region informed and prepared for the trail experience they are undertaking. Once in the region, visitors receive the additional information needed to help them be responsible and compliant trail users.

A SUSTAINABLE TRAIL SYSTEM

- All trails are sited and developed in accordance with trail planning, design, and construction best practices and with consideration to climate change adaptation. Unsustainable, poorly designed, and redundant trails are decommissioned, and unauthorized trail building does not occur. New trail development and enhancement of existing trails occurs through a formalized process.
- Trails are actively maintained, and their conditions remain aligned with the established Trail Management Objectives (TMOs).
- Wildlife and ecosystem processes are healthy and functioning and unacceptable impacts from trail development and visitation on sensitive fish, wildlife and their habitats (e.g. caribou, colonial nesting birds, fish), vegetation communities, wetlands, watercourses, and water quality are avoided. Human-wildlife conflicts are minimized.
- Trail density is limited in environmentally sensitive areas to maintain habitat, wildlife corridors and landscape connectivity.
- The spatial and temporal patterns of trail visitation are predictable, allowing wildlife to adjust their behaviours and patterns to mitigate disturbance and displacement during the most sensitive seasons.
- Trails are responsibly sited and sustainably designed, and visitation is actively managed on them to avoid unacceptable impacts to Indigenous values and traditional uses as well as other historic resources.
- Interactions between trail users and community residents are respectful and conflicts are minimal.

WHAT IS TRAIL TOURISM?

Tourism is the activities of people travelling to and staying in places outside their usual environment for leisure, business or other purposes for not more than one consecutive year. Trail tourism is tourism that is motivated by a destination's trail network.

WHO IS A TOURIST?

Tourists are anyone who stays one or more nights away from home. Or someone who spends no nights away from home but travels at least 40km one way from their home to their destination.

Statistics Canada

COMMUNITY SUPPORT FOR TRAILS & TRAIL TOURISM

- Residents recognize their trails are important community assets and they actively use trails for health, social and connectivity benefits.
- Regional residents support trails and trails tourism. Visitation does not unacceptably impact resident's own enjoyment of the trails and trail amenities.
- Local elected officials understand, support, and are committed to realizing the social, economic, and environmental benefits that trails and trails tourism bring to the region.

ECONOMIC GROWTH & DIVERSIFICATION

- Trail related visitation to the region increases in a measured and responsible way. Continued growth is contingent on resource conditions remaining in a desirable state.
- Direct spending by trail-based visitors in the region increases and the regional economy grows.
- Trails and trail related visitation are stimulating opportunities for existing and new businesses to serve trail visitors.

PARTNERSHIPS, COLLABORATION & RESOURCING

- Planning, development, and management of the trail system occurs through an effective partnership approach between the M.D. of Bonnyville, City of Cold Lake, area villages and summer villages, First Nations, Métis Settlements, the Government of Alberta, and public components of the trails ecosystem. The trails ecosystem is aligned and works collaboratively to develop and manage the trail system and advance trail tourism.
- Residents and trail users are engaged in the management processes, including participation as active volunteers.
- The businesses in the region's communities benefit from trail tourism and actively contribute financial and capacity support for the development, maintenance, and management of the trail system and visitation.
- The trails ecosystem is sustainably resourced and has the capacity and capability to develop, maintain and manage the trail system, visitors and to encourage trail tourism.

6.3 KEY MANAGEMENT CONCEPTS

For the region's trail system to be developed and managed to provide for a mix of activity optimized, non-motorized and mixed-use trail experiences, its useful to have a way of describing what the mix of trails will be, what they will look like, what they'll offer, and where different types of trails are best located. A formal trail classification system and conceptual zoning approach will be used to describe the types of trails, their intended purposes, and their potential locations to help guide development and ensure consistency. A "Level of Development" guideline will help provide consistent understanding of what types of amenities are appropriate for each trail type.

6.3.1 TRAIL CLASSIFICATION

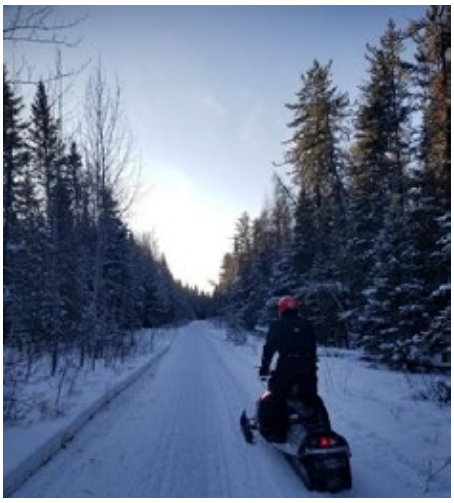
To the greatest extent possible, individual trails in the region should have specific purposes and objectives, and they should be built, managed, and operated in a consistent manner across administrations according to their defined "Trail Management Objectives" (TMOs).

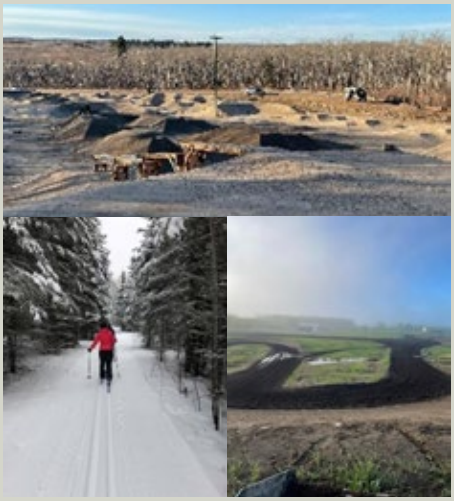
Nine TMOs are recommended for the region. A short summary of these is provided in Table 20. Please see Appendices C and D for detailed descriptions of each type.

Table 20 Trail Classification & Permitted Activities (Trail Management Objective Types)

TMO	Representative Image	Activities Permitted	Short Description
1		Non-motorized (all-season)	• Wide, asphalt surface • Easy level of difficulty • Frequent maintenance

TMO	Representative Image	Activities Permitted	Short Description
2		Non-motorized OR Mixed-use (all-season)	• Wide, asphalt or aggregate surface, shared with roadway with some separation. • Frequent maintenance • For use only where physical separation from road is infeasible or impractical. *<Image: Representative but not exactly as recommended>*
3		Non-motorized (all-season)	• Wide, aggregate surface • Easy to moderate difficulty • Periodic maintenance
4		Non-motorized (all-season)	• Narrow, natural surface • Easy to moderate difficulty • Infrequent maintenance

TMO	Representative Image	Activities Permitted	Short Description
5		Mixed-use (all-season)	• Wide, granular surface • Easy level of difficulty • Connectivity focus • Frequent maintenance *<Image: Iron Horse Trail>*
6		Mixed-use (all-season)	• Wide, granular or natural surface • Easy to moderate difficulty • Recreation focus • Periodic maintenance
7		Mixed-use (winter)	• Wide, snow covered (snow-vehicle optimized) • Easy to moderate difficulty • Periodic maintenance *<Image: Cold Lake Snowmobile Club>*

TMO	Representative Image	Activities Permitted	Short Description
8		Optimized for Non-motorized OR Mixed-use OR Motorized (seasonally dependent)	• Specialty/ Optimized (e.g. MTB, MX, Nordic Ski) • Easy to very difficult difficulty • Required specialized design and maintenance to be guided by appropriate best practices *<Images: Bonnyville Nordic Ski Club; Cold Lake Bike; Cold Lake MX Club>*
9		Paddling OR Mixed boating	• Purposeful water access infrastructure *<Images: Accudock>*

While variability exists about what is considered motorized and non-motorized activities, particularly for electrified activities, it's recommended that the region uses the Trans Canada Trails National Guidelines for Classifying Multi-Use Trails (Trans Canada Trail, 2021) guidance for its permitted trail activities, as shown in Figure 87. Trails that allow a combination of both motorized and non-motorized activities are referred to as "mixed-use" trails.

Non-Motorized Activities

- Pedestrian - walking / hiking / running
- On-road cycling *(includes self-propelled and type 1 unthrottled electric assist)*
- Leisure cycling *(includes self-propelled and type 1 unthrottled electric assist)*
- Mountain biking *(includes self-propelled and type 1 unthrottled electric assist)*
- Adaptive cycle / mountain biking
- Small-wheeled conveyances
- Equestrian
- Equestrian drawn vehicles (buggy / cart, wagon, sleigh)
- Nordic Cross-country skiing (classic/ skate)
- Snowshoeing
- Paddling

Motorized Activities

- Off-road motorcycle / dual-sport motorcycle
- Motorized vehicle – with width 1.5m (60") or less
- Motorized vehicle – width greater than 1.5m (60") but 1.83m (72") or less
- Motorized vehicle – width greater than 1.83m (72")
- Snowmobile / snowbike – width 1.5m (60") or less
- Snowmobile – width greater than 1.5m (60")
- On-road cycling (includes type 2 & 3 throttled electric bicycles)
- Mountain biking (includes type 2 & 3 throttled electric bicycles)
- Motorized boating

Figure 86: Trans Canada Trail Differentiation between Motorized and Non-Motorized Activities

6.3.2 TRAIL EXPERIENCE ZONES

"Where is a good place around here to _____?"

The answer to this common visitor question is one that every successful trail destination should plan for and be able to clearly communicate to visitors.

Five trail experience zones (Table 21) and sub-zones are used in the remainder of this document to represent where specific types of trail experiences are, or could be, prioritized for active management and development based on the zones suitability for various activities and its potential to contribute to the region's inventory of trail experiences and desired resource conditions.

For each type of zone, the appropriate trail classifications (i.e. their TMOs) that are best suited to support the activities within each zone are also identified.

Note: *While some noted locations later in this document already have trail related planning and development, not all zones have been sanctioned or approved for trail activities.*

THE TOURISM REALITY OF MIXED-USE TRAILS

Although mixed-use (combining motorized, non-motorized and mechanized activities) trails can be successful in the recreational context, this plan recognizes that typically mixed-use trails optimize the tourism potential for visitors who are seeking a motorized experience. Due to goal interference and unmet expectations, mixed-use trails rarely become travel motivating experiences for visitors seeking a non-motorized experience.

Table 21 Trail Experience Zones

Trail Experience Zone (TEZ)			Intent	APPROPRIATE TMO Types
1	**Community Connectivity & Recreation Zone**	**A. Developed / Urban Focus**	This zone is densely populated and is best served with a thoughtful network of improved non-motorized and mixed-use trails. The primary user objectives for this zone include socializing, exercise, active transportation, and connections to desired services and destinations. The network should contain non-motorized and/or mixed-use connections primarily at the green level of difficulty.	1, 2, 3
		B. Rural/ Front-country Focus	This zone is moderately populated in a rural setting and is best served with an intensively used, moderate density network of natural surfaced and improved non-motorized and mixed-use trails. The primary user objectives for this zone include nature, socializing, exercise, active transportation, and connections to desired services and destinations. The network should contain non-motorized and/or mixed-use connections at the green level of difficulty.	2, 3, 4, 5
2	**Visitor Interface Zone**	**A. Access Focus**	This zone is well-suited to provide visitors with a welcoming and memorable gateway experience and starting / ending to their trail outing. Access zones provide visitors with critical information about the trail system, rules, responsible use, and preparedness as well as wayfinding to help them ensure a safe, responsible, and compliant outing. Access zones may also provide formalized parking and access to visitor amenities and interpretation.	2, 5 and roads permitting mixed use
		B. Service Focus	This zone is well-suited to provide formalized, inviting and convenient trail-based connections to the accommodations, fuel, food and beverage and equipment and supply services that they may require. The primary user objectives for the zone are connectivity, safety, and efficiency.	2, 5 and roads permitting mixed use

Trail Experience Zone (TEZ)			Intent	APPROPRIATE TMO Types
3	Long Distance Adventure Zone	**A. Mid-country Extensive**	This zone is well-suited to provide a moderately used, low-density network of natural and/or granular mixed-use trails and basic visitor amenities (e.g. viewpoints, campsites). The primary user objectives for this zone include longer distance connection, nature, escape, solitude, risk, and exercise. The network could contain medium to long distance mixed-use trails or stacked loops at the green and blue level of difficulties. Sustainability of trails in the area will be enhanced through careful routing, designed water crossings and clear user expectations.	4, 6, 7
		B. Backcountry Extensive	This zone is well-suited to enable a low-density network of water or natural surfaced multi-use, non-motorized trails and basic visitor amenities (e.g. viewpoints). The primary user objectives for this zone include quiet, nature, escape, solitude, risk, and exercise. The network should contain medium to long non-motorized trails or stacked loops at the green and blue level of difficulties.	4, 8
4	Activity Optimized Intensive Zone	**A. OHV Play Park**	The intent of this zone is to provide an intensively used open area that is optimized for challenge, enjoyment, and skill development. The area should offer a mix of green, blue, and black difficulty lines or features. Natural setting is not a priority in this zone and users of the area should expect noise and higher speeds. Non-motorized use may be tolerated if it can occur safely.	8
		B. OHV Trail Area	The intent of this zone is to provide a network of intensively used trails for day-use that are optimized for challenge, enjoyment and skill development. The area will offer a mix of green, blue, and black trails provided they can be managed sustainably. Natural setting is desired, but users of the area should expect other users, noise and higher speeds. Non-motorized use may be tolerated if it can occur safely.	6, 7, 8
		C. Hiking, Trail Running & Snowshoeing Area	The intent of this zone is to provide an intensively used, stacked loop network of singletrack, natural surfaced, non-motorized trails and visitor amenities that are optimized for hiking, trail running and snowshoeing in the winter. The primary user objectives for the zone include nature, exercise, and socializing. The network will offer a mix of green and blue level of difficulty trails in a natural, visually appealing front or mid-country recreation setting. Motorized use is not permitted in this zone. While cycling, including class 1 e-bikes, may be permitted on these trails, it will be discouraged.	4

Trail Experience Zone (TEZ)			Intent	APPROPRIATE TMO Types
4	**Activity Optimized Intensive Zone**	**D. Mountain Biking & Fat Biking Area**	The intent of this zone is to provide an intensively used system of trails and/or features suitable for mountain biking. In the winter, fat biking should be supported though grooming. Snowshoeing and pedestrian use on the fat bike trails in the winter will be discouraged. Off-highway vehicle use, including Class 2 and 3 e-bikes, motorcycles, and snowmobile use will be limited or prohibited unless being used for trail development, operations, maintenance, or emergency response.	4, 8
		E. Nordic Ski Area	The intent of this zone is to provide an intensive use, stacked loop network of groomed Nordic ski trails for classic and/or skate ski opportunities in the winter season. The primary user objectives for the zone include exercise, socializing and nature. The network should offer a mix of green and blue level of difficulty trails. Hiking, snowshoeing, fat biking, off-highway vehicles and snowmobiles are not permitted on Nordic trails during the winter season. Some trails in the zone may support hiking, cycling and other non-motorized use in the warm season months.	8
		F. Equestrian Area	The intent of this zone is to provide an intensive use, stacked loop network of equestrian trails for trail riding and/or wagons and sleighs. Motorized activities should not be permitted. Other low-speed, non-motorized activities may be permitted provided in some cases, but their use must defer and yield to equestrian users.	4, 8
5	**Trail Free Zone**		For specific reasons, no trail development is envisioned in this zone.	

6.3.3 LEVEL OF DEVELOPMENT GUIDELINES

Not all trails require extensive infrastructure and amenities. A trails' level of development should complement its location, setting and its objectives. In general, trails that are near more populated areas, are intended for greater levels of comfort, and are likely to experience heavier or more tourism-focused use should be more developed and more accessible.

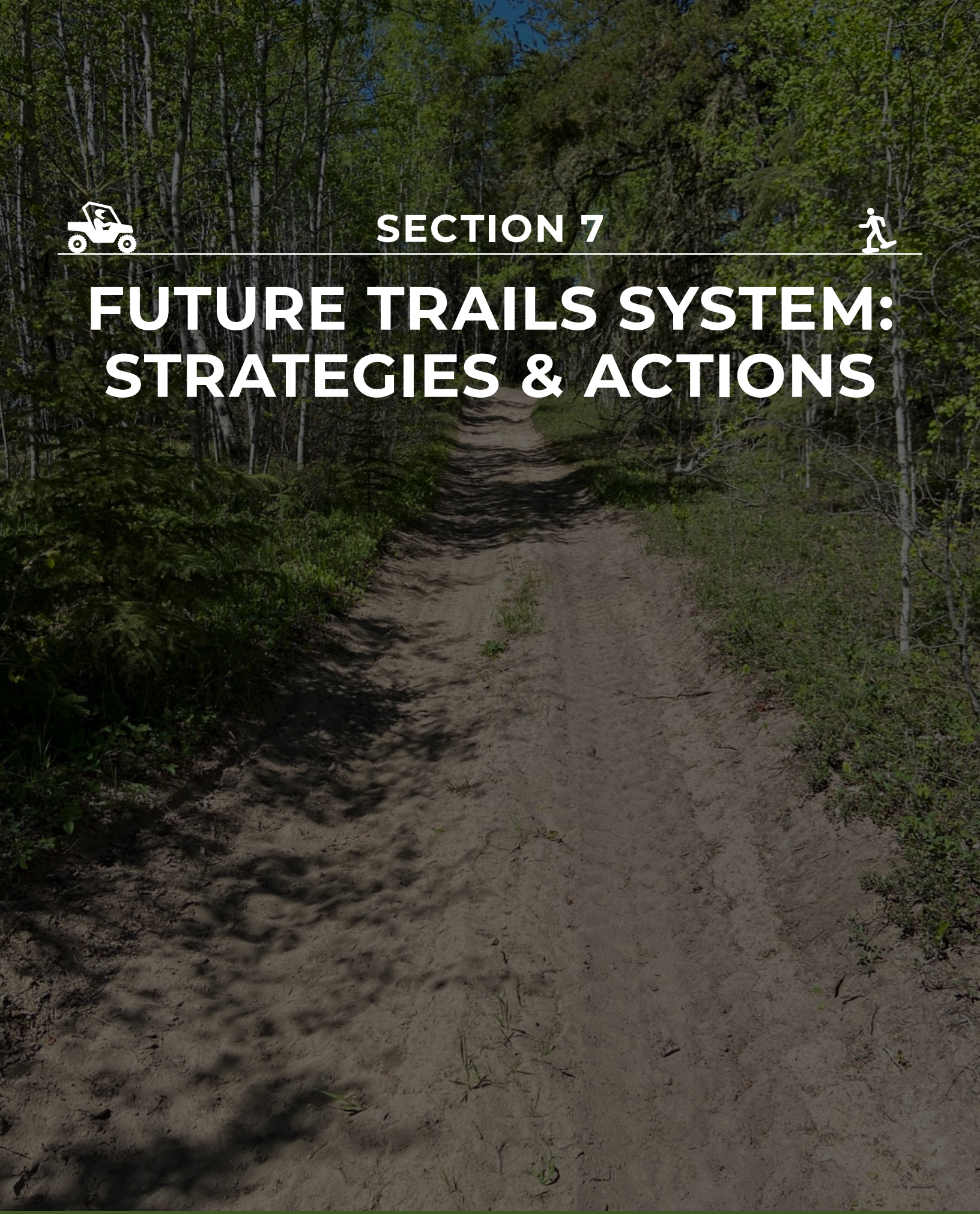
The following table (Table 22), adapted from the Trans Canada Trail Guidelines for Classifying Multi-Use Trails, presents useful guidance for determining the suitability of various types of infrastructure for various levels of development.

These guidelines should be used in tandem with the ascribed TMO for each trail in the region's network and should guide capital development and maintenance decisions for each trail.

Table 22 Level of Development Guidelines

INFRASTRUCTURE, SERVICES & AMENITIES		Level of Development Guideline		
		Developed	Moderately Developed	Minimally Developed
RECREATION SETTING	**Developed**	Appropriate	Appropriate	May be appropriate
	Front Country	Appropriate	Appropriate	May be appropriate
	Mid-country	May be Appropriate	Appropriate	May be appropriate
	Backcountry	Inappropriate	May be Appropriate	Appropriate
TRAIL INFRASTRUCTURE		Structures are frequent and typically constructed of imported materials. May include bridges, boardwalks, curbs, handrails etc. Crossings (roads and stream) are engineered for safety and protection of human life and other values.	Structures of limited size, scale, and quantity; typically constructed of native materials. Structures adequate to protect trail infrastructure and resources. Bridges as needed for environmental protection and appropriate access.	Structures minimal to non-existent. Drainage typically accomplished without structures. Bridges as needed for environmental protection and appropriate access.
ACCESS	**Major Trailhead**	Appropriate – pending degree of use / trail significance.	Appropriate – pending degree of use / trail significance.	Appropriate – pending degree of use / trail significance.

INFRASTRUCTURE, SERVICES & AMENITIES		Level of Development Guideline		
		Developed	Moderately Developed	Minimally Developed
ACCESS	**Minor Trailhead**	Appropriate – pending degree of use / trail significance.	Appropriate – pending degree of use / trail significance.	Appropriate – pending degree of use / trail significance.
	Rustic Trailhead	Appropriate – pending degree of use / trail significance.	Appropriate – pending degree of use / trail significance.	Appropriate – pending degree of use / trail significance.
SIGNAGE & WAYFINDING	**Major Trailhead Signs with Maps**	Appropriate	May be Appropriate	May be Appropriate
	Minor Trail Signs with Maps	Appropriate	Appropriate	May be Appropriate
	Trail Markers/ Directional Signs	Appropriate	Appropriate	May be Appropriate – but bare minimum required to navigate
	Regulatory/ Caution/ Advisory Signs (including road crossings)	Appropriate	Appropriate	Appropriate – but minimal
	Interpretive Signs	Appropriate	May be Appropriate	Appropriate – but minimal
COMFORT & CONVENIENCE	**Flush Toilet**	May be Appropriate	Inappropriate	Inappropriate
	Composting Toilet	May be Appropriate	Appropriate	May be Appropriate
	Vault Toilet	Appropriate	Appropriate	May be Appropriate
	Waste Receptacles	Appropriate	May be Appropriate	Inappropriate
	Recycling Receptacles	Appropriate	May be Appropriate	Inappropriate
	Benches	Appropriate	May be Appropriate	Inappropriate
	Viewpoint infrastructure	Appropriate	May be Appropriate	May be Appropriate - minimal
	Picnic Tables	Appropriate	May be Appropriate	May be Appropriate - minimal
	Firepits	May be Appropriate	May be Appropriate	May be Appropriate - minimal
	Activity-specific amenities (e.g. loading, storage, launch, maintenance)	Appropriate	May be Appropriate	Inappropriate



SECTION 7

FUTURE TRAILS SYSTEM: STRATEGIES & ACTIONS

Research undertaken during the planning process suggests that to achieve and maintain the desired conditions in Section 6, the region's trail ecosystem should strategically align its efforts and capacity to:

1 Harmonize Trail Foundations

2 Address Key Sustainability Issues

3 Develop a Connected and Diversified Trail Network

4 Enhance User Experiences

5 Actively Manage Use & Impacts

6 Animate & Activate Community

As an organizing framework, these strategies are supported by specific actions that the trails ecosystem can work together to implement.

It is important to acknowledge that additional work to assess the feasibility of some identified actions will be required, as will the development of the tactical details required to implement them (i.e. who, when, how etc.). It may be found that some actions are not practical or feasible to implement at this time for a variety of reasons.

Finally, readers of this plan should not assume that the M.D. of Bonnyville, the City of Cold Lake, and/or the Government of Alberta are able to lead every identified action. Recognizing that all entities in the region's trails ecosystem have a role to play, leading the implementation of some actions may be most efficiently and effectively accomplished by entities outside of government but with government support where appropriate.

7.1 STRATEGY 1: HARMONIZE TRAIL FOUNDATIONS

For the region to work together efficiently and effectively, it is important to align its foundational language, approach, and management tools across its administrative jurisdictions. This should not be interpreted as moving toward common administration, identical documents, or additional bureaucracy. Rather, its intent is to allow jurisdictions to efficiently work together with shared purpose within their existing administrations.

7.1.1 ALIGN DETAILED PLANNING, APPROVAL AND DESIGNATION APPROACHES

Using the desired conditions, trail classifications, and trail experience zones outlined in sections 6.2 and 6.3, the region's administrations should work to use similar approaches to approve, designate, and communicate information on the trails being managed in the region. This will help clarify and bring consistency to the intent, responsibilities and objectives for individual trails and will enable the assembly, communication and marketing of a single, cohesive regional "network".

Trail sustainability begins with making deliberate decisions about which trails will be supported, formalized, and designated for which activities, in which seasons, under what conditions, and for what level of development. Since both existing and future trails in the region involve many administrative jurisdictions, it is important to signal collaborative intent to work toward a conceptual connected network that seamlessly crosses administrative boundaries and serves collective interests.

To ensure each trail in the region's network meets a baseline measure of quality and sustainability, a consistent process to actively assess and evaluate each trails suitability for the regional network would help prioritize and focus regional efforts. This process should allow for the nomination of existing trails, trails managed in partnership with others (e.g. other municipalities and/or organizations), as well as new trail proposals. The desired conditions outline in section 6.2 and criteria such as those in Table 23 could form the basis of a common assessment approach for each administration and could be used to evaluate and gauge the suitability of any proposed trail for inclusion in a formalized regional network.

Table 23 Possible Evaluation Framework for Future Trail Proposals

Desired Conditions	Criteria *The proposed trail or trail segment …*
A Must Experience Trails Destination	Will provide a quality and "in-demand" trail experience and is expected to be well used by locals and visitors.
	Will address a known gap in trail connectivity or trail experience.
A Sustainable Trail System	Aligns with the stated intent of the trail experience zone the trail is proposed within.
	Avoids watercourses or an appropriate watercourse crossing (bridge, hardening) can be feasibly implemented to avoid impacts to water quality and riparian health.
	Avoids wet areas and wetlands.
	Will not unacceptably impact sensitive wildlife or sensitive wildlife habitats, food sources, or sensitive ecological features.
	Is unlikely to increase conflicts between visitors and wildlife.
	Avoids known historic resources.
	Will not result in inter or intra recreation activity conflicts or conflicts with exist disposition holders or private landowners.
Economic Growth & Diversification	Will create connections and opportunity to elevate economic benefits of the trail system for local and regional businesses.
Community Support for Trails & Trail Tourism	Is supported by the local trails ecosystem.
Partnerships, Collaboration & Resourcing	Can be maintained and managed within existing or available resources and capacity.
	Does not result in significant or unreasonable operational challenges for maintenance and management.

ADDITIONAL OPPORTUNITIES

1. Use the conceptual trail experience zoning and trail alignments in Section 7.3 to signal an interest in supporting and pursuing detailed planning with regional municipalities, adjacent municipalities, First Nations, Métis Settlements, Iron Horse Trail partners, and the Government of Alberta. Reinforce in communications that the interest is in finding mutually agreeable trail alignments, not rigid adherence to mapped lines in this document.
2. Formally approve desirable trail alignments under M.D. or City administrative control for inclusion into the regional trail system. Ensure that each trail identified for the system is assigned a specific TMO and intended level of development and that it is managed towards these.
3. Working with the regional trails ecosystem (i.e. collaborative forum) and the Government of Alberta, develop, approve and introduce a transparent and publicly available trail development proposal and approvals process to help assess and direct prioritization of future trails nominated for inclusion in the system. This could include the criteria found in Table 23.
4. Develop and implement a clear communications package to outline the intent, purpose, desired resource conditions, and strategies associated with the regional trail initiative.

7.1.2 ALIGN TRAIL RELATED BYLAWS AND POLICY

The bylaws and policies governing and guiding the management and use of trails across jurisdictions should be modernized and updated to provide the regulatory tools needed to enable sound management. Key updates should include, but may not be limited to:

- Policy enabling designation, development and maintenance of trails consistent with all TMO classifications.
- Prohibiting unauthorized trail development.
- Prohibiting use that is not compliant with a trails TMO.
- Requiring compliance with orders, signs and notices posted on the trail and in staging areas.
- Prohibit interference with the quiet and peaceful enjoyment of the trail.
- Enabling and encouraging OHV use on specific roads to enhance regional connectivity.
- Prohibiting OHV use off the trail tread unless within a staging area, or where permitted.
- Clearly identifying required equipment, conduct and other requirements.
- Establishing speed limits for OHVs and snowmobile use within “quiet zones” which are intended to be applied within more urban areas and adjacent to neighbourhoods and camping areas.
- Prohibit posting of signs and notices unless authorized.
- Require a permit for commercial guiding or commercial businesses on trails or in staging areas and establishing a permit process for these uses.
- Prohibit the hosting of special events and competitions, including commercial events, without a permit.
- Allowing closure of the trail under specific conditions (e.g., wet periods, construction etc.) and making it an offence not to abide by the closure.
- Prohibit camping outside of designated camping areas.
- Require industrial operators / permittees to restore damage to the trail to the conditions specified.
- Govern OHV use based on vehicle width rather than vehicle type.
- Prohibiting wheeled OHV use during the winter when the trail is groomed.
- Permit off-road motorcycles and dual-sport motorcycles on trails that allow wheeled OHVs.

7.1.3 ADOPT AND ALIGN TRAIL OPERATIONAL STANDARDS & PROCESSES

Similarly, the region's administrations should develop and adopt a suite of guiding trail development, operation, and maintenance standards to support administrative efficiencies and to help ensure trail experiences are of similar high quality for residents and visitors. Not all standards need to be identical (e.g. sign branding), but they should be comparable and complementary. Standards and processes that should be prioritized for alignment could be:

- Level of Development Guidelines (e.g. Section 6.3.3)
- Signage typology and manual (e.g. Section 7.4.5)
- Staging area design typology (e.g. Section 7.4.4)
- Trail amenities standards and design
- Water crossing standards and designs
- Maintenance standards and schedules
- Staffing/ contracting/ volunteer processes
- Training processes
- Event and commercial permitting processes

7.1.4 ESTABLISH AND MAINTAIN A COLLABORATIVE GOVERNANCE FORUM

Developing and maintaining a quality, sustainable trails system that functions for communities, residents, and visitors requires the active involvement and commitment of the entire trails ecosystem.

To achieve and maintain the desired conditions and effectively implement the actions of this plan, trail-based recreation clubs, provincial and local governments, Indigenous governments, accommodation and visitor service providers, event organizers, other tourism attractions, destination marketing organizations, and economic development teams in the region will need to find and sustain ways to efficiently work together.

An ongoing forum or other arrangement that fosters active and ongoing collaboration on trail planning, development, operation, and management matters is needed. The specific form of this forum could be a joint committee, sub-committee, task force, commission, council, or other functional body, but it should exhibit the following.

1. Clear and ongoing municipal leadership from the M.D. and City.
2. A formal goal-focused purpose to develop a sustainable, high-quality trail system in the region.
3. Good governance supported by a terms-of-reference with a minimum of a three-year renewable timeframe, annual workplans, and annual performance reporting.
4. Active and formal participation from the Government of Alberta (preferably the departments responsible for public land, outdoor recreation and parks, and transportation).
5. Active, open, and voluntary participation from other municipal governments in the region (e.g. towns, villages, summer villages).
6. Active, open, and voluntary participation from First Nations and Métis Settlements in the region.
7. Active, open, and voluntary communication with adjacent jurisdictions.
8. Active, open, and voluntary participatory roles for trail, outdoor recreation, business, tourism, and environmental organizations.
9. Clear respect for treaties, for landowner rights, and for land manager authorities.
10. Sub-committees or areas of specialty to foster progress, growth, development and sharing of leading practices related to trail planning, design and construction, operations, visitor management and community activation.

The primary roles of the initiative could include:

- Championing and ensuring a collaborative trails ecosystem-wide approach to the implementation of this initiative's recommendations and related plans.
- Providing advice to local and provincial government on initiative implementation.
- Working collaboratively to monitor visitation, trail sustainability, visitor impacts, and the success of the region as a trails destination.
- Working collaboratively to advise land and recreation managers with advice and potential solutions for resolution of trail sustainability issues, visitor conflicts or undesirable impacts.
- Providing recommendations on the classification of trails, development of new trails and trail infrastructure, or the enhancement of existing trails and trail infrastructure in keeping with trail initiatives and plans.
- Coordinating and prioritizing volunteer stewardship initiatives.
- Providing advice on marketing and branding efforts.
- Ensuring coordination and collaboration between all parties, services, and supporters of the trails ecosystem.
- Championing and communicating the benefits of trails and trails tourism within the region and to elected officials.

7.1.5 FOSTER & LEVERAGE PARTNERSHIPS

Successful implementation of the specific elements of this plan will require resources, assets, capacity, and expertise beyond what any single organization, administration, or group of volunteers can provide.

Some of the specific partnership arrangements that should be considered include the following.

OPPORTUNITIES

1. Establish municipal partnerships with the Government of Alberta to enable development and operation of sustainable trails on provincial public land (e.g. designation under the Provincial Trails Act) that allow realization of recreation, tourism and economic benefits for the region.
2. Collaborate on the pursuit of grants, corporate donations, in-kind contributions, ongoing funding, and other resources to support implementation of this plan.
3. Establish a paid seasonal trail crew that could also leverage volunteer involvement. Emphasis could be placed on exploring the creation of a youth and/or Indigenous trail crew to provide employment and skill development opportunities.
4. Develop and implement a comprehensive and modern volunteer steward program to attract, excite and motivate a new generation of volunteers and trail volunteerism.
5. Work with the local/regional Destination Marketing Organizations to explore opportunities for the DMO and trail-related businesses in the region to provide funding support to trails in the region (e.g. Figure 87).
6. Coordinate with partners and topical experts to provide pertinent training and development including:
   - » Sustainable trails planning, design, construction, maintenance, and management.
   - » Trail risk and liability management.
   - » Trail visitor market insights and research.
   - » Trail experience development.
   - » Volunteer management.
   - » Trail activation approaches.
   - » Trail destination marketing and communications.

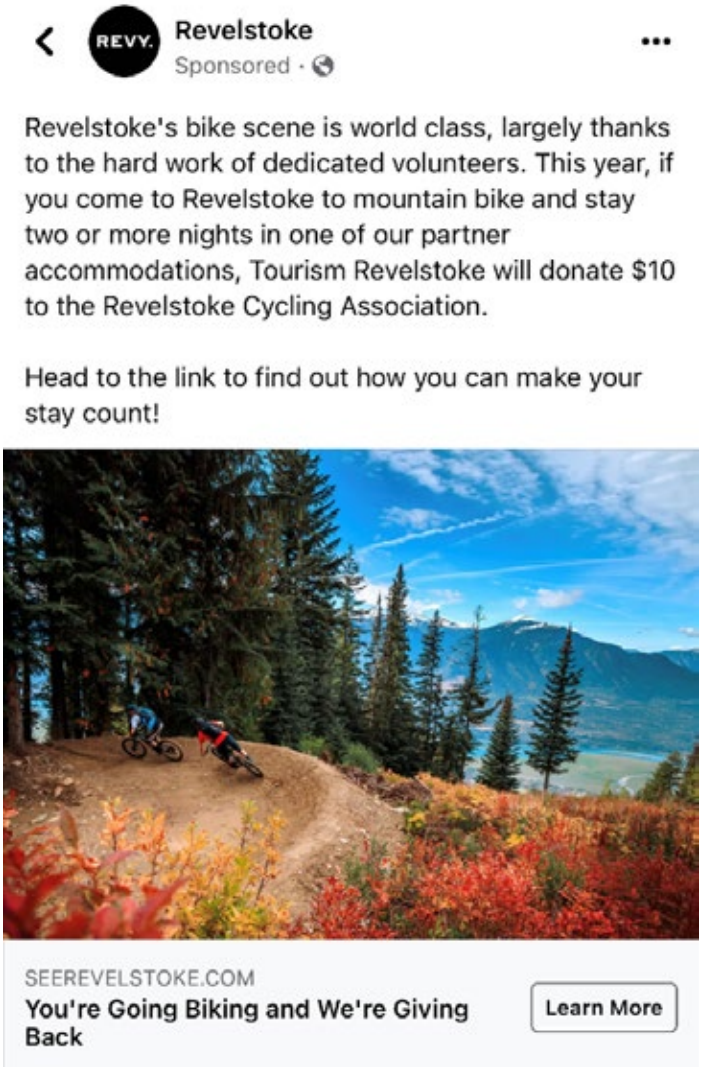


Figure 87: Example of DMO with Trail Management

7.1.6 RESOURCE APPROPRIATELY

Like other infrastructure and services, good trails require resources. The input capacities and costs for planning, development, maintenance, and programming must be well considered. Future success will hinge on the region's ability to maintain the oversight, operations, staffing and volunteer capacity and to plan for alternative operational and capital funding sources. To ensure long-term sustainable resourcing and capacity, the following specific actions should be considered:

1. Working collaboratively with regional municipalities and Iron Horse Trail partners to develop and communicate a capital maintenance, replacement plan and funding agreement for the system.
2. Consider new revenue streams to support the development, maintenance, and management of the system. Potential initiatives include:
   - » Creating profitable attractions along the trail system that can serve as revenue generators (e.g. trail-accessible camping, OHV play parks).
   - » As the tourism readiness and quality of regional trail experiences grows, consider the introduction of a trail pass fee(s) for some trail experiences to help offset expenses. Fees could be tiered with a lower fee for residents and higher fee for visitors.
   - » Corporate sponsorship and appropriate advertising on the system.
   - » Sale of advertising and promotions through the visitor trip planning, on-trail mobile device app and appropriately sited and graphic design-controlled advertisements in staging areas.
   - » Sale of appealing, eye catching, and functional merchandise.

7.2 STRATEGY 2: ADDRESS KEY SUSTAINABILITY ISSUES

Foreseeable situations exist that are material risks to the long-term viability and effectiveness of a sustainable regional trails system. It is important to identify what some of these are and consider steps to prevent or mitigate their impacts.

7.2.1 PLAN FOR MANAGING UNDESIRABLE VISITOR USE IMPACTS

Examples exist around the world where trail managers and destinations have failed to anticipate or plan for the physical impacts of trail users on the trail system, community impacts, and reputational risks that can flow from poor visitor experiences. Left unmanaged, these effects can diminish a destination's appeal to visitors and potential future residents. Tactics that can help prepare and prevent these impacts include the following.

1. Using the Interagency Visitor Use Management Council's Visitor Use Management Framework (VUMF) (**https://visitorusemanagement.nps.gov/**) as a guide, engage professional assistance to help prepare a visitor use management plan for regional trails to:
    - » Expand on the desired visitor experiences and resource conditions for trails in the system,
    - » Identify the indicators and establish thresholds for each indicator.
    - » Determine the current condition (baseline) for each indicator in relation to determined thresholds.
    - » Determine and document that differences between existing and desired conditions and the links between visitor use.
    - » Identify management strategies and actions that will be taken to ensure desired conditions are maintained.
    - » Establish monitoring strategy and procedures.

2. Adopt and promote the Leave No Trace (**https://leavenotrace.ca**) outdoor skills and ethics program for residents and visitors. Leave No Trace messaging can be incorporated into all trip planning information, mobile device apps, promotional and marketing materials and through signage in strategic locations on-trail (e.g., trailheads, rest areas, viewpoints, attractions, campgrounds etc.). Trail volunteers, bylaw officers and others who interact with visitors directly can be trained in Leave No Trace principles and share this information with trail visitors. Targeted visitor education campaigns can be delivered during peak seasons and special events to educate visitors about responsible recreational use of trails.
3. Actively coordinate with municipal bylaw officers, the RCMP, and other applicable agencies to undertake coordinated and targeted compliance assurance campaigns to promote the safe and respectful recreational use of the trail and to respond to recurring non-compliance issues.

7.2.2 ADDRESS ENVIRONMENTAL CONCERNS

Trails, particularly summer OHV trails, are often associated with ecological impacts. This, in part, is due to a long history of using linear access and trail alignments that were not intended or designed for repeated travel. The resulting damage, both frequent and severe, has helped to seed concern and skepticism about the realistic probability of OHV trails being viable over time.

To help counter this perspective, it is critically important that existing and foreseeable sustainability issues are addressed and managed head-on, particularly the following.

7.2.2.1 WATER CROSSINGS

The region's trail system crosses many permanent and ephemeral watercourses. Most current watercourse crossings are informal and not intentionally designed to retain the watercourse's functionality. To mitigate the impacts of the trails on water quality, fish habitat, and hydrology, efforts are needed to ensure crossings comply with Alberta's Code of Practice for Watercourse Crossings and best practices.

OPPORTUNITIES

1. Assess watercourse crossings in the approved regional trail network for compliance with the Alberta Watercourse Crossing Code of Practice. Address any deficiencies or close applicable trails for public use until they are compliant.
2. Crossings on all conceptual trail segments for potential incorporation into the regional system should be assessed and brought into compliance with the Alberta Watercourse Crossing Code of Practice before the trail or trail segment is incorporated into the system.
3. Any trail segment with crossings that fall out of compliance with the Code will be closed for public access by the land manager.

7.2.2.2 MITIGATE THE IMPACTS OF TRAILS AND VISITATION ON WILDLIFE & WILDLIFE HABITAT

Managing human use patterns and behaviours is critical to enabling wildlife to continue to occupy habitats throughout the trail system. This is particularly important in mid-country and backcountry settings. In addition to good trail planning and design, a more active approach to management of the trail system and visitor use will help to mitigate the undesirable impacts that trails and visitor use can have on wildlife and their habitats. In addition to the actions outlined below, visitor education will be critical.

OPPORTUNITIES

1. Ensure trail nomination, designation and approval approaches fully consider potential wildlife impacts.
2. Where warranted, implement permanent trail closures as necessary (determined in cooperation with Government of Alberta) where and when the presence and/or behaviours of wildlife pose an unacceptable and abnormal risk to the public safety or to the animal's welfare. The length of closures should be guided the by Government of Alberta with priority given to wildlife needs. Closures should be immediately communicated to the public and to the region's trails ecosystem with rationale.
3. As deemed essential by appropriate authorities, consider temporary closures of portions of the trail system to minimize disturbance of wildlife during particularly sensitive periods of the year (e.g. birthing, rearing, winter). The purpose and details of these closures must also be effectively communicated to residents and visitors.
4. Where habitats warrant, sightlines should be managed to enable wildlife to detect visitors and to reduce potential predation.
5. Waste receptacles and other potential attractants should be carefully considered and managed.
6. While not regulated in all areas, visitor education and information should be used to strongly encourage residents and visitors to keep their dogs on leash as much as possible.
7. Information should be provided to all trail visitors about how to report human-wildlife conflicts and concerns to the appropriate government authorities.
8. Develop a human-wildlife conflict response plan for the trail system to guide actions and management reactions to reported human-wildlife conflicts. Ensure appropriate staff from the M.D., City, and Government of Alberta, and others in the trails ecosystem are familiar with the plan.

HUMAN WILDLIFE CONFLICTS...

Are negative interactions between people and wild animals that have undesirable consequences for wildlife, humans, or both.

7.2.2.3 IDENTIFY & CONTROL WEEDS & INVASIVE PLANTS

Trails can be a vector for introducing and spreading weeds and invasive plants. Weeds and invasive plants can outcompete native plants and negatively impact local ecosystems and wildlife. While an inventory of weeds and invasive plants was not been completed as part of this plan, weeds are present in the study area and it's reasonable to assume that recreation activity may be associated with some transmission. Active management is needed to ensure that further introduction and spread is avoided and existing infestations are identified and appropriately treated, controlled or removed.

OPPORTUNITIES

1. Collaborate with partners and landowners to undertake an inventory of weeds and invasive plant species along the trails and trail infrastructure.
2. Collaborate with landowners and partners to develop and implement a weed and invasive plant species monitoring and appropriate treatment program.
3. Develop activity-specific "responsible use" practices (e.g. use of weed-free feed for equestrian users, cleaning of equipment between trail outings).
4. Ensure visitor education initiatives fully incorporate awareness and impact reduction tactics.

7.2.3 ADDRESS VISITOR SAFETY AND RISK MANAGEMENT

Actively managing hazards and risks associated with trails and trail use is a critical task for competent trail managers. Good risk management processes (e.g. Figure 88) demonstrate that competency to visitors and users, helps keep them and workers safe, helps minimize insurance costs for the trail ecosystem, and helps maintain confidence in the destination.

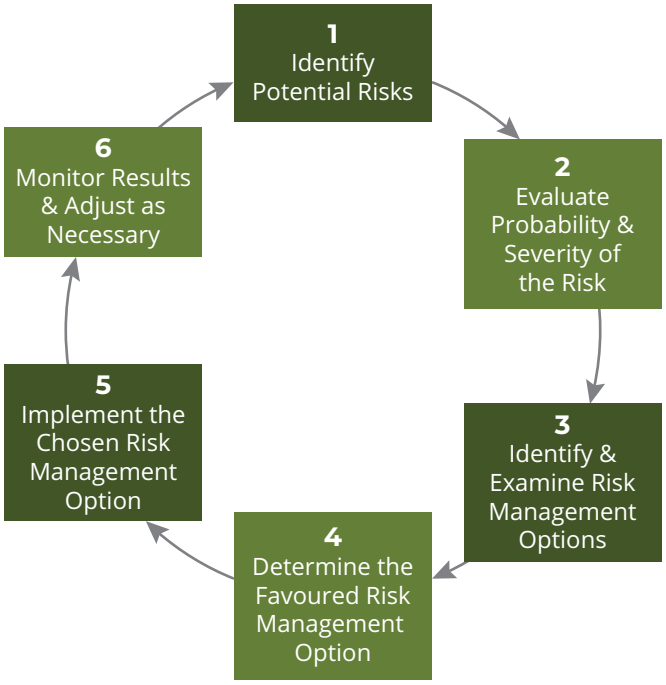


Figure 88: Risk Identification and Management

OPPORTUNITIES

1. To ensure ongoing maintenance and good risk management, develop and apply a trail inspection, maintenance, and documentation procedure. The procedure should specify the frequency with which formal trail maintenance and safety inspections are to occur, protocols for documenting the findings of those inspections, reporting the findings to the respective management authorities, and documenting when corrective actions were taken to resolve identified deficiencies.
2. Provide and promote a means for visitors to report trail conditions, maintenance problems and accidents or injuries sustained on the trail. Investigate any reported accidents or injuries sustained on the trail and, where relevant, undertake corrective actions and document the actions taken.
3. Provide adequate trip planning information as well as on-trail signage, warnings, and notices to make visitors aware of the information, equipment and skills required to travel the trail safely, risks and potential for injuries, and the trail conditions.
4. Develop trail lighting standards in urban connectivity zones and address deficiencies.
5. Implement crossing improvements where non-conformant with **Trails in Alberta's Highway Rights of Way** guidelines manual (Figure 89).
6. Work with local First Responders to prepare and maintain an up-to-date emergency response plan for the system, especially for isolated and remote areas on the trail where emergency service access may be challenging.
7. Ensure that First Responders have the necessary equipment to action rescues that may be required and regularly train to respond to public safety incidents that may occur on the trail system.

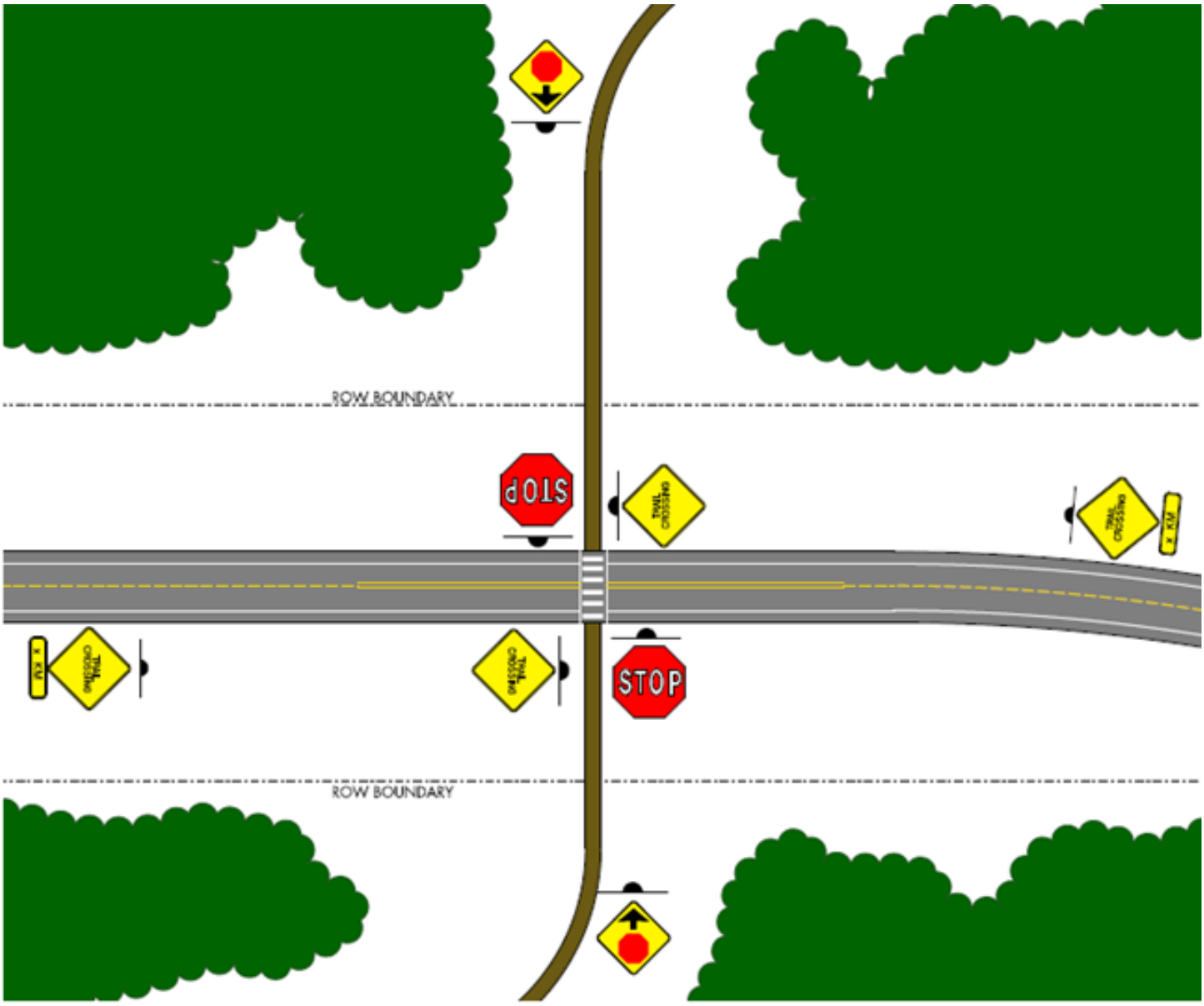


Figure 89: Signage & Roadway Markings for a Mid Block Highway Crossing (Trails in Alberta Highway Rights-of-Way)

7.2.4 ADDRESS EMERGENT COMMUNITY RESERVATIONS AND CONCERNS

Trails can bring significant benefits to communities, but they can also bring unwanted and undesirable impacts. Long-term sustainability of a trail system requires the ongoing support of people that may be affected by it. Many trail concerns in communities are foreseeable and can be mitigated, managed, or avoided altogether. Respectful and inclusive processes that create opportunity and proactively attend to concerns will help minimize challenges that could jeopardize or erode the viability of the region's trails.

7.2.4.1 INDIGENOUS VALUES

The region's diverse Indigenous peoples' long-standing relationship with the land presents unique opportunities to ensure values are respected. Actions that should be considered include the following.

1. Ensure treaty rights are respected and supported through trail planning, development, and operation, and that associated processes actively solicit and consider Indigenous input and perspective.
2. Work with First Nation and Metis administrations to design and build functional connectivity between settled areas throughout the region.
3. Actively provide opportunity, when appropriately supported, for the inclusion of Indigenous names, themes, content, and story in signage, interpretive, promotion and education efforts.
4. Situate, design, and manage trails to avoid impact to areas of concern and, where appropriate, to channel visitors to areas where visitation may be desired or beneficial.
5. Actively provide opportunity for direct involvement in trail operations, programming and/or activation (e.g. as articulated elsewhere throughout this plan).

7.2.4.2 PRIVATE LAND

Trails can change land use and patterns of human activity. These changes can have real and lasting effects on adjacent landowners. Actions that should be considered include the following.

1. Ensure planning and development processes provide opportunity for concerns and potential solutions to be brought forward before decisions and implementation.
2. Develop a "Good Neighbour" education program that can help adjacent landowners learn about trails, the importance of trails to the region, how good trails can reduce unwanted use (e.g. across fields), how trail visitors are being managed to minimize impact on adjacent landowners, process for non-recreational use of trails, vegetation management, and steps adjacent landowners can take to minimize their impacts on, or even enhance, visitor experiences.
3. Through trip planning and on-trail information, ensure visitor awareness and understanding of respectful conduct including staying off private land, respecting gates and cattle, keeping out of fields, and other beneficial practices.
4. In areas where trespassing, theft and/or vandalism from trail users is a concern, work with adjacent landowners to plan, develop and install effective visitor management and/or access controls.

7.2.4.3 ACCESSIBILITY & INCLUSION

Fundamentally, all trail users will require accessible trail elements at some stages of their lives and a trail system should be highly functional for all users. Not all trails can or should be built for universal access, but intentionally providing accessible trail experiences is a hallmark of progressive trail management. Recommended actions for trails in the region include:

1. Ensure planning and development processes are inclusive and accessible to people of different ages, backgrounds, and mobilities.
2. Utilize contemporary accessible design guidelines and best practices for trails and amenities as broadly as possible. These include emergent guidelines from Accessibility Standards Canada (**https://accessible.canada.ca/**), as well as the rapidly evolving guidelines from leading accessibility-focused organizations.
3. Ensure accurate and specific trail information is available to enable potential users to make informed decisions before they arrive at the trail (e.g. trail length, surface type, surface design parameters). This should be available at trailheads, on online and electronic navigation aids, and made available to specialized information services for various communities.
4. Invite audits and assessment of trail accessibility by respected non-profit organizations that specialize in these services.
5. Partner in the provision of adaptive equipment (e.g. adaptive mountain bikes or aMTBs) for regional signature trails and/or optimized experience areas.

7.3 STRATEGY 3: DEVELOP A CONNECTED AND DIVERSIFIED REGIONAL TRAIL NETWORK

Connectivity is essential to ensuring the region's trail system functions well. Trails must be connected to each other, to neighbourhoods, to attractions on and off the trail, to visitor services (e.g. food, fuel, supplies) and to available accommodations (e.g. campgrounds, fixed-roof accommodation).

Currently, the Iron Horse Trail serves as a unique and important spine trail for the region, but connectivity gaps exist that create functional challenges for residents and visitors looking to access trails from their communities. These gaps also limit the potential of the trail network to serve visitors well and to drive economic benefits from tourism.

Optimally, the overall supply of available regional trails should also align with the interests and desired trail experiences of residents and visitors (e.g. permitted activities, setting, level of difficulty etc.). This requires effort to ensure suitable trail experiences are available for desired activities and that these opportunities are in locations that are well-suited (e.g. proximity, desirable attributes, minimized impacts).

The following sections and maps provide an overview of recommended trail connections and zones that are suitable for focused trail development to support resident interest and the region's tourism potential.

Developing these connections and area enhancements can be achieved with a combination of new trails and improvements to existing alignments. It is important, however, that both new and existing alignments are thoroughly and critically assessed and evaluated against criteria (e.g. section 7.1) before designation as many existing alignments are not currently suitably designed or situated.

NOTE: IT IS ACKNOWLEDGED THAT SOME OF THESE PRIORITY CONNECTIONS AND TRAIL EXPERIENCE ZONES FALL UNDER MULTIPLE ADMINISTRATIONS. RECOMMENDED CONNECTIONS AND ZONES ARE CONCEPTUAL ONLY. DETAILED PLANNING AND APPROVALS ARE REQUIRED FOR EACH TO ENSURE FEASIBILITY AND APPROPRIATE SITING AND DESIGN. OPTIMAL ROUTING MAY DIFFER THAN SHOWN IN THE MAPS THAT FOLLOW.

7.3.1 CITY OF COLD LAKE AND IMMEDIATE AREA

This area of the region is a busy interface between urban and rural development that is naturally positioned to serve as a hub for the eastern part of the region. Several critical connectivity gaps should be prioritized for collaborative detailed planning and development. The location, rationale and recommended trail classifications are outlined in Figure 90 and in Table 24. Additional detail for suggested priority connections is provided in the appendices. It is also recommended that work continue with Cold Lake First Nations to consider how the Nation can be effectively connected to this expanded network.

Table 24 Priority Connections Descriptions

	Recommended Trail Connections	Rationale	TMOs	For Detail See
1	Cold Lake to Cold Lake Provincial Park (16th Ave)	Enable safe, convenient non-motorized connection for residents to the Park	1 / 2	Appendix D
2	Iron Horse Trail Staging Crossing Highway 28	Enable mixed-use corridor connectivity to city services and region's east	5	Appendix D
3	Iron Horse Trail Staging to M.D. Cold Lake Campground	Enable safe, clear, year-round, mixed-use connectivity to accommodation (camping) and northern connections	5	Appendix D
4	Cold Lake to Kinosoo Ridge Ski Hill	Enable safe, moderate-distance non-motorized connection to this significant regional tourism asset	2 / 3	Appendix D
5	Enhanced twinned connection from City to Beaver River Trestle	Provide safe separation for motorized and non-motorized traffic to this significant regional tourism asset	1 and 5	Appendix D
6	African Lake trail upgrading and repurposing	Provide mixed-use connectivity between 21st and ~46th avenues	5	Appendix D
7	Cold Lake to Grande Centre Golf Course	Extend mixed-use connectivity east to Golf Course	5	Appendix D
8	City of Cold Lake to existing and future subdivisions to west	Establish safe connectivity to City services (e.g. recreation center, schools)	1, 3 or 5	--
9	Grande Centre Gold Course to Cherry Grove	Establish safe mixed-use connectivity	5	--
10	Cherry Grove to Saskatchewan border	Establish safe mixed-use connectivity	5	--
11	Iron Horse Trail to Casino Dene	Establish safe mixed-use connectivity	5	--
12	NW Cold Lake and beyond	Establish mixed-use connectivity to trails north and west as part of larger loop system	5	--

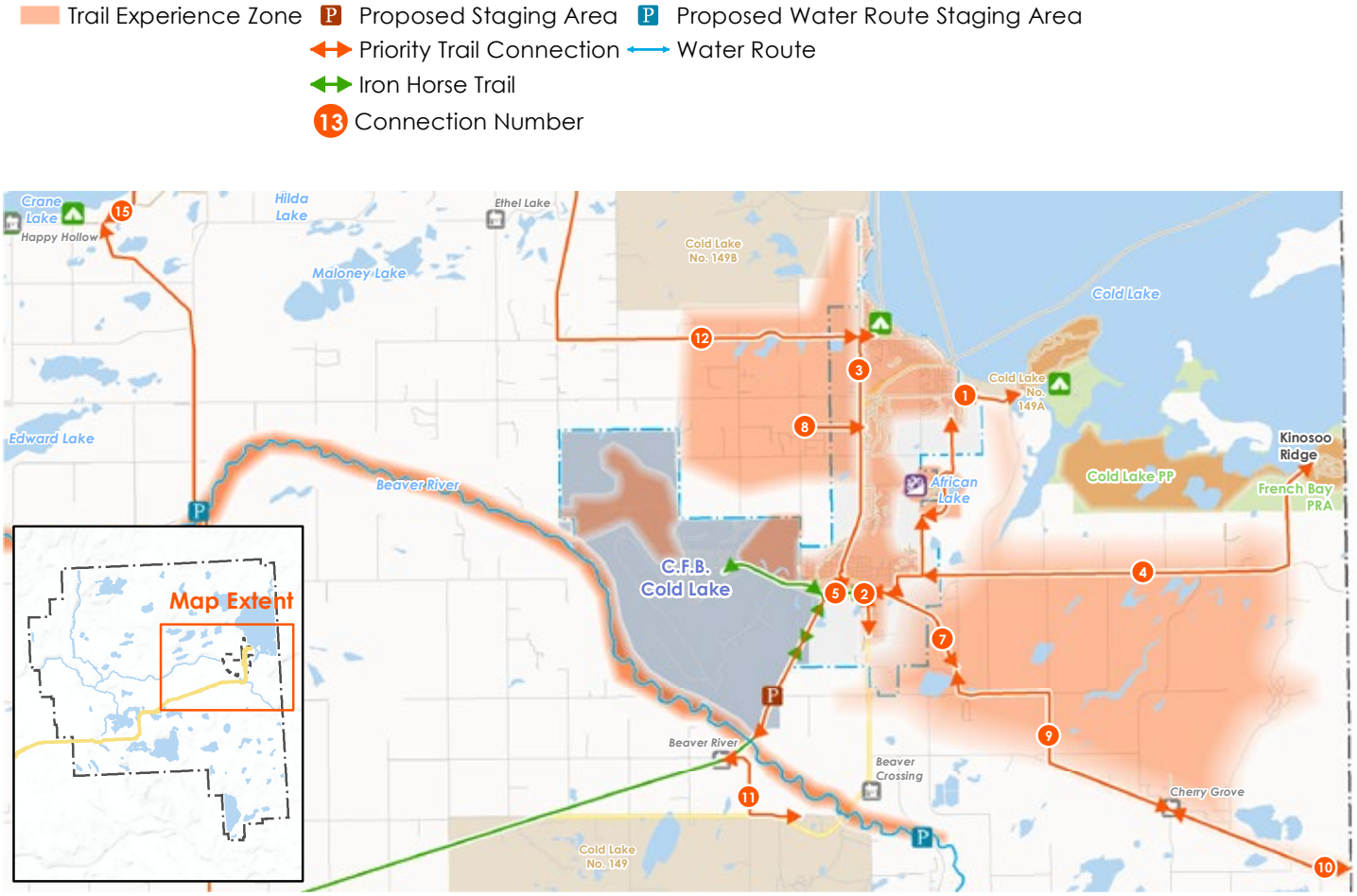


Figure 90: Priority Cold Lake Area Connections

In addition to the specific connections about, it is recommended that City, M.D., Government of Alberta, CFB Cold Lake Four Wing, trail organizations and other administrations cooperatively work together to consider and enable trail experiences that meet emergent demand in this part of the region through additional detail planning, enhancements and development in the areas identified in Table 25 (i.e. "Trail Experience Zones"). These areas are roughly delineated in Figure 91.

Table 25 Suitable Trail Experience Zones near Cold Lake

#	Trail Experience Zones	Appropriate areas that are well-suited for these trail experiences	Recommendation
1	**Community Connection & Recreation**		
	A. Urban	• City of Cold Lake	Continue to actively support, plan and develop trail fine-scale connectivity in this area with appropriate TMOs.
	B. Rural	• Rural subdivisions west of Cold Lake • East of Cold Lake towards Cherry Grove and Kinosoo Ridge	Continue to actively support, plan and develop fine-scale trail connectivity in these areas with appropriate TMOs.
2	**Visitor Interface**		
	A. Access	• Cold Lake Iron Horse Trail staging • Iron Horse Trail access between City and Beaver River Trestle at Township Road 624. • Iron Horse Trail access at Township Road 623	Develop /enhance parking and staging using approaches outlined in section 7.4.4.
	B. Service	• Commercial area surrounding Iron Horse Staging along highway 28.	Enhance and activate using approaches in section 7.6. Ensure sanctioned OHV access to services.
3	**Long-Distance Adventure**		
	A. Mid-country Extensive	• Iron Horse Trail • Over-ice connections on Cold Lake • Mixed-use connections north of City	Develop and enhance these connections with understanding how they connect with and serve broader network.
	B. Backcountry Extensive	• Beaver River water route	Develop staging and infrastructure to support route
4	**Activity Optimized**		
	A. OHV Play Parks	• Cold Lake Mason Watt MX Track	Support enhancements that align with demand.
	B. OHV Optimized Trails	• Public land surrounding African Lake mixed-use trail network	Formalize a dense, well-maintained network of OHV trails connected to MX track and regional mixed-use connections.

#	Trail Experience Zones	Appropriate areas that are well-suited for these trail experiences	Recommendation
4	C. Hiking, Trail Running & Snowshoeing Trails	• Area northwest of CFB Cold Lake Four Wing. • Cold Lake Provincial Park	Work collaboratively to formalize a network of non-motorized trails specifically for lower speed, non-motorized experiences.
	D. Mountain Biking & Fat Biking Trails	• Cold Lake Bike Park and Trails • Kinosoo Ridge Adventure Park	Continue to develop experiences aligned with demand.
	E. Nordic Ski Trails	• Grande Centre and Cold Lake golf courses. • Cold Lake Provincial Park	Work collaboratively to consider provision of groomed opportunities.
	F. Equestrian Trails	• Area northwest of CFB Cold Lake Four Wing	Work collaboratively to consider specific trails.

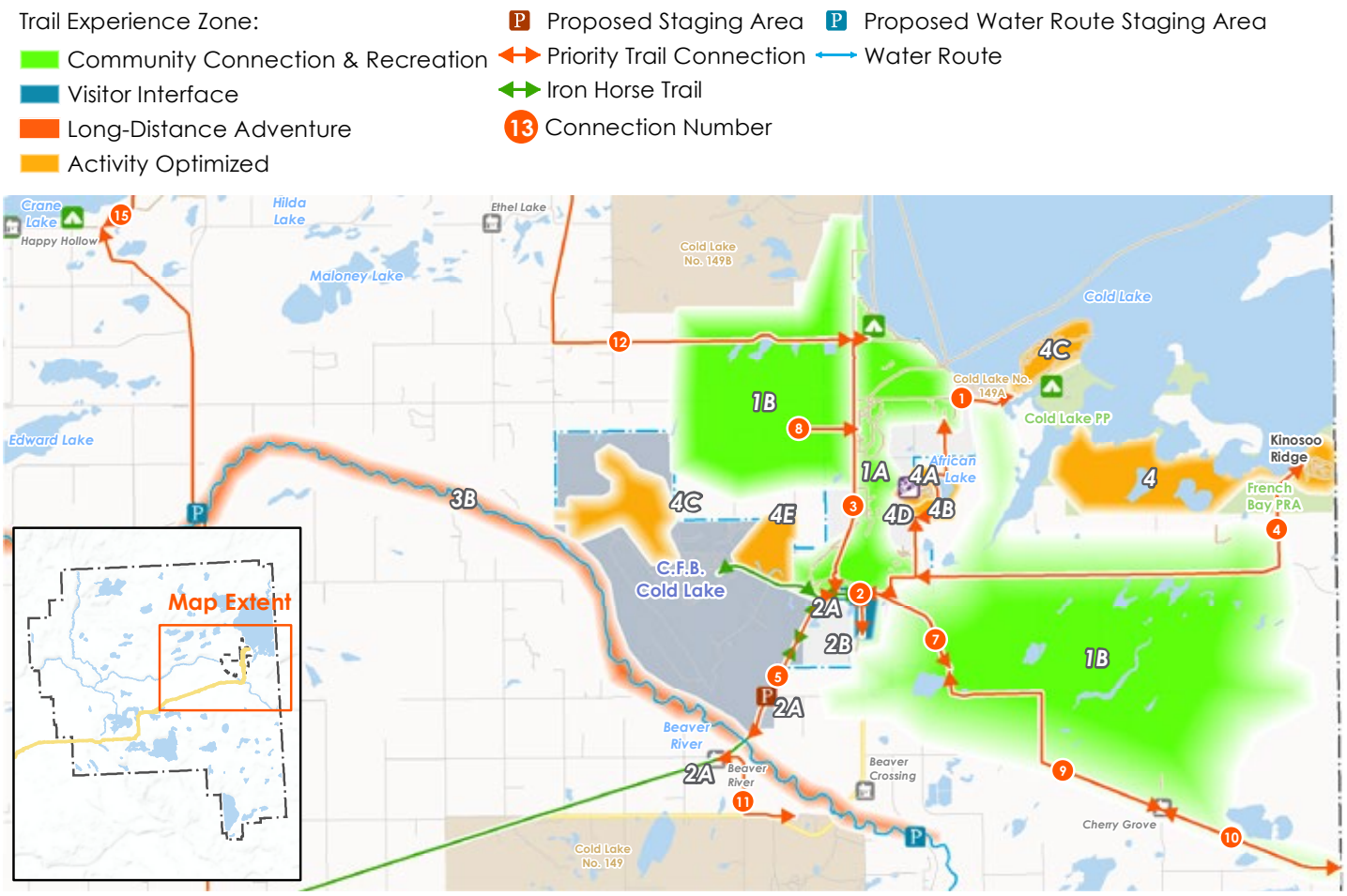


Figure 91: Map of Trail Experience Zones near Cold Lake

7.3.2 SOUTH M.D. OF BONNYVILLE

This part of the region has some of the most accessible lakes and has significant rural development. Critical connectivity gaps that should be considered for collaborative, detailed planning and development in this portion of the planning area are outlined in Figure 92 and Table 26. It is also recommended that work continue with First Nations and Métis Settlements to consider how their communities can be effectively connected to the region's expanded trail network and to ensure their interests and values are considered.

Table 26 Description of Priority Connections in South M.D. of Bonnyville

	Recommended Trail Connections	Rationale	TMOs
13	Ardmore (or nearby) to Crane Lake	Provide safe, mixed-use connectivity directly to desirable northern trails.	5
14	Bonnyville to rural subdivisions(s) east of town	Establish safe connectivity to town services (e.g. recreation center, schools)	1, 3 or 5
15	Iron Horse Trail/Bonnyville to M.D. Muriel Lake Park & Campground	Establish safe mixed-use connectivity and potential for long-distance loops.	5
16	Circumnavigation of Muriel Lake	Formalize and enhance sustainability of significant existing mixed-use trail. Provides desirable mid-length loop.	5 / 6
17	Muriel Lake to St. Paul County	Establish safe mixed-use connectivity and potential for long-distance loops.	6 or 7
18	Jessie Lake	Reestablish popular loop experience. (Enhance if feasible or disestablish).	1 / 3
19	Iron Horse Trail to Franchere Bay PRA and Pelican Point M.D. Campground	Provide mixed-use connectivity to popular campgrounds and potential formalized OHV area. (Most desirable if OHV camping can be accommodated.)	5
20	Iron Horse Trail to Moose Lake Provincial Park Campground.	Provide mixed-use connectivity to popular campground. (Most desirable if OHV camping can be accommodated.)	5
21	Iron Horse Trail to public land north of Moose Lake	Provide mixed-use connectivity to potential formalized OHV area and play park.	5

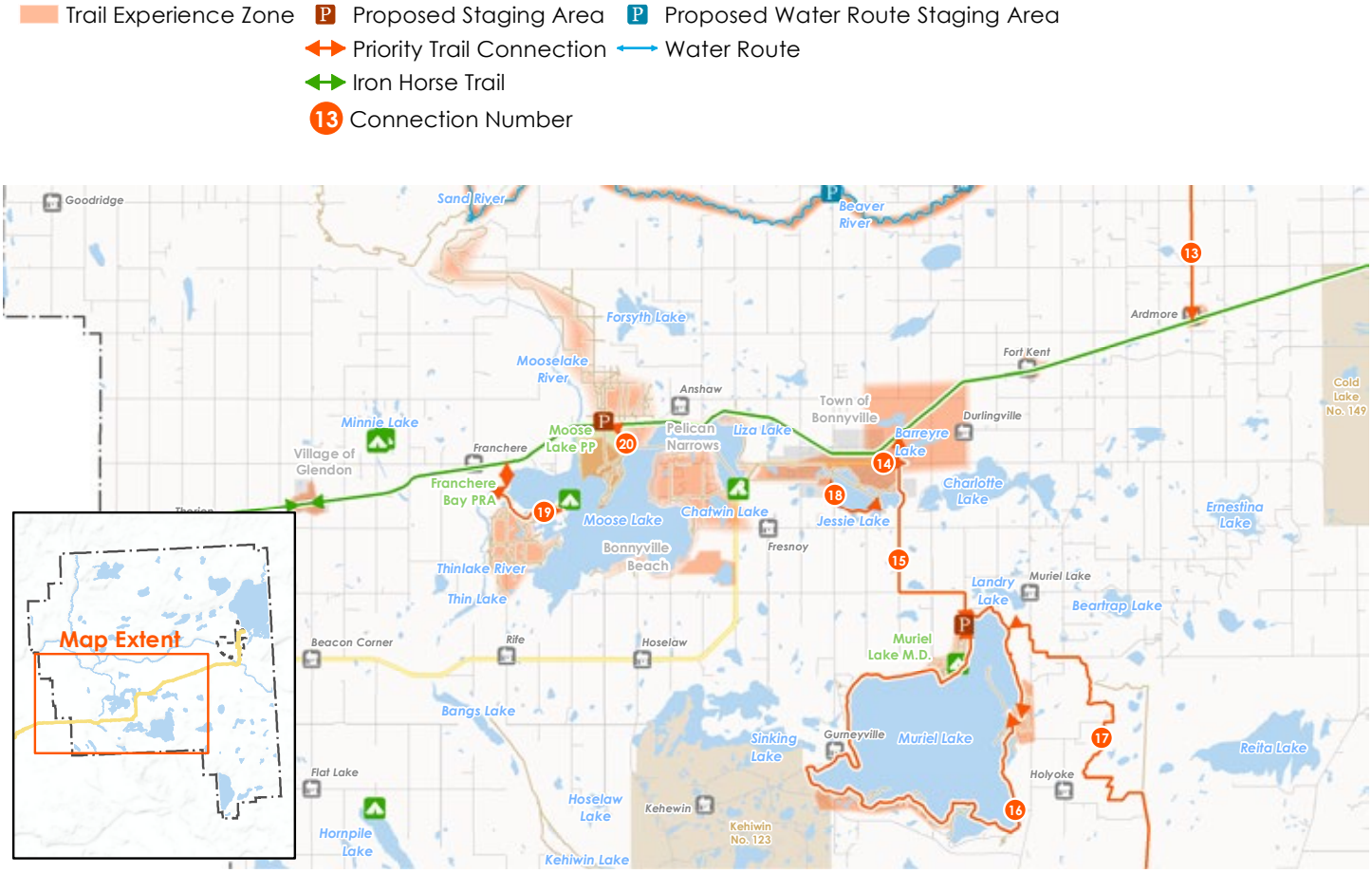


Figure 92: Map of Priority Connections in South M.D. of Bonnyville

In addition to the specific connections above, it's recommended that the M.D., Government of Alberta, Town of Bonnyville, County of St. Paul, trail organizations and other administrations work together to enable and improve specific trail experiences in this part of the region through additional detail planning, enhancements and development in the areas identified in Table 27. These areas are roughly delineated in Figure 94.

Table 27 Description of Suitable Trail Experience Zones in South M.D. Bonnyville

#	Trail Experience Zones	Appropriate areas that are well-suited for these trail experiences	Recommendation
1	**Community Connection & Recreation**		
	A. Urban	• Town of Bonnyville • Hamlets of Ardmore, Ft. Kent, Therien, Cherry Grove • Village of Glendon	Actively support planning and development of fine-scale trail connectivity appropriate TMOs.
	B. Rural	• Rural subdivisions east of Bonnyville • Rural subdivisions surrounding Moose Lake • Rural subdivisions surrounding Muriel Lake	Continue to actively support, plan and develop fine-scale trail connectivity in these areas with appropriate TMOs.
2	**Visitor Interface**		
	A. Access	• Muriel Lake M.D. Park • Iron Horse Trail at Bonnyville • Public land north of Moose Lake • Public land southwest of Pelican Point	Develop /enhance parking and staging using approaches outlined in section 7.4.3
	B. Service	• Iron Horse Trail at Bonnyville, Ardmore, Glendon	Enhance and activate using approaches in section 7.6. Ensure sanctioned OHV access to services.
3	**Long-Distance Adventure**		
	A. Mid-country Extensive	• Iron Horse Trail • Mixed-use connection to Crane & Tucker Lakes • Mixed-use connection to St. Paul	Develop and enhance these connections with understanding of how they connect with and serve broader trail network.
	B. Backcountry Extensive	• Beaver River paddling experience	Develop staging and infrastructure to support route
4	**Activity Optimized**		
	A. OHV Play Parks	• Public land directly north of Moose Lake Provincial Park	Plan and design for OHV with intent to consolidate higher impact activities in this area.
	B. OHV Optimized Trails	• Public land north of Moose Lake Provincial Park • Public land southwest of Pelican Point M.D. Park	Formalize a dense, well-maintained network of OHV optimized trails.
	C. Hiking, Trail Running & Snowshoeing Trails	• Muriel Lake M.D. Park • Public land east of Bonnyville Beach • Moose Lake Provincial Park	Enhance network of non-motorized trails specifically for lower speed, non-motorized experiences.

#	Trail Experience Zones	Appropriate areas that are well-suited for these trail experiences	Recommendation
4	D. Mountain Biking & Fat Biking Trails	• Muriel Lake M.D. Park • Moose Lake Provincial Park (winter fatbiking)	Develop singletrack experiences aligned with demand.
	E. Nordic Ski Trails	• Muriel Lake M.D. Park • Moose Lake Provincial Park • Public land east of Bonnyville Beach • Jessie Lake Park	Enhance groomed opportunities.
	F. Equestrian Trails	• Muriel Lake M.D. Park • Public land east of Bonnyville Beach	Formalize and enhance specific trails.
5	**No Trail Zone**	• Avian nesting areas on Muriel Lake	Work with Government of Alberta to clarify and delineate areas using contemporary data.

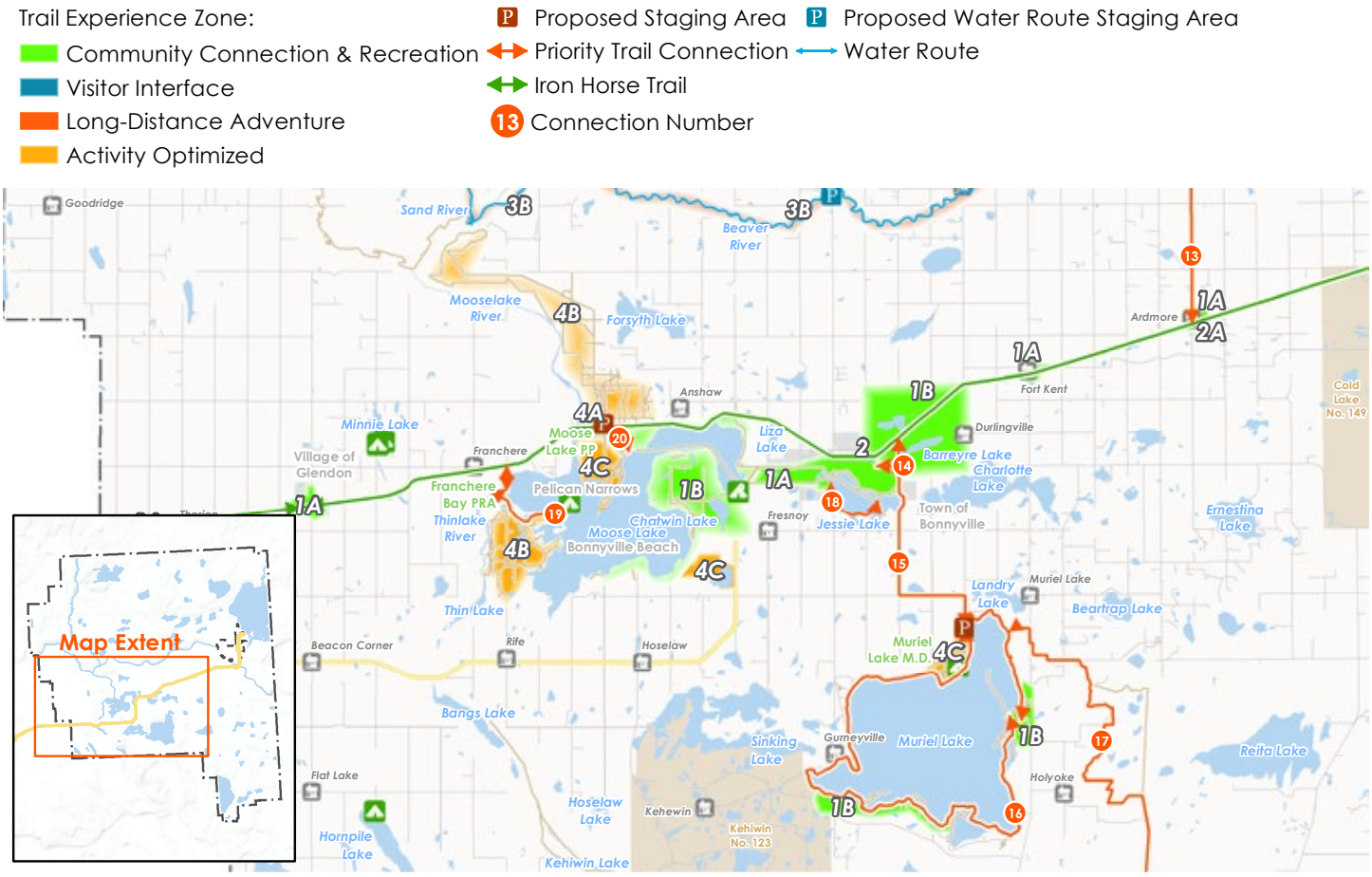


Figure 93: Map of Suitable Trail Experience Zones in South M.D. Bonnyville

7.3.3 NORTH M.D. OF BONNYVILLE

This part of the region lends itself very well to long-distance adventure and is particularly well-suited for motorized experiences. However, this area also includes significant industrial and grazing presence, and its northernmost extents overlap caribou habitat (e.g. near May and Marie lakes).

Critical connectivity gaps that should be considered for collaborative, detailed planning, formalization, and development in this portion of the planning area are outlined in Figure 94 and Table 28. It is also recommended that work continue with First Nations to consider how their communities can be effectively connected to the region's expanded trail network and to ensure their interests and values are considered.

Table 28 Priority Connections in North M.D.

	Recommended Trail Connections	Rationale	TMOs
12	NW Cold Lake and beyond	Establish mixed-use connectivity to trails north and west of city as part of larger loop system.	5
13	Ardmore (or nearby) to Crane Lake	Provide safe mixed-use connectivity directly to the region's northern trails and enable larger loops.	5
14	Cold Lake to Crane Lake	Provide safe mixed-use connectivity to the Tucker/ Crane Lake area.	5, 6 or 7 (as conditions allow)
15 -18	Crane & Tucker Lake Network	Enable core connectivity in and around these popular lakes. Enhance sustainability of existing routes. Enables mid-distance loop experiences.	5, 6 or 7 (as conditions allow)
19 -23	Tucker, Bourque, Wolf Lakes and beyond to NW	Enable core connectivity in and around these lakes, allows large loop experiences, and establishes connection to Lac La Biche County. Enhance sustainability of existing routes.	5, 6 or 7 (as conditions allow)
24 - 27	Marie, May, Cold Lakes and beyond to NE	Enable core connectivity in and around these lakes, allows large loop experiences, and establishes connection to Lac St. Anne County. Enhance sustainability of existing routes.	5, 6 or 7 (as conditions allow)

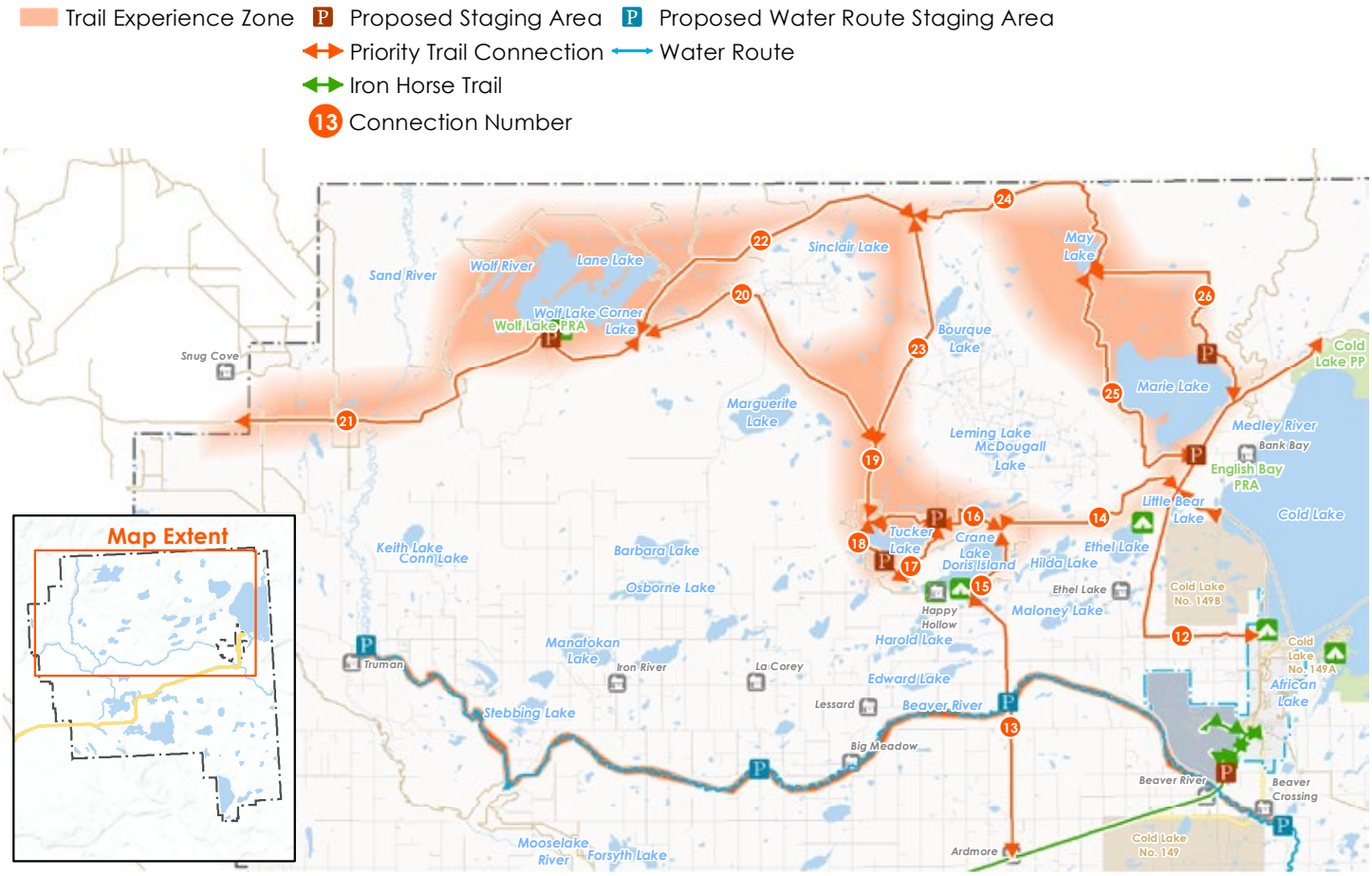


Figure 94: Map of Priority Connections in North M.D. Bonnyville

In addition to the specific connections above, it's recommended that the M.D., Government of Alberta, Lac La Biche County, CFB Cold Lake, trail organizations and other administrations cooperatively work together to meet emergent demand for specific trail experiences in this part of the region through additional detail planning, enhancements and development in the areas identified in Table 29 . These areas are roughly delineated in Figure 95.

Table 29 Suitable Trail Experience Zones in North M.D. Bonnyville

#	Trail Experience Zones	Appropriate areas that are well-suited for these trail experiences	Recommendation
1	**Community Connection & Recreation**		
	B. Rural	• Rural subdivisions (e.g. English Bay; subdivisions near Marie, Ethel, Crane Lakes)	Continue to actively support, plan and develop fine-scale trail connectivity in these areas with appropriate TMOs.
2	**Visitor Interface**		
	A. Access	• Crane/Tucker Lake • Marie Lake • Wolf Lake	Develop /enhance parking and staging using approaches outlined in section 7.4.3.
	B. Service	• Crane Lake	Consider opportunities to significantly enhance available trail services such as those in section 7.6.1.
3	**Long-Distance Adventure**		
	A. Mid-country Extensive	• Interlakes area throughout north • Connections south to Iron Horse Trail • Connections west to Lac La Biche County	Develop and enhance these connections with understanding of how they connect with and serve broader trail network.
	B. Backcountry Extensive	• Wolf Lake paddling experience • Beaver River paddling experience	Develop staging and infrastructure to support route
4	**Activity Optimized**		
	B. OHV Optimized Trails	• Crane/Tucker Lake network	Formalize a dense, well-maintained network of OHV optimized trails with auto-accessible and trail accessible camping opportunities.
	C/E/F. Hiking, Trail Running, Snowshoeing, Equestrian Trails	• Around Crane Lake settled areas	Enhance network of non-motorized trails specifically for lower speed, non-motorized experiences.

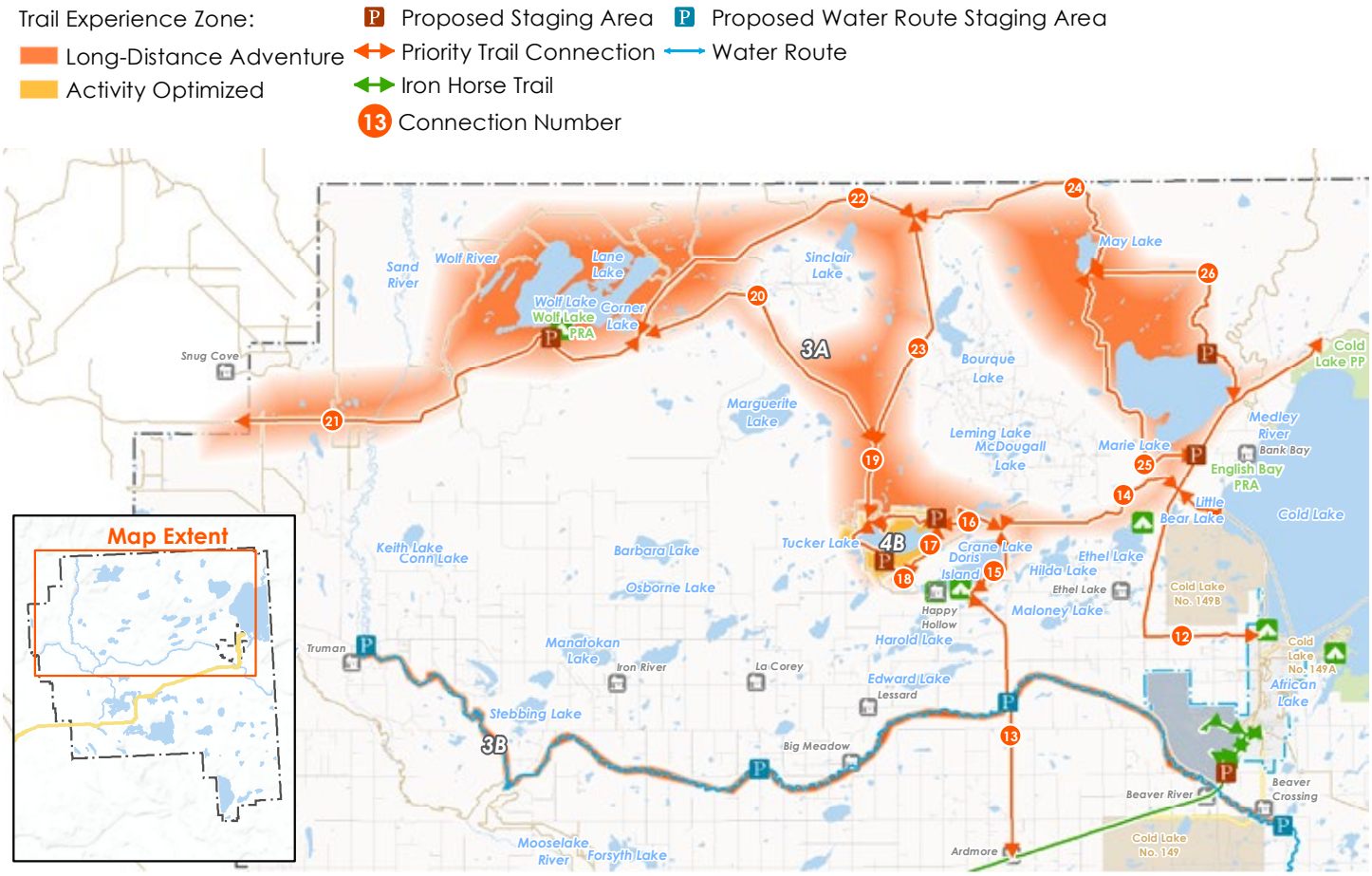


Figure 95: Map of Suitable Trail Experience Zones in North M.D. Bonnyville

7.4 STRATEGY 4: ENHANCE USER EXPERIENCES

Like customer experiences, little things often make the difference between a fair trail experience and an excellent trail experience. Understanding and acting on these things puts the region in position to be able to activate substantial change in how satisfied residents and visitors are with their trail experiences.

7.4.1 UNDERSTAND USERS AND VISITORS

Good management decisions are based, in part, on accurate information and insights about visitor use and motivations. Information on where trail users come from, why they come, when they come, what they do, how long they stay, what they spend, their satisfaction with their experience, and their opinion of the trails can all help to inform management decisions to keep trails relevant and appealing.

OPPORTUNITIES

1. Work with experienced professionals to design and implement an ongoing visitor counting initiative to understand total visitation and visitation patterns in the area. This could include monitoring visitation through mobile data analytics.
2. Work with experienced professionals to design and regularly implement visitor studies to better understand:
   - » Visitor origins
   - » Demographics
   - » Motivations
   - » Activity preferences
   - » Start & end locations
   - » Party size and composition
   - » Length of trip
   - » Satisfaction
   - » Spending
   - » Near- / off-trail attractions and experiences
   - » Satisfaction and net promoter score
3. Monitor and analyse online visitor feedback (e.g., Trip Advisor, Social Media) to understand visitor sentiments and manage the brand. Actively respond to online visitor feedback.

7.4.2 DESIGNATE AND DEVELOP "SIGNATURE" ATTRACTIONS & ROUTES

A signature attraction or trail offers the potential of an experience far beyond the ordinary. These sites and trails are capable of being the exclusive or primary reason for why target markets choose to visit a destination.

These market and export ready trail experiences, if well developed, managed, and differentiated from the region's competition, have the potential to drive greater and higher-yield visitation.

In turn, these experiences have the potential to provide even greater positive economic and social benefits to their host communities while also becoming some of the most prized local recreation experiences.

Signature trails are deliberately extraordinary. They:

- Are nationally, provincially, or regionally unique and are purposefully designed and managed to exceed visitor expectations.
- Involve spectacular, moving, and/or beautiful natural and or cultural experiences.
- Best represent what a region has to offer in terms of trail activities.
- Are approved and supported by the land manager and trail operators.
- Differentiated from other trails in the region and competing trail experiences.
- Are market or export ready and can serve as the primary motivator for why a visitor chooses our region.
- Provide market-driven on-trail visitor accommodations, amenities, services, and trip planning information.

WHAT IS A SIGNATURE TRAIL?

Signature trails go beyond the ordinary into the extraordinary. It is a trail that is capable of being the exclusive or primary reason for why target markets choose a destination. Though the trail type, length, level of development and difficulty can vary, the trail experience is regionally or provincially unique, the trail provides supporting amenities and services, and the trail is purposefully designed to meet the expectations of specific target markets.

- Are animated with visitor itineraries, guiding services and high-profile events, festivals and / or competitions.
- Are capable of attracting additional funding and promotional support from tourism-focused initiatives and organizations.

Developing one or more signature trail experience will help to put the region on visitors' "must experience" list as a trail destination.

The following potential signature trail experiences would be significantly different than anything else available in Northern Alberta and beyond. *However, it should be noted that there may be practical, financial, social, environmental, regulatory, and/or cultural rationale that is out of scope of this initiative that may render them unfeasible. Their presentation below should not be interpreted or implied as an endorsement or authorization.*

OPPORTUNITIES

1. Support the ongoing development of the Iron Horse Trail as a stand-alone signature trail destination for the region. In particular, the region can help accomplish this through supporting the implementation of the trail's 2021 strategic plan and its strategies and actions, including:
   - » Optimizing and enhancing access points (e.g. Cold Lake, Bonnyville and other communities).
   - » Enhancing and activating existing significant attractions, such as the Beaver River trestle (Figure 96) with its unique vistas and aircraft viewing opportunities (see Section 7.3.1).
   - » Enhancing connectivity from the trail to amenities (e.g. community services and campgrounds).
2. Evaluate the feasibility and identify routing options to develop connected significant signature trail experiences from the Iron Horse Trail to:
   - » An optimized OHV play park and connected trail system north of Moose Lake Provincial Park (see Section 7.3.2).
   - » Long-distance, mixed-use loop opportunities that connect from Bonnyville through to County of St. Paul (see Section 7.2.2).
   - » Long-distance, mixed-use loop opportunities connecting the region's northern lakes and west through to Lac La Biche County (see Section 7.2.3).

Figure 96: Beaver River Trestle's Striking Profile and View

Figure 97: Tucker Lake's Impressive Setting

3. Evaluate the feasibility and detailed routing options to develop an all-season, OHV optimized destination experience with multi-loop and overnight opportunities, including backcountry camping or huts , in and around the pine forests and sand of Tucker Lake (Figure 98) and Crane Lake.

4. Continue to enhance the region's near-market-ready specialized and unique infrastructure, amenities and experiences for optimized non-motorized experiences including:
   - » Cold Lake Bike Park
   - » Kinosoo Ridge Resort
   - » Muriel Lake M.D. Park

Figure 98: Example of an OHV friendly huts / comfort camping. (https://www.atvresort.com/)

7.4.3 IMPROVE STAGING AND ACCESS

Staging areas are the places that most visitors will start and end their trail experience. They set the first impression and tone for the visitor's experience. When well designed, they provide safe parking, access to the trail, and help to provide organized visitor information (e.g. trail characteristics, safety, preparedness, regulations, Leave No Trace principles, bear awareness, fire safety, etc.) to ensure well-informed and prepared visitors. This can help to reduce costly and time-consuming emergency response, as well as risk and liability. Appropriately and deliberately designed staging areas can also support the hosting of trail events such as races and rallies.

Community trailheads are places where residents access the trail system directly from their local neighbourhood on foot, bike or OHV. When intentionally designed, trailheads provide residents with physical access to the trail system as well as organized visitor information to ensure well-informed and prepared visitors.

Depending on design and condition of these access points, they can signal to visitors that the trails are managed and cared for, or they can suggest the opposite if they are in poor repair. Design and siting are also important determinants of whether these sites are targeted by thieves, vandals, or others looking to partake in undesirable or unlawful activities.

Efforts have been made to establish a network of formalized staging areas along the Iron Horse Trail, but there is little formal access in other locations. As previously identified, many current staging areas are basic in nature, provide limited visitor amenities and unorganized parking and circulation. Community trailheads are largely informal, and many do not provide key information about the trails and trail system to visitors. In addition, no major formal staging area has been developed within the region to support trail access into the trail system on the broader public lands. Efforts are needed to continue to enhance the visitor appeal and the amenities and information provided at existing staging areas and trailheads.

OPPORTUNITIES

1. Implement a consistent staging area and trailhead typology and level of service guideline. Existing staging areas and community trailheads can be enhanced, and new staging areas and trailheads can be developed and serviced in accordance with the staging area and trailhead typology guidelines outlined in Table 30.
2. Develop or enhance new staging areas identified in Access Zones and proposed staging location in sections 7.3.1, 7.3.2, and 7.3.3.
3. Formalize and enhance the network of community trailheads where residents access the trails from their neighbourhoods.
4. Develop and install themed features to enhance the experience and sense of arrival for visitors at access points. If supported by local Indigenous leadership, theming and design of the gateway features should be inspired by Indigenous peoples and the natural and cultural heritage of the region.

Table 30 Staging Area Typology (Yes, No, Optional)

Services	Staging Area & Trailhead Classification		
	Major Staging Area	Minor Staging Area	Community Trailhead & Connector
10 - 15 passenger vehicle stalls	N	Y	N
15 – 25 passenger vehicle stalls	Y	N	N
10 truck and trailer stalls	O	O	N
15-20 truck and trailer stalls	O	N	N
Compacted gravel surfacing	Y	Y	N
Circulation for passenger vehicles	Y	Y	N
Circulation for truck & trailer	Y	Y	N
Circulation for commercial buses	Y	N	N
Delineated Parking Stalls	Y	O	N
User Determined Stalls	N	O	N
Signage			
Gateway Feature Sign / Monument	O	N	O
Kiosk	Y	O	N
Wayfinding Map & trail access information	Y	Y	Y
Interpretive	O	O	O
Responsible use / education	Y	Y	Y
Regulatory	Y	Y	Y
Wildfire	Y	Y	Y
Warnings and notices	Y	Y	Y
Comfort & Convenience Amenities			
Picnic tables	O	N	N
Day use shelter	O	N	N
Toilets (pit / vault)	Y	O	N
Waste & recycling receptacles	O	O	O
Designated fire rings (if appropriate)	O	N	N
Activity Specific Amenities (examples)			
• Hitching Rails	O	N	N
• Corral	O	N	N
• Manure disposal corral	O	N	N
• Warming shack	O	N	N
• Rental Equipment Facility (e.g. front-counter, storage)	O	N	N
• Tool Centre (common tools)	O	O	N

7.4.4 IMPROVE SIGNAGE AND WAYFINDING

Appealing, well-designed and well-placed trail signage provides a welcoming and informative environment for visitors. Good signage ensures visitors have the information they need when they need it for them to stay safe, be responsible, and to remain compliant with expectations. Good signage that also clearly communicates the rules is also essential to backstopping and enabling compliance and enforcement actions. Finding a balance between too little and too much signage is important as cluttered signage often gets ignored and detracts from the recreation setting.

Current efforts have been taken recently by the M.D. and City to enhance many signs in the region's trail system. Many signs are working well, but opportunity remains to greatly improve the signage system to make a great first impression and better convey complete and consistent information. The current signage system can be improved by:

- Incorporating territorial land acknowledgements, Indigenous place / landmark and trail naming, and interpretive content (as appropriate and with support of local First Nations).
- Ensuring sign orientation is appropriate for the trails it is placed on.
- Incorporating industry accepted and recognizable iconography showing permitted and prohibited activities as well as the trail level of difficulty ratings (e.g. white circle, green circle, blue square, black diamond).
- Communicating basic trail design parameters such as grades, cross slopes, tread widths and materials.
- Communicating level of preparedness information (e.g. AdventureSmart).
- Identifying what visitor amenities are available and their locations.
- Ensuring maps show all designated trails in the networks and that undesignated trails are signed closed.
- Ensuring only existing, purposeful viewpoints and amenities are shown.
- Ensuring sign designs and materials will resist and endure vandalism.

OPPORTUNITIES

1. Design kiosks, trailhead, and wayfinding signage to apply signage best practices and communicate all essential information (e.g. iconography for permitted / prohibited activities and level of difficulty, trail design parameters etc.) and to align with the Government of Alberta signage guidelines (Table 31) which provides general guidance on the typical location and content to be included in each sign type.

Table 31 Signage Guidelines

Sign Type	Typical Location	Typical Content
Gateway / Monument	• Entrance to trailhead / staging area.	• Trail / trailhead name • Branded, memorable feature • Photo opportunity
Kiosk	• Major staging areas	• Trail name • Permitted & prohibited activities (icons) • Level of difficulty (icons) • Trail design characteristics: » Length » Tread surface » Tread width » Avg / max grades » Obstacle frequency / height • Preparedness & AdventureSmart (equipment, skills, trip plan) • On-trail amenities • Trail condition slider • Hazards / risk identification & safety messaging • Responsible use messaging • Wildfire messaging • Land acknowledgement and cultural messaging • Regulations • Map of trail(s) and amenities
Secondary Trailhead Sign	• Community / minor trailheads	• Trail name • Permitted & prohibited activities (icons) • Level of difficulty (icons) • Trail design characteristics: » Length » Tread surface » Tread width » Avg / max grades » Obstacle frequency / height • Trail condition slider • Map of trail(s)
Waymarkers	• Trail intersections	• Navigation directions • Trail names • Map (optional)
Hazard / Warning	• Where major natural or visitor caused hazards exists	• Hazard identification and instruction to visitor
Regulatory	• Areas of non-compliance	• Regulatory requirement
Highway / Roadway Trail Crossings	• As identified in AB Transportation's Trails in Alberta Highway Rights of Way Guidelines	• Trail / Road crossing ahead

2. Install wayfinding, regulatory and visitor education / responsible use (e.g. Leave No Trace) signage at all community trailheads.
3. Develop and install on-road wayfinding signage to help visitors locate the major staging areas from visitor services zones.
4. Work with Alberta Transportation, municipalities and Northeast Muni-Corr to appropriately sign all highway / roadway crossings (on the highway/ road and on the trail).
5. Collaboratively develop and incorporate interpretive signage to allow users to develop awareness of the area, its history, its environment, and its peoples.

7.4.5 INCORPORATE COMFORT AND CONVENIENCE AMENITIES

Appropriate and well-sited visitor comfort and convenience amenities such as toilets, benches, picnic tables, hitching rails, designated fire rings, waste receptacles and other features can greatly affect the quality of visitor experiences.

Amenities are also powerful management tools and can help to concentrate and manage undesirable visitor impacts (e.g. human waste). Often overlooked, amenities such as benches, viewpoints and day-use sites can effectively "absorb the time" of trail users and reduce the amount of trail that might otherwise be needed to satiate their interests.

Currently, comfort and convenience amenities are provided in only a few locations. Where they are provided, the level of servicing is not yet consistent and, in some locations, the amenities are aging and reaching the end of their asset lifecycles. Efforts should be taken to improve the quality and consistency of visitor amenities to align with their objectives and desired level of development.

OPPORTUNITIES

1. Ensure that the amenities available at all the region's designated trails are consistent with their TMOs and ascribed "Level of Development".
   - » Provide appropriate comfort and convenience amenities at existing and new staging areas in keeping with the trailhead design guidance provided in Table 25.
   - » Consider on-trail amenities in keeping with "Level of Development" guidelines in Table 17(section 6.3.3).
2. Continue to monitor the evolution and requirements of activities to align services with needs (e.g. the electrification of bicycles, OHVs, snowmobiles and other vehicles) to consider the provision a network of supporting electric charging stations or other appropriate amenities.

7.5 STRATEGY 5: ACTIVELY MANAGE USE & IMPACTS

The region's trail system hosts thousands of visits by residents and visitors each year and interest exists to sustainably increase this use. Visitation impacts trail surfaces and can undesirably impact wildlife, fish, water quality, Indigenous values, and wildfire risk if not well-managed. Visitation can also lead to crowding, visitor conflicts, concerns from residents and trespass concerns from First Nations, Métis Settlements, landowners and tenure holders. Increases and changes in visitation also affects risk and liability exposure for governments and trail operators.

> *"Although we always hope for visitors to be on their best behaviour, we need to plan for their worst behaviour."*

The following actions are recommended to prepare and position the region for managing visitor use and associated impact.

7.5.1 MONITOR & MAINTAIN TRAILS TO THEIR TRAIL MANAGEMENT OBJECTIVES (TMOS)

Siting and condition of a trail is one of the most fundamental determinants of the quality of a visitor's experience. The trail tread must meet the needs and expectations of the user and the activity they are taking part in. A quality trail is rarely straight, and it is designed with an enjoyable flow. Trail conditions are also a determinant of the extent of undesirable impacts on vegetation, wildlife, fish, water and other ecological values. Most M.D. and City trails are in good condition, but the condition of many public land trails in the system are poor and need intervention to avoid further degradation, complete loss of trail function, and/or increased visitor safety and liability risks. The risks of more frequent and severe weather events associated with climate change may also exacerbate current trail sustainability issues.

Having access to timely and accurate information about trails and their condition is fundamental to sound trail and visitor management. To be sustainable, it is essential that trail managers understand how trail conditions are evolving over time, to identify undesirable changes quickly and be able to respond to these.

OPPORTUNITIES

1. Work with staff, volunteers, and the trail ecosystem to understand and implement the TMO approach and to prepare and approve annual trail maintenance plans to address basic trail sustainability issues.
2. Work with experienced trail professionals to develop and implement a cost-effective and feasible trail monitoring program to monitor changes in trail conditions. This should include:
   - » A formal trail inspection component to ensure trails are inspected on a regular basis (minimum of twice per year) including after all major wind and rain events.
   - » A standardized digital trail inspection form to document trail inspections and procedures that will be used to prioritize and then track any actions taken to resolve identified and reported deficiencies and sustainability issues.
   - » A convenient online means for visitors to crowdsource the identification of trail maintenance and sustainability issues (e.g. TrailForks).
3. Incorporate both proactive (e.g. scheduled) and reactive maintenance capacity and approaches to ensure timely and effective maintenance. This could include a “rapid response” protocol and the ability to close trails as needed when the ground and trail treads are saturated and unacceptably susceptible to damage, rutting and erosion.

7.5.2 MANAGE VISITATION BEHAVIORS & IMPACTS

Fostering self-propagating responsible conduct and stewardship ethic among trail users is one of the most effective means to keep trails sustainable with minimum cost and intervention. Strategies and actions to improve awareness, understanding and compliance include the following.

OPPORTUNITIES

1. Implement strategies and actions associated with the recommended Visitor Use Management plan (Section 7.2.1).
2. Engage experts in recreation management and visitor education to work collaboratively with the trails ecosystem to develop a comprehensive visitor education strategy. The strategy could be based on successful existing initiatives (e.g. Leave-No-Trace, Tread Lightly) and focus on informing and educating about undesirable visitor impacts (e.g. fish, wildlife, cultural values, trespass, safety etc.), reporting channels for issues and concerns (e.g. 911, 310-LAND, Report-A-Poacher) and inspiring visitors to implement skills, best practices, and ethics to mitigate the impacts at key decision points throughout their planning and visit.
3. Examine the feasibility and interest in establishing a trail steward program to ensure staff and/or volunteers maintain a presence on the trail system to promote responsible and compliant visitation.
4. Increase on-trail management presence and compliance patrols throughout the region by staff and volunteers. Administrations should consider increasing staff presence and on-trail patrols throughout the peak summer and winter seasons. Efforts should be prioritized to address common non-compliance issues.

7.5.3 DISESTABLISH & REMEDIATE UNDESIRED ROUTES

Routes that are not incorporated into the designated trail network should be actively closed and remediated as more appropriate and sustainable connections are developed.

The area should also be monitored for unauthorized trail development and, where found, this development should be suspended until assessed. Unauthorized trail development should be investigated and compliance assurance actions (e.g. education, warnings, enforcement) should be pursued when necessary. Partners in the region's trail ecosystem should understand, however, that jurisdictions with good quality trails and active engagement usually have few challenges with unauthorized trail development. The potential for unauthorized trail development is inversely related to the quality of available trail experiences and the availability of meaningful opportunities for residents to be involved in planning, development, and operation.

7.5.4 MANAGE NON-VISITOR IMPACTS

The region's outdoor recreation interests and footprints will continue to overlap with other land uses (e.g. forestry, grazing, oil and gas activities). With planning and foresight, there are opportunities and actions that can be taken to improve how these interests can coexist and work together to mitigate challenges and impacts.

Common non-visitor impacts to trails include noise, viewshed alteration, tread disturbance or destruction, blocking or alteration of trail alignments, use of inappropriate or damaging equipment, and failure to appropriately restore a trail following use or change. Examples include:

- Tread impacts from cattle, particularly during soft ground conditions (e.g. enduring hoofprints, manure),
- Blading or clearing a trail alignment for access that results in widening, straightening or smoothing and/or other alterations.
- Visible clearing of vegetation and trees from hilltops, backdrops, vistas and other areas that contribute to scenic value.

OPPORTUNITIES

1. Foster constructive working relationships that build mutual understanding between trail communities and other land uses.
2. Ensure mutual awareness of values, common concerns, and common goals.
3. Provide opportunity for industry and commercial users to actively contribute to trail development as a component of their community investment and relation initiatives.
4. Establish and implement standards for planning, development and operations that encourage desirable conduct and best-practices for trail users and other land uses that minimize concern and support common goals.
5. Use and leverage existing and emerging regulatory tools (e.g. Alberta Trails Act) where compliance concerns exist.

7.6 STRATEGY 6: ANIMATE TRAILS & FOSTER TRAIL-FRIENDLY COMMUNITIES

The region's trails are significant recreation assets that are used by residents and visitors. Several communities in the region function as starting and ending locations for trail experiences and as visitor service hubs. Trail-focused visitor services in these locations are currently limited, but significant opportunity exists to improve them and to elevate the economic benefits that flow to the region.

The experiences visitors have leaves lasting impressions on their memories of our region. Visitors who come to the region that feel acknowledged and welcomed, that can access the services they require, and that are inspired to take some time to explore and experience the communities are highly likely to have positive experiences and be "Net Promoters" of the region.

Many of the strategies and tactics that successful trail communities have used are well documented. Some of these that could be considered by the region to foster and outwardly display a "trail culture" include the following.

OPPORTUNITIES

1. Establish safe, appealing, and legal trail connections within the suggested Visitor Interface & Service Zones (see Section 7.3) to enable visitors to travel directly from the trail system to trail-friendly accommodations, attractions, visitor amenities, and service businesses.
2. Work with local service providers and business community to identify and address gaps in visitor services that support trail-based visitors (e.g. secure OHV parking at hotels, equipment storage at hotels, equipment repair and supplies, guides, equipment rentals, etc.).
3. Incorporate beautification initiatives within Visitor Interface & Service Zones to create a welcoming sense of arrival and to reinforce and express the region's trail culture.
4. Provide well-placed, visitor-focused, and easy to understand wayfinding aids on access trails, access corridors, and roadways within communities to:
   - » reassure visitors that they are on a designated trail and/or access corridor and
   - » help trail-based visitors locate trail-friendly service providers.
5. Work with interested trail-friendly businesses to create welcoming trail-themed storefront initiatives that reinforce the region's trail culture and reaffirms that visitors are welcomed and appreciated.
6. During peak trail season(s) and major events, deploy trail-themed street pole banners to provide a welcoming sense of arrival as visitors come into and travel through the community.

7.6.1 POSITION AND ATTRACT VISITORS TO THE REGION

Creating the conditions for high-quality, memorable trail experiences will only benefit the region if locals and visitors know about and choose to experience the trail system. This is particularly important for tourism, as deliberate efforts should be invested in to build reputation and convince target markets to choose the region over other destinations that may have fewer travel barriers.

The region currently does not have an obvious trail destination brand. Current trails-focused marketing and trip-planning efforts are limited and fragmented. Deploying modern marketing tools that reach our target visitors with compelling stories, images, and appropriate trip planning information at each step of their *Pathway to Purchase* will be an important focus to motivate trail tourism.

However, efforts to advance marketing of the region as a trails destination should only occur once the destination has increased its trail tourism readiness to be "market-ready". Marketing before the trails and services are ready for visitation can have significant negative impacts on the region's environment and reputation as a desirable destination.

Efforts to advance marketing of the region as a trails destination should only occur after the destination has:

- increased its trail tourism readiness to "market-ready",
- addressed the major trail sustainability issues, and
- the capacity to serve and manage the visitation.

OPPORTUNITIES

1. Work with the regional Destination Marketing and Management Organization and/or Travel Alberta to develop a compelling trail destination brand and prepare a modern, integrated trail tourism destination marketing and communications strategy to encourage both locals and visitors to experience the trail system.
2. As part of the marketing strategy, develop a single, authoritative, visitor-focused trail experience planning website with timely and accurate trip planning information. The website should include:
   - » A compelling overview of trail experience zones and signature trails.
   - » All essential trip planning information including trail details such as:
   - » GPS / GPX track downloads.
   - » Integration with TrailForks, All Trails and similar services.
   - » Descriptions of what is and is not needed to safely travel the trails.
   - » Promote transportation, accommodations, guides, safety and health considerations, trail etiquette, Leave No Trace principles, and emergency procedures.
   - » A trail finder search tool that allows visitors to enter and filter trails by search criteria (e.g. activity type, length, difficulty, recreation setting, natural region, supporting amenities etc.).
   - » Visitor itineraries that integrate trail experiences with accommodations, attractions, events, and other experiences (e.g. festivals, culinary, Indigenous) in the region.
   - » Up-to-date trail condition reports and trip reports (e.g. provided by community members or visitors).
   - » Contacts for local tourism operators and service providers (e.g. guides, transportation, rentals, accommodations, eating establishments, groceries etc.)
   - » A schedule of special events, celebrations, and competitions.
   - » Inspiring images and videos of the trails and visitor testimonials.
   - » Media coverage of the trails.
   - » Latest updates.
   - » Trail news blog.
3. Ensure trail information is current and accurate on the main crowdsourced based apps and services (e.g., trailforks.com, alltrails.com, Ride-With-GPS, Backroads Mapbooks) and that these services are promoting appropriate trails and used to communicate any temporary trail and area closures (e.g., seasonal closures, emergency closures etc.).
4. Work with trail-friendly businesses to develop and market sales and promotions to entice trail visitors into communities.
5. Actively seek out and build respected presence in the physical and online locations where desired target markets gather. This can include trade expos and events, and can also include popular online forums, groups and services.

7.6.2 MONITOR, UNDERSTAND & CELEBRATE THE BENEFITS FROM THE TRAIL SYSTEM

Often, the benefits of trails and trails tourism are not well-documented or communicated. This lack of evidence can make it difficult to justify further or ongoing investments in the network and the trails ecosystem.

It is essential to take the time to identify and celebrate trails successes and share these with the region's elected officials, tourism industry, trail partners and residents. This reporting and information sharing will help to strengthen support for the implementation of this plan.

It is also important for the trails ecosystem to routinely reflect on what is working and what isn't. These insights will inform adaptive management and enable the trails ecosystem to adjust approaches where needed to ensure the desired conditions set in the plan are achieved or retained.

OPPORTUNITIES

1. Position this work as key deliverables of the region's collaborative trail form (i.e. 7.1.4).
2. Undertake a regular economic impact study to understand and monitor changes in the direct, indirect and induced economic impacts from the trail system.
3. Develop and distribute a *State of Trails Report* every two years to summarize progress made on implementing this plan and desired resource conditions. This can include successes, challenges, and reporting on the indicators and status of targets and thresholds as outlined in this plan as well as other metrics relating to changes in visitation, length of stay, visitor spending, direct / indirect and induced economic benefits, businesses expanded / created, employment, visitor satisfaction, future priorities, and other relevant information.
4. Develop a communications strategy to share the benefits and success of the trails system to elected officials, residents, and the trails ecosystem.

APPENDICES

APPENDIX A: PLANNING AREA STATISTICS

General Stats	Area	
Study Area Total (Km²)	7236.81	

Trails and Linear Disturbance (Rec Use)	Length (km)	
Near-term Proposed/Future Trails	27.33	
Sanctioned terrestrial trail	147.18	
Undetermined Trail/Linear Disturbance	727.52	
Water & Over-ice Routes	262.22	
Total Terrestrial Trails & Linear Disturbance	902.20	
Total Trail Length (with water & ice routes)	1164.56	

Historic Resource Values (Total Area)	Area (km²)	% Study area
HRV 01	**0.67**	**0.0092%**
h	0.67	0.0092%
HRV 03	**0.33**	**0.0046%**
a	0.33	0.0046%
HRV 04	**148.77**	**2.0558%**
a	21.28	0.2940%
a, c	8.92	0.1233%
a, p	0.16	0.0022%
c	117.09	1.6180%
c, h	0.32	0.0045%
p	1.00	0.0138%
HRV 05	**745.74**	**10.3048%**
a	432.75	5.9799%
a, h	0.35	0.0048%
a, p	198.86	2.7480%
h	2.79	0.0385%
p	110.99	1.5337%

HRV (Total Area)	Length (km)	% Total trail length
1	4.97	0.07%
4	44.96	1%
5	374.04	5%

Natural Subregions (Total Area)	Area (km²)	% Study area
Central Mixedwood	3689.41	51%
Dry Mixedwood	3547.40	49%

Natural Subregions (by Trail Length)	Length (km)	% Total trail length
Central Mixedwood	477.72	42%
Dry Mixedwood	659.51	58%

RTOS (Total Area)	Area (km²)	% Study area
Backcountry (Setting I)	0.00	0%
Backcountry (Setting II)	343.14	5%
Mid-country (Setting III)	1559.76	22%
Front-country (Setting VI)	2198.21	30%
Front-country (Setting V)	3056.67	42%
Developed (Setting VI)	78.99	1%

RTOS (by Trail Length)	Length (km)	% Total trail length
Backcountry (Setting I)	0.00	0%
Backcountry (Setting II)	26.15	2%
Mid-country (Setting III)	297.64	26%
Front-country (Setting VI)	527.87	46%
Front-country (Setting V)	221.34	19%
Developed (Setting VI)	58.80	5%

Scenic Value (Total Area)	Area (km²)	% Study area
Very Low	4240.43	59%
Low	691.02	10%
Moderate	394.65	5%
High	278.73	4%
Very High	553.61	8%

Scenic Value (Total Area)	Length (km)	% Total trail length
Very Low	555.33	49%
Low	162.81	14%
Moderate	126.18	11%
High	98.38	9%
Very High	122.96	11%

Water Crossings	Count	
Watercourse Crossing (Field Collected)	6.00	
Water Crossing (Desktop & Field)	176.00	

Road Classifications	Length (km)	
One-lane Gravel Road	2987.31	44%
Two-lane Gravel Road	190.32	3%
Divided Paved Road	13.08	0%
One-lane Undivided Paved Road	567.87	8%
Two-lane Undivided Paved Road	982.47	15%
Four-lane Undivided Paved Road	2.43	0%
Driveway	575.69	9%
Unimproved Road	785.34	12%
Truck Trail	330.22	5%
Dry-Weather Road	315.16	5%
Total Road	**6749.88**	

Trail By Land Ownership (Approx)	Length (km)	
City	64.79	6%
Town	16.90	1%
Village	1.61	0%
Summer Village	0.12	0%
First Nation Reserve	0.00	0%
Métis Settlements	0.00	0%
Provincial Park	30.65	3%
Provincial Recreation Area	4.68	0%
DND	6.25	1%
Other	1042.10	92%

Land Administration	Area (km²)	
City	66.59	1%
Town	34.99	0%
Village	7.67	0.1%
Summer Village	1.03	0.01%
First Nation Reserve	357.54	5%
Métis Settlements	647.85	9%
Provincial Park	65.44	1%
Provincial Recreation Area	5.31	0.1%
Hydrology / Waterbody	835.48	12%
Study Area Total (km²)	7236.81	100%
Remaining Area:	5214.90	72%

Land Type	Area (km²)	
Forest Protection Area	3203.73	44%
Crown Land Reservation	1933.99	27%
Cold Lake Sub-Regional Plan Tourism Areas	994.25	14%

Environmental	Area (km²)	
ESA	1893.38	26%
Key Wildlife and Biodiversity Zones	1293.69	18%
Caribou Range	294.79	4%

APPENDIX B : OVERVIEW OF TRAIL CLASSIFICATIONS AND APPROXIMATE COSTING

Intermunicipal Trail Management Plan: Summary of Trail Classifications & Management Objectives (TMOs)					
TMO #	**Physical Description**	**Primary User Objectives**	**Key Attributes**	**Example Activities**	**Cost Information** *(Including 30% contingency; refer to route assessments for exclusions)*
1	**Non-motorized, Multi-use** (wide, paved)	Quiet, low-speed, low-snow experiences in and around populated urban, rural residential settings (front-country, mid-country) to support quality of life and connectivity goals.	• 2.5-3+m width • Asphalt • Easiest difficulty • Year-round, frequent maintenance.	• Walking/ running. • On-leash dogs • Cycling/E-Bikes • Small-wheel conveyances • Mobility devices	• 3m Asphalt Trail c/w subbase. **Estimated Cost: $260.00/linear meter.**

Intermunicipal Trail Management Plan: Summary of Trail Classifications & Management Objectives (TMOs)					
TMO #	**Physical Description**	**Primary User Objectives**	**Key Attributes**	**Example Activities**	**Cost Information** *(Including 30% contingency; refer to route assessments for exclusions)*
2	**Non-motorized & Mixed-use Roadway Lanes**	Safe, secure corridors connections, unidirectionally (preferred) integrated with urban and regional (low to high speed) roadway network. Notes: • *Non-motorized/ motorized shared-use lane development should be based on roadway speeds; available right-of-way; land use; street classification; travel prioritization, volumes, level of service; types of activity; utilities; snow clearing and storage requirements; topography/ curvature.* • *Consider phased implementation with temporary route development (e.g., roadway lane reduction, and temporary delineation devices) for one (1) year to assess trail use and potential shared use conflicts and/ or issues.*	On-Street Shared Lanes – 2 variations: • (A) Existing asphalt roadways (11 meters wide): Motorized/ Non-motorized Use – 3.5m to 3.7m vehicle lane reduction and 3.0m (min.) mixed-use lane (asphalt or gravel) c/w 0.6m to 1.0m wide delineator. • (B) Existing asphalt roadways (9 meters wide): Motorized/ Non-motorized Use – 3.5m vehicle lane reduction; shoulder extension; and 3.0m (min.) mixed-use lane (asphalt or gravel) c/w 0.6m to 1.0m wide delineator. • Year-round, frequent maintenance.	On-Street: • Cycling/E-Bikes • Small-wheel conveyances Shared Roadway: • Cycling • OHV • Snowmobile • Highway motorcycle	**TMO (A1) – 11-meter roadway width** • Vehicle Lane Reduction & Line Painting • Retain Existing Asphalt (3.5m wide) • Core Asphalt & Install Wood Rail Delineator • Delineation Area Line Painting **Estimated Cost: $180.00/linear meter.** **TMO (A2) – 11-meter roadway width** • Vehicle Lane Reduction & Line Painting • Asphalt Removal (3.5m wide) • Gravel Replacement (3.5m wide) • Wood Rail Delineator **Estimated Cost: $450.00/linear meter.** **TMO 2 (B1) – 9-meter-wide roadway trail extension** • Vehicle Lane Reduction & Line Painting • Clearing (3.5m wide) • Fill (1.0m shoulder extension) • Asphalt Extension (3.5m wide) • Core Asphalt & Install Wood Rail Delineator • Delineation Area Line Painting **Estimated Cost: $350.00/linear meter.** **TMO 2 (B2) – 9-meter-wide roadway trail extension** • Vehicle Lane Reduction & Line Painting • Clearing (1.0m wide) • Fill (1.0m shoulder extension) • Asphalt Removal (3.5m wide) • Gravel Replacement (3.5m wide) • Wood Rail Delineator **Estimated Cost: $475.00/linear meter.**

Intermunicipal Trail Management Plan: Summary of Trail Classifications & Management Objectives (TMOs)					
TMO #	**Physical Description**	**Primary User Objectives**	**Key Attributes**	**Example Activities**	**Cost Information** *(Including 30% contingency; refer to route assessments for exclusions)*
3	**Non-motorized, Multi-use** (wide, aggregate)	Quiet, low-to-moderate speed, all-season experiences in rural residential and mid-country settings to support quality of life and connectivity goals, particularly where lower capital and maintenance costs are desired.	• 2.5-3+m width • Firm aggregate/ natural • Snow covered in colder months • Easy to moderate difficulty • Routine maintenance	• Walking • On-leash dogs • Cycling • Self-propelled winter (e.g. snowshoe, non-optimized ski)	• 3m Granular Trail c/w subbase. **Estimated Cost: $160.00/linear meter.**
4	**Non-motorized, Multi-use** (narrow, natural)	Quiet, low-to-moderate speed, all-season experiences in mid-country or backcountry settings to support adventure and tourism goals, particularly where low capital and maintenance cost trails are desired.	• 0.6-1.5m width • Firm aggregate/ natural • Snow covered in colder months • Moderate difficulty • Occasional maintenance	• Walking • MTB / Fatbike • Equestrian • Self-propelled winter (e.g. snowshoe, non-optimized ski)	GRANULAR • 1.5m Granular Trail c/w subbase. **Estimated Cost: $80.00/linear meter.** NATURAL Variable depending on native soil.
5	**Mixed-use, Multi-use Connector** (wide, granular, snow covered in winter months)	Maintained all-season routes optimized for safe and efficient all-season connectivity between long-distance/ rural trails and populated areas for moderate speed, low-moderate noise activities.	• 3 to 4m Mixed Use/Multi-Use Lane. • Firm aggregate • Easiest difficulty • Routine maintenance	• OHV • Snowmobile • Highway motorcycle • Most other uses also permitted, but not encouraged.	• 3m Granular Trail c/w subbase. **Estimated Cost: $160.00/linear meter.**

Intermunicipal Trail Management Plan: Summary of Trail Classifications & Management Objectives (TMOs)					
TMO #	**Physical Description**	**Primary User Objectives**	**Key Attributes**	**Example Activities**	**Cost Information** *(Including 30% contingency; refer to route assessments for exclusions)*
6	**Mixed-use, Multi-use** (wide, natural/ aggregate, snow covered in winter months)	Lower maintenance, all-season trails that support enjoyable, moderate speed activities with low-to-moderate noise in mid-country to back-country settings. Expectations for lower speed, lower-noise users should be managed.	• 2.5-3m width • Firm natural or aggregate • Moderate difficulty • Occasional maintenance • Snow covered in winter months	• OHV • Snowmobile • Highway motorcycle • Most other non-motorized uses also permitted.	GRANULAR • 3m Granular Trail c/w subbase. **Estimated Cost: $160.00/linear meter.** NATURAL Variable depending on native soil.
7	**Mixed-use, Snow Vehicle Optimized** (wide, snow-covered)	Trails optimized to support moderate speed and moderate noise activities in frozen conditions. Motorized wheeled activities are excluded or restricted in winter and summer because of likelihood of impacts to the trail surface (e.g. ruts, trenches, holes, erosion.)	• 3-4m width • Snow covered (over mixed and frozen surfaces) • Moderate difficulty • Routine grooming and maintenance	• Snowmobile • Other low surface impact activities.	• No cost information provided

Intermunicipal Trail Management Plan: Summary of Trail Classifications & Management Objectives (TMOs)					
TMO #	**Physical Description**	**Primary User Objectives**	**Key Attributes**	**Example Activities**	**Cost Information** *(Including 30% contingency; refer to route assessments for exclusions)*
8	**Specialty/ Activity Optimized** *Trails and/or confined areas specifically built and maintained to support a specific activity and user experience.*	These trails may allow other non-optimized activities, but they do not provide highly enjoyable or desirable experiences for these activities. Therefore, these trails are generally not well-suited to mixing with other uses. This TMO allows for highly specialized, purposeful features (e.g. jumps, mud pits. obstacles). It also allows for user objectives, experiences and amenities that might be unsuitable in other TMO classifications (such as skills progression, directional travel, high difficulty, higher noise, higher speeds, bigger risks, specialized infrastructure). This TMO should have very purposeful and detailed design and operational guidance to reduce, mitigate, and manage associated impacts and risks.	• Design dependent on specific activity and desired experience. • Variable difficulty • Design and maintenance guidance should defer to recognized standards (where available) for primary activity purpose such as IMBA, NOHVCC, Whistler MTB standards.	• MTB park • MX park • OHV play park • XC ski trail network • Equestrian trail network • Climbing/ scramble routes • Whitewater courses & routes	• Cost dependent on design parameters

Intermunicipal Trail Management Plan: Summary of Trail Classifications & Management Objectives (TMOs)					
TMO #	**Physical Description**	**Primary User Objectives**	**Key Attributes**	**Example Activities**	**Cost Information** *(Including 30% contingency; refer to route assessments for exclusions)*
9	**Flatwater Route** (Infrastructure)	Pertains to the general infrastructure needed to support safe access to optimized flatwater or grade 1-2 river adventures.	• Flat water or grade 1-2 river • Suitable supporting infrastructure at launch/ takeouts and at stops on route. • Occasional maintenance to facilitate entrance egress. • No expectation of full route maintenance	• Paddling • Motorized boating	• Cost dependent on design parameters.

OTHER TMO CONSIDERATIONS:

- Sidewalks not included in trail classification system. Where feasible, all sidewalks should be boulevard separated and a minimum 1.8m wide based on current Complete Street Standards.
- Safe Journey Routes (e.g., school zones, parks, and neighbourhood connectors) should be considered as part of the classification system in urban areas for

APPENDIX C: INTERMUNICIPAL ASSESSMENT DETAIL (ROUTES 1 TO 7)

The following assessments are intended to reflect approximate routing and costs only.

ROUTE 1. CONNECT THE CITY OF COLD LAKE TO COLD LAKE PROVINCIAL PARK

Route Alignment: 16 Avenue/Township Road 632A (from 8 Street to Range Road 15A)

TMO RECOMMENDATION:

8 Street to 6 Street (East - Residential Edge)

1. **16 Avenue (8 Street – east) –** Approximate length: 97m.

   Notes: The existing Collector roadway is 11m wide (approx.), providing 2-way traffic lanes and observed parallel parking on the south side of the street. The north edge (cemetery) is constrained by steep grades and overhead power. The south edge (residential) has a narrow grass boulevard (0.6m wide approx.) and concrete sidewalk (less than 1.0m wide approx.) Both sides of the roadway have curb and gutter, complete with (side inlet) storm catch basins.

   Reducing the travel lanes to 3.5m to 3.7m it is recommended that TMO 2 (A) be applied along the south edge of 16 Avenue.

   ESTIMATED COST (TMO 2 (A1): $18,000.00 (includes 30% contingency).

   ESTIMATED COST (TMO 2 (A2): $44,000.00 (includes 30% contingency).

   NOTES:

   a. The following items are not included in the cost estimate:
      i. Roadway/underground service upgrading or redevelopment.
      ii. Signage/Wayfinding and Trail and Amenities.
   b. Application of TMO 2 (A) to this segment will remove existing on-street parking.
   c. Improve Safe Journey connection in front of Cold Lake Elementary School (2.5m wide (min.) concrete monolithic sidewalk).
   d. Intersection Improvements (Complete Street intersection applications).

2. **16 Avenue (7 Street – east) –** Approximate length: 104m.

   Notes: The existing Collector roadway is 11m wide (approx.), providing 2-way traffic lanes and observed parallel parking on the south side of the street. The north edge (residential) is generally flat with overhead power and has several driveway crossings closer to 6 Street. The south edge (residential) has a narrow grass boulevard (less than 0.6m wide approx.); a concrete sidewalk (less than 1.0m wide approx.); tree lines; and driveway crossings. Both sides of the roadway have curb and gutter. The storm system may terminate at 6 Street, as no catch basins/manholes are observed beyond 6 Street.

   Reducing the travel lanes to 3.5m to 3.7m it is recommended that TMO 2 (A) be applied along the south edge of 16 Avenue.

   ESTIMATED COST (TMO 2 (A1): $19,000.00 (includes 30% contingency).

   ESTIMATED COST (TMO 2 (A2): $47,000.00 (includes 30% contingency).

   NOTES:

   a. The following items are not included in the cost estimate:
      i. Roadway/underground service upgrading or redevelopment.
      ii. Signage/Wayfinding and Trail and Amenities.
   b. Application of TMO 2 (A) to this segment will remove existing on-street parking.

3. **16 Avenue (6 Street – east) –** Approximate length: 100m.

   Notes: 16 Avenue roadway parameters terminate at the end of the existing residential development and the roadway reduces in width to 9m (approx.). The north edge (residential) is flat open grass with overhead power and one driveway crossing. Beyond existing residential development, the north edge has a low-lying ditch and tree lines. The south edge (residential) has a narrow grass boulevard (less than 0.6m wide approx.); a concrete sidewalk (less than 1.0m wide approx.); trees; and driveway crossings. Beyond existing residential development, the south edge has a low-lying ditch, overhead power, and tree/shrub lines. All concrete curb and gutter terminate before the end of the existing residential development.

   Reducing the travel lanes to 3.5m to 3.7m it is recommended that TMO 2 (B) be applied along the south edge of 16 Avenue/Township Road 632A.

   ESTIMATED COST (TMO 2 (B1): $35,000.00 (includes 30% contingency).

   ESTIMATED COST (TMO 2 (B2): $48,000.00 (includes 30% contingency).

   NOTE:

   a. The following items are not included in the cost estimate:
      i. Roadway/underground service upgrading or redevelopment.
      ii. Signage/Wayfinding and Trail and Amenities.

4. **16 Avenue/Township Road 632A (East of residential area to Range Road 15A – Cold Lake Provincial Park) –** Approximate length: 1305m.

   Notes: Roadway width 9m (approx.). The north edge has variations of low-lying ditch and steep slopes and tree lines (complete with several gravel road and driveway intersections). The south edge has variations of shallow slope (extended ditch), steep slope and shrub/ditches, overhead power, and tree/shrub lines (complete with informal/gated road intersections and gravel laybys).

   Reducing the travel lanes to 3.5m to 3.7m it is recommended that TMO 2 (B) be applied along the south edge of Township Road 632A.

   ESTIMATED COST (TMO 2 (B1): $457,000.00 (includes 30% contingency).

   ESTIMATED COST (TMO 2 (B2): $620,000.00 (includes 30% contingency).

   NOTES:

   a. The following items are not included in the cost estimate:
      i. Signage/Wayfinding and Trail and Amenities.
      ii. Clearing/Brushing.
      iii. Grading and Embankment/Ditch Redevelopment.
   b. Intersection enhancements and trail extension beyond Range Road 15A not included.

ROUTE 2. IRON HORSE TRAIL (ACROSS HWY 28) TO GRANDE CENTRE GOLF & COUNTRY CLUB CONNECTOR

Route Alignment: From Iron Horse Trail (staging area sign) to informal trail alignment (between 47 Avenue residential area and Walmart Supercentre)

Notes:

- Highway 28/ 51 Street– 4 lanes.
- Highway 28/ 51 Street – median separated (1.0m wide approx.) at crossing location.
- 46 Avenue (west) – aligned with crossing location (no traffic lights or pedestrian crossing).
- Intersection Lights at 43 Avenue (235m approx. from crossing location).
- Intersection lights at 50 Street (160m approx. from crossing location).

TMO RECOMMENDATION:

TMO 5 development on south side of Iron Horse Trail (Staging Area), extending along in front of the existing building/platform following existing overhead power lines to Parkview Crescent (Iron Horse Trail interface should include staging area for Cold Lake Active Transportation/Trails network and formal entry at Parkview Crescent and/or the interface with Highway 28. Highway 28/ 51 Street Crossing. Extend TMO 5 along north side of 46 Avenue (existing commercial crossings/island modifications recommended); install flashing beacon pedestrian crossing (complete with intersection improvements) from north side of 46 Avenue (west) to 46 Avenue (east) boulevard; redevelop the existing multi-use trail as a TMO 5 and extend the trail to align with Grande Centre Golf & CC informal trail (between Dairy Queen and Paint Store); install crossing over 50 Street; utilize the existing easement (parking lot area) between the commercial/retail building to extend the TMO 5 to the Grande Centre Grande Centre Golf & CC trail (Refer to Route 7 for connection).

Approximate length: 900m.

ESTIMATED COST: $144,000.00 (includes 30% contingency).

Install TMO 5 as 3m wide asphalt trail:

ESTIMATED COST: $234,000.00 (includes 30% contingency)

NOTES:

a. a) The following items are not included in the cost estimate:
   i. Iron Horse Trail Head Staging Area.
   ii. Formalized Entry to the Iron Horse Trail.
   iii. Signage/Wayfinding and Trail and Amenities.
   iv. Curb/Gutter Modifications and Barrier-free Pararamp Additions.
   v. Crossing Additions (e.g., Line Painting, Signing and Flashing Beacon) at Highway 28 and 50 Street.
   vi. Existing Millennium Trail Removals and Redevelopment.
   vii. Parking Lot Modifications and Trail Easement Development.

b. Approximately 14.5m of parking stall/ lane area exists between the Paint Store and Dairy Queen parking area. This area could be reduced to a 13m cross-section to accommodate the easement. The remainder of the easement could be accommodated with the removal of parking stalls (5.5 m long approx.) along the north side of the Dairy Queen property.

ROUTE 3. HIGHWAY 28/55 STREET NORTH CONNECTOR (IRON HORSE TRAIL TO COLD LAKE MUNICIPAL DISTRICT CAMPGROUND)

Route Alignment: From Iron Horse Trail (staging area sign) to Cold Lake Municipal District Park

Notes:

- Highway 28/51 Street – 4 lanes (median separated until 55 Street. Median reintroduced at 62 Avenue to Highway 55/ 16 Avenue).
- Millennium Trail (west side) extends from the Iron Horse Trail to Cold Lake waterfront providing a TMO 1 connection.

TMO RECOMMENDATION*:

From the Iron Horse Trail - Trail Head, establish a TMO 5 route to 55 Street. Develop a formalized crossing over 47 Avenue to the northeast corner of the intersection. Develop a TMO 2 (B) (364m approx.) along the east side of 55 Street to existing 48 Avenue crossing. Formalize the crossing of 48 Avenue and extend a TMO 5 route to the intersection of Highway 28 and 48 Avenue/50 Avenue intersection (side by side with Millennium Trail). Extend TMO 5 route development along the west side of Highway 28 to 57 Avenue. Between 48/50 Avenue and 54 Avenue there are two options for the Millennium Trail.

Option 1: Maintain the existing Millennium Trail alignment along the west side of Highway 28, complete with separation between the proposed TMO 5. *Note: This option included in the estimated cost below.*

Option 2: Repurpose the existing Millennium Trail alignment with the proposed TMO 5 and relocate the Millennium Trail to the east side of Highway 28 from 48/50 Avenue to the existing trail connection at 54 Avenue.

Approximate length: 1742m.

ESTIMATED COST (TMO 2 (B1): $348,000.00 (includes 30% contingency).

ESTIMATED COST (TMO 2 (B2): 393,000.00 (includes 30% contingency).

NOTES:

a. The following items are not included in the cost estimate:
    i. Iron Horse Trail Head Staging Area.
    ii. Signage/Wayfinding and Trail and Amenities.
    iii. Crossing Additions (e.g., Line Painting, Signing and Flashing Beacon) at 47 Avenue, 48 Avenue, and Highway 28 (Refer to Option 2: Millennium Trail relocation to east side of Highway 28 at 48/50 Avenue).
    iv. Curb/Gutter Modifications and Barrier-free Pararamp Additions.
    v. Separation devices (Option 1) or landscape/buffer additions.
    vi. Option 2: Millennium Trail relocation.

From 57 Avenue to south of Highway 55/ 16 Avenue extend the TMO 5 route along the west side of Highway 28/ 51 Street. This area is approximately 10m wide from roadway edge to existing fence/tree lines. The highway/roadway edge is generally flat.

Approximate length: 3346m.

ESTIMATED COST: $535,000.00 (includes 30% contingency)

NOTES:

a. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Grading/drainage modifications.

Approximately 470 m south of the Highway 28/ Highway 55/16 Avenue intersection, extend the TMO 5 route along the abandoned 28 Street road right-of-way to the intersection of Highway 53 and 28 Street.

Approximate length: 528m.

ESTIMATED COST: $85,000.00 (includes 30% contingency)

NOTES:

a. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Trail Easement Costs.
    iii. Clearing/Brushing.
    iv. Grading/drainage modifications.

Install crosswalk and signing at the intersection of 28 Street and Highway 55/16 Avenue and extend a TMO 2 (B) route along the east side of 28 Street to the intersection with 25 Street. The east edge of 28 Street has less residential development and potential grading/drainage constraints.

Approximate length: 1152m.

ESTIMATED COST (TMO 2 (B1): $403,000.00 (includes 30% contingency).

ESTIMATED COST (TMO 2 (B2): $547,000.00 (includes 30% contingency).

NOTES:

a. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Crossing Additions (e.g., Line Painting, Signing, etc.) at Highway 55.
    iii. Grading and Embankment/Ditch Redevelopment.

Install crosswalk and signing and extend a TMO 5 route along the east side of 28 Street to the intersection with 1 Avenue. The east edge of 28 Street has less wooded and wetland areas.

Approximate length: 512m.

ESTIMATED COST: $82,000.00 (includes 30% contingency)

NOTES:

a. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Crossing Additions (e.g., Line Painting, Signing, etc.) at 25 Street.
    iii. Grading and Embankment/Ditch Redevelopment.
b. Sections of this route may require TMO 2 (B) development to mitigate conflict with low lying/wetland areas.

Install crosswalk and signing and extend a TMO 5 route along the north side of 1 Avenue to the Cold Lake Municipal District Campground access road. The north edge of 1 Avenue has no residential development; however, this section may require grading/ditch redevelopment, tree clearing and alignment adjustments west of 25 Street (ex. curb, gutter and sidewalk).

Approximate length: 761m.

ESTIMATED COST: $122,000.00 (includes 30% contingency)

NOTES:

a. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Crossing Additions (e.g., Line Painting, Signing, etc.) at 1 Avenue.
    iii. Clearing/Brushing.
    iv. Grading and Embankment/Ditch Redevelopment.
b. TMO 2 (A) could be considered as an alternate option along the north side of 1 Avenue. Estimated cost: $138,000.00 to $340,000.00.

***NOTE:** Alternative routes from the IHT to 50th street along Palm Creek or through CFB Cold Lake were considered but are likely not feasible at this time due to residential noise concerns. These should be reconsidered if OHV noise regulation is implemented in the future.*

ROUTE 4. KINOSOO RIDGE CONNECTOR (50TH AVENUE/TOWNSHIP ROAD 630 TO KINOSOO RIDGE RESORT (VIA RANGE ROAD 11)

Route Alignment: From 38 Street along 50 Avenue/Township Road 630 to Range Road 11, north to Kinosoo Ridge Resort.

Notes:

- Township Road 630 (asphalt) and Range Road 11 (gravel) approximately 9m wide within (an assumed) 20m R.O.W.
- Township Road 630 – tree lined edge with steep ditch/embankment conditions along the south edge of the roadway. Overhead power, setback tree line, and varied flat/embankment/ditch conditions along the north edge of the roadway.
- Range Road 11 – both road edges are tree lined, complete with low flat ditches. The tree line along the west edge of the road is setback further than the east side tree line.

TMO RECOMMENDATION:

TMO 2 (B) development along the north side of Township Road 630.

Approximate length: 9882m.

ESTIMATED COST (TMO 2 (B1): $3,459,000.00 (includes 30% contingency).

ESTIMATED COST (TMO 2 (B2): $4,700,000.00 (includes 30% contingency).

NOTES:

a. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Driveway and road crossings.
    iii. Clearing/Brushing.
    iv. Grading and Embankment/Ditch Redevelopment.

TMO 2 (B) development along the west side of Range Road 11 to the Kinosoo Ridge Resort parking lot.

Approximate length: 3294m.

ESTIMATED COST (TMO 2 (B2): $1,367,000.00 (includes 30% contingency).

NOTES:

a. TMO 2 (B2) estimated cost per linear meter adjusted ($415.00/lm.) to reflect existing gravel road conditions and the extension of the existing roadway shoulder only.
b. If an asphalt route is preferred, a TMO 1 route (elevated/berm) will need to be separately developed from the existing gravel roadway. **Estimated cost: $2,025,000.00**.
c. The following items are not included in the cost estimate:
    i. Signage/Wayfinding and Trail and Amenities.
    ii. Clearing/Brushing.
    iii. Grading and Embankment/Ditch Redevelopment.

ROUTE 5. IRON HORSE TRAIL – EXPANSION/TWINNING (COLD LAKE STAGING AREA TO BEAVER RIVER TRESTLE)

Route Alignment: From Iron Horse Trail (staging area sign) to Beaver River Trestle Bridge.

Approximate length: 5151m.

TMO RECOMMENDATION:

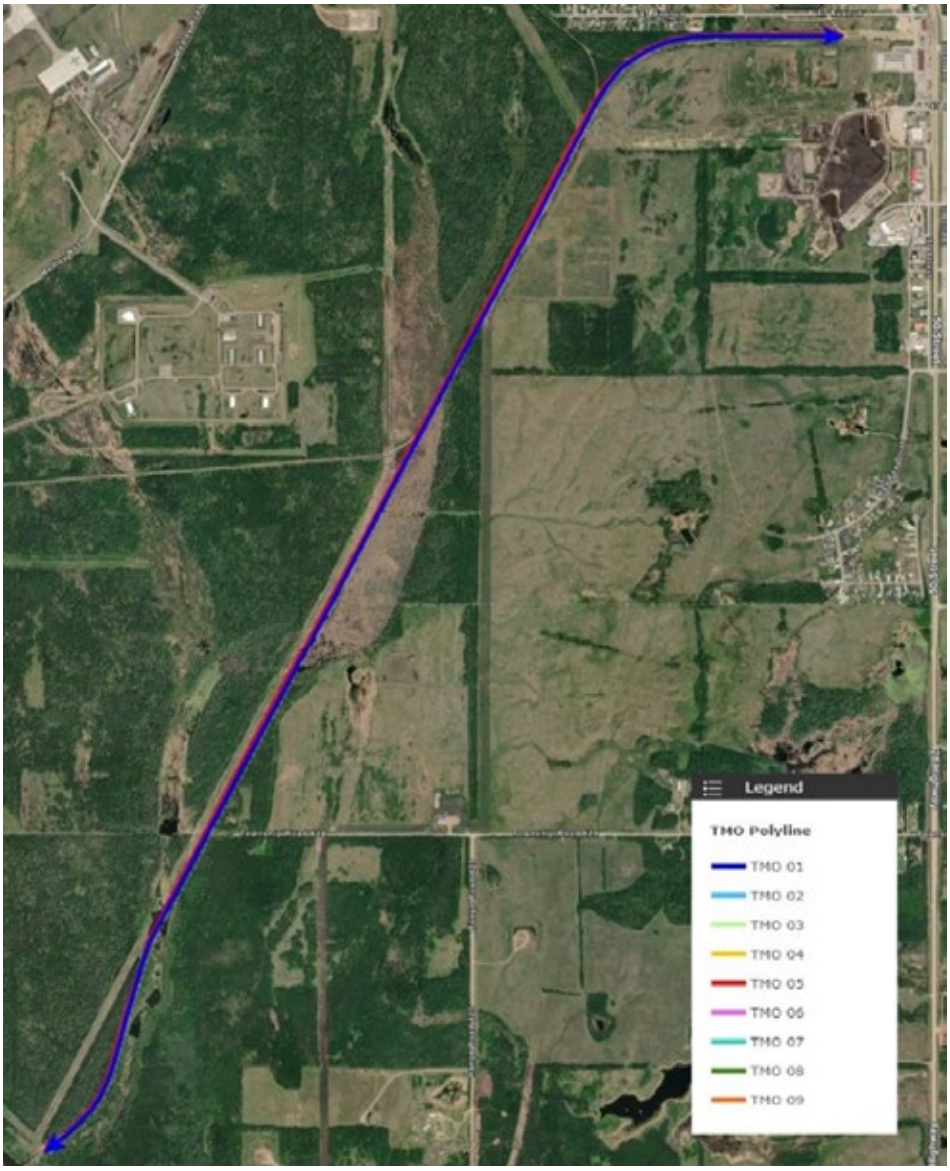
TMO 1 and TMO 5, complete with median separation devices (e.g., grass/vegetation, bollards/ boulders, signing, rails, etc.).

ESTIMATED COST – TMO 1: $1,350,000.00 (includes 30% contingency).

ESTIMATED COST - TMO 5: $824,000.00 (includes 30% contingency).

NOTES:

a. The following items are not included in the cost estimate:
   i. Existing Trail Infrastructure Removals and/or Modifications.
   ii. Signage/Wayfinding and Trail and Amenities.
   iii. Median Separation Devices.
   iv. Clearing/Brushing.
   v. Grading.



ROUTE 6. AFRICAN LAKE TRAIL UPGRADES & EXTENSION (BRADY HEIGHTS TO LEFEBVRE HEIGHTS NEIGHBOURHOODS)

Route Alignment: From Brady Heights to Lefebvre Heights Neighbourhood upgrade existing looped trail alignments and extend new trail around the east side of African Lake.

TMO RECOMMENDATION:

TMO 5 looped trail upgrades.

Approximate length: 4508m.

New trail extensions (linking to existing trail)

Approximate length: 2225m.

ESTIMATED COST: $1,100,000.00 (includes 30% contingency).

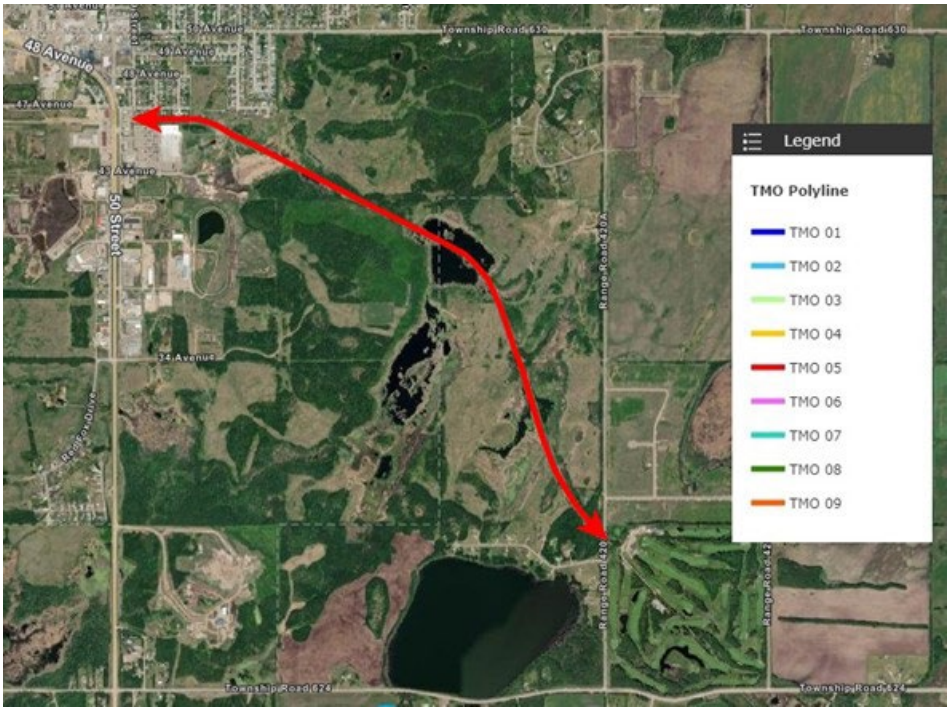
NOTES:

a. The following items are not included in the cost estimate:
   i. Existing Trail Infrastructure Removals and/or Modifications.
   ii. Signage/Wayfinding and Trail and Amenities.
   iii. Bridging.
   iv. Clearing/Brushing.
   v. Grading.

ROUTE 7. GRAND CENTRE GOLF & COUNTRY CLUB CONNECTOR (FROM ROUTE 1 CONNECTOR TO GRAND CENTRE GOLF AND COUNTRY CLUB)

Route Alignment: From Route 1 Connector to Grand Centre Golf and Country Club via existing informal trail alignment.

Approximate length: 3368m.



TMO RECOMMENDATION:

TMO 5 trail upgrades.

ESTIMATED COST: $539,000.00
(includes 30% contingency)

NOTES:

a. The following items are not included in the cost estimate:
   i. Existing Trail Infrastructure Removals and/or Modifications.
   ii. Signage/Wayfinding and Trail and Amenities.
   iii. Bridging.
   iv. Clearing/Brushing.
   v. Grading.

APPENDIX D: DETAILED TMO FORMS

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** TBD **Land Manager:** Various

Trail Name: All trails in accordance with TMO#1 (PAVED MULTI-USE, NON-MOTORIZED **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☐ Summer (snow-free)
- ☐ Winter (snow-covered)
- ☑ All

Level of Development:

- ☐ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ● Non-Motorized
- ☐ Motorized
- ☐ Mixed Use

Use Type:

- ☐ Single Use
- ● Multi-Use
- ☐ Activity-Optimized

Level of Challenge:

- ● Easiest
- ☐ Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ● Standard
- ☐ Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☐ Snow Vehicle (<1.83 m wide)
- ☐
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

2.5	Travelled Surface Width (m)
<5	Target Grade (%)
10	Max Grade (%)
<15	Proportion Grade (%)
2 / crowned	Target Cross Slope (%)
<8	Max Cross Slope (%)
	Proportion Cross Slope (%)
3 / 4	Clearing Width/Height (m)
2.5	Turning Radius (m)
None /	Obstacle Frequency/Height

Tread Surfacing:

- ☑ Asphalt/Concrete/Paver
- ☐ Agg - Firm
- ☐ Agg - Loose
- ☐ Nat - Firm
- ☐ Nat - Loose
- ☐

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
2 x year	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak period	Enforcement Patrols
Immediate	Hazard response
As required	Snow removal

Trail Name: MD Bonnyville/City of Cold Lake **Trail Number:** NA

Travel Management Strategies

Permitted Uses (Check all that apply)	From Date (mm/dd)	To Date (mm/dd)
✓ Pedestrian	01/01	12/31
✓ On-Road Cycling	01/01	12/31
✓ Leisure Cycling	01/01	12/31
✓ Mountain Biking	01/01	12/31
✓ Adaptive Cycle/MTB	01/01	12/31
✓ Equestrian	01/01	12/31
Equestrian Drawn Vehicle		
X-Ctry Ski - Classic		
X-Ctry Ski - Skate		
Snowshoe		
Off-Road Motorcycle		
OHV <1.5m		
OHV 1.5m - 1.83m		
OHV >1.83m		
Snowmobile <1.5m		
Snowmobile >1.5m		
✓ Class 1 E-Bike	01/01	12/31
Class 2 E-Bike		
Class 3 E-Bike		
✓ Electric Mobility Assistive Devices	01/01	12/31
✓ Electric Skateboards/One-Wheels	01/01	12/31

Prohibited Uses (Check if applicable)	From Date (mm/dd)	To Date (mm/dd)
✓ All Motorized Use	01/01	12/31
(Fill in all that apply)		
Class 2- & 3 e-bikes	01/01	12/31
Dogs off-leash (except where permitted)	01/01	12/31

Other Uses

(Optional: type any that apply)

	Accept	Discourage
Small-wheeled vehicles	●	
High-speed travel (~>30 kph)		●
Dogs on-leash	●	

	Yes	No
Universally Accessible:		●

Trail User Objectives

Escape	✓ Nature	✓ Socializing
Solitude	Risk	✓ Efficiency
Challenge	✓ Exercise	✓ Connectivity
Play		

Remarks/Reference Information

This TMO is intended principally for quiet, low-speed, low-snow experiences on urban, rural residential (front-country, mid-country) leisure and connector trails.

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** TBD **Land Manager:** Various

Trail Name: All TMO#2 A/B trails (MULTI-USE, A - NON-MOTORIZED or B =MIXED USE) **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☐ Summer (snow-free)
- ☐ Winter (snow-covered)
- ☑ All

Level of Development:

- ☑ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ☐ Non-Motorized
- ☐ Motorized
- ● Mixed Use

Use Type:

- ☐ Single Use
- ● Multi-Use
- ☐ Activity-Optimized

Level of Challenge:

- ● Easiest
- ☐ Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ● Standard
- ☐ Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☐ Snow Vehicle (<1.83 m wide)
- ☐
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

2.5+	Travelled Surface Width (m)
<10	Target Grade (%)
10	Max Grade (%)
<10	Proportion Grade (%)
2-5	Target Cross Slope (%)
<8	Max Cross Slope (%)
	Proportion Cross Slope (%)
3 / 8	Clearing Width/Height (m)
2.5	Turning Radius (m)
Occa / 0.05	Obstacle Frequency/Height

Tread Surfacing:

- ☑ Asphalt/Concrete/Paver
- ☑ Agg - Firm
- ☐ Agg - Loose
- ☐ Nat - Firm
- ☐ Nat - Loose
- ☐

Target Frequency

Per Year *(Fill in all that apply)*

Routine	Tread Repair
As required	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Routine	Enforcement Patrols
Immediate	Hazard response

Trail Name: MD Bonnyville/City of Cold Lake **Trail Number:** NA

Travel Management Strategies

Permitted Uses (Check all that apply)	From Date (mm/dd)	To Date (mm/dd)
✓ Pedestrian	01/01	12/31
✓ On-Road Cycling	01/01	12/31
✓ Leisure Cycling	01/01	12/31
✓ Mountain Biking	01/01	12/31
✓ Adaptive Cycle/MTB	01/01	12/31
✓ Equestrian	01/01	12/31
☐ Equestrian Drawn Vehicle	01/01	12/31
☐ X-Ctry Ski - Classic	snow	snow
☐ X-Ctry Ski - Skate	snow	snow
☐ Snowshoe	snow	snow
☐ Off-Road Motorcycle		
☐ OHV <1.5m		
☐ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
☐ Snowmobile <1.5m		
☐ Snowmobile >1.5m		
✓ Class 1 E-Bike	01/01	12/31
☐ Class 2 E-Bike	01/01	12/31
☐ Class 3 E-Bike	01/01	12/31
✓ Electric Mobility Assistive Devices	01/01	12/31
✓ Electric Skateboards/One-Wheels	01/01	12/31

Prohibited Uses (Check if applicable)	From Date (mm/dd)	To Date (mm/dd)
✓ All Motorized Use	01/01	12/31
(Fill in all that apply)		
Dogs off-leash (except where permitted)	01/01	12/31

Other Uses (Optional: type any that apply)	Accept	Discourage
Small-wheeled vehicles	☐	●
High-speed travel (~>32 kph)	☐	●
Dogs on-leash	●	☐
	☐	☐
	☐	☐

	Yes	No
Universally Accessible:	☐	●

Trail User Objectives

☐ Escape	☐ Nature	✓ Socializing
☐ Solitude	☐ Risk	✓ Efficiency
☐ Challenge	✓ Exercise	✓ Connectivity
☐ Play		

Remarks/Reference Information

This road-adjacent TMO is intended principally for maintenance connector trails for low-to-moderate speed experiences isettings where separated alignment is difficult or impossible.

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** TBD **Land Manager:** Various

Trail Name: All trails in accordance with TMO#3 (MULTI-USE, NON-MOTORIZED) **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☐ Summer (snow-free)
- ☐ Winter (snow-covered)
- ☑ All

Level of Development:

- ☐ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ● Non-Motorized
- ☐ Motorized
- ☐ Mixed Use

Use Type:

- ☐ Single Use
- ● Multi-Use
- ☐ Activity-Optimized

Level of Challenge:

- ☐ Easiest
- ● Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ● Standard
- ☐ Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☐ Snow Vehicle (<1.83 m wide)
- ☐
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

2.5	Travelled Surface Width (m)
<10	Target Grade (%)
10-15	Max Grade (%)
<15	Proportion Grade (%)
2-5 / crowned	Target Cross Slope (%)
<8	Max Cross Slope (%)
	Proportion Cross Slope (%)
3 / 4	Clearing Width/Height (m)
2.5	Turning Radius (m)
Occa / 0.05	Obstacle Frequency/Height

Tread Surfacing:

- ☐ Asphalt/Concrete/Paver
- ☑ Agg - Firm
- ☐ Agg - Loose
- ☑ Nat - Firm
- ☐ Nat - Loose
- ☐

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
2 x year	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak period	Enforcement Patrols
Immediate	Hazard response
As desired	Snow grooming

Trail Name: MD Bonnyville/City of Cold Lake **Trail Number:** NA

Travel Management Strategies

Permitted Uses (Check all that apply)	From Date (mm/dd)	To Date (mm/dd)
✓ Pedestrian	01/01	12/31
✓ On-Road Cycling	01/01	12/31
✓ Leisure Cycling	01/01	12/31
✓ Mountain Biking	01/01	12/31
✓ Adaptive Cycle/MTB	01/01	12/31
✓ Equestrian	01/01	12/31
✓ Equestrian Drawn Vehicle	01/01	12/31
✓ X-Ctry Ski - Classic	snow	snow
✓ X-Ctry Ski - Skate	snow	snow
✓ Snowshoe	snow	snow
☐ Off-Road Motorcycle		
☐ OHV <1.5m		
☐ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
☐ Snowmobile <1.5m		
☐ Snowmobile >1.5m		
✓ Class 1 E-Bike	01/01	12/31
✓ Class 2 E-Bike	01/01	12/31
✓ Class 3 E-Bike	01/01	12/31
✓ Electric Mobility Assistive Devices	01/01	12/31
✓ Electric Skateboards/One-Wheels	01/01	12/31

Prohibited Uses (Check if applicable)	From Date (mm/dd)	To Date (mm/dd)
✓ All Motorized Use	01/01	12/31
(Fill in all that apply)		
Dogs off-leash (except where permitted)	01/01	12/31

Other Uses (Optional: type any that apply)	Accept	Discourage
Small-wheeled vehicles	☐	●
High-speed travel (~>32 kph)	☐	●
Dogs on-leash	●	☐
	☐	☐
	☐	☐

	Yes	No
Universally Accessible:	☐	●

Trail User Objectives

✓ Escape	✓ Nature	✓ Socializing
☐ Solitude	☐ Risk	✓ Efficiency
☐ Challenge	✓ Exercise	✓ Connectivity
☐ Play		

Remarks/Reference Information

This TMO is intended principally for lower maintenance leisure and connector trails that support quiet, low-to-moderate speed experiences in rural residential and mid-country settings.

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** **Land Manager:**

Trail Name: All trails managed in accordance with TMO#4 **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☑ Summer (snow-free)
- ☑ Winter (snow-covered)
- ☑ All

Level of Development:

- ☐ Developed
- ☐ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ● Non-Motorized
- ☐ Motorized
- ☐ Mixed Use

Use Type:

- ☐ Single Use
- ● Multi-Use
- ☐ Activity-Optimized

Level of Challenge:

- ☐ Easiest
- ● Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ● Standard
- ☐ Enhanced

Optimized Activity Types

(Check all that apply)

- ☑ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☐ Snow Vehicle (<1.83 m wide)
- ☐
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

<1.5	Travelled Surface Width (m)
3-10	Target Grade (%)
7-15	Max Grade (%)
10-15	Proportion Grade (%)
2-8	Target Cross Slope (%)
2-10	Max Cross Slope (%)
5	Proportion Cross Slope (%)
2.0 / 3	Clearing Width/Height (m)
2	Turning Radius (m)
Reg / 0.3	Obstacle Frequency/Height

Tread Surfacing:

- ☐ Asphalt/Concrete/Paver
- ☐ Agg - Firm
- ☐ Agg - Loose
- ☑ Nat - Firm
- ☐ Nat - Loose
- ☐

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
2 x year	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak period	Enforcement Patrols

Trail Name: TM03 **Trail Number:** NA

Travel Management Strategies

Permitted Uses (Check all that apply)	From Date (mm/dd)	To Date (mm/dd)
☑ Pedestrian		
☐ On-Road Cycling		
☐ Leisure Cycling		
☑ Mountain Biking		
☐ Adaptive Cycle/MTB		
☑ Equestrian		
☐ Equestrian Drawn Vehicle		
☑ X-Ctry Ski - Classic		
☑ X-Ctry Ski - Skate		
☑ Snowshoe		
☐ Off-Road Motorcycle		
☐ OHV <1.5m		
☐ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
☐ Snowmobile <1.5m		
☐ Snowmobile >1.5m		
☐ Class 1 E-Bike		
☐ Class 2 E-Bike		
☐ Class 3 E-Bike		
☐ Electric Mobility Assistive Devices		
☐ Electric Skateboards/One-Wheels		

Prohibited Uses (Check if applicable)	From Date (mm/dd)	To Date (mm/dd)
☑ All Motorized Use	01/01	12/31
(Fill in all that apply)		
Class 3 e-bikes	01/01	12/31
Electric mobility assistive devices	01/01	12/31

Other Uses (Optional: type any that apply)	Accept	Discourage

	Yes	No
Universally Accessible:	☐	●

Trail User Objectives

☑ Escape	☑ Nature	☑ Socializing
☐ Solitude	☐ Risk	☐ Efficiency
☐ Challenge	☑ Exercise	☐ Connectivity
☐ Play		

Remarks/Reference Information

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** TBD **Land Manager:** Various

Trail Name: All trails in accordance with TMO#5 (MIXED USE, MULTI-USE CONNECTOR **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☐ Summer (snow-free)
- ☐ Winter (snow-covered)
- ☑ All

Level of Development:

- ☐ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ☐ Non-Motorized
- ☐ Motorized
- ● Mixed Use

Use Type:

- ☐ Single Use
- ☐ Multi-Use
- ● Activity-Optimized

Level of Challenge:

- ● Easiest
- ☐ Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ● Standard
- ☐ Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☑ Two-Wheel Motorized
- ☑ Motorized (<1.83 m wide)
- ☑ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☑ Snow Vehicle (<1.83 m wide)
- ☑ Wheeled activities (<~50kph)
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

3-4	Travelled Surface Width (m)
5-10	Target Grade (%)
5-10	Max Grade (%)
<15	Proportion Grade (%)
2-5	Target Cross Slope (%)
<8	Max Cross Slope (%)
	Proportion Cross Slope (%)
3.5 / 4	Clearing Width/Height (m)
5	Turning Radius (m)
None /	Obstacle Frequency/Height

Tread Surfacing:

- ☐ Asphalt/Concrete/Paver
- ☑ Agg - Firm
- ☐ Agg - Loose
- ☐ Nat - Firm
- ☐ Nat - Loose
- ☐

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
2 x year	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak period	Enforcement Patrols
Immediate	Hazard response
As required	Snow grooming

Trail Name: MD Bonnyville/City of Cold Lake **Trail Number:** NA

Travel Management Strategies

Permitted Uses (Check all that apply)	From Date (mm/dd)	To Date (mm/dd)
✓ Pedestrian	01/01	12/31
✓ On-Road Cycling	01/01	12/31
✓ Leisure Cycling	01/01	12/31
✓ Mountain Biking	01/01	12/31
✓ Adaptive Cycle/MTB	01/01	12/31
✓ Equestrian	01/01	12/31
✓ Equestrian Drawn Vehicle	01/01	12/31
✓ X-Ctry Ski - Classic	snow	snow
✓ X-Ctry Ski - Skate	snow	snow
✓ Snowshoe	snow	snow
✓ Off-Road Motorcycle	01/01	12/31
✓ OHV <1.5m	01/01	12/31
✓ OHV 1.5m - 1.83m	01/01	12/31
OHV >1.83m		
✓ Snowmobile <1.5m	snow	snow
✓ Snowmobile >1.5m	snow	snow
✓ Class 1 E-Bike	01/01	12/31
✓ Class 2 E-Bike	01/01	12/31
✓ Class 3 E-Bike	01/01	12/31
✓ Electric Mobility Assistive Devices	01/01	12/31
✓ Electric Skateboards/One-Wheels	01/01	12/31

Prohibited Uses (Check if applicable)	From Date (mm/dd)	To Date (mm/dd)
All Motorized Use	01/01	12/31
(Fill in all that apply)		
OHV>1.83m	01/01	12/31
Snowvehicle> 1.83m	01/01	12/31
Highway vehicles (except motorcycles)	01/01	12/31

Other Uses (Optional: type any that apply)	Accept	Discourage
Highway motorcycles (e.g. dual purpose)	●	
Non-optimized activities		●
High-speed travel (~>50 kph)		●

	Yes	No
Universally Accessible:		●

Trail User Objectives

- ☐ Escape
- ☐ Nature
- ☐ Socializing
- ☐ Solitude
- ☐ Risk
- ✓ Efficiency
- ☐ Challenge
- ☐ Exercise
- ✓ Connectivity
- ☐ Play

Remarks/Reference Information

While accommodating most activities this TMO is intended for lower maintenance trails that support connectivity for moderate speed, low-to-moderate noise activities in rural-residential

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** TBD **Land Manager:** Various

Trail Name: All trails in accordance with TMO#6 (MIXED USE, MULTI-USE, EXPERIENC **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☐ Summer (snow-free)
- ☐ Winter (snow-covered)
- ☑ All

Level of Development:

- ☐ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ☐ Non-Motorized
- ☐ Motorized
- ● Mixed Use

Use Type:

- ☐ Single Use
- ● Multi-Use
- ☐ Activity-Optimized

Level of Challenge:

- ☐ Easiest
- ● Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ☐ Standard
- ● Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☐ Snow Vehicle (<1.83 m wide)
- ☑ Wheeled activities (<~50kph)
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

2.5-3	Travelled Surface Width (m)
5-10	Target Grade (%)
<15	Max Grade (%)
<15-25	Proportion Grade (%)
2-5	Target Cross Slope (%)
<8	Max Cross Slope (%)
	Proportion Cross Slope (%)
3.5 / 3.5	Clearing Width/Height (m)
5	Turning Radius (m)
Occa / 0.15	Obstacle Frequency/Height

Tread Surfacing:

- ☐ Asphalt/Concrete/Paver
- ☐ Agg - Firm
- ☑ Agg - Loose
- ☐ Nat - Firm
- ☑ Nat - Loose
- ☐

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
2 x year	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak period	Enforcement Patrols
Weekly-Montl	Hazard response
If desired	Snow grooming

Trail Name: TMO#5 **Trail Number:** NA

Travel Management Strategies

Permitted Uses

(Check all that apply)

	From Date (mm/dd)	To Date (mm/dd)
✓ Pedestrian		
✓ On-Road Cycling		
✓ Leisure Cycling		
✓ Mountain Biking		
✓ Adaptive Cycle/MTB		
✓ Equestrian		
✓ Equestrian Drawn Vehicle		
✓ X-Ctry Ski - Classic		
✓ X-Ctry Ski - Skate		
✓ Snowshoe		
✓ Off-Road Motorcycle		
✓ OHV <1.5m		
✓ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
✓ Snowmobile <1.5m		
✓ Snowmobile >1.5m		
✓ Class 1 E-Bike		
✓ Class 2 E-Bike		
✓ Class 3 E-Bike		
✓ Electric Mobility Assistive Devices		
✓ Electric Skateboards/One-Wheels		

Prohibited Uses

(Check if applicable)

	From Date (mm/dd)	To Date (mm/dd)
☐ All Motorized Use	01/01	12/31

(Fill in all that apply)

OHV>1.83m	01/01	12/31
Snowmobile > 1.83m	01/01	12/31
Highway vehicles (except motorcycles)	01/01	12/31

Other Uses

(Optional: type any that apply)

	Accept	Discourage
Highway motorcycles (e.g. dual-purpose)	●	
High-speed operation & travel (~<50 kph)		●
		●

	Yes	No
Universally Accessible:		●

Trail User Objectives

- ✓ Escape
- ☐ Solitude
- ☐ Challenge
- ☐ Play
- ✓ Nature
- ☐ Risk
- ☐ Exercise
- ✓ Socializing
- ☐ Efficiency
- ✓ Connectivity

Remarks/Reference Information

While accommodating most activities this TMO is intended for lower maintenance trails that support enjoyable, moderate speed activities with low-to-moderate noise in mid-country

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** TBD **Land Manager:** Various

Trail Name: All trails in accordance with TMO#7 (MIXED USE, OPTIMIZED SNOWVEHIC **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☐ Summer (snow-free)
- ☑ Winter (snow-covered)
- ☐ All

Level of Development:

- ☐ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ☐ Non-Motorized
- ☐ Motorized
- ● Mixed Use

Use Type:

- ☐ Single Use
- ● Multi-Use
- ☐ Activity-Optimized

Level of Challenge:

- ☐ Easiest
- ● Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ☐ Standard
- ● Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☑ Snow Vehicle (<1.83 m wide)
- ☐
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

3+	Travelled Surface Width (m)
5-10	Target Grade (%)
<15-20	Max Grade (%)
<10-15	Proportion Grade (%)
2-5	Target Cross Slope (%)
5-10	Max Cross Slope (%)
	Proportion Cross Slope (%)
>4 / 3.5	Clearing Width/Height (m)
7	Turning Radius (m)
Occa / 0.15	Obstacle Frequency/Height

Tread Surfacing:

- ☐ Asphalt/Concrete/Paver
- ☐ Agg - Firm
- ☐ Agg - Loose
- ☐ Nat - Firm
- ☐ Nat - Loose
- ☑ Groomed-sı

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
2 x year	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak period	Enforcement Patrols
Weekly-Montl	Hazard response
As required	Snow grooming

Trail Name: MD Bonnyville/City of Cold Lake **Trail Number:** NA

Travel Management Strategies

Permitted Uses

(Check all that apply)

	From Date (mm/dd)	To Date (mm/dd)
✓ Pedestrian	01/01	12/31
☐ On-Road Cycling		
☐ Leisure Cycling		
☐ Mountain Biking		
☐ Adaptive Cycle/MTB		
☐ Equestrian		
☐ Equestrian Drawn Vehicle		
✓ X-Ctry Ski - Classic	Snow	Snow
✓ X-Ctry Ski - Skate	Snow	Snow
✓ Snowshoe	Snow	Snow
☐ Off-Road Motorcycle		
☐ OHV <1.5m		
☐ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
✓ Snowmobile <1.5m	Snow	Snow
✓ Snowmobile >1.5m	Snow	Snow
☐ Class 1 E-Bike		
☐ Class 2 E-Bike		
☐ Class 3 E-Bike		
☐ Electric Mobility Assistive Devices		
☐ Electric Skateboards/One-Wheels		

Prohibited Uses

(Check if applicable)

	From Date (mm/dd)	To Date (mm/dd)
☐ All Motorized Use	01/01	12/31

(Fill in all that apply)

All wheeled OHVS	01/01	12/31

Other Uses

(Optional: type any that apply)

	Accept	Discourage
Fat Biking	●	
Skijoring	●	
High-speed operation & travel (~>50 kph)		●

	Yes	No
Universally Accessible:		●

Trail User Objectives

- ✓ Escape
- ☐ Solitude
- ☐ Challenge
- ☐ Play
- ✓ Nature
- ☐ Risk
- ☐ Exercise
- ✓ Socializing
- ✓ Efficiency
- ✓ Connectivity

Remarks/Reference Information

This TMO is intended to support low-moderate speed and moderate noise winter activities in frozen conditions. Wheeled conveyances are not supported in warmer conditions because

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: MD Bonnyville/City of Cold Lake **Trail Operator:** **Land Manager:**

Trail Name: All trails in accordance with TMO#8 (SPECIALIZED/OPTIMIZED) **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☑ Summer (snow-free)
- ☑ Winter (snow-covered)
- ☑ All

Level of Development:

- ☑ Developed
- ☑ Moderately Developed
- ☐ Minimally Developed

(Check one in each category)

Mode of Travel:

- ☐ Non-Motorized
- ☐ Motorized
- ● Mixed Use

Use Type:

- ☐ Single Use
- ☐ Multi-Use
- ● Activity-Optimized

Level of Challenge:

- ☐ Easiest
- ☐ Moderate
- ● Difficult
- ☐ Very Difficult

Preparedness:

- ☐ Standard
- ● Enhanced

Optimized Activity Types

(Check all that apply)

- ☑ Pedestrian
- ☑ Equestrian
- ☑ X-Country Ski
- ☑ Snowshoe
- ☑ Mountain Bike
- ☑ Two-Wheel Motorized
- ☑ Motorized (<1.83 m wide)
- ☑ Motorized (1.5-1.83 m wide)
- ☑ Motorized (>1.83 m wide)
- ☑ Snow Vehicle (<1.83 m wide)
- ☑ Other mechanically assisted
- ☐
- ☐
- ☐

Design Parametres

(Fill in all that apply)

variable	Travelled Surface Width (m)
variable	Target Grade (%)
variable	Max Grade (%)
variable	Proportion Grade (%)
variable	Target Cross Slope (%)
variable	Max Cross Slope (%)
variable	Proportion Cross Slope (%)
varial / varial	Clearing Width/Height (m)
variable	Turning Radius (m)
/ Varia	Obstacle Frequency/Height

Tread Surfacing:

- ☑ Asphalt/Concrete/Paver
- ☑ Agg - Firm
- ☑ Agg - Loose
- ☑ Nat - Firm
- ☑ Nat - Loose
- ☑ Groomed-sı

Target Frequency

Per Year *(Fill in all that apply)*

variable	Tread Repair
variable	Drainage Cleanout
variable	Tread Grading
variable	Brushing
variable	Condition Survey
variable	Enforcement Patrols
variable	Hazard response

Trail Name: TMO#7 **Trail Number:** NA

Travel Management Strategies

Permitted Uses *(Check all that apply)*	From Date *(mm/dd)*	To Date *(mm/dd)*
☐ Pedestrian		
☐ On-Road Cycling		
☐ Leisure Cycling		
☐ Mountain Biking		
☐ Adaptive Cycle/MTB		
☐ Equestrian		
☐ Equestrian Drawn Vehicle		
☐ X-Ctry Ski - Classic		
☐ X-Ctry Ski - Skate		
☐ Snowshoe		
☐ Off-Road Motorcycle		
☐ OHV <1.5m		
☐ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
☐ Snowmobile <1.5m		
☐ Snowmobile >1.5m		
☐ Class 1 E-Bike		
☐ Class 2 E-Bike		
☐ Class 3 E-Bike		
☐ Electric Mobility Assistive Devices		
☐ Electric Skateboards/One-Wheels		

Prohibited Uses *(Check if applicable)*	From Date *(mm/dd)*	To Date *(mm/dd)*
☐ All Motorized Use		
(Fill in all that apply)		

Other Uses

(Optional: type any that apply)

	Accept	Discourage
VARIABLE - OPTIMIZED FOR ACTIVITY	●	
Non-optimized activities		●
		●

	Yes	No
Universally Accessible:		●

Trail User Objectives

☐ Escape	☐ Nature	✓ Socializing
☐ Solitude	✓ Risk	☐ Efficiency
✓ Challenge	✓ Exercise	☐ Connectivity
✓ Play		

Remarks/Reference Information

Trails and/or confined areas specifically built and maintained primarily to support a specific activity and user experience.

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

Region: Bonnyville **Trail Operator:** MD Bonnyville/City of Cc **Land Manager:** MD/City

Trail Name: All access infrastructure with TMO #9(FLATWATER ROUTES) **Trail Number:** NA

Trail Beginning: NA **Beg. Milepost:** NA

Trail Ending: NA **End. Milepost:** NA

Trail Inventory Length: NA km **Trail Mileage Source:** ☐ Wheel ☐ GPS ☐ Map ☐ Unknown

TMO Trail Section

NA **Sec. #**

Section Beginning: NA **Beg. Milepost:** NA

Section End: NA **End. Milepost:** NA

Trail Classification

(Check any that apply)

Season:

- ☑ Summer (snow-free)
- ☐ Winter (snow-covered)
- ☐ All

Level of Development:

- ☐ Developed
- ☑ Moderately Developed
- ☑ Minimally Developed

(Check one in each category)

Mode of Travel:

- ☐ Non-Motorized
- ☐ Motorized
- ● Mixed Use

Use Type:

- ☐ Single Use
- ☐ Multi-Use
- ● Activity-Optimized

Level of Challenge:

- ● Easiest
- ☐ Moderate
- ☐ Difficult
- ☐ Very Difficult

Preparedness:

- ☐ Standard
- ● Enhanced

Optimized Activity Types

(Check all that apply)

- ☐ Pedestrian
- ☐ Equestrian
- ☐ X-Country Ski
- ☐ Snowshoe
- ☐ Mountain Bike
- ☐ Two-Wheel Motorized
- ☐ Motorized (<1.83 m wide)
- ☐ Motorized (1.5-1.83 m wide)
- ☐ Motorized (>1.83 m wide)
- ☐ Snow Vehicle (<1.83 m wide)
- ☑ Non-motorized paddling
- ☑ Motorized boating
- ☐
- ☐

Design Parametres

(Fill in all that apply)

Ramp: 5+	Travelled Surface Width (m)
Ramp: 12-14	Target Grade (%)
Ramp: 15	Max Grade (%)
	Proportion Grade (%)
	Target Cross Slope (%)
	Max Cross Slope (%)
	Proportion Cross Slope (%)
5 / 5	Clearing Width/Height (m)
	Turning Radius (m)
/	Obstacle Frequency/Height

Tread Surfacing:

- ☑ Asphalt/Concrete/Paver
- ☑ Agg - Firm
- ☐ Agg - Loose
- ☐ Nat - Firm
- ☐ Nat - Loose
- ☑ Water

Target Frequency

Per Year *(Fill in all that apply)*

As required	Tread Repair
	Drainage Cleanout
As required	Tread Grading
As required	Brushing
2 x year	Condition Survey
Peak periods	Enforcement Patrols

Trail Name: ITMP TMO#8 **Trail Number:** NA

Travel Management Strategies

Permitted Uses (Check all that apply)	From Date (mm/dd)	To Date (mm/dd)
☐ Pedestrian		
☐ On-Road Cycling		
☐ Leisure Cycling		
☐ Mountain Biking		
☐ Adaptive Cycle/MTB		
☐ Equestrian		
☐ Equestrian Drawn Vehicle		
☐ X-Ctry Ski - Classic		
☐ X-Ctry Ski - Skate		
☐ Snowshoe		
☐ Off-Road Motorcycle		
☐ OHV <1.5m		
☐ OHV 1.5m - 1.83m		
☐ OHV >1.83m		
☐ Snowmobile <1.5m		
☐ Snowmobile >1.5m		
☐ Class 1 E-Bike		
☐ Class 2 E-Bike		
☐ Class 3 E-Bike		
☐ Electric Mobility Assistive Devices		
☐ Electric Skateboards/One-Wheels		

Prohibited Uses (Check if applicable)	From Date (mm/dd)	To Date (mm/dd)
☐ All Motorized Use		
(Fill in all that apply)		
		1

Other Uses

(Optional: type any that apply)

	Accept	Discourage
Kayaking	●	
Canoeing	●	
Small motorized craft	●	
Highway vehicles (launch assist only)	●	
OHV		●

	Yes	No
Universally Accessible:		●

Trail User Objectives

- ☑ Escape
- ☑ Solitude
- ☐ Challenge
- ☐ Play
- ☑ Nature
- ☐ Risk
- ☐ Exercise
- ☐ Socializing
- ☐ Efficiency
- ☑ Connectivity

Remarks/Reference Information

This general TMO is intended to apply to flatwater routes, Grade1/2 river routes, and highway vehicle access to these routes

Trail Designer or Manager

Name: **Signature:**

Title: **Date:**

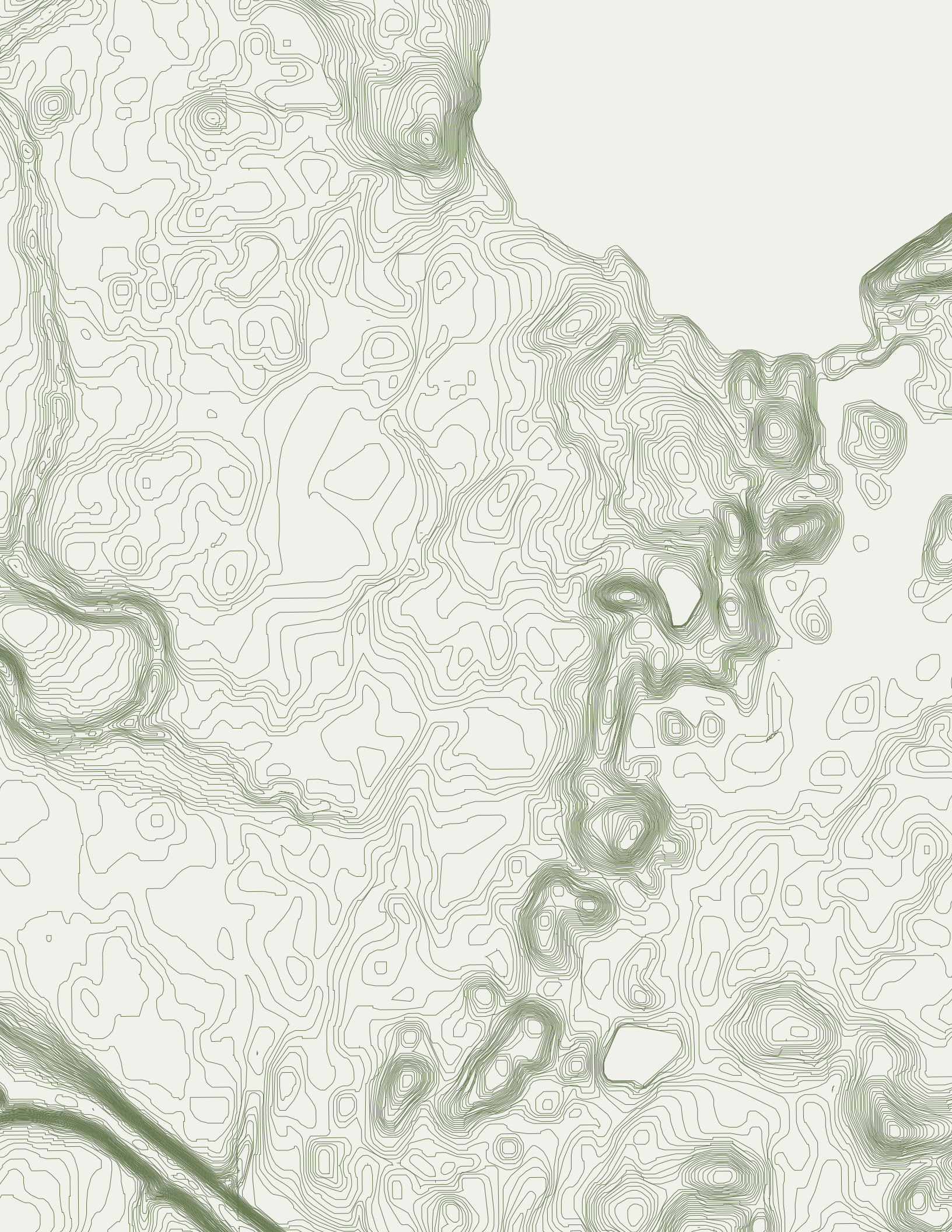
REFERENCES

Canadian Standards Association. (2014). Commentary on CSA S6-14, Canadian Highway Bridge Design Code (S6.1-14 ed.). Ontario: CSA Group.

Government of Alberta. (n.d.). Alberta Water Codes of Practice. Retrieved from https://www.alberta.ca/water-codes-of-practice.aspx

LICA Environmental Stewards. (2022). Beaver River Integrated Watershed Management Plan.

Trans Canada Trail. (2021). Guidelines for Classifying Multi-Use Trails. Retrieved from https://tctrail.ca/national-guidelines-webinars/.




rcs+