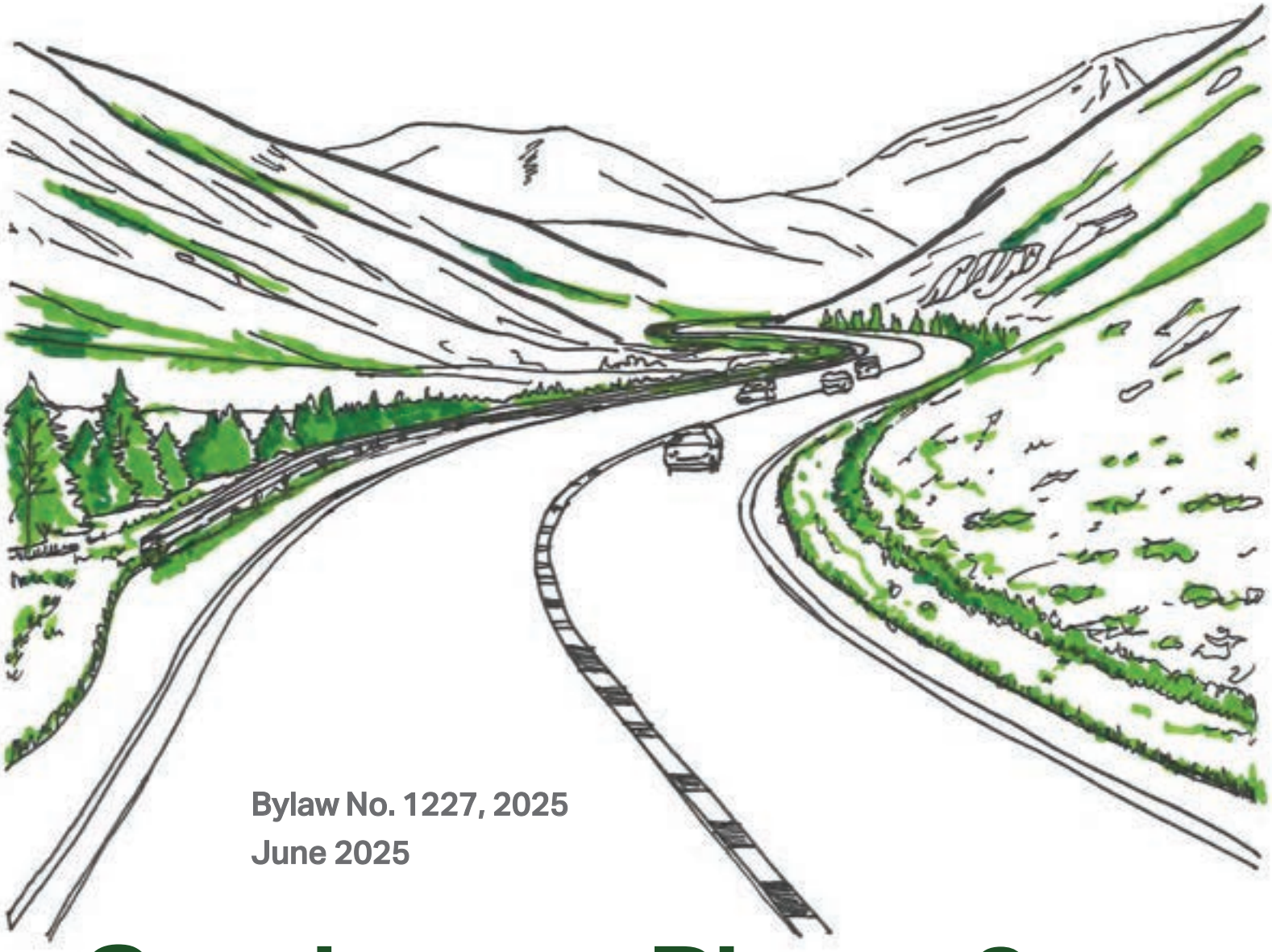
CROWSNEST PASS
Naturally Rewarding



Bylaw No. 1227, 2025
June 2025

# Southmore Phase 2

## Area Structure Plan

**MUNICIPALITY OF CROWSNEST PASS**
**BYLAW NO. 1227, 2025**
**Southmore Phase 2 ASP**

**BEING** a bylaw of the Municipality of Crowsnest Pass, in the Province of Alberta, to adopt the Southmore Phase 2 Area Structure Plan, a new area structure plan for lands within the north half of 34-7-4-W5M in south Blairmore.

**WHEREAS** section 633 of the Municipal Government Act empowers a municipal Council to adopt, by bylaw, an area structure plan;

**AND WHEREAS** the Council of the Municipality of Crowsnest Pass has requested the preparation of the Southmore Phase 2 Area Structure Plan for adoption under section 633 of the Municipal Government Act;

**AND WHEREAS** the purpose of the Southmore Phase 2 Area Structure Plan is to provide a framework for subsequent subdivision and development;

**NOW THEREFORE**, under the authority and subject to the provisions of the Municipal Government Act, Revised Statutes of Alberta 2000, Chapter M-26, as amended, the Council of the Municipality of Crowsnest Pass in the province of Alberta duly assembled does hereby enact the following:

1. This plan attached as Schedule A, upon adoption, shall be known as the Southmore Phase 2 Area Structure Plan.
2. Bylaw 1227, 2025, being the Southmore Phase 2 Area Structure Plan is hereby adopted.
3. This bylaw comes into effect upon third and final reading hereof.

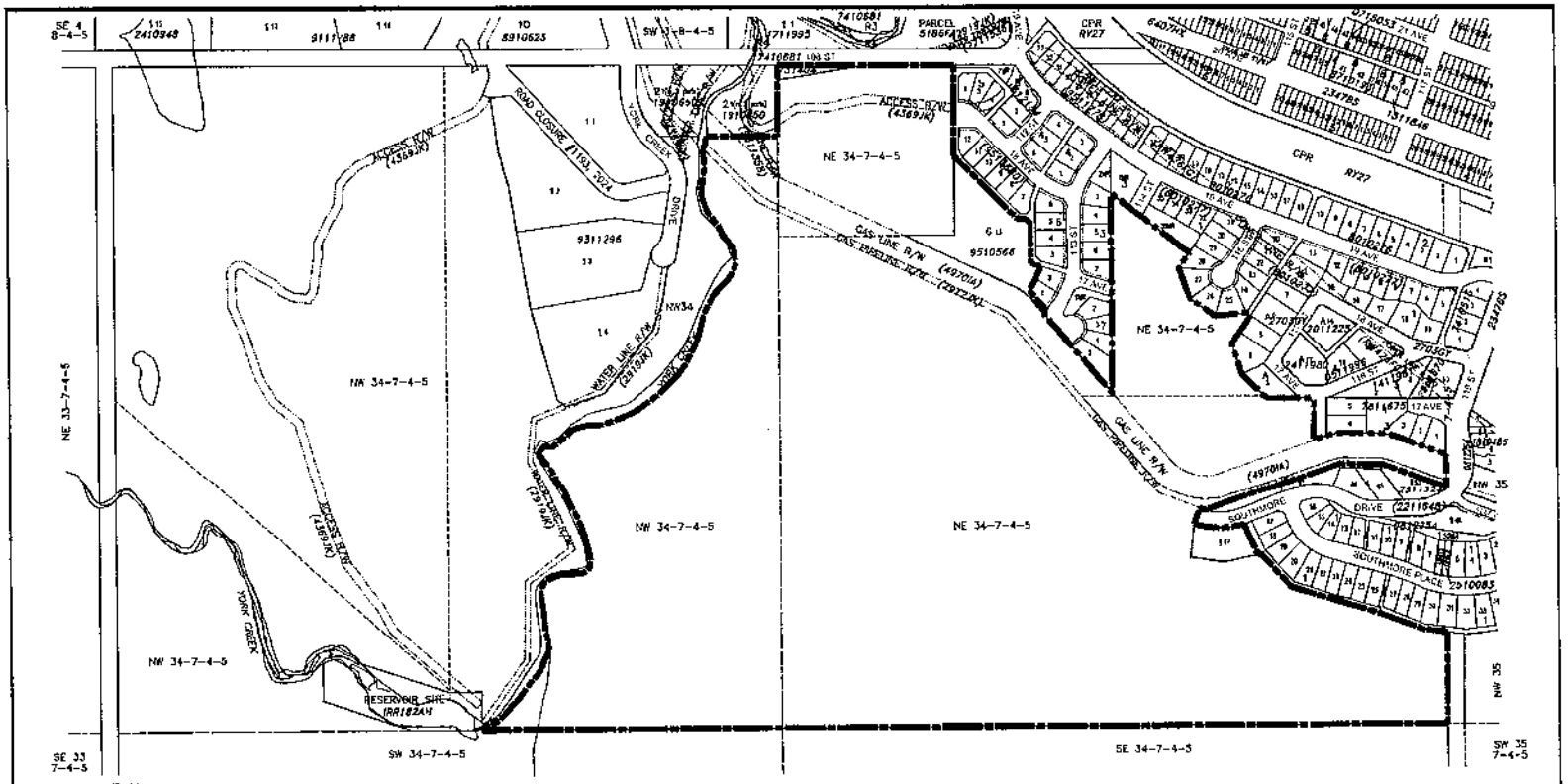
READ a **first** time in council this 27th day of May, 2025.

READ a **second** time in council this 24th day of June, 2025.

READ a **third and final** time in council this 24th day of June, 2025

Dave Filipuzzi
Deputy Mayor

Patrick Thomas
Chief Administrative Officer




SCHEDULE 'A'

PROPOSED AREA STRUCTURE PLAN BOUNDARY

PORTIONS OF N 1/2 SEC 34, TWP 7, RGE 4, W 5 M & LOT 47, BLOCK 1, PLAN 0812254 & LOT 13, BLOCK 6, PLAN 9510566

MUNICIPALITY: MUNICIPALITY OF CROWSNEST PASS

DATE: MAY 20, 2025

Bylaw #: 1227, 2025

Date: _____

OLDMAN RIVER REGIONAL SERVICES COMMISSION

May 20, 2025 N:\C-N-P\CNP LUD & Land Use Redesignations\Crowsnest Pass Southmore ASP and Redesignation.dwg

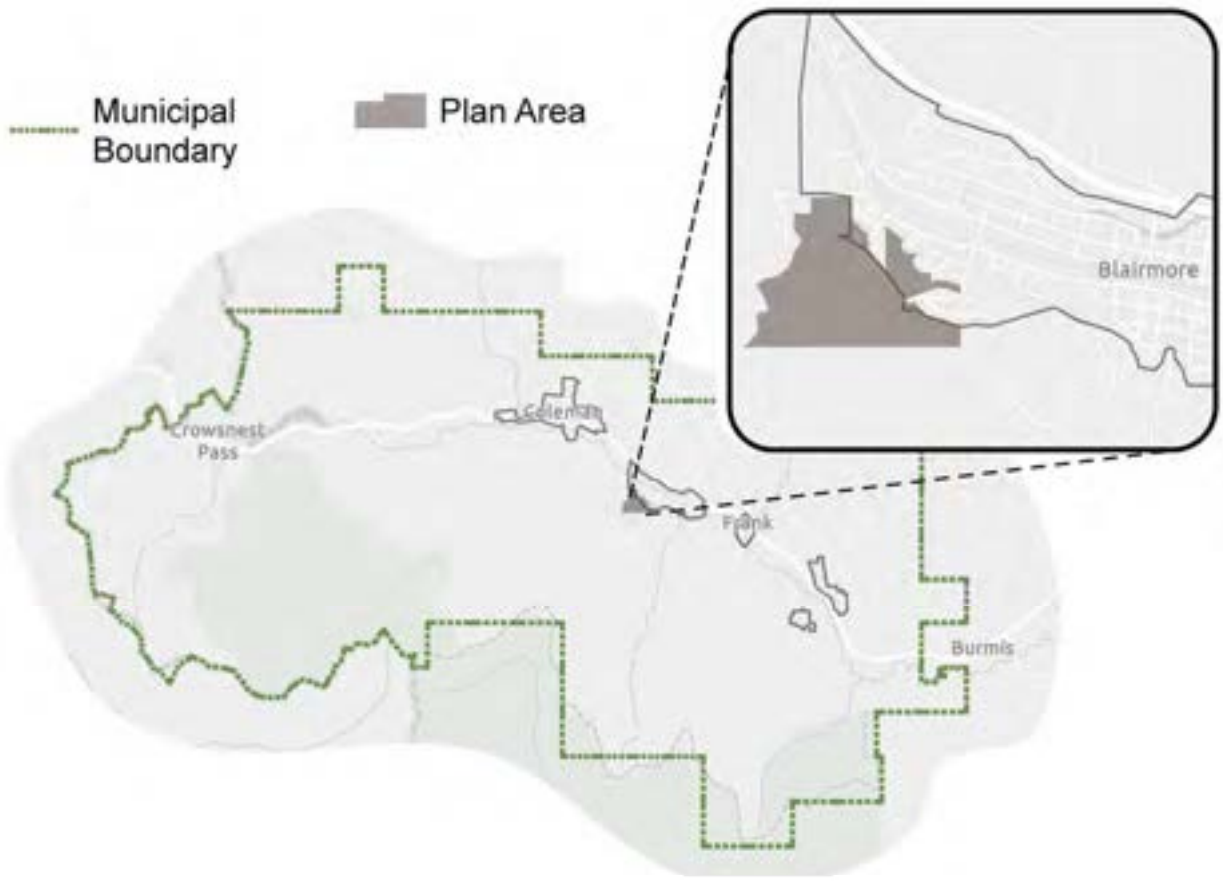



**Figure 1** Locational Context

# Executive Summary

The Southmore Phase 2 Area Structure Plan ("Phase 2 ASP") presents a policy framework for the future land use, subdivision and development of approximately 55 hectares (137 acres) of land on a north-facing slope in south Blairmore. The Plan Area is within the north half of 34–7–4–W5, west of the existing Southmore neighbourhood. It is projected to house more than 900 residents at full build-out.

Adopted by bylaw, the Phase 2 ASP is a statutory document deriving legal authority from the *Municipal Government Act.* Development of the Phase 2 ASP was preceded by a preliminary assessment of the engineering feasibility for the planning project.

The Phase 2 ASP policies are informed by the findings of that assessment and are articulated through the lens of the Municipal Development Plan. These policies include written statements as well as conceptual layouts for land use, transportation, stormwater management, water distribution and wastewater collection. The policies have been further shaped by engagements with landowners, local community groups, municipal departments, provincial ministries, and the public.

The Phase 2 ASP is separated into two parts, which are intended to be read together. Part 1 articulates context relevant to the Plan Area, while Part 2 provides policy statements accompanied by supplementary context.

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# Part 1—ASP Context

# Introduction

## Purpose

The purpose of the Phase 2 ASP is to provide a framework for the subdivision and development of the lands within the Plan Area by establishing the future land uses, population density, transportation routes, utility corridors, sequence of development and other matters through a comprehensive planning process. The Phase 2 ASP will ultimately increase the supply of residential lots in Crowsnest Pass while providing a level of certainty to residents and developers regarding the long-range vision for the Plan Area.

**Figure 2** Entrance to Crowsnest Pass (looking east)

# Plan Area

The Plan Area for Southmore Phase 2 consists of 55 hectares (137 acres) of land within the north half of 34–7–4–W5. It is bound by existing urban neighbourhoods to the north, Pass Powderkeg ski area to the southeast, the existing Southmore neighbourhood ("Southmore Phase 1") to the east, the Livingstone Public Land Use Zone to the west and southwest, and York Creek to the west. The Plan Area is bisected from east to west by the Nova Gas Transmission Line, hereafter referred to as the high-pressure gas line.

The Plan Area consists of seven parcels, four of which are north of the high-pressure gas line. Most of the existing development in the Plan Area is concentrated in this northern portion. Parcel A contains a registered access right-of-way and a compressor substation, along with remnants of a historical use including stick-up pipes, a concrete pad indicative of a building foundation, and metal and wood debris. At the public open house held on April 24, 2025, it was learned that a sawmill and planer operated on the site between 1946 and 1964—originally as Bodio and Sartoris Lumber Company and subsequently as Bodio Lumber Company when the former was dissolved in 1955.

A mountain biking trail traverses Parcel B. Parcel C is vacant and has the steepest slopes in the northern portion of the Plan Area. Parcel D contains an existing residential use in the form of a developed residence, detached garage, workshop, horse stables and corrals.

The portion of the Plan Area to the south of the high-pressure gas line is largely vacant. In February 2025, a subdivision application was approved on Parcel E, which, upon registration, will create two country residential parcels on the east side of York Creek. The majority of Parcel E is thus excluded from the Land Use Concept articulated in the Phase 2 ASP. The rationale for its inclusion in the Plan Area is twofold: its role in accommodating the conveyance of stormwater from Parcel F to York Creek, and the significance of the watercourse to the local biophysical context. Parcel F contains an abandoned barn, mountain biking trails and, most significantly, the main underground working area of the former Sunburst Coal Mine. Parcel G was created as part of Southmore Phase 1, but its location at the western margin of the existing neighbourhood, coupled with its larger area relative to the other Phase 1 lots, justifies its inclusion in the Plan Area.

**Table 1: Plan Area Parcels**

| Parcel | Area | Ownership | Title Number |
|---|---|---|---|
| A | 4.4 ha (10.9 ac) | Private | 241307280 |
| B | 1.1 ha (2.6 ac) | Municipal | 951053230036 |
| C | 2.6 ha (6.4 ac) | Private | 041258811 |
| D | 3.1 ha (7.7 ac) | Private | 961039446 |
| E | 13.7 ha (33.8 ac) | Private | 191062673001 |
| F | 30.2 ha (74.6 ac) | Municipal | 071603252003 |
| G | 0.3 ha (0.7 ac) | Private | 181252219 |

# **Map 1** Plan Area

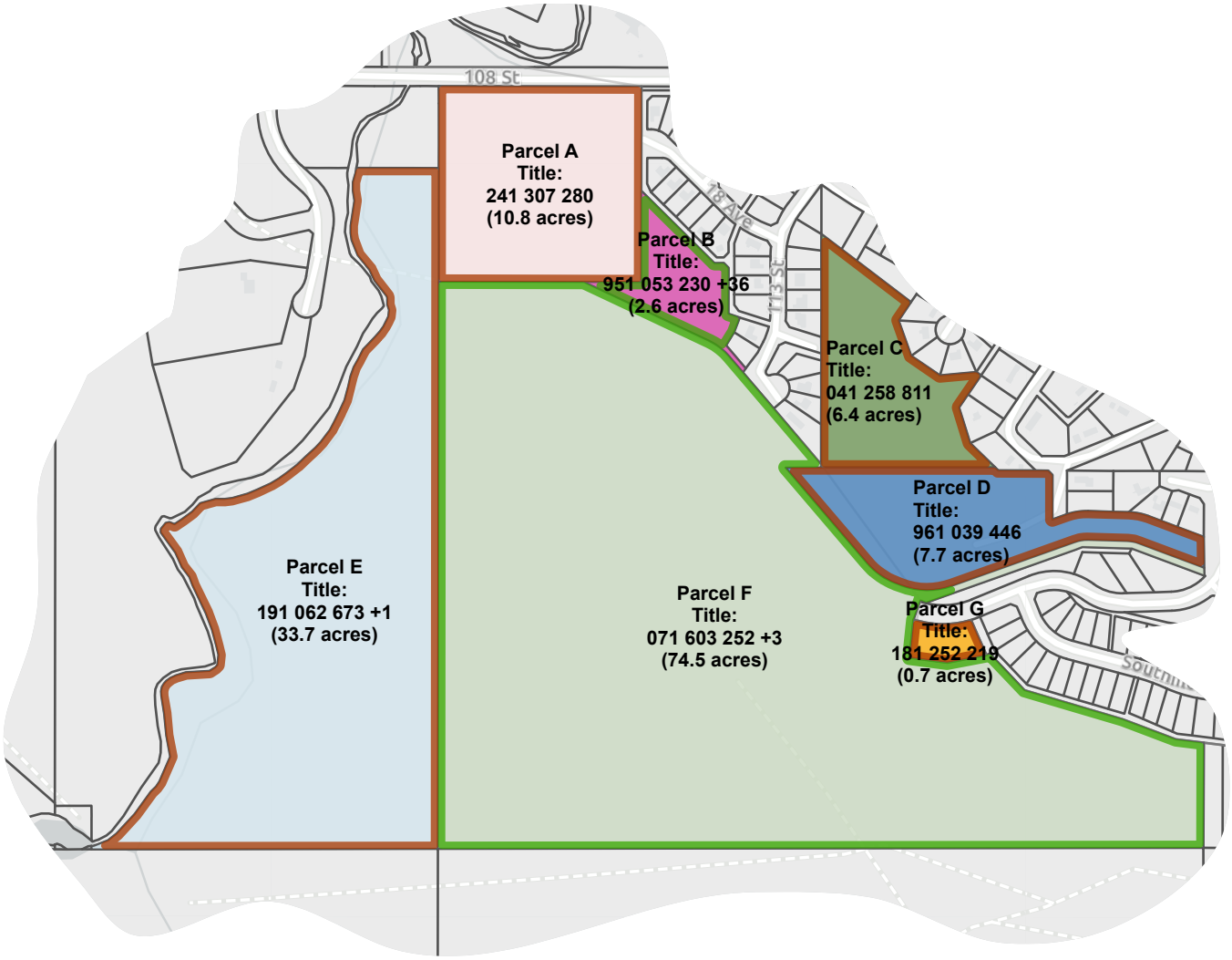


**Figure 3** Multi-Storey Home with Compact Footprint

# Vision

Southmore Phase 2 will blend the amenities of urban living with the allure of backcountry access. Boasting panoramic views spanning much of the Crowsnest Valley, this forested hillside in Blairmore will feature development that embodies a slope adaptive philosophy. The neighbourhood will showcase a commitment to tasteful design and minimal environmental impact, with an overall aesthetic guided by the natural topography. Phase 2 will build on the high standards of the existing Southmore neighbourhood to diversify the local housing supply, adding an estimated 361 new dwelling units tailored to the needs of working-age families, young professionals and older adults. As envisioned in the Pass Powderkeg Master Plan Concept, select units will offer the prospect of skiing or snowboarding directly to the trails. The phenomenal geographic setting of Southmore Phase 2 will also create ongoing opportunities for mountain bikers, hikers and trail runners to engage with the outdoors. Ultimately, this next chapter in the development of Southmore will further reinforce the reputation of Crowsnest Pass as a premier destination in the Canadian Rockies.

**Figure 4** Built-up Area of Blairmore (119 St. and Southmore Drive shown in pink)

# Municipal Planning Context

## Community Context

From a resident-attraction perspective, unparalleled location and access to outdoor recreation gives Crowsnest Pass a significant advantage relative to municipalities of comparable size. According to the 2021 Census of Population, the Municipality was home to an estimated 5,695 residents—a 1.9 percent increase from 2016. More recently, provincial population statistics for 2023 published by Municipal Affairs put the local population at 6,007, which is a 5.5 percent increase relative to the federal census numbers.

More than one quarter (±27%) of Crowsnest Pass residents live in Blairmore, the principal service and retail sector hub. Blairmore features a blend of historical charm and modern amenities, all within a dense urban footprint that accommodates 746 persons per square kilometre according to federal census data. Despite being located at the periphery of Blairmore's built-up area, Southmore Phase 2 benefits from convenient access to essential services within the community. Health care and recreational facilities, grocery stores, pharmacies, banks and the downtown retail shops are all within a ±20-minute walk, as is the nearest elementary school.

Running east–west through this urban community is the Crowsnest Community Trail, the backbone of non-motorized connectivity linking Blairmore to the neighbouring urban communities of Coleman and Frank. In relation to the Plan Area, the trail's nearest segment is located approximately 275 metres (900 ft) north of the Plan Area's northwest corner.

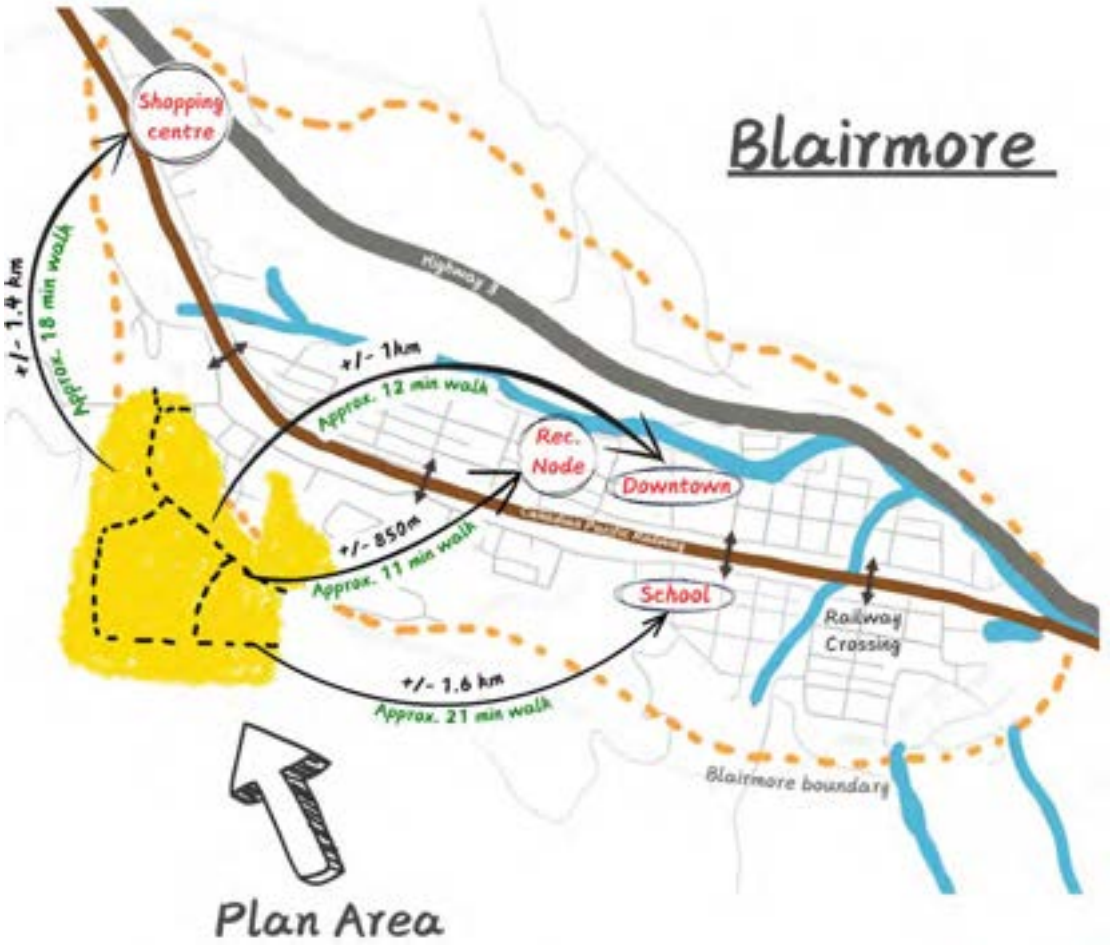



**Figure 5** Community Context and Walking Distances

# Municipal Development Plan

As a means of accommodating future development in a linear municipality where the supply of developable land is scarce, the Municipal Development Plan (2021) identifies several future urban growth nodes. These areas are to be preserved for future urban development pursuant to Policy Section 1.1 of the Municipal Development Plan. In Blairmore, the single growth node roughly corresponds to the Plan Area for the Phase 2 ASP—which has been expanded to include adjacent parcels. The Municipal Development Plan notes that the growth node could accommodate up to 900 residents.

Figure 6 is a replica from the Municipal Development Plan. The area identified as "Old Hospital Redevelopment Site" has been repositioned as Crowsnest Commons, a 7-acre commercial development with excellent access off Highway 3 that will bring highly sought retail and services premises.

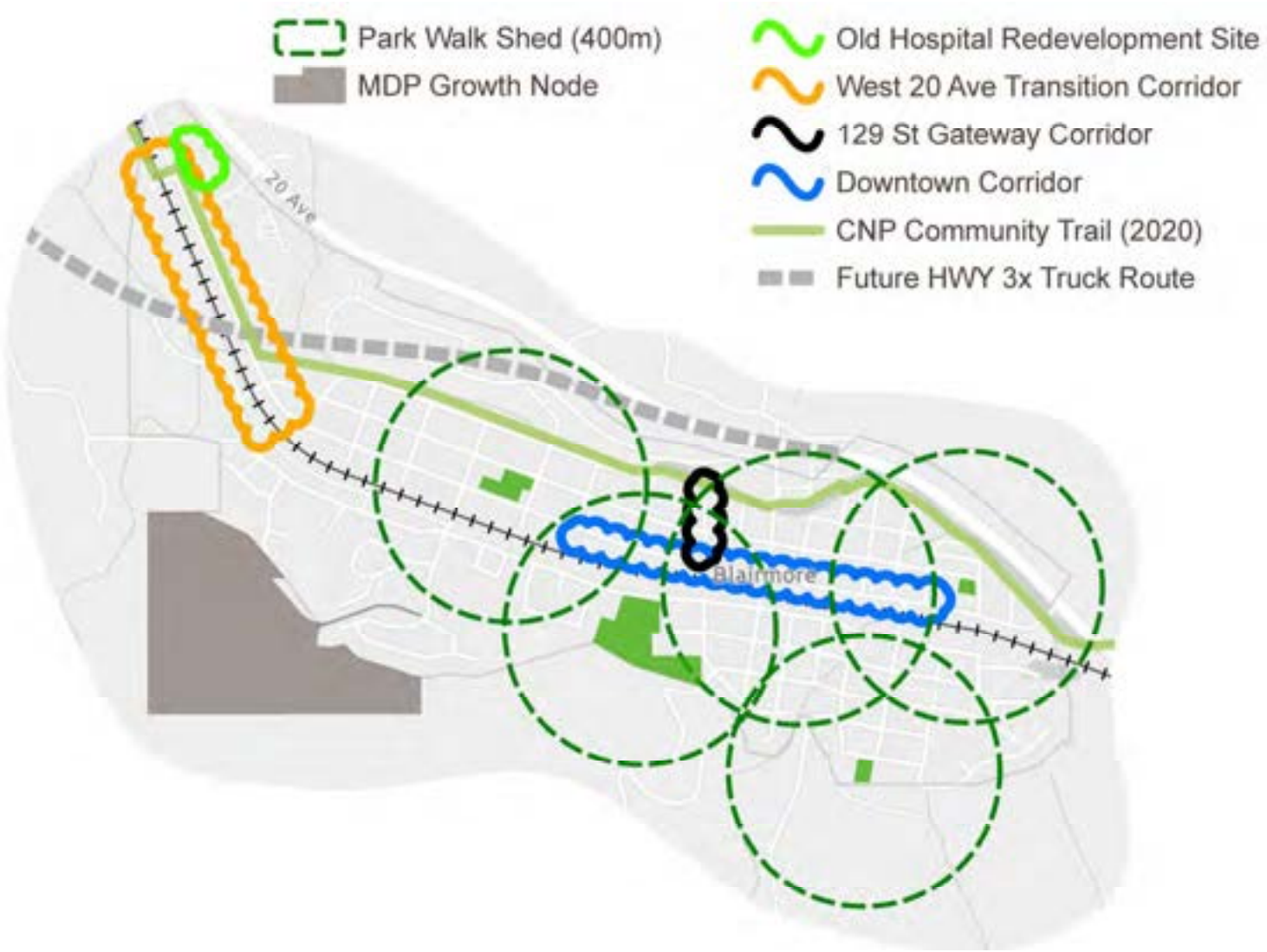



**Figure 6** Municipal Development Plan Growth Node

# Land Use Bylaw

Under the Municipality's Land Use Bylaw, the existing land use districting for Parcels A through D is Non-Urban Area (NUA-1). South of the high-pressure gas line, Parcel E is designated as Grouped Country Residential (GCR-1) while Parcels F and G are designated as Comprehensive Ski Village (CSV).

The Phase 2 ASP envisions flexible residential districting for the future residential areas on Parcels A through D. However, there is a site on Parcel A that will be best suited to High Density Residential (R-3). Also, the NUA-1 districting could potentially be retained on the portion of Parcel D that encompasses the existing residential use.

Comprehensive Ski Village (CSV) district is the preferred future designation for future residential areas located south of the high-pressure gas line. Regarding the portions of Parcel E that do not contribute to the Land Use Concept, it is anticipated that the existing GCR-1 districting will be retained.

Parks, trails and other green spaces within the Plan Area will be best suited to either the Recreation and Open Space (RO-1) district or the Public (P-1) district.

The desired districting for Southmore Phase 2 is reiterated through policy statements in the Plan Implementation section of Part 2.

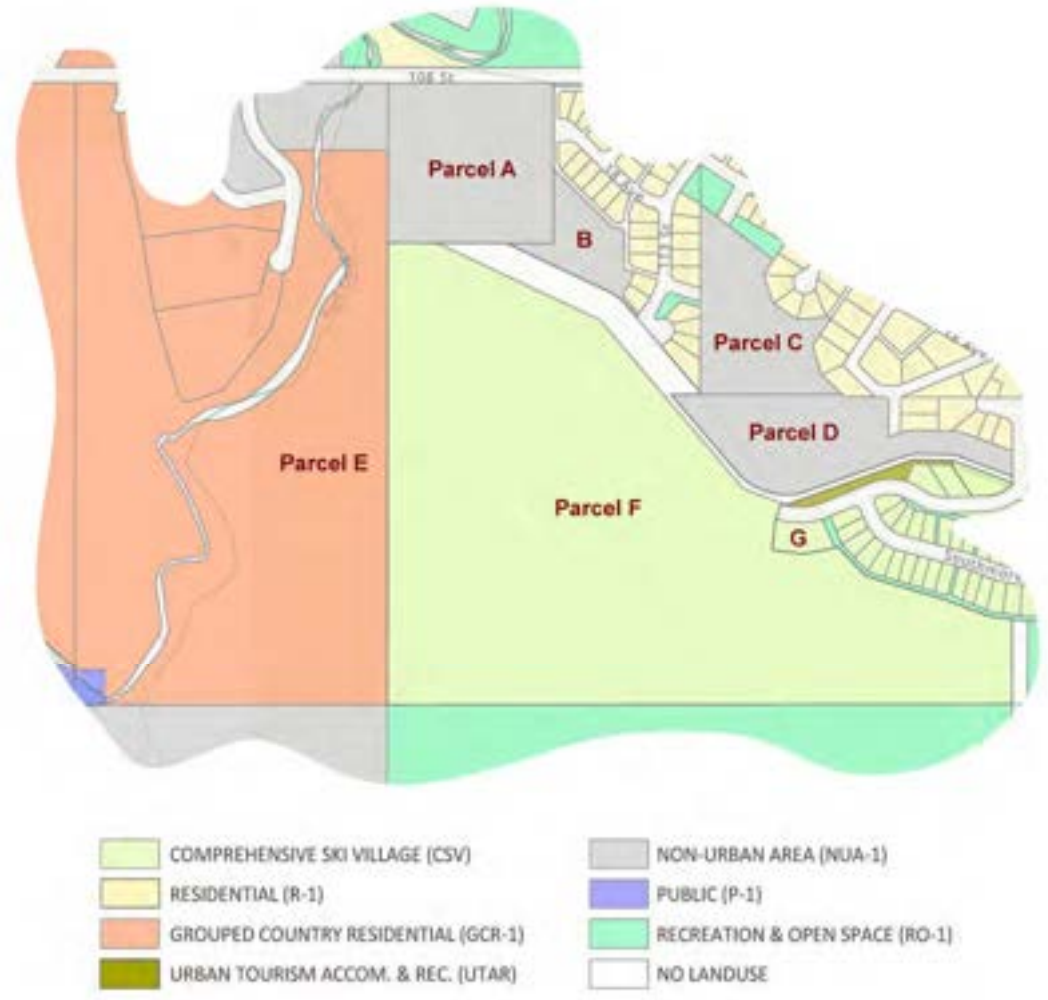



**Figure 7** Existing Land Use Districting

# Southmore (Phase 1)

The existing Southmore neighbourhood was developed in accordance with the Southmore Area Structure Plan ("existing ASP"), which was adopted by the Municipality in 2005. The existing ASP encompasses roughly 40 hectares (100 acres) within the NE 34–7–4–W5 and NW 35–7–4–W5.

The existing ASP is sparse in detail but rooted in a sound planning philosophy. It honours the local environmental context by advocating for development that is responsive to the mountainous terrain, emphasizing how this helps secure a prized view from each building site. The plan also stresses the necessity for considerable land reserve dedications due to the prevalence of strong slopes coupled with the desire for pedestrian connectivity to Pass Powderkeg and downtown Blairmore. The retention of extensive coniferous tree cover throughout the public areas is cited as pivotal to cultivating the aesthetic of a resort community, with the caveat that this goal should be balanced with the implementation of FireSmart best practices. The existing ASP also highlights the need for geotechnical investigation as the neighbourhood develops, with a specific focus on identifying historical coal mining activities.

Southmore Phase 1 was put in effect by Plan 0812254, which subdivided 48 residential lots from a 7-hectare (17-acre) parent parcel. The developer has sold all the lots, and the neighbourhood has developed substantially over the past few years. Phase 1 left a 30-hectare (75-acre) parcel in the NE 34–7–4–W5 as a candidate for future development. Owned by the Municipality, this parcel is a key component of the Plan Area for the Phase 2 ASP. Lot 47 from Subdivision Plan 0812254 is also included in the Plan Area for Phase 2 as Parcel G; however, none of the other parcels in the Plan Area for Phase 2 are dealt with in the existing ASP.

**Figure 8** Plan of Survey 0812254 (Southmore Phase 1)

# Historical Land Use Concept

Conceptual proposals for residential development within the Plan Area for Southmore Phase 2 date back nearly a half-century at least. In 1977, an outline plan envisioned 156 mobile homes on the northern half of Parcel F.

The area to the north of the high-pressure gas line with the bolded boundary has since been developed as Crowsnest Estates, though the layout of the approved subdivision plan differs from the original concept sketched by McElhanney.

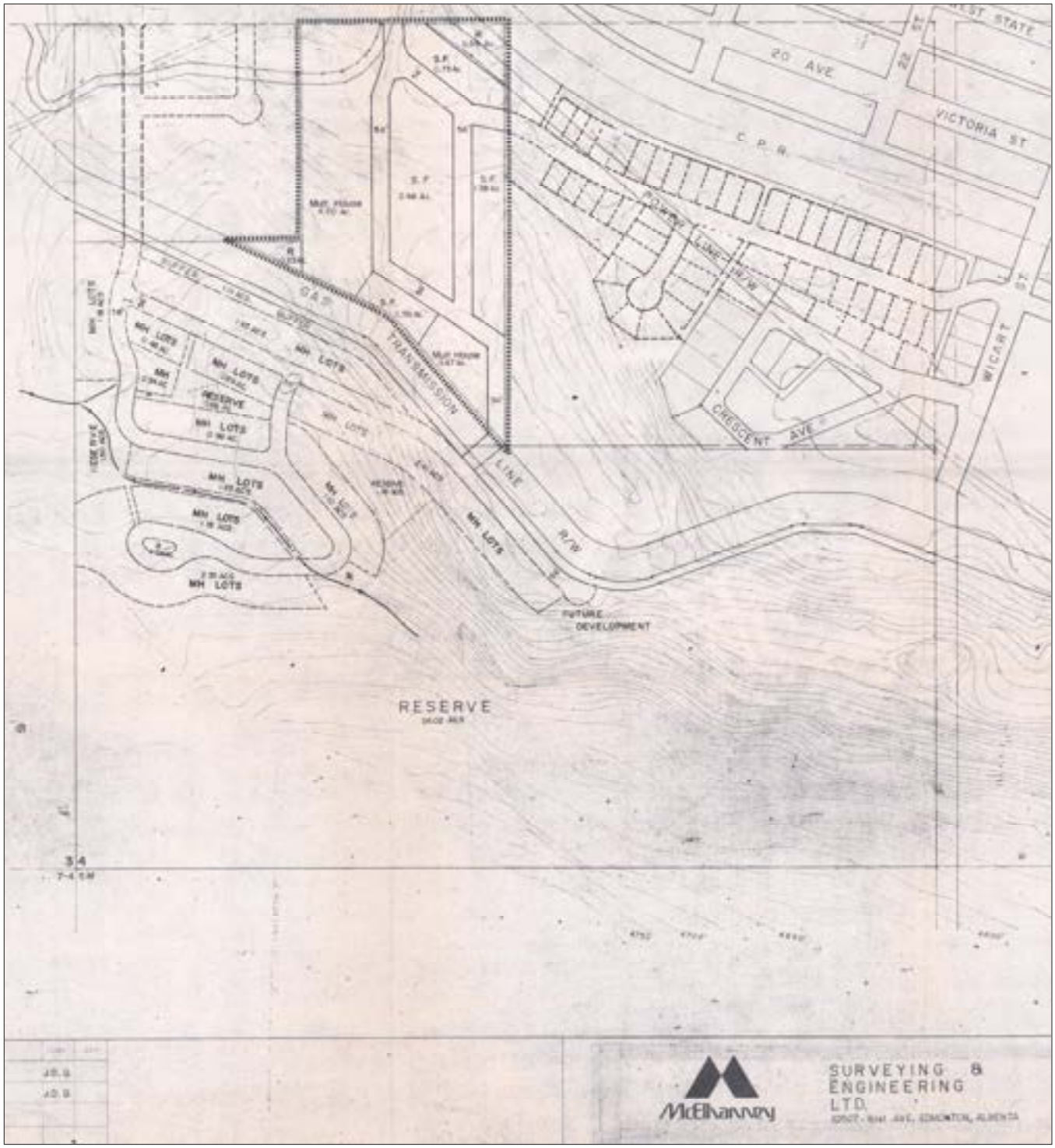



**Figure 9** 1977 Outline Plan

# Site Development Assessment

In 2024, a high-level assessment was completed to evaluate the physical constraints and engineering feasibility of the Plan Area for future residential development. The outcome of this evaluation was a report ("Site Development Assessment"), which is attached as Appendix B.

The Site Development Assessment was developed through a desktop review of environmental considerations, followed by a site visit to further identify development constraints affecting the Plan Area. Three major constraints were identified: strong slopes, the high-pressure gas line, and an abandoned coal mine.

The Site Development Assessment was undertaken with regard to the minimum density target specified in the Municipal Development Plan for new urban residential neighbourhoods, which is 30 dwelling units per net hectare (12 dwelling units per net acre). Of the two conceptual layouts that were presented, Option 2 forms the basis of the Land Use Concept for the Phase 2 ASP. A comparison of the two layouts, along with first-order cost estimates for Option 2, is provided in Appendix B. At 30 dwelling units per net hectare (12 dwelling units per net acre), the development density associated with the Option 2 layout meets the Municipality's density target. However, this layout had to be modified slightly during preparation of the Phase 2 ASP to ensure that the provision of green spaces will not exceed the statutory limits permitted under the *Municipal Government Act*. The end result was a slightly lower projected density of 27 units per net hectare (11 units per net acre). This density decrease is attributed to the proportional increase in net developable area relative to the total lot frontage on which the density is calculated. Despite falling just short of the density target, the modified layout achieves a respectable density in view of the challenging terrain and should be regarded as compliant with the Municipal Development Plan policy. The reality for residential development in a hillside setting is that higher densities are not always practical. In the Site Development Assessment, only areas with slopes of less than 10 percent were deemed suitable for densification due to the significant engineering challenges and cost premiums associated with stronger slopes.

Besides the Municipal Development Plan, other municipal documents that were examined as part of the Site Development Assessment include the Infrastructure Master Plan (2022) and the Engineering and Development Standards (2005). The findings of the Site Development Assessment have informed the development of the Phase 2 ASP.

Photo 1:113th Street Looking North

Photo 2: 113th Street looking SW across TC Energy R/W

**Figure 10** Junction of 113 St. & High-Pressure Gas Line
(Photographs from site visit undertaken for Site Development Assessment)

# Part 2—ASP Policy

# Plan Interpretation

## Policy Statements

1. The Phase 2 ASP is to be used alongside the Land Use Bylaw and may be used to inform amendment of the Land Use Bylaw.
2. The Municipality shall amend the Land Use Bylaw as required to incorporate the policy statements of the Phase 2 ASP.
3. Planning policy is articulated throughout Part 2 under headings titled "Policy Statements." The preambles to these policy statements are not intended as statements of planning policy. Similarly, the preceding content in Part 1 is not to be interpreted as policy; however, Parts 1 and 2 are intended to be read together as the former provides context relevant to the Plan Area. The supplementary information provided in the appendices is not to be interpreted as policy and furthermore does not form part of the Phase 2 ASP.
4. The following provisions describe how to interpret policy statements in the Phase 2 ASP with respect to their binding effect:
   (a) The term "shall" indicates a mandatory directive that must be followed.
   (b) The term "should" indicates a statement that is intended to be followed; however, deviations are allowed provided that they do not undermine the overall intent of the statement.
   (c) The term "may" indicates a suggested action that is encouraged.
5. The following maps are concept maps for the purpose of the Phase 2 ASP:
   (a) Map 5: Land Use Concept;
   (b) Map 6: Transportation Concept; and
   (c) Map 7: Wet Utilities Servicing Concept.
6. The concept maps are policy statements with the caveat that they are conceptual in nature and that their boundaries are approximate and subject to refinement at the subdivision stage as a consequence of detailed engineering design, based on any of the following factors:
   (a) the findings of geotechnical investigation;
   (b) the feasibility of proposed road alignments and block configurations arising from significant slope-induced challenges;
   (c) the allocation of any reserve lands;
   (d) the location and size of stormwater management facilities; and
   (e) any subdivision layout consideration that the Subdivision Authority deems relevant.
7. Broader flexibility is authorized for the area in Map 5: Land Use Concept encompassing the southernmost road and its abutting lots—identified in Map 5 as "Adaptable to Future Ski Hill Expansion"—regarding the integration of limited commercial and/or other compatible uses, as well as alternate spatial configurations that typify a resort residential community, with ski-in ski-out access being a key feature.

## Policy Statements (continued)

8. A proposed subdivision involving a deviation from one or more of the concept maps may be considered without an amendment to the Phase 2 ASP where the Subdivision Authority is satisfied that the proposed deviation is consistent with the overall intent of the Phase 2 ASP.

9. Where the Subdivision Authority is unsure whether a proposed deviation is consistent with the overall intent of the Phase 2 ASP, the Subdivision Authority may refer the matter to Council for a decision.

10. Where development density is referenced in a policy statement, the development density shall be calculated having regard only to principal dwellings (omitting secondary suites).

11. The concept maps should not be relied upon to make any assumptions regarding the developability of land. The developability of land is site-specific and shall be determined at the subdivision stage based on geotechnical investigation.

12. The costs associated with developing land in accordance with Map 5: Land Use Concept shall be borne by the developer. This includes the hard costs of construction along with engineering costs and other soft costs associated with development design or pre-development due diligence.

13. As a condition of subdivision approval, the proportionate share of planning costs for the preparation of the Phase 2 ASP may be recuperated by the Municipality for each parcel within the Plan Area where the land is to be developed in accordance with the Phase 2 ASP.

# Plan Area Features

## Biophysical Features

The Plan Area is located along a north-facing slope at the western margin of the Rocky Mountain Foothills, one of two physiographic divisions of the Rocky Mountain Area within Alberta. The boundary of the other physiographic division—the Rocky Mountains themself—encroaches slightly into the Plan Area.

A ridge bisects the Plan Area in a southeasterly direction, draining the land toward York Creek, a tributary of the Crowsnest River, on the one side, and to the built-up area of Blairmore on the other. Flowing from the south, York Creek forms the western boundary of the Plan Area, then continues north for roughly 275 metres (875 ft) before draining into the Crowsnest.

*Natural Regions & Subregions of Alberta: A Framework for Alberta's Parks* is the provincial land classification system that interprets natural landscapes in a geographic context according to biophysical features. Under this classification system, the natural region corresponding to the Plan Area is "Rocky Mountain" and the natural subregion is "Montane." As is typical in Montane areas, strong slopes are prevalent throughout the Plan Area. Elevations range from 1310 metres (4298 ft) at the northern boundary of Parcel A along 108 Street to 1455 metres (4774 ft) at the southern boundary of Parcel F. Elevations in the future residential area range from 1310 metres (4298 ft) to 1365 metres (4478 ft).

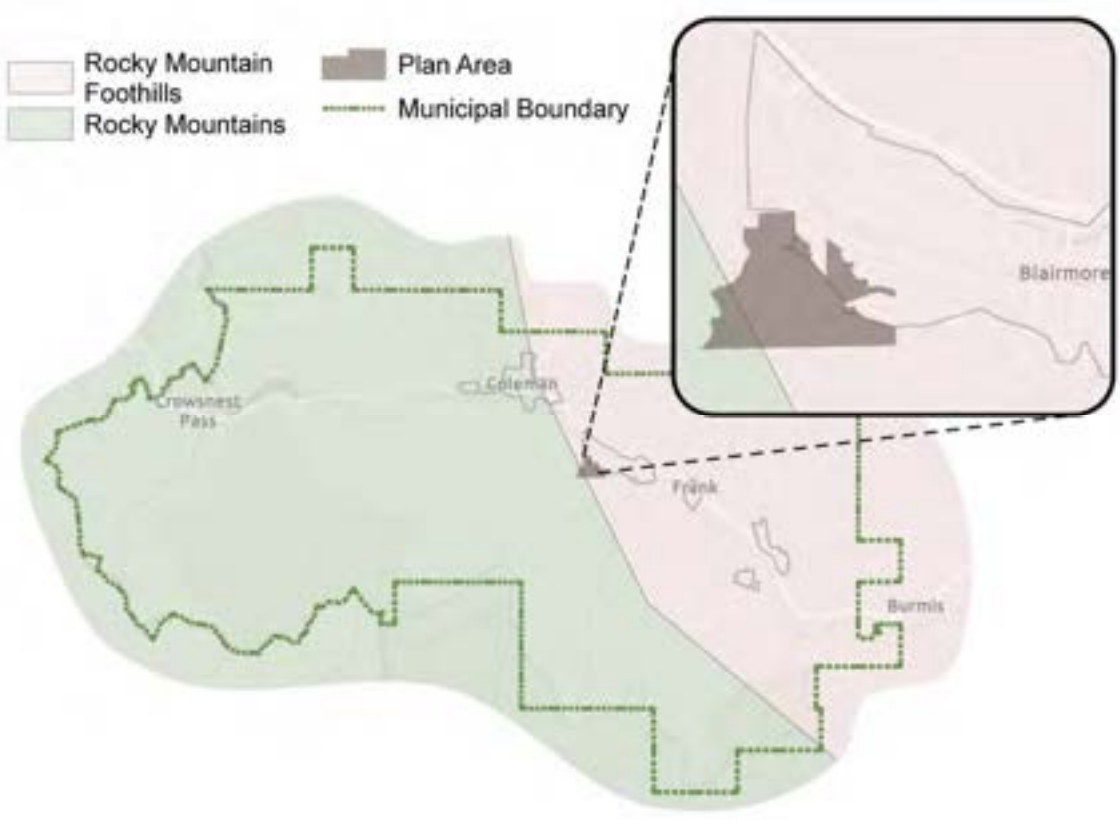



**Figure 11** Physiographic Divisions

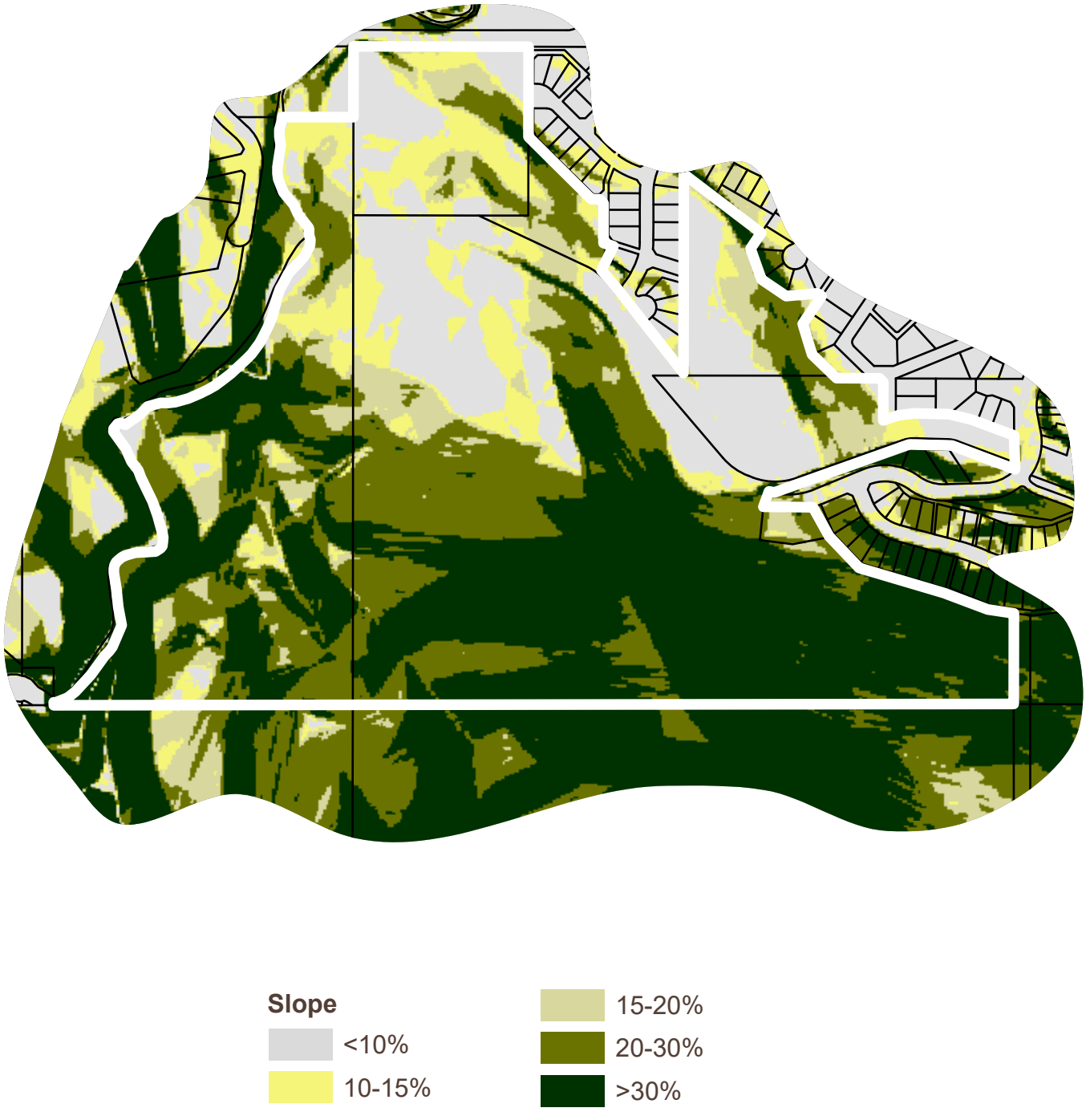
The residential development contemplated in the Phase 2 ASP is generally confined to areas with slopes of 30 percent or less, though the southernmost portion of the Land Use Concept does contain some slightly steeper areas that have been integrated into the proposed cul-de-sac configurations. The slope values are based on a 1.5-metre digital elevation model derived from contours. Assumptions about the developability of land as a function of slope are carried forward from the Site Development Assessment. These assumptions are summarized in Table 2 and provide a general framework; however, site-specific geotechnical investigations will ultimately be the basis for determining the physical suitability of land within the Plan Area. These investigations will reveal information about the geomaterials, which is crucial to overcoming the engineering challenges associated with developing land in a hillside area. Such knowledge will ultimately inform the subdivision layouts and engineering designs for Southmore Phase 2.

**Table 2: Developability as a Function of Slope**

| Slope | Developability |
|---|---|
| 0–10% | Presents the most opportunity for densification. 10% is the maximum grade that will allow for a standard building foundation and reasonable costs for municipal roads and utilities. |
| 10–20% | Developability is contingent upon the careful selection of transportation routes and lot orientation. The Land Use Bylaw threshold triggering the preparation of a slope stability assessment is 15%. |
| 20–30% | Targeted development of large lots requiring significant on-site investment for foundations and retaining walls. |
| >30% | Generally regarded as undevelopable except where shown in the residential area of the Land Use Concept. |

**Figure 12** Forested hillside of Southmore Phase 2
(Looking east, with the railway and high-pressure gas line corridors shown in pink)

# **Map 2** Existing Slope Percentage



Soil types and plant communities in Montane areas can vary dramatically over short distances due to the combined forces of terrain and climate. While the dominant soils in Montane areas throughout southwest Alberta are Orthic Dark Gray Chernozems, occurrences of Gray Luvisols become more frequent on north-facing slopes. This is because north-facing slopes receive little direct sunlight and are somewhat shielded from the prevailing westerly winds, leading to moister conditions than those experienced on south and west-facing slopes. The increased water content and permeability of such soils can impact the design of stormwater management facilities and roadway subgrades. North-facing slopes also tend to experience greater snow accumulation compared to other slope aspects. This is a factor that should be considered in subdivision designs within the Plan Area.

Land cover in the Plan Area is largely coniferous forest, with mature white spruce dominating the poorly drained areas and mature lodgepole pine thriving on drier sites. The dense tree cover is supported by a vigorous woody understory of shrub along with broad-leafed, non-woody plants. Prevalent species include common juniper, prickly rose, bearberry, buffaloberry, bunchberry and various mosses. This dense vegetation helps stabilize the soil and provides habitat to a variety of species.

Despite the moister conditions of its north-facing slope, the heavy forest cover is indicative of an elevated wildfire risk. The Municipality's "Wildland–Urban Interface Fire Hazard Map" (reproduced below as Figure 13) assigns a rating of extreme fuel to the Plan Area. While the removal of mature and overmature timber stands that will be carried out in preparation for future development will help mitigate the wildfire risk, wildland–urban interface risk assessments at the subdivision stage and mandatory landscaping standards at the development stage may nonetheless be necessary. In addition to these prescriptive requirements, the Municipality supports the implementation of voluntary best practices that reduce vulnerability to wildfire through its FireSmart Bylaw. Several of the non-compulsory provisions from the FireSmart Bylaw have been incorporated into the Phase 2 ASP to highlight the importance of wildfire-resilient planning within the wildland–urban interface.

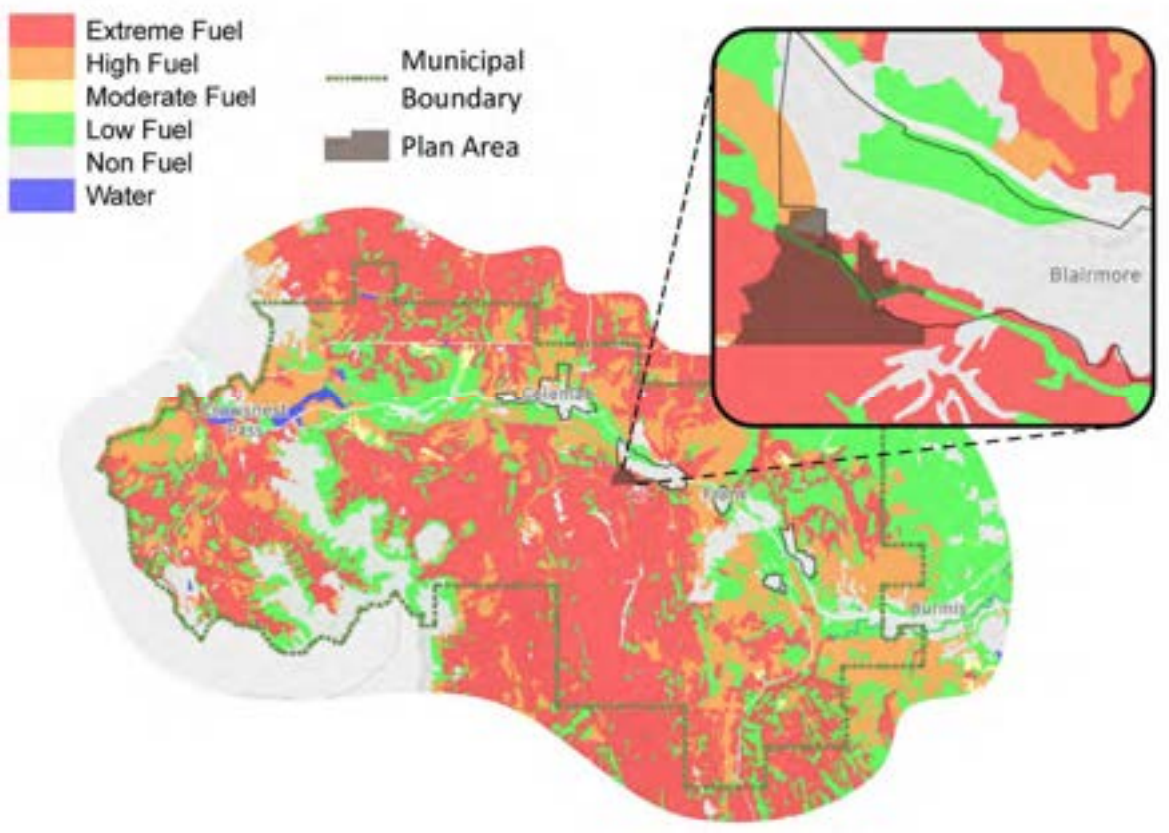



**Figure 13** Wildfire Hazard

The riparian corridor bordering York Creek will be sensitive to the impacts of future development, including the harvesting of timber undertaken to prepare the development sites. Removing trees in proximity to the banks of a watercourse can impact riparian and aquatic environments in a multitude of ways. For instance, logging activities can change light levels, nutrient availability, sediment input and bank stability, and may result in the influx of large woody debris into the watercourse. Rigorous erosion control will be necessary to protect the existing patterns of streamflow and water quality in York Creek.

The York Creek riparian corridor is situated at the periphery of a broader wildlife linkage zone between Blairmore and Coleman, referred to in the Municipal Development Plan as the central linkage zone. The linear nature of the York Creek riparian corridor makes it crucial to habitat connectivity and gives it some potential for trail development; however, the steep gradient abutting the bed and shore may frustrate the feasibility of this latter objective.

A desktop evaluation of the risk impact to ecological connectivity associated with Southmore Phase 2 was undertaken through the Connectivity Risk Assessment Tool developed by the Miistakis Institute. Inputting the extent of the Plan Area and the anticipated development density into the web application, the resulting report indicated high-risk conditions across the board. It is worth noting that this finding is inevitable for practically any land use proposal at the scale of an area structure plan. This is because the tool categorizes a use that will result in more than 20 human events per day as a high level of human activity—and consequently a high level of ecological risk. Recognizing the compromised nature of the central wildlife linkage zone, Municipal Development Plan policy identifies the Southmore Phase 2 Plan Area as a key growth node and directs environmental protection efforts to the east linkage zone and west linkage zone at the expense of the central linkage zone. The higher-level policy provided in the Municipal Development Plan is underpinned by an understanding that the supply of developable land in Crowsnest Pass is limited due to challenging topographic conditions. As such, the recommended mitigation of avoiding development in the Plan Area altogether is simply not a viable option.

The Municipal Development Plan also stipulates policy for development in proximity to wildlife linkage zones, chiefly by promoting the integration of wildlife-sensitive design features such as the contextual placement of buildings and fencing and outdoor lighting solutions that curb the extent of light trespass into the linkage zone.

The Phase 2 ASP seeks to implement the Municipal Development Plan by outlining a policy framework that plans with, rather than against, the existing biophysical features. The Phase 2 ASP framework could benefit from a biophysical impact assessment that predicts the extent of potential impacts on the baseline environmental conditions and recommends additional mitigation measures beyond those outlined in the Municipal Development Plan. Ultimately, the next chapter of Southmore has the capacity to support local biodiversity while providing a desirable urban residential setting.

## Policy Statements

14. Site-specific geotechnical investigations, including the drilling of boreholes, should be undertaken throughout the Plan Area as part of subdivision applications to the extent necessary to determine the suitability of the subject lands for the proposed subdivision.

15. An application to subdivide land within the Plan Area may be required, at the request of the Municipality, to be accompanied by the submission of a biophysical impact assessment to evaluate the potential effects of a proposed subdivision on the physical and biological aspects of the environment. Where a biophysical impact assessment is required, it shall be prepared by a qualified professional.

16. A subdivision applicant may be required to commission a wildland–urban interface risk assessment to determine necessary mitigative measures as part of the subdivision approval process.

17. Timber harvesting, woodlot management and associated logging activities undertaken on private land within the Plan Area shall be conducted in an environmentally responsible manner that minimizes potential adverse effects. Logging debris shall be disposed of to prevent contributing excess combustible fuel loads to the Plan Area as well as to prevent this debris from entering York Creek.

18. The submission of an erosion and sediment control report may be required in respect of any proposed subdivision or development within the Plan Area.

# Areas of Potential Environmental Concern

According to ST45: Coal Mine Atlas, an Alberta Energy Regulator publication, the Sunburst Coal Mine operated from 1919–1930, producing 19,000 tonnes of coal at a depth of 63 metres (207 ft). This abandoned coal mine is in the eastern portion of the Plan Area. Its approximate extent, as depicted in the Alberta Energy Regulator database, begins north of the high-pressure gas line. It stretches to the southeast, through the proposed west extension of Southmore Drive into Parcel G, and into Parcel F. Historical documents allege the location of the main underground working area to be beneath Parcel F. Ownership of the mine was transferred a handful of times throughout its 11-year operating history. Blairmore Coal Co. Ltd. owned the mine the longest, and Cartwright and Thomason owned the mine at the time it was shut down in 1930.

No surface features relating to the Sunburst Coal Mine were documented during the Phase 1 Environmental Site Assessment that was undertaken as part of the Site Development Assessment. As a result, areas used for coal storage, mine spoil storage and drainage discharge remain unknown. Adding to the uncertainty is the length of time that has elapsed since the mine ceased operations. Naturally, any reclamation that was undertaken 95 years ago would fall well short of current regulatory standards set by the Alberta Energy Regulator. Given that the abandoned mine will impact the proposed Land Use Concept for Southmore Phase 2—in particular, the west extension of Southmore Drive and the residential development south of this road—a mine site geotechnical investigation is warranted to better understand the scope of these impacts.

The Phase 1 Environmental Site Assessment also identified a potential environmental concern on Parcel A based on a collection of visual evidence—abandoned metal and wood materials, stick-up pipes and a concrete pad indicative of a former building foundation. An environmental records search did not yield any information about the property's historical context. However, at the public open house held in April 2025, it was learned that a sawmill and planer had operated on the site from 1946–1964. This revelation, which was substantiated through a search of the Lethbridge Herald archives, explains the type of debris that was observed on Parcel A during the site visit. While the provincial database for lumber-related operations had been queried for approvals pertaining to the manufacturing of wood products, this database was only maintained from


**Figure 14** Abandoned Coal Mine

1993–2012. It therefore would not have captured the approvals, if any, that would have been issued while the businesses were active. The extensive use of creosote, PCP and other preservatives associated with sawmills makes the underlying soils and groundwater prone to methane contamination from wood residue. Also, due to the vulnerability of the logging industry to macroeconomic and geopolitical factors, sawmills may cease operations abruptly and be abandoned without proper site remediation. In view of this, further environmental assessment of the site is warranted.

## Policy Statements

19. The developer shall commission a mine site geotechnical investigation encompassing Parcels D, F and G to ascertain the impacts of the abandoned coal mine on the developability of those parcels and to determine whether mitigative measures will be necessary.

20. Where a mine site geotechnical investigation is undertaken in support of a proposed subdivision and the findings of the investigation reveal any portion of the subject land to be undevelopable or require mitigative measures, these findings shall be adhered to including, where necessary, modifying the layout of the proposed subdivision to the satisfaction of the Subdivision Authority.

21. Areas that are prone to subsidence or other physical hazards based on the findings of a mine site geotechnical investigation shall be preserved in their natural state or otherwise mitigated, in accordance with the recommendations outlined in the mine site geotechnical investigation and to the satisfaction of the Subdivision Authority.

22. The Municipality should require the developer to commission further environmental assessment on Parcel A to determine the property's environmental condition, including the presence, nature and extent of any contaminants stemming from its historical use as a sawmill and planer.

# High-Pressure Gas Line

TC Energy operates a high-pressure gas line that bisects the Plan Area from east to west. The pipeline corridor is protected by two registered rights-of-way—Plan 4970IA and Plan 7912JK—which abut each other and have a collective width of 41 metres (134 ft). The prescribed area extends 30 metres (98 ft) in either direction from the centreline of the pipeline and is governed under the *Canadian Energy Regulator Act.* An informational brochure published by the pipeline operator is attached as Appendix C. TC Energy issues authorizations for crossings of the right-of-way for the purposes of utilities, roads and, from time to time, trails.

The pipeline operator also provides input on land use decisions outside the right-of-way. Pursuant to *CSA Z663: Land Use Planning in the Vicinity of Pipeline Systems,* TC Energy is entitled to a referral of any application within 200 metres (656 ft) of the pipeline.

The pipeline operator was engaged to discuss road and utility crossings as part of the planning process for the Phase 2 ASP. During these discussions, costs for a full road right-of-way crossing (including utilities) were estimated at $250,000 for preliminary engineering design and $1,000,000 for detailed engineering design.

## Policy Statements

23. Subdivision and development applications within 200 metres (656 ft) of the high-pressure gas line shall be referred to TC Energy prior to a decision being rendered.
24. A geotechnical investigation shall be completed at the location of the proposed road and utility crossings of the high-pressure gas line to support the engineering designs for the crossings.
25. Written consent from TC Energy shall be required for ground disturbance within the prescribed area.
26. Written consent from TC Energy shall be required to construct a facility across, on, along or under the high-pressure gas line right-of-way.
27. Overland drainage across the high-pressure gas line right-of-way shall be prohibited, except where TC Energy authorizes such drainage as part of a crossing agreement or otherwise provides written consent allowing the drainage.
28. Permanent structures, driveways and parking areas shall be located a minimum of 7 metres (23 ft) from the edge of the high-pressure gas line right-of-way.
29. Temporary structures without a foundation and not anchored to the ground shall be located a minimum of 3 metres (10 ft) from the edge of the high-pressure gas line right-of-way.

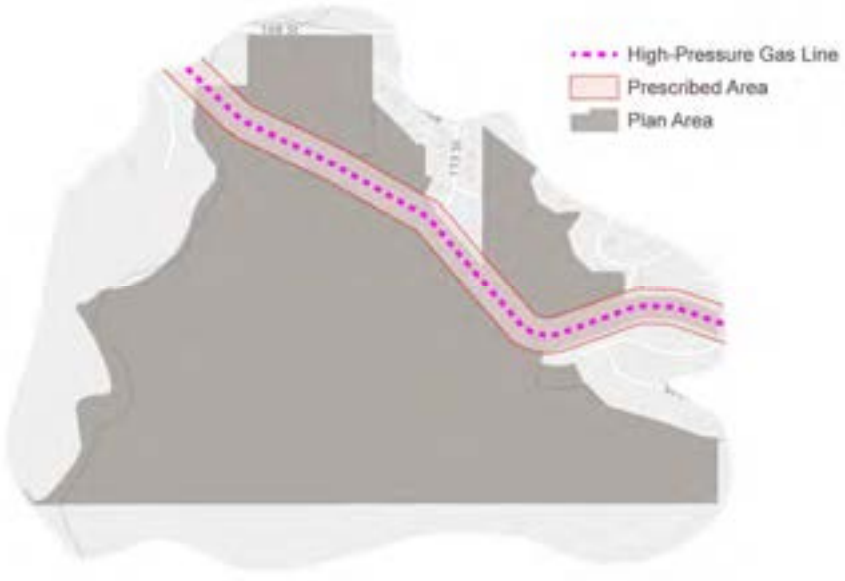



**Figure 15** High-Pressure Gas Line

# Mountain Biking Trails

The Plan Area falls within an expansive network of mountain biking trails. This network encompasses a diversity of recreation settings, from easily accessible trailheads to challenging, high-elevation backcountry routes.

More than 50 km of trails south of Blairmore are maintained by the United Riders of Crowsnest Club (UROC), a registered society seeking to establish Crowsnest Pass as Alberta's premier mountain biking destination. The Municipality is at a distinct advantage compared to larger urban centres in that its trails are readily accessible from most visitor accommodations, negating the need for secondary transportation to trailheads.

UROC maintains trails at Pass Powderkeg under an agreement with the Municipality. In 2016, UROC secured permission from TC Energy to construct and maintain a segment of trail within the high-pressure gas line right-of-way. The organization also maintains trails in the Livingstone Public Land Use Zone south of the Plan Area through temporary field authorizations issued by Alberta Forestry and Parks. The Livingstone-Porcupine Hills Recreation Management Plan commits the province to explore trail development options in the Public Land Use Zone. This includes potential collaborations with local trail groups to develop an "epic ride" as defined by the International Mountain Biking Association (IMBA)—a trail that would give riders in Crowsnest pass direct backdoor access to the Castle Parks. Notably, an IMBA designation is recognized in the Municipal Development Plan as a pursuit that could bring positive economic impacts to Crowsnest Pass.

The United Riders of Crowsnest Club Trail Management Plan (2023) is the product of joint recreation planning between UROC and the province. The document catalogues existing disturbance trails in the Public Land Use Zone and lays the groundwork for future provincial trail designations. Feedback from the public engagement process for Southmore Phase 2 highlights a strong affection among residents toward sustaining a connected non-motorized trail network. Most relevant to the Plan Area is the Buck 50, a fast and flowy intermediate-level downhill trail that connects to various parts of the network. One crucial connection is the Powderkeg-York Connector, which runs east–west from Blairmore to Coleman. While certain trails within the network are reserved exclusively for mountain bikers, the Buck 50 is available for use by other non-motorized users, including hikers and trail runners. A total of 8500 counts were recorded on the Buck 50 during the summer 2024 season. Although the main access to the Buck 50 is provided at Pass Powderkeg, an alternate access traverses the Plan Area from the southern terminus of 113 Street. The Buck 50 and its connector are both depicted in Map 3. While the connector trail will likely be compromised by future development in the Plan Area, the Phase 2 ASP recognizes the importance of retaining access to the broader network of mountain biking trails located south of the future built-up area.

## Policy Statements

30. Public access to the remainder of the Buck 50 mountain biking trail outside the Plan Area shall be preserved via designation of a public utility lot or reserve land, or through other appropriate means. This designated area may include an area for public parking.

31. Wayfinding elements indicating trail access points shall be integrated into approved subdivisions within the Plan Area.

**Figure 16** Existing Trail at Terminus of 113 St.

# **Map 3** Existing Mountain Biking Trails

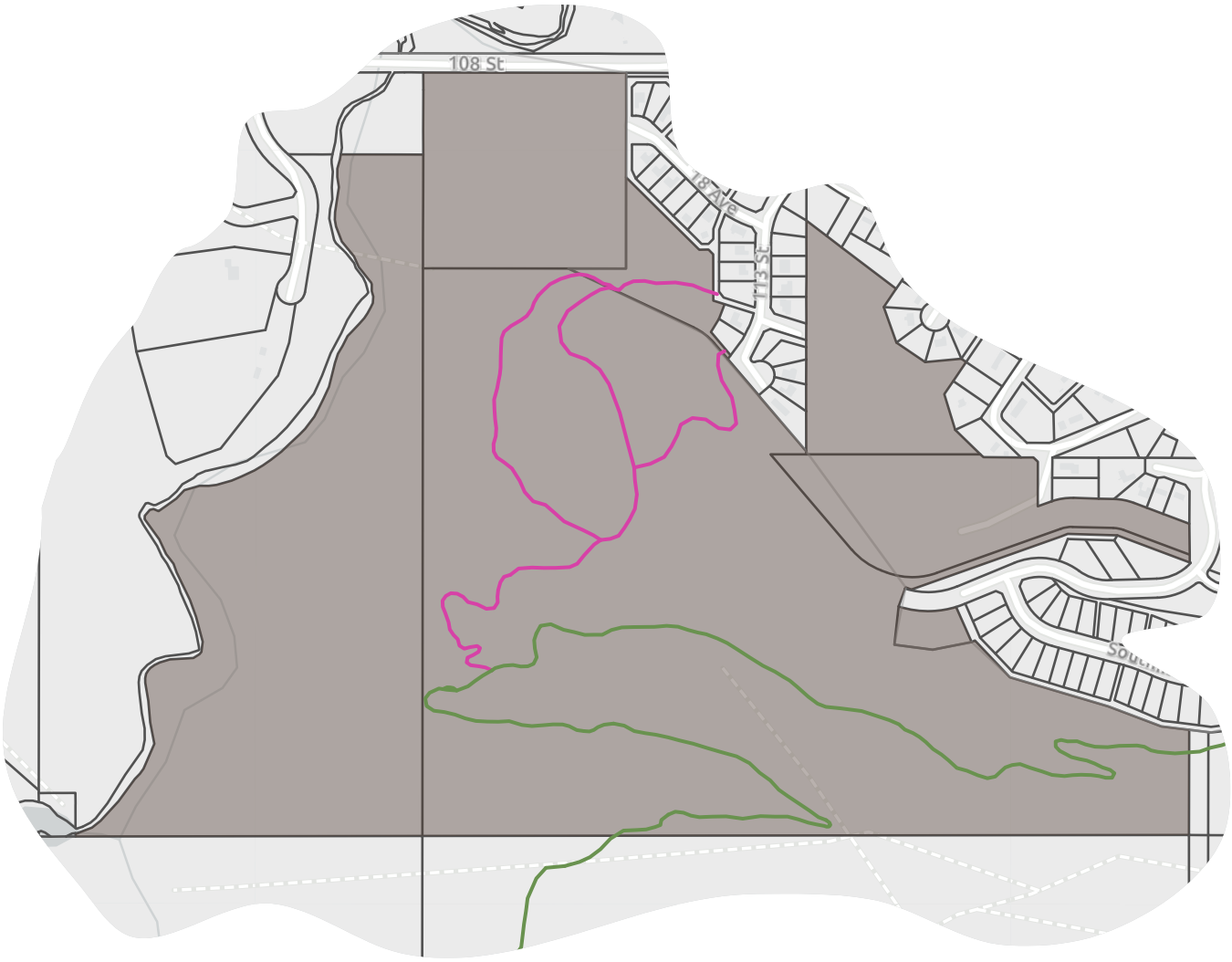


**Figure 17** Buck 50 Trail into the Public Land Use Zone

# Historic Resources

The Plan Area is identified in the provincial Listing of Historic Resources as having the potential to include level 3 historic resource value of a palaeontological nature as well as levels 4 and 5 historic resource value of an archaeological nature.

Alberta Arts, Culture and Status of Women is the provincial ministry responsible for administering the *Historical Resources Act.* Should the Ministry issue an approval authorizing the development contemplated in the Phase 2 ASP to proceed without the completion of a historical resources impact assessment, then the Listing of Historic Resources will need to be reviewed at the time of future subdivision applications to ensure the historic resource values impacting the Plan Area have not changed in the time that has elapsed since the draft Phase 2 ASP was circulated to the province.

## Policy Statements

32. Except as provided for in the ensuing policies, a historical resources impact assessment shall be submitted at the subdivision stage where the historic resource values impacting the Plan Area at the time of subdivision differ from the historic resource values that were known at the time the Phase 2 ASP was circulated to Alberta Arts, Culture and Status of Women (Ministry).

33. The Subdivision Authority may make approval from the Ministry a condition of subdivision approval.

34. A historical resources impact assessment shall not be required where the subdivision applicant has obtained clearance from the Ministry that the assessment is not required.

35. Where historic resources are discovered during development, the developer shall report the discovery to the Ministry and adhere to the protocols outlined in the *Historical Resources Act*.

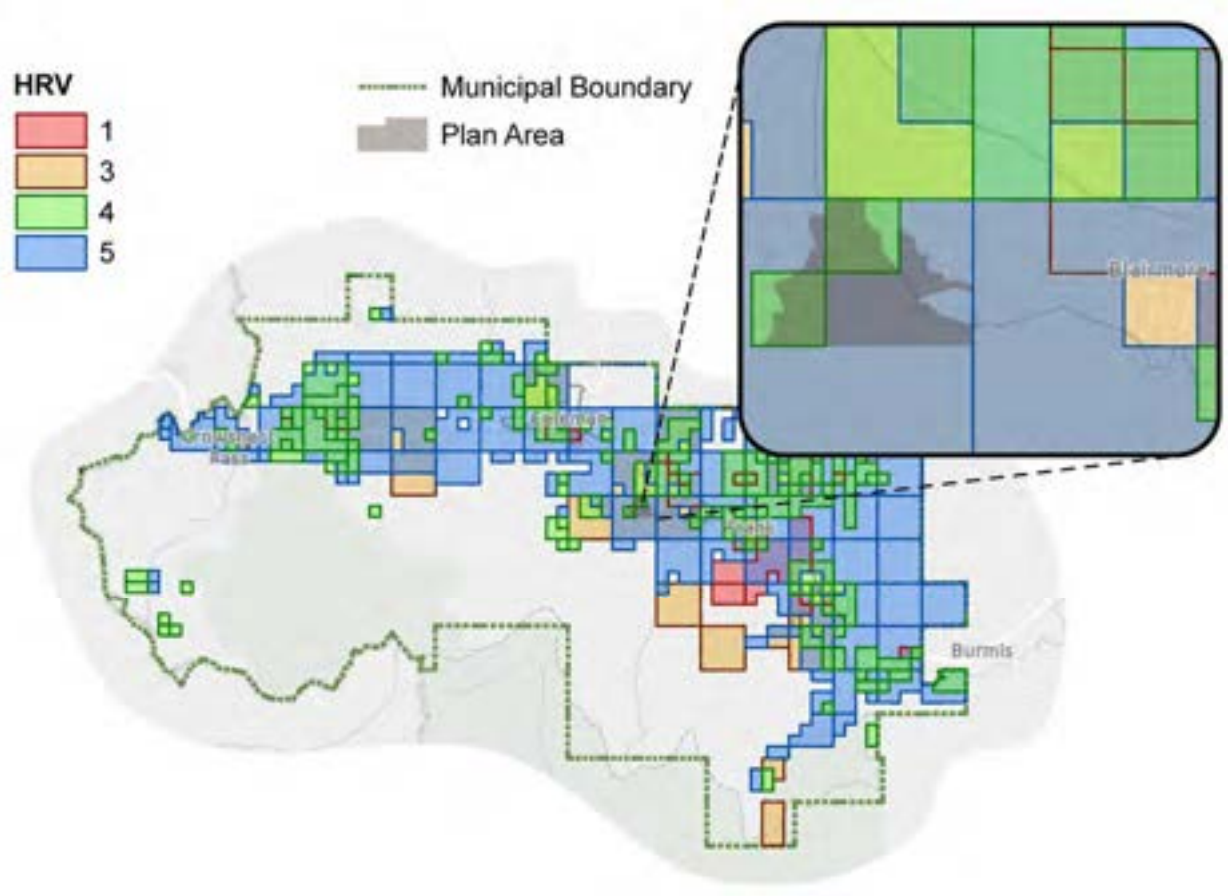



**Figure 18** Historic Resource Values

# **Map 4** Development Constraints

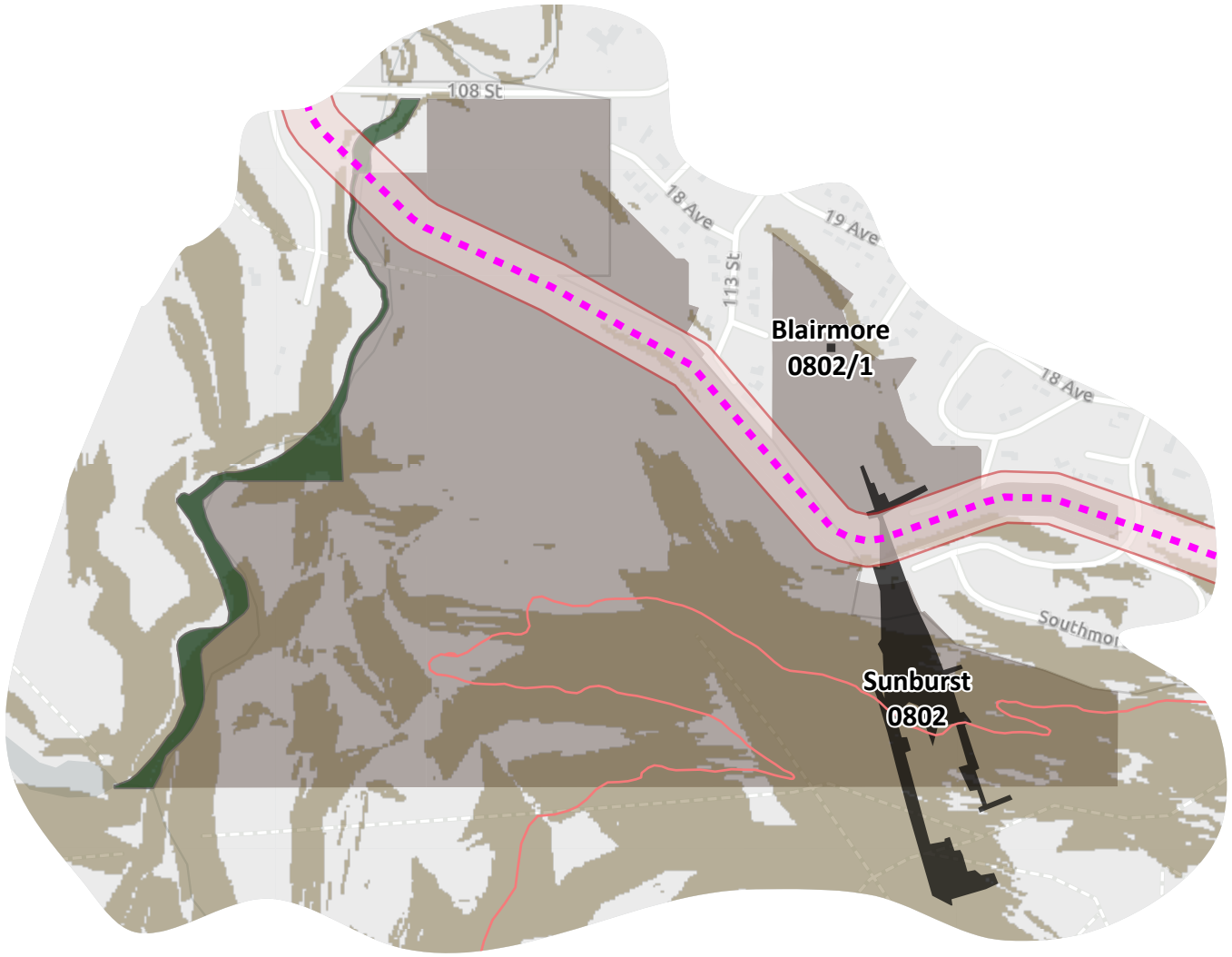


**Figure 19** Conceptual Cul-De-Sac Layout

# Land Use Concept

## Open Space

The conceptual layout for future residential development in Southmore Phase 2 is primarily restricted to the portion of the Plan Area where slopes do not exceed 30 percent. The topographical constraints of other lands within the Plan Area make them well suitable as naturalized areas.

The environmental reserve designation could be appropriate for these potential naturalized areas with severe slope constraints, with two notable exceptions. Firstly, as the subdivision of Parcel E for grouped country residential development involved the dedication of a riparian corridor bordering York Creek as environmental reserve, lands on Parcel E are not eligible for further environmental reserve dedication. The second exception pertains to the portion of the 10.1-hectare (25.0-acre) area abutting the southern margin of the Land Use Concept in Map 5, which is identified in the Pass Powderkeg Master Plan Concept as a future expansion area for the ski hill. Unlike low-impact trail types that fall within the realm of passive recreational infrastructure that can be suitably accommodated on environmental reserves, ski trails involve a more significant linear disturbance that would undermine the intent of the reserve land designation. Due to these exceptions, it is anticipated that any environmental reserves within the Plan Area will be concentrated in the southeast corner on Parcel F. East of the future expansion area for Pass Powderkeg, this steep hillside encompasses what is alleged to be the historical working area of the Sunburst Coal Mine. Naturally, should the findings of site-specific geotechnical investigations reveal any land that is unstable, then the environmental reserve designation could encompass these areas as well.

The naturalized areas are a key ingredient to the outdoors-focused vision underpinning Southmore Phase 2. Retaining abundant tree cover throughout the Plan Area will support the growth of native species and contribute to local biodiversity in the neighbourhood, setting the stage for future development to occur in harmony with the environmental context. The naturalized areas also have the capacity to secure crucial links within the municipal trail network and enhance multi-modal connectivity to surrounding areas in Crowsnest Pass.

**Table 3: Land Use Statistics – Plan Area**

| Component | Hectares | Acres | % of PA | % of GA |
|---|---|---|---|---|
| Plan Area (PA) | 55.3 | 136.7 | 100.0% | —— |
| Existing Environmental Reserve | 1.6 | 3.9 | 2.9% | —— |
| Potential Naturalized Areas | 9.2 | 22.7 | 16.6% | —— |
| Gross Area (GA) | 44.6 | 110.1 | 80.6% | 100.0% |
| Future Ski Trails (Pass Powderkeg) | 10.1 | 25.0 | —— | 22.7% |
| Existing GCR-1 | 10.6 | 26.3 | —— | 23.9% |
| Existing NUA-1 | 1.0 | 2.6 | —— | 2.3% |
| High-Pressure Gas Line | 3.6 | 8.9 | —— | 8.1% |
| Gross Developable Area (GDA) | 19.2 | 47.3 | —— | 43.0% |
| Roads | 4.4 | 10.9 | —— | 9.9% |
| Public Utilities | 1.2 | 2.9 | —— | 2.6% |
| Municipal Reserve (Land Dedication Only) | 0.4 | 1.1 | —— | 1.0% |
| Net Developable Area (Residential) | 13.1 | 32.5 | —— | 29.5% |

**Table 4: Land Use Statistics – Parcels (hectares)**

| Parcel | Parcel Area | Existing ER | PNA[1] | Required MR (Type) | Required MR | FST [2] | Existing GCR-1 | Existing NUA-1 | NGTL[3] | Roads | Public Utilities | NDA (Res.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 4.4 | 0.0 | 0.0 | Land | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 1.0 | 0.2 | 2.3 |
| B | 1.1 | 0.0 | 0.3 | Cash-in-lieu | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.6 |
| C | 2.6 | 0.0 | 0.4 | Cash-in-lieu | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 1.8 |
| D | 3.1 | 0.0 | 0.0 | Cash-in-lieu | 0.3 | 0.0 | 0.0 | 1.0 | 1.5 | 0.1 | 0.0 | 0.5 |
| E | 13.7 | 1.6 | 0.0 | N/A | 0.0 | 0.0 | 10.6 | 0.0 | 0.0 | 0.2 | 0.0 | 1.3 |
| F | 30.2 | 0.0 | 8.5 | Cash-in-lieu | 2.2 | 10.1 | 0.0 | 0.0 | 1.7 | 2.6 | 1.0 | 6.3 |
| G | 0.3 | 0.0 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| Totals | 55.3 | 1.6 | 9.2 | —— | 4.5 | 10.1 | 10.6 | 1.0 | 3.6 | 4.4 | 1.2 | 13.1 |

**Table 5: Land Use Statistics – Parcels (acres)**

| Parcel | Parcel Area | Existing ER | PNA[1] | Required MR (Type) | Required MR | FST [2] | Existing GCR-1 | Existing NUA-1 | NGTL[3] | Roads | Public Utilities | NDA (Res.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 10.8 | 0.0 | 0.0 | Land | 1.1 | 0.0 | 0.0 | 0.0 | 1.1 | 2.5 | 0.4 | 5.8 |
| B | 2.6 | 0.0 | 0.8 | Cash-in-lieu | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 1.5 |
| C | 6.4 | 0.0 | 0.9 | Cash-in-lieu | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 4.6 |
| D | 7.7 | 0.0 | 0.0 | Cash-in-lieu | 0.8 | 0.0 | 0.0 | 2.6 | 3.6 | 0.3 | 0.0 | 1.3 |
| E | 33.8 | 3.9 | 0.0 | N/A | 0.0 | 0.0 | 26.3 | 0.0 | 0.0 | 0.4 | 0.0 | 3.2 |
| F | 74.6 | 0.0 | 20.9 | Cash-in-lieu | 5.4 | 25.0 | 0.0 | 0.0 | 4.2 | 6.5 | 2.5 | 15.5 |
| G | 0.7 | 0.0 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 |
| Totals | 136.7 | 3.9 | 22.7 | —— | 11.0 | 25.0 | 26.3 | 2.6 | 8.9 | 10.9 | 2.9 | 32.5 |

Footnotes:

1 Potential Naturalized Area
2 Future Ski Trails
3 Nova Gas Transmission Line

# **Map 5** Land Use Concept


- Semi-Detached Residential (or equivalent density)
- Apartment Building(s) Site
- Potential Pedestrian Corridor
- Potential Public Utility Lot
- Potential Municipal Reserve
- Single-Detached Residential
- Existing NUA-1
- Adaptable to Future Ski Hill Expansion
- Future Ski Trails
- Future Ski Lift 'F'
- Environmental Reserve
- Potential Naturalized Area
- Candidate Area for Park
- Utility Right of Way (5.0m, Stormwater)

## Policy Statements

36. Except as provided for in Policies 6–8, the distribution of open spaces throughout the Plan Area shall align with Map 5: Land Use Concept.

37. The development of Southmore Phase 2 shall retain access to the remainder of the Buck 50 trail outside the Plan Area.

38. The developer may use a combination of reserve land designations to the Subdivision Authority's satisfaction to actualize the open space network illustrated in Map 5: Land Use Concept.

39. The Subdivision Authority may require, as a condition of subdivision approval, the dedication of land as environmental reserve in the form of a titled parcel(s) of land in the ownership of the Municipality.

40. Areas identified in Map 5: Land Use Concept as Potential Naturalized Area may be required to be dedicated as environmental reserve at the subdivision stage.

41. The following areas may be required to be dedicated as environmental reserve at the subdivision stage:

    (a) areas that are unstable based on the findings of site-specific geotechnical investigation; and

    (b) areas that are prone to subsidence or other hazards based on the findings of a mine site geotechnical investigation of the Sunburst Coal Mine.

42. Areas containing slopes exceeding 30 percent that are outside of a road corridor or a residential block in Map 5: Land Use Concept may be required to be dedicated as environmental reserve at the subdivision stage, with the exception of:

    (a) any area identified in Map 5: Land Use Concept as "Future Ski Trails";

    (b) any area on Parcel E; and

    (c) any area on Parcel G.

43. Where land is dedicated as environmental reserve, this dedication may be deemed by the Municipality to constitute an agreement respecting environmental reserve pursuant to section 664.1 of the *Municipal Government Act*.

44. Lands dedicated as environmental reserve shall remain in their natural state, except that they may, subject to approval by the Municipality, accommodate low-impact trails, related passive recreational infrastructure and/or roads.

45. Vegetation management practices undertaken to mitigate the wildfire risk shall be allowed on naturalized areas (including environmental reserves) and the developer of a new subdivision may be required to fuel-modify naturalized areas (including environmental reserves) and municipal reserves through the terms and conditions of a development agreement.

46. Land required to be dedicated as municipal reserve shall not predominantly contain slopes exceeding 15 percent.

47. Land should be designated as municipal reserve at the candidate location indicated in Map 5: Land Use Concept for the purpose of co-locating a public park and stormwater management facility.

48. Land within the Plan Area should be designated as a public utility lot for snow dumping purposes. Where land is designated for snow dumping, its multi-use potential should be explored with respect to accommodating public parking for trail users.

49. Land dedicated as environmental reserve, as municipal reserve or as a public utility lot shall be designated into the Recreation and Open Space (RO-1) land use district or the Public (P-1) land use district, as may be applicable.

50. The Municipality should engage TC Energy for a follow-up discussion regarding the opportunity to utilize the high-pressure gas line right-of-way within the Municipality's broader trail network by formalizing the passive recreational use of this linear infrastructure.

# Density and Layout

The Land Use Concept articulates future residential development for Southmore Phase 2 at the block scale within the net developable area of 13 hectares (32 acres). This conceptual layout envisions a development density equal to 27 dwelling units per net hectare (11 dwelling units per net acre). Despite secondary suites being an allowable use within the pertinent land use districts, development density is calculated having regard only to principal dwellings. The development density statistics are provided in Table 6.

**Table 6: Development Density**

| Parameter | Value |
|---|---|
| Total Units * | 361 |
| Net Developable Area | 13 ha (33 ac) |
| Unit Density | 27 / net ha (11 / net ac) |
| Population Density ** | 69 / net ha (28 / net ac) |
| Total Persons | 903 |

* Based on total lot frontage and 12-metre-wide (39-ft-wide) lots.
** Assumes an average of 2.5 persons per unit.

The layout of proposed subdivisions within Southmore Phase 2 will be determined by the topographical blueprint, where existing grades are indicative of an established equilibrium for post-development conditions to emulate. With this in mind, the flexible development standards prescribed in the Comprehensive Ski Village (CSV) district are best able to accommodate layouts favourable to the steeper terrain south of the high-pressure gas line. This applies both at the subdivision scale as well as for individual site plans. The narrow minimum lot width of 9.1 metres (30 ft) allows for a higher lot yield to offset servicing cost premiums. At the same time, it encourages smaller building footprints to offset landowners' foundation costs. Also benefitting landowners is the zero lot line setback applicable to the front yard, a standard that precludes long driveways requiring massive volumes of cut and fill.

Additionally, with the future expansion area for Pass Powderkeg abutting the southern margin of the Land Use Concept, the potential exists for resort residential type uses as contemplated in the purpose statement underlying the district. The Pass Powderkeg Master Plan Concept observes that direct access to and from the trails—ski-in ski-out—has become a staple amenity of contemporary mountain resort communities.

## Policy Statements

51. The development density for any proposal guided by the Phase 2 ASP shall be calculated by dividing the number of principal dwelling units that will be generated by the proposal by the net developable area of the subject lands.

52. A proposed subdivision shall have a density that generally conforms to the density envisioned for the subject lands in Map 5: Land Use Concept. Low-density proposals that could undermine realizing an overall density for the neighbourhood of 27 dwelling units per net hectare (11 dwelling units per net acre) should be rejected.

53. A proposed subdivision involving a density that is higher than the density envisioned in Map 5: Land Use Concept may be considered on a case-by-case basis. Relevant factors that the Subdivision Authority may consider when deciding whether to approve a higher-density proposal include but are not limited to:

    (a) the physical suitability of the subject lands to accommodate a higher density;

    (b) the servicing capacity of the subject lands;

    (c) the integration of a slope adaptive philosophy; and

    (d) the projected impacts on neighbouring properties.

54. A proposed subdivision involving deviations to Map 5: Land Use Concept shall be considered where such deviations are related to the findings of geotechnical investigation regarding slope stability, impacts of the Sunburst Coal Mine or any other pertinent features.

55. A proposed subdivision involving deviations to Map 5: Land Use Concept shall be considered where such deviations relate specifically to the area in Map 5: Land Use Concept encompassing the southernmost road and its abutting lots—identified in Map 5 as "Adaptable to Future Ski Hill Expansion"—regarding the integration of limited commercial and/or other compatible uses, as well as alternate spatial configurations that typify a resort residential community, with ski-in ski-out access being a key feature.

## Policy Statements (continued)

56. Proposed subdivisions shall adhere to the minimum lot size standards prescribed in the Land Use Bylaw, unless those standards are waived by the Subdivision Authority.

57. The minimum lot width for semi-detached dwellings in the CSV district should be amended from the existing standard of 9.1 metres (30 ft) per unit to 7.6 metres (25 ft) per unit to facilitate a higher development density for semi-detached dwellings than for single-detached dwellings.

58. The CSV district should be amended so that the zero lot line setback applicable to the front yard of a single-detached dwelling likewise applies to the front yard of a semi-detached dwelling.

59. Other amendments to the CSV district may be explored where the amendments would better align the district regulations with the policy statements in the Phase 2 ASP, including but not limited to amendments aimed at better facilitating opportunities for ski-in ski-out varieties of resort residential development as contemplated in the Pass Powderkeg Master Plan Concept.

60. Subdivision layout and design shall consider, and incorporate as may be deemed prudent and appropriate, relevant FireSmart best practices.

61. Subdivision layout and design shall integrate a slope adaptive philosophy that embodies a sensitivity to the hillside context. A slope adaptive philosophy integrates the following elements relating to subdivision layout and design:

    (a) the avoidance of clear-cutting and mass grading;

    (b) the integration of retaining features, legally secured via easements where necessary, in lieu of engineered slopes to avoid disturbing trees, outcrops and other natural features;

    (c) the terracing of retaining features to break up large expanses of mass and provide opportunity for unique landscaping features;

    (d) variations in lot sizes where this would result in less extensive terrain modification, enhanced tree retention and/or a more optimal selection of building sites;

    (e) the control of erosion and sedimentation during construction; and

    (f) revegetation post-construction using native plant species to safeguard against erosion and prevent the spread of noxious weeds.

62. Detailed engineering design for an approved subdivision shall include a subdivision grading plan, along with a grading plan for each lot specifying the design elevations. Development of any lot for which a lot grading plan has been specified shall adhere to the design elevations provided in said lot grading plan as a condition of development permit approval. Any deviation from a specified lot grading plan shall require approval by the Development Authority and must be designed by a professional engineer.

**Figure 20** Building Foundations Stepped into Hillside

# Housing and Built Form

The balanced distribution of housing types in the Land Use Concept reflects an aspiration to create an inclusive residential environment that caters to different household sizes, age groups and income levels. It is a strategic response to an uptick in demand for housing in a mountain community that will bring to market a substantial inventory of new homes. The diverse housing type mix is also an implementation of Municipal Development Plan policy requiring greenfield development to provide no more than 70 percent of proposed dwelling units as single-detached dwellings. However, severe slope constraints in certain portions of the Plan Area make it impractical to deliver this housing type ratio at the block scale as envisioned in the Municipal Development Plan. This reality is echoed in the Site Development Assessment, which finds that steeper slopes with larger grades differentials are better suited to walk outs and larger lots. Accordingly, the natural features of the land warrant application of the threshold for single-detached dwellings at the neighbourhood scale—encompassing the Plan Area as a whole—rather than at the block scale.

A modest 50 percent (179 units) of the proposed distribution are single-detached dwellings, supplemented by a generous 42 percent (152 units) semi-detached. On the 0.30-hectare (0.74-acre) site earmarked for high-density residential development, the remaining 8 percent (30 units) of the total dwelling units are apartments. The housing type distribution achieves dense residential land use, to the extent that this is practical on such challenging terrain.

**Table 7: Housing Type Distribution**

| Housing Type | Lots | Units | Percent of Units |
|---|---|---|---|
| Single-Detached | 179 | 179 | 50% |
| Semi-Detached | 76 | 152 | 42% |
| Apartment | 1 | 30 | 8% |
| Total * | 256 | 361 | 100% |

* The distribution does not include the secondary suites that are anticipated to be developed on some of the single-detached lots.

The higher-density site is strategically located on land with slopes of less than 10 percent. The site offers convenient access to community amenities, including downtown Blairmore and the municipal trail network. Development of the apartment building site may be eligible to receive a five-year reduction in municipal property taxes pursuant to the Municipality's Targeted Multi-Family Incentive Program.

Aesthetically, the new homes will remain true to the nature-based ethos that was foundational to the success of Southmore Phase 1. Forms, materials and palettes that respond to the natural characteristics of the site and its broader Montane context are preferred. With respect to form, a principal aim is to reduce the apparent bulk of structures. While this can be challenging on lots in hillside neighbourhoods where the topography dictates small foundations and multi-storey floor plans, one design method that can be used to overcome the perception of bulk is to step the foundation into the hillside. Roof design is another contributing factor as to whether a building embodies a slope adaptive philosophy. The roof is a more visually prominent architectural feature on a lot with strong slopes than it is on a lot with gentle slopes. Variations in roof height and plane can therefore determine the extent to which a residence is able to blend into its hillside context with minimal visual impact.

The integration of stone, timber and other natural building materials indigenous to the natural subregion will be pivotal to articulating a cohesive design aesthetic that reflects the fusion of urban and mountain architecture underpinning Southmore Phase 2. Where synthetic building materials are used, a preference for earth tones will complement the indigenous materials and further contribute to this sense of cohesion.

## Policy Statements

63. For the purpose of implementing Municipal Development Plan Policy 2.1.2: Housing Ratio in New Residential Neighbourhoods, the 70-percent-maximum percentage of single-detached dwellings shall be delivered at the neighbourhood scale for the Plan Area as a whole rather than at the block scale.

64. A select number of micro-units in the 37–74 $m^2$ (400–800 $ft^2$) range should be provided in any apartment building to provide entry-level housing that is attainable for a broad range of income groups.

## Policy Statements (continued)

65. The development of secondary suites on single-detached lots shall be encouraged as per the provisions of the Land Use Bylaw.

66. Accessory buildings developed on a single-detached lot should be located near the principal dwelling to minimize non-essential terrain modification.

67. The CSV district may be amended to decrease the maximum building height of a principal dwelling where the principal dwelling is located on the downslope side of a double-fronted road.

68. The Development Authority should encourage the design of buildings to adhere to a slope adaptive philosophy that embodies a sensitivity to the hillside context and reduces visual impact. A slope adaptive philosophy integrates the following elements relating to building design:

    (a) the stepping of building foundations into the hillside to avoid excessively massive forms;

    (b) the breaking up of building mass to conform to the slope and avoid large, unbroken expanses of wall, thereby reducing the apparent bulk of the building;

    (c) the design of rooflines to reflect the angles and shapes of the surrounding landscape;

    (d) the use of indigenous materials and compatible colours with a preference for earth tones; and

    (e) the treatment of tall walls with variation in siding materials and accent bands.

69. Apartment building development shall integrate the following site design strategies:

    (a) parking shall be located at the rear or side of the building and shall include the minimum number of parking spaces for use by persons with physical disabilities in accordance with the Land Use Bylaw;

    (b) bicycle racks should be provided in the common area;

    (c) common areas shall meet or exceed universal design principles;

    (d) programmed areas of shared amenity spaces—landscape lighting, seating and other outdoor furniture, barbecue areas, community gardens, etc.—should be illustrated on a site plan submitted in conjunction with a development permit application;

    (e) bioswales, rain gardens and related permeable areas should be integrated into the landscaping design to accommodate stormwater and snowmelt; and

    (f) solar access should be provided for amenity spaces.

70. Developers may implement architectural controls to further secure a high quality of development and/or to mandate the use of fire-resistant building materials. Where a subdivision is governed by architectural controls, the architectural controls may be registered against the title to each lot in the subdivision by way of restrictive covenant.

71. Enforcement of architectural controls shall be the responsibility of the developer or, where a homeowners association or condominium corporation has been established, the homeowners association or condominium corporation. The Municipality shall not be responsible for enforcing architectural controls.

# Landscaping

Southmore Phase 2 is in the wildland–urban interface, where the built environment abuts and intermingles with wildland vegetation. The extensive tree cover throughout the Plan Area will give the neighbourhood its distinctive mountain resort community aesthetic; however, this will come at the expense of an increased fuel load. As a result, responsible landscaping decisions will be necessary to safeguard against the wildfire risk.

Landowners can take precautionary measures by seeking guidance from FireSmart. Most relevant to landscaping are the Home Ignition Zone guidelines, which are designed to limit the presence of combustible vegetation in proximity to structures. FireSmart also administers a Neighbourhood Recognition Program, which encourages landowners to join forces and commit to reducing the ignition risk to their properties.

## Policy Statements

72. Lots shall be well maintained until development commences to manage vegetative fuels and avoid unsightly conditions.
73. Private yards shall be maintained in a natural slope condition. Landscaping involving significant, non-essential volumes of cut and fill shall not be allowed.
74. Xeriscaping should be required in private yards as an alternative to lawns.
75. Landowners should consult the FireSmart Guide to Landscaping to select plant species that are fire-resistant.
76. Where a homeowners association or condominium corporation is formed as part of a subdivision in Southmore Phase 2, the organization is encouraged to participate in the FireSmart Neighbourhood Recognition Program by preparing a FireSmart Neighbourhood Plan.
77. Landowners should have regard to the Wildlife-Wise Gardening practices promoted by the Crowsnest Conservation Society.
78. Landowners should integrate paving areas, screening, signage and related site accent features that integrate natural tones like wood cladding, and soft textures complementary to the overall site design to create visual interest.
79. Outdoor lighting in private yards should be purposeful, targeted, low level and warm coloured to maximize stargazing potential. Downward-directed fixtures that reduce glare and light trespass are preferred.

**Figure 21** Multi-Storey Homes with Compact Footprints

**Figure 22** Highway 3 and Landforms

# Servicing Concept

## Roads

The conceptual roadway network for Southmore Phase 2 is illustrated in Map 6. It envisions a continuous connection between Southmore Drive and 108 Street that, at full build-out, will include a crossing agreement for the roadway to cross the high-pressure gas line. However, the west extension of Southmore Drive into the Plan Area was flagged in the Site Development Assessment as requiring further investigation to determine its engineering feasibility. Significant retaining features may be needed to support this primary road corridor, and/or it may be necessary to encroach up the hillside to develop the road depending on whether the standard 20-metre (66-ft) width is sufficient for the right-of-way. The ultimate roadway alignment will be established at the subdivision stage as part of detailed engineering design.

Access to the portion of the Plan Area located north of the high-pressure gas line will be from 108 Street, 17 Avenue and 18 Avenue. The existing access roads are currently developed to an urban asphalt standard except for 108 Street, which is developed to a rural road cross-section and will require upgrading to an urban minor collector road with a minimum finished surface width of 12.5 metres (41 ft). Southmore Drive and the north–south road linking it to 108 Street will likewise function as urban minor collectors, while the remaining internal roadways will be developed to an urban local road standard with a finished surface width of 10.5 metres (34 ft), also within a 20-metre (66-ft) right-of-way. These minimum design standards derive from "Table 2.2.2 – General Design Guidelines" of the Engineering and Development Standards.

Other design standards impacting the layout of proposed road corridors are the maximum grade of 10 percent for urban local roads, the maximum grade of 10 percent for urban collector roads (at the minimum design speed of 50 km/h), the maximum grade at intersections of 2 percent, and the maximum grade of 12 percent for driveways. Although the maximum grade for urban collector roads decreases as the design speed increases, speed limits above the minimum design speed of 50 km/h are likely not practical in the context of the Phase 2 ASP due to the terrain and the prevalence of residential frontage along these minor collector roads.

The high-level evaluation of the traffic impacts undertaken as part of the Site Development Assessment estimates that the Land Use Concept will generate approximately 3000 vehicles per day, with 270 vehicles in the PM peak hour. The additional traffic is not expected to significantly impact the existing road network; however, this finding will be subject to more detailed analysis at the subdivision stage.

## Policy Statements

80. Except as provided for in Policies 6–8, the layout of roads shall align with Map 6: Transportation Concept, subject to refinements during detailed engineering design.

81. A detailed assessment of projected traffic impacts shall be undertaken by a professional transportation engineer at the subdivision stage. This detailed assessment shall include:

    (a) assessment of the existing traffic control at the intersection of 20 Avenue and 112 Steet;

    (b) assessment of road structure geometrics along 108 Street with respect to accommodating regular two-way traffic flows;

    (c) identification of off-site road infrastructure improvements; and

    (d) projection of cumulative impacts on the road network.

82. The detailed assessment of projected traffic impacts should be submitted to Alberta Transportation and Economic Corridors, who may request a more formal traffic impact assessment.

83. The conceptual design of roads shall be refined into detailed engineering design at the subdivision stage. Detailed design shall include the following:

    (a) a road layout based on the natural contours that avoids excessive grading, without compromising the provision of adequate emergency access;

    (b) additional road cross-sections;

    (c) a possible road realignment depending on the engineering feasibility of constructing the Southmore Drive extension as proposed in Map 6: Transportation Concept;

    (d) provision for stormwater runoff, erosion control, emergency vehicles, household waste removal vehicles and school buses; and

    (e) traffic calming measures to reduce the prevalence of speeding.

84. A developer may be required to contribute toward upgrades, or future upgrades, for off-site roads as identified in a traffic impact assessment and in accordance with an off-site levy bylaw (if applicable). The Municipality shall not be required to bear any portion of these costs or any other costs required to service the subdivision.

85. The layout of sidewalks may integrate additional curvature beyond that of the roadway where necessary to accommodate the physical limitations of pedestrians by reducing the sidewalk slope. Such curvy sidewalk layouts may result in physical separation from the road right-of-way over short distances.

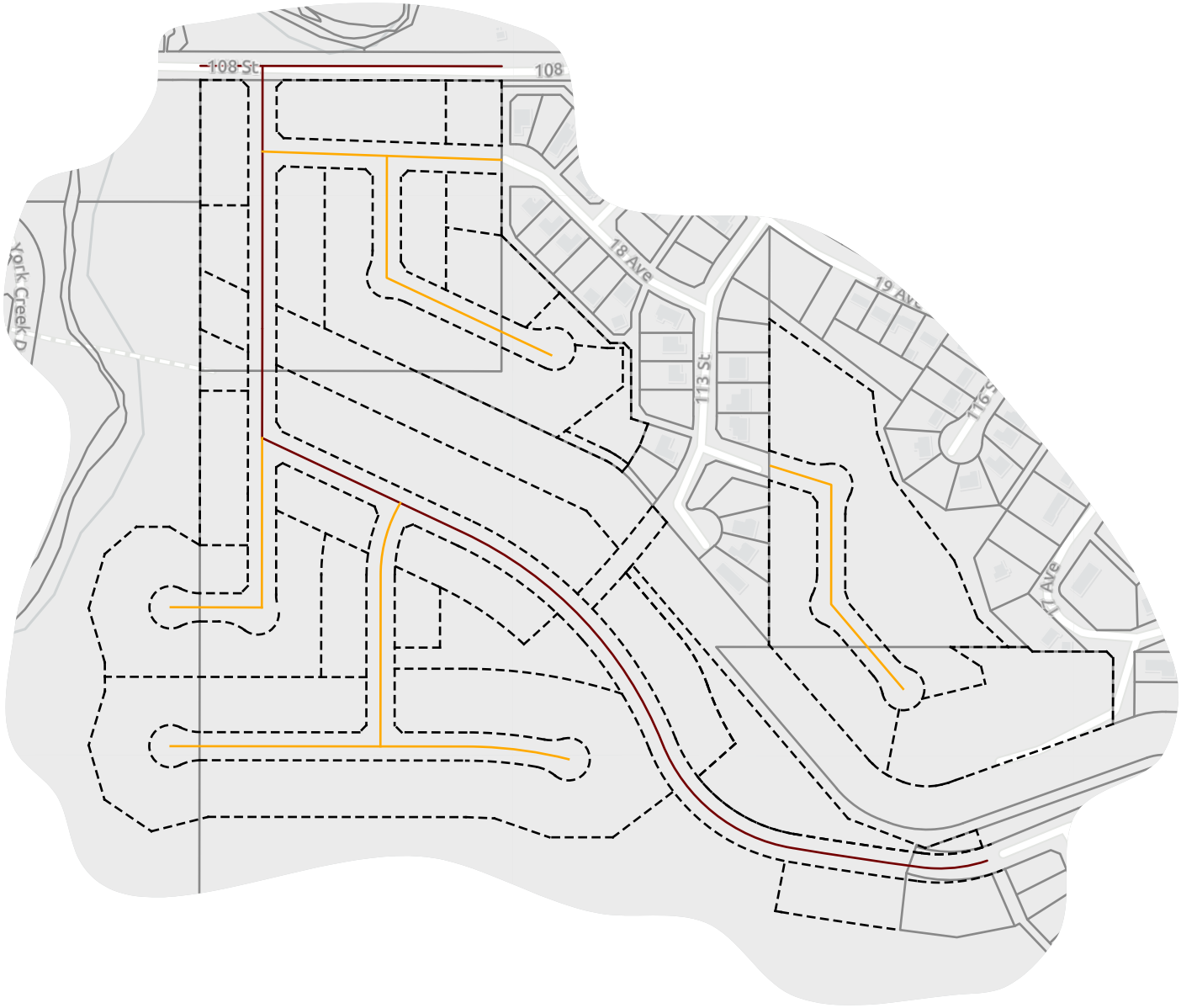
86. The minimum road design standards specified in the Municipality's Engineering and Development Standards do not apply to a private road in a condominium development.

87. On a case-by-case basis and subject to approval by Council and verification from the Municipality's Protective Services department that the provision of emergency access will not be compromised, the minimum road width specified in "Table 2.2.2 – General Design Guidelines" of the Engineering and Development Standards may be varied in respect of a one-way road creating a looped road network that provides a secondary access.

88. On a case-by-case basis and subject to approval by Council, the maximum road grade specified in "Table 2.2.2 – General Design Guidelines" of the Engineering and Development Standards may be varied to allow a road grade of up to 12 percent over short, straight distances.

89. Except for the potential relaxations to requirements of "Table 2.2.2 – General Design Guidelines" provided for in the preceding policy statements, the design of roads shall conform to or exceed the minimum design standards specified in the Municipality's Engineering and Development Standards, subject to any provisions of a signed development agreement between the developer and the Municipality.

# **Map 6** Transportation Concept




Urban Minor Collector Road
Urban Local Road
Proposed Block Linework

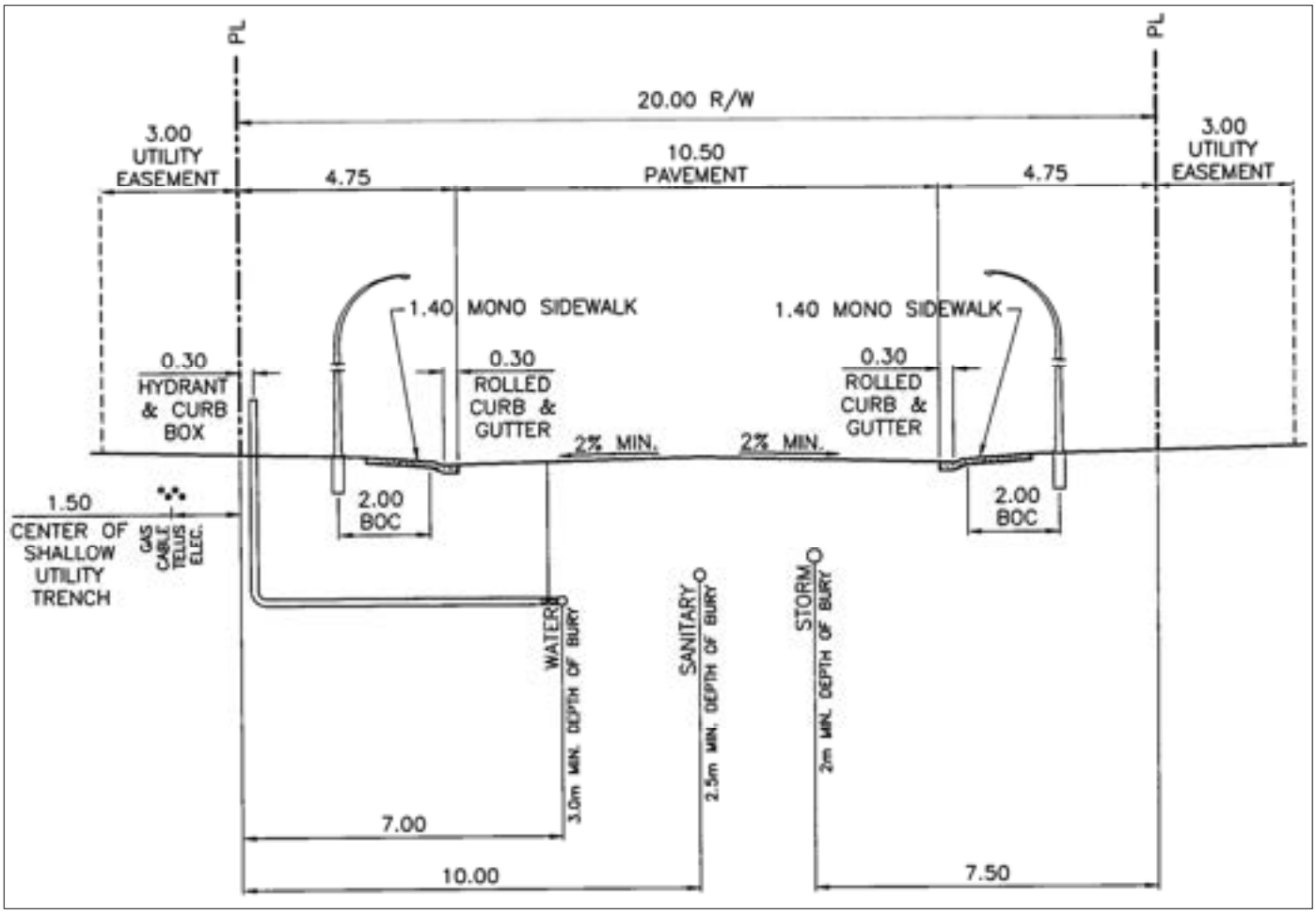



**Figure 23** 20m R/W Urban Local Street Cross Section
(Drawing No. ST–1 from the Engineering and Development Standards)

**Table 8: Urban Local Road Design Standards ***

| Parameter | Value |
|---|---|
| Minimum Right-of-Way Width | 20 m |
| Minimum Surface Width | 10.5 m |
| Maximum Allowable Gradient | — |
| At Minimum Design Speed | 10% |
| At Maximum Design Speed | 10% |
| Design Speeds | — |
| Minimum Design Speed | 30 km / h |
| Maximum Design Speed | 50 km / h |

* Additional design standards for this roadway classification are specified in "Table 2.2.2 – General Design Guidelines" of the Engineering and Development Standards.

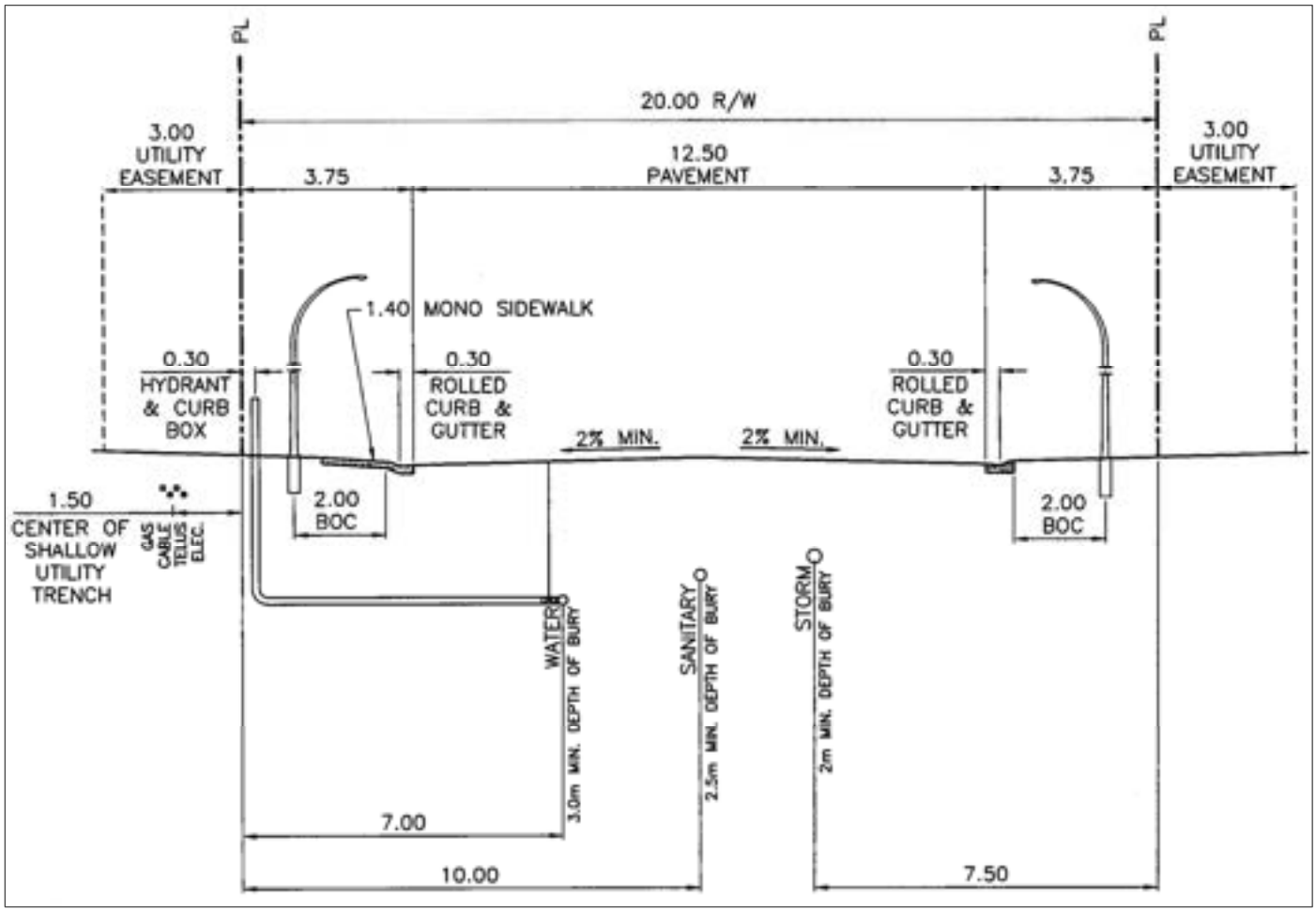



**Figure 24** 20m R/W Urban Collector Street Cross Section
(Drawing No. ST–2 from the Engineering and Development Standards)

**Table 9: Urban Collector Road Design Standards ***

| Parameter | Value |
|---|---|
| Minimum Right-of-Way Width | 20 m |
| Minimum Surface Width | 12.5 m |
| Maximum Allowable Gradient | — |
| At Minimum Design Speed | 10% |
| At Maximum Design Speed | 6% |
| Design Speeds | — |
| Minimum Design Speed | 50 km / h |
| Maximum Design Speed | 70 km / h |

* Additional design standards for this roadway classification are specified in "Table 2.2.2 – General Design Guidelines" of the Engineering and Development Standards .

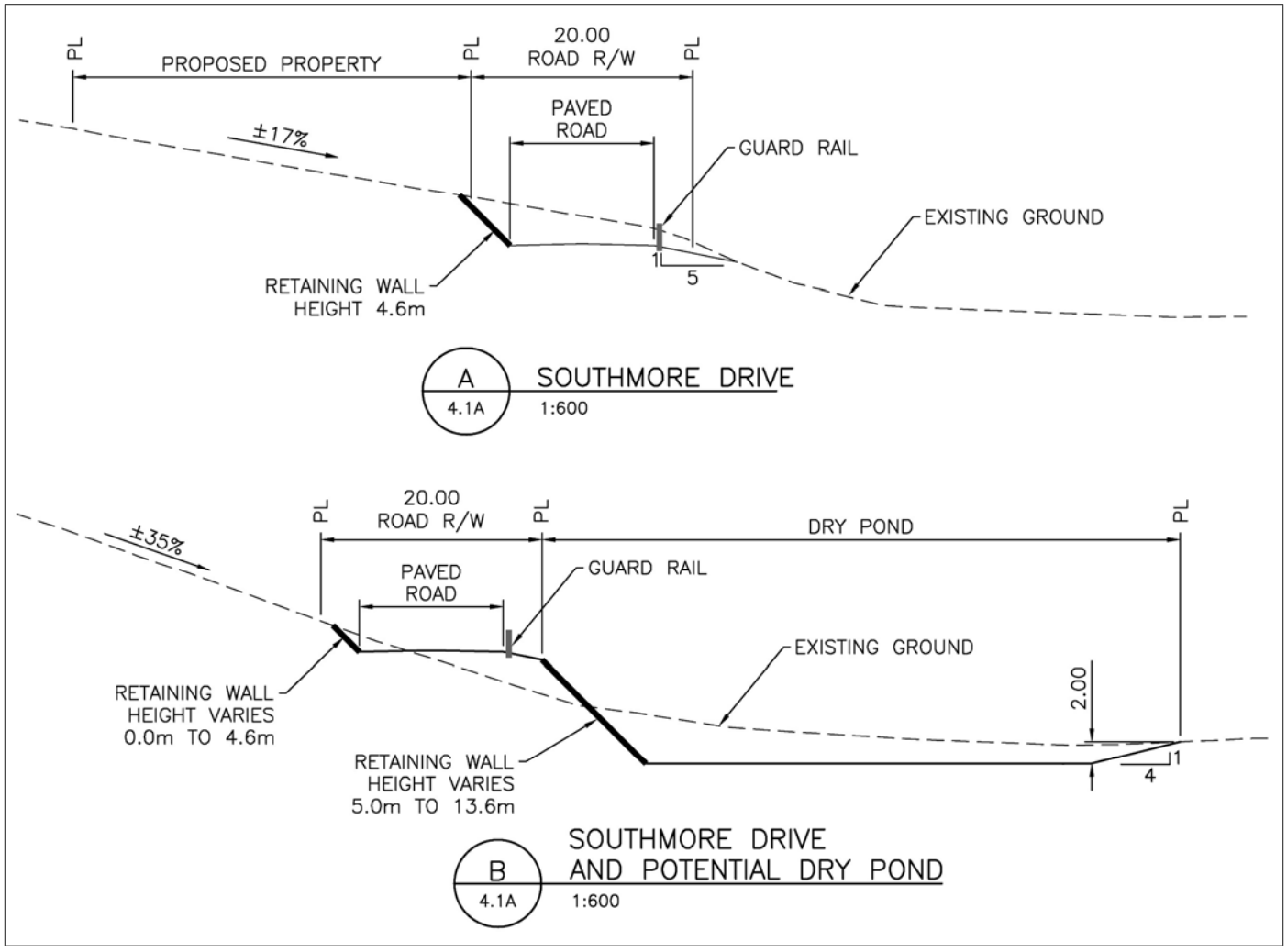



**Figure 25** Conceptual Cross-Section: Southmore Drive
(Figure 4.3 from Site Development Assessment)

# Stormwater

Effectively managing stormwater in Southmore Phase 2 will require the construction of stormwater management facilities on dedicated public utility lots. These facilities will be designed to detain runoff and prevent off-site drainage impacts.

The Site Development Assessment identified three stormwater management facilities; however, Parcel E is likely no longer a viable option for the westerly facility in view of the recent approval of grouped country residential lots at that location. Instead, an alternate location on Parcel F is proposed. Through a utility right-of-way across Parcel E, runoff from the westerly detention pond could be discharged into York Creek as per the original servicing concept. Should the logistics associated with this strategy prove to be too cumbersome, another option would be to obtain written consent from TC Energy for a piped connection across the high-pressure gas line and through Parcel A to an existing outfall structure north of the Plan Area.

The northerly stormwater management facility will abut 108 Street, across the road from the apartment building(s) site. The third proposed facility is at the southeast periphery of the Plan Area. This location is supported by storm sewer inverts along Southmore Drive that indicate the possibility for a gravity connection. Subject to a review of residual system capacities, the outlets for these latter two facilities can be connected to existing downstream infrastructure. The three stormwater management facilities are depicted in Map 7.

Subdivision layouts that are rooted in a slope adaptive philosophy achieve drainage patterns that align more closely with pre-development conditions compared to layouts that have little regard for a site's topography.

Still, even minor terrain modifications can significantly impact surface water flows. The challenging terrain thus calls for the integration of low impact development practices to attenuate peak flows and reduce the required size of dedicated stormwater management facilities to help offset the land consumptive nature of the conventional storm sewer infrastructure. Low impact development practices also improve water quality, thereby enhancing the site's natural features.

One low impact development practice well suited to supplement conventional storm sewer infrastructure in a hillside context is the use of bioswales. These gently sloped vegetated channels capture runoff from impervious surfaces and convey it at a reduced velocity to downstream watercourses or storm sewer inlets. Bioswales are usually positioned alongside roads and other linear hardscapes, either running parallel or meandering in accordance with the terrain. During conveyance, vegetation and soil within the bioswale filter out silt and pollutants, improving surface water quality compared to standard curb and gutter systems. Some of the runoff infiltrates into the ground, which helps alleviate the burden on other storm sewer infrastructure during peak flow events. The subsurface infiltration rate is therefore a key aspect of bioswale design, along with the density, topography, layout and the ratio of gross area to impervious area. Even with the integration of bioswales, responsible erosion and sediment control practices are needed to mitigate sediment deposition and safeguard water quality in York Creek and other downstream water bodies.

## Policy Statements

90. Except as provided for in Policies 6–8, the location of stormwater management facilities shall align with Map 7: Wet Utilities Servicing Concept, subject to refinements during detailed engineering design.

91. Drainage of the westerly stormwater management outlet shall be through Parcel E to York Creek courtesy of the registered 5-metre (16-ft) utility right-of-way or, with written consent from TC Energy, via a piped connection across the high-pressure gas line and through Parcel A to the existing outfall north of 108 Street.

92. Drainage of the northerly and easterly stormwater management outlets shall be to existing downstream infrastructure, subject to a review of residual system capacities.

93. The conceptual design of stormwater management facilities shall be refined into detailed engineering design at the subdivision stage. Detailed design shall include the following:

    (a) sizing of stormwater management facilities based on footprints/volumes provided in "Table 5.9" of the Infrastructure Master Plan for a range of runoff coefficients;

    (b) a review of residual system capacities for existing downstream infrastructure;

    (c) the feasibility of a future regional storm outfall line discharging into Lyons Creek in the vicinity of 132 Street, as identified in the Infrastructure Master Plan;

    (d) consideration of low impact development practices that provide infiltration and reduce runoff volumes and velocities; and

    (e) submission of a stormwater management plan indicating the final location and sizing of stormwater management facilities to the satisfaction of Alberta Environment and Protected Areas.

94. Bioswales should be integrated into subdivision layouts to align overland drainage with natural contours as part of the broader stormwater management strategy. Bioswales shall:

    (a) be designed by a professional engineer;

    (b) have depth and flow meeting the criteria of Alberta Environment and Protected Areas (if applicable); and

    (c) respect any minimum distances to property boundaries and building foundations specified by the engineer responsible for the design.

95. The allocation of additional land for stormwater management purposes beyond that which is specified in Map 7: Wet Utilities Servicing Concept shall be required where the findings of detailed design reveal the need for this additional land.

96. The utility rights-of-way, utility easements, public utility lots and restrictive covenants necessary to service an approved subdivision shall be secured prior to subdivision endorsement.

97. Where a stormwater management plan involves a bioswale that will cross a stormwater utility trench, impervious material shall be installed in the stormwater utility trench to prevent the infiltration of stormwater into the trench.

98. The design of storm sewer infrastructure shall conform to or exceed the minimum design standards specified in the Municipality's Engineering and Development Standards, subject to any provisions of a signed development agreement between the developer and the Municipality.

# Water

The Infrastructure Master Plan indicates ample water licensing and storage capacity in the Blairmore reservoir to service Southmore Phase 2, including for fire flows. In the event of an emergency, additional fire flows are contributed by a separate distribution main from Coleman, which remains shut under normal conditions.

Comprehensive planning of the water distribution system involves sizing the municipal service according to the projected development density. The objective is to ensure cost-effective service delivery by avoiding arbitrary expansions to the infrastructure due to insufficient system capacity. Projected water consumption statistics are provided in Table 10. Average Day Demand is based on a per capita consumption rate of 400 litres per day as specified in the Infrastructure Master Plan with respect to future residential development.

**Table 10: Projected Water Consumption**

| Parameter | Value |
|---|---|
| Average Day Demand | 361 $m^3$ / day |
| Maximum Day Demand * | 722 $m^3$ / day |
| Peak Hour Demand ** | 17 L / s |
| Fire Flow *** | 76 L / s |
| Maximum Day Demand + Fire Flow | 84 L / s |

* Peaking factor of 2 specified in the Infrastructure Master Plan.
** Peaking factor of 4 specified in the Infrastructure Master Plan.
*** Fire Flow specified in the Infrastructure Master Plan.

The water pressure challenges associated with providing municipal water service to a hillside neighbourhood will be alleviated—at least in part—by the existing Southmore Booster Station located near the Plan Area at the eastern margin of Phase 1. Much of Phase 2 can likely be serviced by this existing booster station; however, the pumping capacity of its high-pressure line was not verified as part of the Infrastructure Master Plan. As such, water distribution system modelling will be necessary to establish whether the pumping capacity is sufficient to service the higher-elevation residential areas within the Land Use Concept.

Water distribution system modelling will also need to evaluate the potential for looping of the water network, with the ultimate intent of connecting the water main originating at Southmore Drive to the main located at the southern terminus of 113 Street. This will require a utility crossing across the high-pressure gas line.

## Policy Statements

99. Except as provided for in Policies 6–8, the location of water servicing infrastructure shall be in accordance with Map 7: Wet Utilities Servicing Concept.

100. Where possible, water distribution infrastructure shall be aligned and looped to avoid dead-end mains.

101. Water distribution system modelling shall be undertaken at the subdivision stage during detailed engineering design. The system modelling should include the following:

    (a) integration of a required fire flow equal to 76 L/s for non-sprinklered residential development;

    (b) assessment of the pumping capacity of the high-pressure line in the existing Southmore Booster Station regarding its sufficiency to service Southmore Phase 2; and

    (c) evaluation of the potential for water looping to interconnect the mains at Southmore Drive and 113 Street.

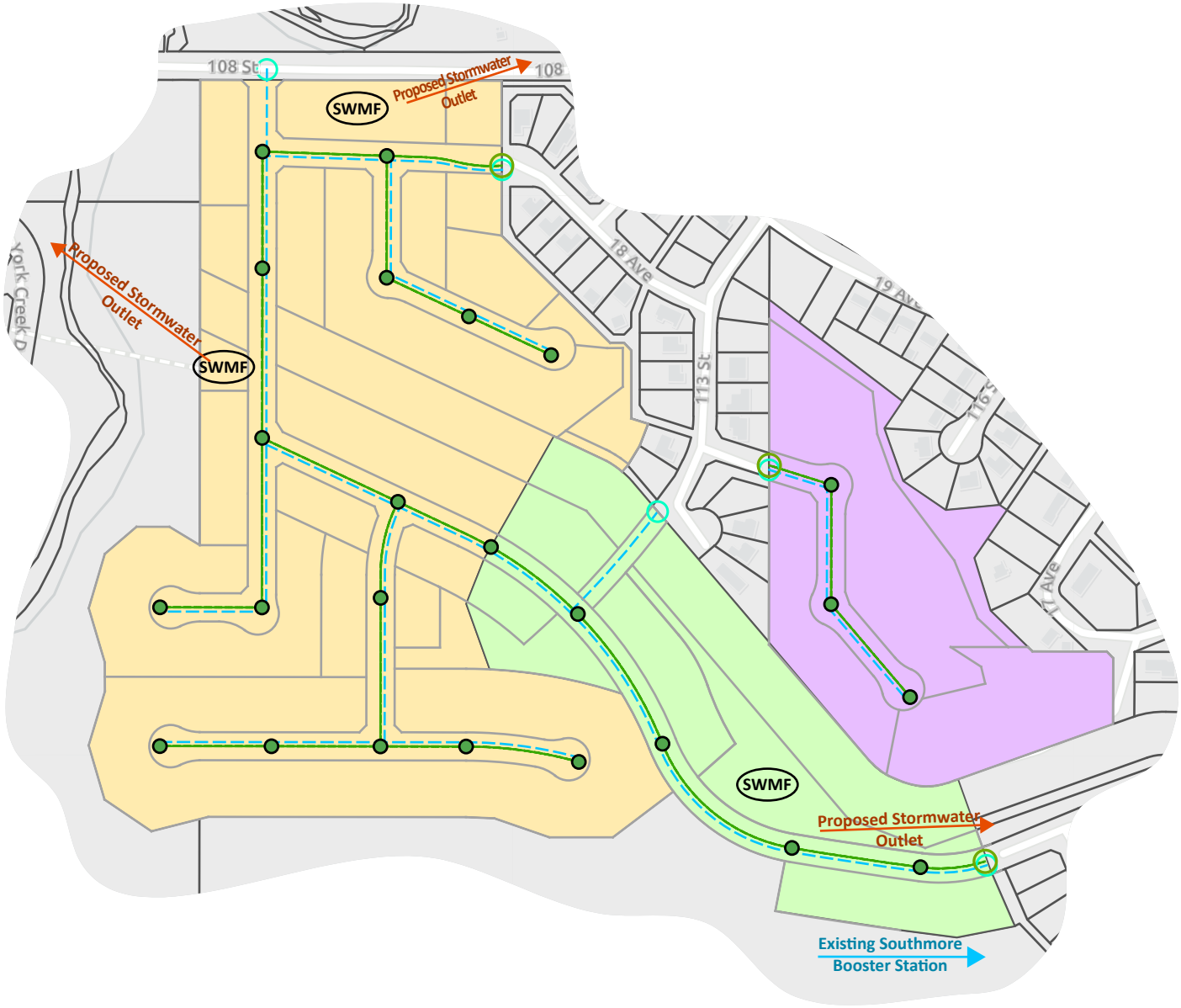
102. All development in the Plan Area shall connect to the installed municipal water service.

103. The utility rights-of-way, utility easements and public utility lots necessary to service an approved subdivision shall be secured prior to subdivision endorsement.

104. Where a stormwater management plan involves a bioswale that will cross a water utility trench, impervious material shall be installed in the water utility trench to prevent the infiltration of stormwater into the trench.

105. The design of water distribution infrastructure shall conform to or exceed the minimum design standards specified in the Municipality's Engineering and Development Standards, subject to any provisions of a signed development agreement between the developer and the Municipality.

# Map 7 Wet Utilities Servicing Concept



# Wastewater

The build-out of Southmore Phase 2 will be accommodated by extending the Municipality's existing wastewater collection system into the Plan Area. Sanitary flows will be conveyed to the Frank Wastewater Treatment Plant.

The proposed wastewater collection system has been segmented into sewer sheds based on the topography, with the understanding that future roadways will be designed to align with existing grades wherever possible. The Site Development Assessment proposes three sanitary sewer connections: Southmore Drive (at the terminus of the existing roadway adjacent to Parcel G), 17 Avenue (at the boundary of Parcel C), and 18 Avenue (at the boundary of Parcel A). Operational depths of the existing sanitary mains at these locations are sufficient for gravity wastewater servicing, and the peak wet weather flows associated with the proposed connections are within the residual conveyance system capacities identified in the Infrastructure Master Plan. However, the capacity of the downstream sanitary sewers will require a more thorough evaluation at the subdivision stage during detailed engineering design.

## Policy Statements

106. Except as provided for in Policies 6–8, the location of wastewater servicing infrastructure shall be in accordance with Map 7: Wet Utilities Servicing Concept.

107. Wastewater collection system modelling shall be undertaken at the subdivision stage during detailed engineering design.

108. All development in the Plan Area shall connect to the installed municipal wastewater service.

109. The utility rights-of-way, utility easements and public utility lots necessary to service an approved subdivision shall be secured prior to subdivision endorsement.

110. Where a stormwater management plan involves a bioswale that will cross a wastewater utility trench, impervious material shall be installed in the wastewater utility trench to prevent the infiltration of stormwater into the trench.

111. The design of wastewater collection infrastructure shall conform to or exceed the minimum design standards specified in the Municipality's Engineering and Development Standards, subject to any provisions of a signed development agreement between the developer and the Municipality.

# Shallow Utilities

The following policy statements pertaining to shallow utility infrastructure are subject to confirmation by the utility service provider at the subdivision stage.

## Policy Statements

112. The developer shall be responsible for coordinating the design and installation of shallow utility services at the subdivision stage.

113. The utility rights-of-way and utility easements necessary to service an approved subdivision shall be secured prior to subdivision endorsement.

114. Shallow utility services shall be designed and installed in accordance with the service provider's standards.

115. Shallow utility services shall be installed underground to reduce the wildfire risk and enhance the aesthetic appeal of the neighbourhood.

116. The existing overhead powerline along 108 Street shall be relocated underground at the time that 108 Street is upgraded to an urban standard.

117. Where a stormwater management plan involves a bioswale that will cross a shallow utility trench, impervious material shall be installed in the shallow utility trench to prevent the infiltration of stormwater into the trench.

# Plan Implementation

## Plan Adoption and Amendment

### Policy Statements

118. The process for adopting the Phase 2 ASP shall proceed in accordance with the *Municipal Government Act*, with Council being the decision-making body.

119. Adoption of the Phase 2 ASP shall be preceded by a public engagement process.

120. A proposed redesignation that does not align with the Phase 2 ASP shall require an amendment to the Phase 2 ASP prior to being considered unless the deviation is provided for in consideration of the relevant policies set forth in Part 2.

121. A proposed amendment to the Phase 2 ASP shall proceed in accordance with the *Municipal Government Act*, with Council being the decision-making body.

122. A proposed amendment to the Phase 2 ASP shall be accompanied by any supporting information requested by Council, the Subdivision Authority or the Development Authority.

123. An amendment to the Phase 2 ASP shall be preceded by a public engagement process.

124. The Phase 2 ASP should be reviewed at a minimum of once every ten years or until full build-out to ensure its policy statements continue to represent the Municipality's vision for the Plan Area.

## Districting of Land within the Plan Area

### Policy Statements

125. Notwithstanding that an area of land is identified in Map 5: Land Use Concept as an area for future residential development, this does not negate the requirement to redesignate the land prior to undertaking subdivision or development. Where a proposed subdivision aligns with the Phase 2 ASP but the subject lands have not been redesignated to the required land use district, the subdivision application shall be preceded by an application to redesignate the subject lands.

126. The following areas, depicted in Map 5: Land Use Concept, shall be redesignated as follows prior to being considered for subdivision and/or development:

(a) The 0.30-hectare (0.74-acre) portion of Parcel A identified as an apartment building(s) site shall be redesignated to High Density Residential (R-3).

(b) All other lands to the north of the high-pressure gas line that are identified as future residential areas shall be redesignated to the appropriate residential district.

(c) Lands to the south of the high-pressure gas line that are identified as future residential areas shall be redesignated to Comprehensive Ski Village (CSV).

(d) Lands shown as a park or green space shall be redesignated to Recreation and Open Space (RO-1).

# Conceptual Schemes

### Policy Statement

127. An application to subdivide land within the Plan Area may be required, at the request of the Municipality, to be accompanied by the submission of a conceptual scheme, prepared by the applicant or on behalf of the applicant at the applicant's expense.

# Comprehensive Site Development Plans

### Policy Statement

128. Where a redesignation application articulates a concept for residential development that aligns with the Phase 2 ASP and the proposal does not contemplate any subdivision of the subject lands, the application may be required, at the request of the Municipality, to be accompanied by the submission of a Comprehensive Site Development Plan, prepared by the applicant or on behalf of the applicant at the applicant's expense.

# Development Sequencing

### Policy Statements

129. The sequence of development for Southmore Phase 2 should generally occur such that the existing road and utility infrastructure are logically extended to avoid leapfrog development.

130. The build-out of Southmore Phase 2 may occur in any number of subphases, according to landowner preferences and market conditions.

# Development Agreements

### Policy Statements

131. A development agreement shall be established at the subdivision stage outlining the responsibilities of the developer regarding the construction, maintenance and turnover to the Municipality of public infrastructure to service the subject lands.

132. Where, pursuant to a development agreement, a developer is required to provide public infrastructure that will benefit subsequent development within the Plan Area, the development agreement may include Endeavour to Assist provisions.

# Glossary

**Area of potential environmental concern** means any area on, in or under land where one or more contaminants of potential concern may be present, as identified through a Phase 1 Environmental Site Assessment or other assessment, and that has not been ruled out through a subsequent Phase 2 Environmental Site Assessment.

**Area structure plan** means a statutory plan in accordance with the *Municipal Government Act* and the Municipal Development Plan for the purpose of providing a framework for subsequent subdivision and development of an area of land in the Municipality, that will include the construction of Municipal Improvements (i.e. public infrastructure constructed by a developer and owned and operated by the Municipality) and/or the dedication of municipal reserves or environmental reserves (or other forms of public open space). An area structure plan may contain any matters Council considers necessary; however, it must describe:

(a) the sequence of development proposed for the area;

(b) the land uses proposed for the area, either generally or with respect to specific parts of the area;

(c) the density of population proposed for the area either generally or with respect to specific parts of the area; and

(d) the general location of major transportation routes and public utilities.

**Bioswale** means a low impact development practice consisting of shallow, gently sloped vegetated channels designed to collect, store, filter and convey runoff.

**Borehole** means a hole advanced into the ground for the purpose of determining engineering or geological classification and properties for instrumentation purposes.

**Castle Parks** means the collective area encompassed by Castle Provincial Park and Castle Wildland Provincial Park.

**Comprehensive Site Development Plan** means a plan, in a format to be determined for each case based on the requirements established in Schedule 4 of the Land Use Bylaw, that provides for the coordinated, comprehensive planning of multi-faceted or otherwise complex development, redevelopment, infill development or bare land condominium subdivision, which is of such a scale or complexity or is located in an area that, in the opinion of the Development Authority or the Subdivision Authority, the proposal requires a coordinated and comprehensive approach to the provision of infrastructure, the design and layout of land uses or buildings, the interrelation of the proposal with adjacent or neighbouring lands, and/or the impact of the proposal on adjacent or neighbouring property owners.

**Concept map** means one of the following maps, which are to be interpreted as policy statements with the caveat that they are conceptual in nature and that their boundaries are approximate and subject to refinement at the subdivision stage as a consequence of detailed engineering design:

(a) Map 5: Land Use Concept;

(b) Map 6: Transportation Concept; or

(c) Map 7: Wet Utilities Servicing Concept.

**Conceptual scheme** means a detailed plan that illustrates:

(a) the layout of a proposed subdivision, with parcel or block boundaries and dimensions;

(b) municipal reserve, environmental reserve, and conservation reserve;

(c) land uses and density of population;

(d) public roadways;

(e) the location and capacity and upsizing requirements of existing or required on-site and off-site municipal water, wastewater, and stormwater infrastructure, based on the design volumes required and produced by the proposed subdivision;

(f) the relation of the proposed subdivision to future subdivision and development of adjacent areas;

(g) the sequence of the proposed subdivision; and

(h) the additional information provided for in the *Matters Related to Subdivision and Development Regulation*, that the Development Officer may deem relevant to making an informed decision on the subdivision application.

**Density** means the development density, expressed by the number of principal dwelling units within the net developable area.

**Detention** means a strategy used in stormwater management in which runoff is detained and later released at a prescribed rate.

**Engineering and Development Standards** means the Engineering and Development Standards for the Municipality of Crowsnest Pass.

**Existing ASP** means the Southmore Area Structure Plan adopted by the Municipality in 2005.

**FireSmart** means a nationwide program originally developed in Alberta to educate landowners who inhabit the wildland–urban interface on best practices that can be implemented to safeguard against the wildfire risk.

**High-pressure gas line** means the Nova Gas Transmission Line operated by TC Energy that runs east-west through the Plan Area.

**Impervious cover** means any hard surface material, such as asphalt or concrete, that limits stormwater infiltration and induces high runoff rates.

**Infrastructure Master Plan** means the Crowsnest Pass Infrastructure Master Plan encompassing water, wastewater and stormwater infrastructure.

**Land Use Bylaw** means the Municipality of Crowsnest Pass Land Use Bylaw.

**Land Use Concept** means the conceptual layout for residential development depicted in Map 5: Land Use Concept illustrating the distribution of open spaces, the primary road and utility corridors and the block configurations for Southmore Phase 2.

**Low impact development** means a comprehensive land development and engineering approach to managing the runoff from precipitation events that emphasizes conservation and the use of onsite natural features to protect water quality. Low impact development focuses on reducing the need for conventional stormwater conveyance and collection systems through the use of decentralized small-scale hydrologic controls to replicate pre-development runoff flows by collecting, storing, filtering, infiltrating and/or conveying runoff close to its surface. Low impact development includes tools, techniques and mechanisms including permeable pavements, vegetative roofs, rain gardens, bioswales and constructed wetlands.

**Mitigation** means any action, strategy or intervention intended to reduce or alleviate the adverse effects and potential risks that occur or may be associated with a specific purpose, activity, project or development.

**Municipal Development Plan** means the Municipality of Crowsnest Pass Municipal Development Plan.

**Municipality** means the Municipality of Crowsnest Pass.

**Natural drainage pattern** means the surface flow regime associated with the pre-disturbance hydrology.

**Naturalized area** means an area that is primarily preserved in its natural state but that may accommodate the development of trails, interpretive signage and other elements of passive recreation. A naturalized area may be dedicated as environmental reserve; however, the term also includes lands that do not carry the environmental reserve designation.

**Net developable area** means the area identified for future residential development in Map 5: Land Use Concept. The net developable area represents the portion of the Plan Area that remains upon subtracting the following areas:

(a) the environmental reserve bordering York Creek;

(b) the potential naturalized areas corresponding to areas with slopes exceeding 30 percent or that are otherwise unstable;

(c) the area on Parcel F reserved for the development of future ski trails;

(d) the area on Parcel D reserved for Existing NUA-1;

(e) the area on Parcel E reserved for Existing GCR-1;

(f) the area occupied by the high-pressure gas line right-of-way; and

(g) the land dedications for municipal reserves, roads and public utilities required to service Southmore Phase 2.

**Part 1** means the part of the Phase 2 ASP that does not provide any policy statements for the Plan Area.

**Part 2** means the part of the Phase 2 ASP that provides the policy statements and glossary for the Plan Area.

**Pass Powderkeg** means a community-focused ski area with great snow and exciting terrain that provides access to a diverse alpine environment. The existing ski area for Pass Powderkeg is located east of the Plan Area while the future expansion area encompasses the southern portion of Parcel F.

**Phase 2 ASP** means the Southmore Phase 2 Area Structure Plan.

**Plan Area** means the total area encompassed by the Phase 2 ASP.

**Prescribed area** means, in the context of the high-pressure gas line operated by TC Energy, the area extending 30 metres (98 ft) in either direction from the centreline of the pipeline.

**Public Land Use Zone** means an area of land designated under the *Public Lands Administration Regulation* designed to accommodate a wide range of recreational uses that are compatible with mining, forestry, surface materials extraction and livestock grazing activities, while also affording protection to sensitive areas and maintaining key wildlife habitat. The Livingstone Public Land Use Zone abuts the Southmore Phase 2 Plan Area to the south.

**Shallow utility** means underground electricity, natural gas or telecommunications infrastructure.

**Site Development Assessment** means the preliminary evaluation of the physical constraints and engineering feasibility for residential development undertaken in respect of the Southmore Phase 2 Plan Area.

**Ski-in ski-out** means a term commonly used in the tourism industry to describe resort residential development located at the base of a mountain or along a mid-mountain slope that allows residents to ski or snowboard directly to and from the trails without the need for additional transportation.

**Southmore Phase 2 Area Structure Plan** means an area structure plan adopted by the Municipality of Crowsnest Pass dealing with future residential development adjacent to an existing neighbourhood in south Blairmore.

**Sunburst Coal Mine** means an abandoned underground coal mine in the Plan Area that operated between approximately 1919 and 1930.

**Urban local road** means an internal road proposed for Southmore Phase 2 that is not an urban minor collector road.

**Urban minor collector road** means Southmore Drive, 108 Street, or the proposed north–south road beginning at 108 Street that intersects the west terminus of Southmore Drive.

**UROC** means United Riders of Crowsnest Club, a non-profit organization that develops and maintains trails, promotes Crowsnest Pass as a mountain biking destination and encourages responsible mountain biking practices.

**Wildlife linkage zone** means an area of seasonal habitat where animals can find food, shelter, and security. Wildlife linkage zones maintain ecological connectivity adjacent to urban environments.

# Appendix A

Summary of Public Consultation

# Southmore Phase 2 Area Structure Plan

*Public Consultation Phase 1 - Summary*

## What We Heard & How We Responded

- Housing
  - Concern that housing products in the future neighbourhood will not be financially accessible to all socioeconomic groups

*RESPONSE*

- *A range of housing types will be required as per Municipal Development Plan policy, which limits the number of single-detached dwellings to not more than 70% and requires a minimum density of 12 units per net acre*

- Nuisance
  - Concerns about Increased traffic resulting from a new neighbourhood
  - Concerns for dust and noise arising from construction

*RESPONSE*

- *Traffic generation resulting from a new neighbourhood will be managed through properly designed roadways, and multiple egress points to mitigate potential congestion*
- *The mitigation of construction related nuisance will be provided for through policy and operational decisions to the extent possible*

- Wildlife & Environment
  - Concern respecting habitat loss and negative impacts to wildlife
  - Concern for loss of forested area and associated recreational opportunities

RESPONSE

- *The importance of natural areas and wildlife corridors, generally, are recognized in the Municipal Development Plan, and will be reflected in the relevant policies of the ASP. Limited opportunities for urban growth exist adjacent to urban centres, with this area being the only identified urban growth node adjacent to Blairmore.*
- *Bioswales and other design and policy measures supporting environmental outcomes will be considered*

- Trails & Open Space
  - Concern for loss of popular mountain bike and walking trails

*RESPONSE*

- *The municipality recognizes the importance of existing trails to the neighbourhood and the broader community, and endeavours to provide for the development of new trails in the plan area through design and policy measures*

## *Next Steps*

A draft area structure plan (ASP) will be prepared, after which a second phase of consultation will be facilitated, providing for review and response to the draft ASP.

*Questions & Comments*

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# Southmore Phase 2 Area Structure Plan

*Public Consultation – Open House Summary*
*(Live event held on 04.24.2025)*

## What We Heard & How We Responded

### TRAILS & OPEN SPACE

- Concern for loss of popular mountain biking and hiking trails, as well as a lack of spaces identified for pedestrians in the Land Use Concept
- **Response:**
  - ⇒ *Policy language was strengthened to ensure that public access to the remainder of the Buck 50 outside the Plan Area is preserved by replacing "should be preserved" with "shall be preserved." (Policies 30 and 37, May 2025 Draft)*
  - ⇒ *A draft policy was added to encourage the Municipality to engage TC Energy for a follow-up discussion regarding the opportunity to utilize the high-pressure gas line right-of-way within the Municipality's broader trail network by formalizing the passive recreational use of this linear infrastructure. (Policy 50, May 2025 Draft)*

### WILDLIFE & ENVIRONMENT

- Concern for loss of tree cover, loss of wildlife habitat and impacts on biodiversity
- **Response:**
  - ⇒ *Due to the limited opportunities for urban growth adjacent to urban centres—especially near Blairmore, where the Southmore Phase 2 Plan Area is the only identified growth node—the loss of tree cover will be a necessary tradeoff to ensure that future development achieves an efficient use of land across the Municipality as a whole.*
  - ⇒ *To mitigate the extent of environmental change, the draft Phase 2 ASP includes policy requiring the integration of a slope adaptive philosophy at the subdivision stage. Policy 61 in the May 2025 Draft provides for enhanced tree retention, the avoidance of clear-cutting and mass grading and various other elements relating to the layout and design of subdivisions that likewise embody a sensitivity to the hillside context.*

### LAND USE TYPES THE PLAN AREA

- Dissatisfaction with the homogeneity of uses (i.e. all residential and no commercial)
- **Response:**
  - ⇒ *Draft policy was amended to indicate the possibility for limited commercial uses at the southern edge of the Land Use Concept. As this area is adjacent to the area designated for the future expansion of Pass Powderkeg, it is well suited for resort residential development—which could include some commercial uses—as originally envisioned in the Comprehensive Ski Village District of the Land use Bylaw. (Policies 7 and 55, May 2025 Draft)*

### AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

- Learned that a sawmill and planer operated on Parcel A between 1946 and 1964—originally as Bodio and Sartoris Lumber Company and subsequently as Bodio Lumber Company
- **Response:**
  - ⇒ *A draft policy was added recommending further environmental assessment on Parcel A to determine the property's environmental condition, including the presence, nature and extent of any contaminants.*

### PROPOSED ROAD LAYOUTS

- Objections concerning the proposed extension of 18$^{th}$ Ave into Parcel A
- **Response:**
  - ⇒ *The existing west terminus of 18$^{th}$ Ave does not exhibit a conventional (i.e. rounded) cul-de-sac design and was likely always intended to one day become a through road connecting to an adjacent residential area.*
  - ⇒ *Because the road hierarchy outlined in Map 6: Transportation Concept envisions the road extension as an urban local road, anticipated traffic volumes will be comparatively low in relation to the three urban minor collectors that are proposed in the Transportation Concept.*

# Appendix B

Site Development Assessment

# SOUTHMORE PHASE 2
# SITE DEVELOPMENT ASSESSMENT

April 17, 2024

Prepared for:
Municipality of the Crowsnest Pass

Prepared by:
Brad Schmidtke

Project Number:
116549078

| Revision | Description | Author | Date | Quality Check | Date | Independent Review | Date |
|---|---|---|---|---|---|---|---|
| 1 | Draft | Brad Schmidtke | 2023/12/18 | Angela Forsyth | 2023/12/19 | | |
| 2 | Final Draft | Brad Schmidtke | 2024/01/29 | Angela Forsyth | 2024/01/29 | Alan Ashcroft | 2024/01/30 |
| 3 | Final | Brad Schmidtke | 2024/04/17 | Angela Forsyth | 2024/04/17 | Alan Ashcroft | 2024/04/17 |

The conclusions in the Report titled Southmore Phase 2 Site Development Assessment are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not consider any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Municipality of the Crowsnest Pass (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by: 

Signature

Brad Schmidtke

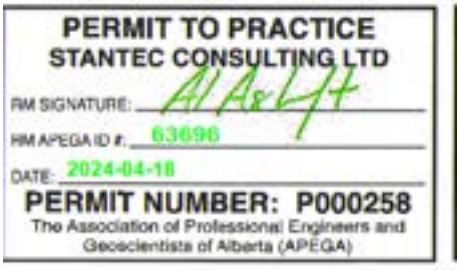
Printed Name

Reviewed by: 

Signature

Angela Forsyth

Printed Name



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# 1 BACKGROUND AND PURPOSE

Stantec Consulting Ltd. (Stantec) was retained by the Municipality of the Crowsnest Pass (MCNP) to provide preliminary concept development and engineering services for the purpose of assessing the feasibility of a residential housing development in the vacant lands identified on **Figure 1.0 Site Context**. It is understood that these subject lands directly west of Southmore Phase 1 will be included in a future Area Structure Plan (ASP) prepared by others.

The subject lands are in NE 34-7-4-5 and NW 34-7-4-5.

Key criteria for final optional concept development includes:

- Unit density target of 12 units/net acre or 29 units/net hectare.
- Efficient land use through maximizing developable area.
- Completion of utility extensions and looping as identified in the Municipality's Infrastructure Master Plan (IMP).
- Maximizing return on investment by increasing land yield (dwelling units) where practical and minimizing infrastructure investments.

Stantec's concept development and feasibility report will focus on the following elements:

- Existing Conditions Assessment (Opportunities and Constraints) including a Phase I Environmental Site Assessment.
- Optional Community Layouts.
- Conceptual servicing strategies and infrastructure requirements.
- Dwelling unit form and road layout recommendations given topographic constraints.
- Order of Magnitude Costs.

## 1.1 Reference Documents

The following documents have been referenced to support this feasibility Assessment:

1. Municipality of Crowsnest Pass Engineering and Development Standards - March 2005
2. Crowsnest Pass Municipal Development Plan (MDP), 2020
3. Municipality of Crowsnest Pass Infrastructure Master Plan (ISL) – October 2022 (MCNP IMP)

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# 2 EXISTING CONDITIONS REVIEW

The following existing conditions review has been compiled through a review of available reference documents, provincial records, and onsite investigations. This summarized information will be used to develop optional layouts and inform servicing strategies. The Pass Powderkeg Ski Area and Southmore Phase 1 residential development is located to the east of the subject lands, with York Creek bounding the west side. The north boundary of the subject lands is predominantly residential development with the southern boundary undeveloped.

## 2.1 Topography

The Southmore Development Area is located on a north facing slope on the south boundary of Blairmore. Grades within the subject lands are identified on **Figure 2.0 Existing Topography-Slope Percentage**, and it is noted that the existing drainage within the plan area is bisected by a ridge of land that diverts existing drainage toward York Creek (West Boundary) and the existing residential areas of Southmore/Blairmore (East Boundary).

Grades within the project area will make the site challenging for development given municipal road standards identify a maximum road grade of 10%. As such lands that have terrain in the range of 0-10% are considered the most advantageous for development from both a unit yield and infrastructure investment perspective. Lands from 11% to 20% will require careful selection of transportation routes and orientation of lots that will minimize onsite development costs by future lot purchasers (retaining walls, extended foundations, etc). Targeted development of lands between 21%-30% has been considered during option development and will be limited to large parcel development requiring significant onsite investment regarding building foundations and retaining walls. Lands with grades greater than 30% are not considered to be developable for the purpose of this review.

Based on our history with Aurora on back to front grades, a 10% grade is the maximum grade that would allow for a standard foundation build and reasonable costs for municipal infrastructure like water, sewer, roads, and shallow utilities. A review of literature around development costing in areas of steep terrain indicates that typical construction values can range from 30% to 50% more for homes and infrastructure depending on severity of the slope.

## 2.2 Existing and Proposed Land Use

The following items from the municipality's development plan and land use bylaw are relevant to future development within the subject lands.

1) The Subject lands are identified as a future residential growth node in the MDP.

2) The site area is in the vicinity of wildlife linkage zones along York Creek. Based on our review, development directly south of Blairmore's urban build-out is unlikely to be affected by this corridor. Development on the western margins of the plan area near the natural drainage course may require an "integrated wildlife sensitive design through contextual placement of buildings, fencing and landscaping, as well as outdoor lighting solutions to curb the extent of light trespass into the linkage zone." (MDP 2021).

3) Lands north of the Trans Canada (TC) Energy right-of-way (R/W) and adjacent to York Creek are currently classified as *Non-Urban Areas (NUA-1)* and meet the criteria of land that is flexible to urban development.

4) Lands south of the TC Energy R/W are designated as *Comprehensive Ski Village (CSV).* This district provides permitted use flexibility regarding housing forms and is well suited to densification. However, the municipality should review the minimum lot widths for multi-plex buildings. Specifically, taking duplex units to a 7.5m minimum width, and allowing similar reductions to the end units of other configurations.

5) Lot 47, Block 1, Plan 081 2254 is located in the southwest corner of the subject lands. This area is already subdivided.

## 2.3 Existing Utilities

Municipal utilities and third-party shallow utilities are present along 18th Avenue, 17th Avenue, 113th Street and Southmore Drive and provide accessible connections for the extension of servicing into the Phase 2 plan area. Also located within the plan area is TC Energy natural gas pipelines infrastructure including a pressure reducing station at the SW corner of the Fabro Lands. Along 108th Street, an overhead power line is located along the southern boundary of the road.

## 2.4 Existing Roadways

Access to Southmore Phase 2 can be provided from 18th Avenue, 17th Avenue, 108th Street and Southmore Drive. Roads and lanes have been developed to varying standards regarding widths, surface improvements and the utilization of sidewalks for pedestrian access. The extension of 113th Street as a roadway for vehicles is not recommended due to grades over the TC Energy line and its southern margin. All aforementioned roads are urban asphalt roads, while 108th Street is currently developed to a gravelled, rural road cross-section. An existing access R/W is present along the extension of 18th Avenue across the Fabro lands.

## 2.5 Environmental Conditions

Key findings in the Phase 1 Environmental Site Assessment (Appendix I) identify the following:

- Abandoned mine site along the eastern margin of the plan.
- TC Energy Pipeline and Compressor Station

- Concrete Foundation with underground piping (Fabro Lands)
- Horse Corrals on the TC Energy R/W
- Abandoned Farm Buildings
- Abandoned metal and wood materials along TC Energy R/W

## 2.6 Additional Study Recommendations

It is recommended that prior to or concurrently with the completion of an ASP, the following additional studies be completed to support future development goals:

- Site Specific Geotechnical and Slope Stability Reviews
- Biophysical Impact Assessment
- Historical/Archaeological Site Reviews
- Mine Site Environmental and Geotechnical Investigation
- Stormwater Management Plan
- Treated Water Distribution Modelling Evaluation
- Geotechnical and Hydro Geotechnical reviews in support of TC Energy Gas line Crossings

## 2.7 Site Photographs

**Photo 1:113th Street Looking North**

**Photo 2: 113th Street looking SW across TC Energy R/W**


**Photo 2: Fabro Lands/108th Street looking west.**

**Photo 4: Southmore Drive looking west along TC Energy R/W.**

**Photo 5: Southmore Drive looking west.**

**Photo 6: Southmore Drive Retaining Walls.**

**Photo 7: Existing Trail System (113th Street)**

**Photo 8: Housing Example Southmore Phase 1**

# 3 OPPORTUNITIES AND CONSTRAINTS ANALYSIS

Based on the existing conditions noted above, Stantec has developed the following list of development opportunities and constraints. **Figure 3.0, Opportunities and Constraints** identifies these existing conditions as well as information in **Appendix II: Southmore Phase 2 Site Review Meeting.**

## 3.1 Site Opportunities

**Topography**

- Site Areas with grades below 10% slope provide the most opportunity for densification, and will be identified as such.
- Steeper slopes with larger grades differentials are more suited to walk outs and larger lots.

**Sanitary Sewer**

- Operational depths of sewer infrastructure in Southmore Drive, 113th Street and 18th Avenue are sufficient for gravity sewer servicing.

- Sewer capacities as outlined in the Municipality's IMP show downstream sewers operating below capacity for sewage conveyance.

**Storm Sewer Systems**

- Inverts provided for storm sewer located in Southmore Drive indicate that a gravity sewer connection from a stormwater management facility along the eastern boundary of the plan may be possible.
- An existing outfall located north of 108th Street will provide a potential connection for Fabro Lands and a future stormwater management strategy.
- MCNP IMP identifies a future regional storm outfall line as a potential stormwater management solution for Southmore. This outfall would discharge to a natural drainage course in the vicinity of 132nd Street.

**Water Distribution**

- Water distribution systems are readily accessible to all sectors of the plan and will provide for water looping within the development.
- Future water system modelling during detailed design is recommended given the pump station in Southmore Phase 1 will be interconnected with water systems pressurized directly from existing reservoirs.

**Roads**

- Roadway extensions are most practical from 108th Street, 17th Avenue, 18th Avenue and Southmore Drive.

**Trail System**

- Existing trails are in the vicinity of 113th Street and extend across into the lands south of TC Energy's R/W. These trails could be used to inform ultimate regional trail systems and connectivity for pedestrians and cyclists.

**Multi-Family Site**

- The northwest corner of the area provides opportunity for good immediate access to the existing roadway network and low slopes, which are conducive for a multi-family development site.

## 3.2 Site Constraints

**Current Engineering Standards**

- Maximum road grades of 10% may limit development potential subject to detailed design.

- Standard 20m Right of Way widths will likely not be adequate for extension of Southmore Drive given terrain and the need for retaining wall structures.

**Topography/Environmental**

- Site Grades exceeding 25% account for 50% of developable lands and will be costly to develop.
- An abandoned mine site has been identified to extend SE from the Cartwright lands and will impact the extension of Southmore Drive and the potential for lot development on the south side of this roadway.

**Utility and Roadway Extensions**

- TC Energy crossing requirements will be required for any extension across their R/W and Infrastructure. (Refer to Appendix III, TC Energy Letter June 6, 2023)
- Rock excavation and considerations around abandoned mine will impact the cost of development and should be reviewed in detail through geotechnical investigations.
- The removal of an access agreement on the Fabro lands will be required and a provision for re-establishment of access will be required during development.

**Stormwater Management**

- Drainage from the western margins of plan area south of TC Energy will require either a new outfall to York Creek, or a piped connection through TC's R/W and the Fabro Lands.
- Stantec's discussions with TC Energy has previously indicated that overland flow from urbanized development would not be permitted across their R/W. This should be discussed further to determine impacts of adjacent residential properties drainage.
- The creation of typical stormwater management facilities in steep terrain is challenging due to the consumption of land to complete appropriate back sloping. It is recommended that low impact design techniques promoting infiltration and capture be developed during detailed design throughout the plan area to minimize the size of dedicated stormwater retention areas.

# 4 OPTIONAL COMMUNITY LAYOUTS

Two optional community layouts are presented as part of this Site Development Assessment that provide opportunity for the incorporation of open space development, single detached homes and identify areas of the plan where densification is better suited. Open areas defined in layout options are comprised of potential creditable Municipal Reserve (MR) Environmental Reserve (ER), Stormwater Management Facilities (SWMF) and undevelopable lands due to escarpments or other constraints.

## 4.1 Option 1

The layout presented in **Figure 4.1A, Layout Option 1** identifies the extension of roads and access points to all developable areas from existing developed lands. From the perspective of vehicular access, only the extension of roads through the Fabro Lands and Southmore Phase 1 is recommended due to topographical constraints as previously identified. Infrastructure extensions from 113th Street should be limited to utilities and potential pedestrian access.

**Table 1 Land Use Statistics**

| Description | Area (Hectares) | Area (Acres) | % of Gross Area |
|---|---|---|---|
| Residential | 9.85 | 24.34 | 45% |
| Roads | 4.42 | 10.92 | 20% |
| Open Space/MR/SWMF/ER | 4.98 | 12.31 | 23% |
| Gas Line R/W | 2.56 | 6.33 | 12% |
| **Total** | **21.81** | **53.90** | **100%** |
| | | | |
| Population | 906 | | |
| Units | 302 | | |
| Population Density (Net Residential Lands) | 92 /ha | | |
| Unit Density (Net Residential Lands) | 31 /ha | | |

It is understood that further delineation of creditable and non creditable open space including stormwater management facilities will occur during ASP development.

### 4.1.1 ROAD NETWORK EVALUATION

The proposed new roads are largely anticipated to be local roads, with a surface width of 10.5 metres. The roadway network provides a continuous connection between 108 Street and the existing west limit of Southmore Drive. This provides additional emergency access, as well as dual evacuation routes as necessary. The ratio of road frontage to lot frontage is identified as 0.82. A ratio of 0.50 would indicate a perfectly double-fronted (housing) roadway development.

The planned curve at the west limit of the existing Southmore Drive will be realigned from the previous vision. This will provide smoother curvature of the roadway and reduce awkward reverse curves to connect the proposed development. No existing roadway infrastructure would be impacted.

The overall area is anticipated to add approximately 2,700 vehicles per day to the existing roadway network and approximately 230 vehicles in the PM peak hour. Refer to Refer to **Figure 4.1B, Servicing Option 1** for a breakdown of traffic volumes. Most of these vehicles are anticipated to access the existing

network via the new connection to 108 Street, with the remainder accessing via the existing Southmore Drive, as well as 19 Avenue via 112 Street and 113 Street.

The additional traffic is not expected to have significant impacts on the existing network. At time of development, traffic operations should be reviewed at the intersection of 20 Avenue & 112 Street to assess if the existing traffic control would be adequate for the increased traffic. It is not anticipated that the increase in traffic will have a significant impact on the Highway 3 intersections.

The road structure and geometrics should be reviewed along 108 Street. With the potential for the traffic to increase by 1,500 vehicles per day, the road should be upgraded to adequately accommodate two-way traffic on a regular basis and reviewed for feasibility to accommodate the increased Equivalent Single Axel Loads (ESAL).

### 4.1.2 SERVICING STRATEGY

The servicing strategies for utilities are identified on **Figure 4.1B, Servicing Option 1** and include provisions for the extension of existing systems throughout the plan area. The sanitary sewer system has been divided into sewer sheds based on topography given the assumption that future roadways will be designed to match existing grades wherever possible. Based on the above, there are three proposed sewer connections and the resultant peak wet weather flows do not exceed residual conveyance system capacities as identified in the MCNP IMP.

Water looping as identified follows the future servicing condition identified in the MCNP IMP and water sizing will be completed during later stages of development.

Potential stormwater management facility outlets are identified for consideration. The easterly and northerly pond outlets can be connected to existing downstream infrastructure subject to review of residual system capacities. The westerly outlet could be directed to York Creek, or potentially through the Fabro Lands. It is recommended that the inclusion of low impact designs be considered during detailed design to promote infiltration and reduce stormwater run-off volumes and velocities from the site, thereby minimizing the size of dedicated stormwater retention ponds.

## 4.2 Option 2

The layout presented in **Figure 4.2A, Layout Option 2** identifies the extension of roads and access points to all developable areas from existing developed lands plus the inclusion of land to York Creek. From the perspective of vehicular access, only the extension of roads through the Fabro Lands and Southmore Phase 1 is recommended due to topographical constraints as previously identified. Infrastructure extensions from 113$^{th}$ Street should be limited to utilities and potential pedestrian access.

**Table 2 Land Use Statistics**

| Description | Area (Hectares) | Area (Acres) | % of Gross Area |
|---|---|---|---|
| Residential | 12.20 | 30.15 | 49% |
| Roads | 4.45 | 11.00 | 18% |
| Open Space/MR/SWMF/ER | 5.82 | 14.38 | 23% |
| Gas Line R/W | 2.56 | 6.33 | 10% |
| **Total** | **25.03** | **61.86** | **100%** |
| | | | |
| Population | 1,035 | | |
| Units | 345 | | |
| Population Density (Net Residential Lands) | 85 /ha | | |
| Unit Density (Net Residential Lands) | 28 /ha | | |

It is understood that further delineation of creditable and non creditable open space including stormwater management facilities will occur during ASP development.

### 4.2.1 ROAD NETWORK EVALUATION

Like Option 1, the proposed new roads are largely anticipated to be local roads, with a surface width of 10.5 metres. The roadway network again provides a continuous connection between 108 Street and the existing west limit of Southmore Drive. This provides additional emergency access, as well as dual evacuation routes as necessary. The ratio of road frontage to lot frontage is defined as 0.70. A ratio of 0.50 would indicate a perfectly double-fronted (housing) roadway development.

The planned curve at the west limit of the existing Southmore Drive will be realigned from the previous vision. This will provide smoother curvature of the roadway and reduce awkward reverse curves to connect the proposed development. No existing roadway infrastructure would be impacted.

The overall area is anticipated to add approximately 3,000 vehicles per day to the existing roadway network, and approximately 270 vehicles in the PM peak hour. Refer to Refer to **Figure 4.2B, Servicing Option 2** for a breakdown of traffic volumes. Once again, most of these vehicles are anticipated to access the existing network via the new connection to 108 Street, with the remainder accessing via the existing Southmore Drive, as well as 19 Avenue via 112 Street and 113 Street.

Like Option 1, the additional traffic is not expected to have significant impacts on the existing network. At time of development, traffic operations should be reviewed at the intersection of 20 Avenue & 112 Street to assess if the existing traffic control would be adequate for the increased traffic. It is not anticipated that the increase in traffic will have a significant impact on the Highway 3 intersections.

Once again, the road structure and geometrics should be reviewed along 108 Street. With the potential for the traffic to increase by 1,500 vehicles per day, the road should be upgraded to adequately accommodate two-way traffic on a regular basis and reviewed for feasibility to accommodate the increased ESALs.

### 4.2.2 SERVICING STRATEGY

The servicing strategies for utilities are identified on **Figure 4.2B, Servicing Option 2** and include provisions for the extension of existing systems throughout the plan area. The sanitary sewer system has been divided into sewer sheds based on topography given the assumption that future roadways will be designed to match existing grades wherever possible. Based on the above, there are three proposed sewer connections and the resultant peak wet weather flows do not exceed residual conveyance system capacities as identified in the MCNP IMP.

Water looping as identified follows the future servicing condition identified in the MCNP IMP and water sizing will be completed during later stages of development.

Potential stormwater management facility outlets are identified for consideration. The easterly and northerly pond outlets can be connected to existing downstream infrastructure subject to review of residual system capacities. The westerly outlet could be directed to York Creek, or potentially through the Fabro Lands. It is recommended that the inclusion of low impact designs be considered during detailed design to promote infiltration and reduce stormwater run-off volumes and velocities from the site thereby minimizing the size of dedicated stormwater retention ponds.

## 4.3 Typical Cross-Sections

**Figure 4.3, Typical Sections** identifies the current local road standard as well as conceptual cross-section for the Southmore Drive extension and stormwater management facility.

## 4.4 Opinions of Probable Cost

Full build-out of Southmore Phase 2 is anticipated to cost between $21 million and $29 million. All order of magnitude and project costs should be updated as required based on future design efforts.

A summary of anticipated development costs is identified below in Table 3. Stantec has attached a detailed Order of Magnitude cost for Option 2 in Appendix IV.

**Table 3 Summary of Anticipated Development Costs**

| Item | Cost |
|---|---|
| General Grading, Erosion/Sediment Control, General Requirements | $3.3M |
| Deep Utilities (Sewer, Water and Storm Water Management) | $4.6M |
| Building Services | $1.4M |
| Roadway Development | $5.9M |
| Shallow Utilities and Roadway Lighting | $4.9M |
| Open Space Development | $0.8M |
| Subdivision Fees/Levies | $0.2M |
| Planning, Engineering and Administration | $3.0M |
| Fortis Administration and Fees | $0.2M |
| TC Energy Preliminary Engineering Requirements | $0.3M |
| **Total Development Cost** | **$24.6M** |

**Includes TC Energy crossing estimates*
***M=Millions*
****These costs are based on Layout Option 2*

**Municipality of the Crowsnest Pass**
**Southmore Phase 2 - Option 2**
**Order of Magnitude Cost**

January 29, 2024
** Assumes 6 Phases

Project Number: 116549078
File: Pre-Design

| | | |
|---|---|---|
| # Lots= | 316 | |
| # ha= | 25 | Gross Area |
| # ha= | 17 | Net Area excluding Open Space and Gasline R/W |

## 1. GENERAL GRADING & EROSION CONTROL

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Site Clearing | 200,000 | sm | $ 2.00 | $ 400,000.00 |
| 2. Common Excavation to Embankment | 70,000 | cm | $ 4.00 | $ 280,000.00 |
| 3. Rock Excavation | 30,000 | cm | $ 20.00 | $ 600,000.00 |
| 4. General Requirements | 6 | LS | $ 150,000.00 | $ 900,000.00 |
| 5. Site Maintenance and Erosion/Sediment Control | 6 | LS | $ 75,000.00 | $ 450,000.00 |
| **Subtotal** | | | | $ 2,630,000.00 |
| **Contingency** | | | 25% | $ 657,500.00 |
| **TOTAL** | | | | **$ 3,287,500.00** |

## 2. SANITARY SEWER SYSTEM

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Sanitary Sewer System Piping and Manholes | 2,120 | l.m. | $ 340.00 | $ 720,800.00 |
| **Subtotal** | | | | $ 720,800.00 |
| **Contingency** | | | 25% | $ 180,200.00 |
| **TOTAL** | | | | **$ 901,000.00** |

## 3. STORM SEWER SYSTEM

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| **1. Storm Sewer System Piping, Manholes and CB's** | 2,120 | l.m. | $ 650.00 | $ 1,378,000.00 |
| **2. Storm Water Management Outfalls** | 3 | ea | $ 75,000.00 | $ 225,000.00 |
| **Subtotal** | | | | $ 1,603,000.00 |
| **Contingency** | | | 25% | $ 400,750.00 |
| **TOTAL** | | | | **$ 2,003,750.00** |

## 4. WATER DISTRIBUTION SYSTEM

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Water Main including Hydrants and Appurtenances | 2,120 | lm | $450.00 | $ 954,000.00 |
| 2. TC Energy Crossing | 1 | ea | $250,000.00 | $ 250,000.00 |
| 3. Tie to Existing including road replacement | 5 | ea | $25,000.00 | $ 125,000.00 |
| **Subtotal** | | | | $ 1,329,000.00 |
| **Contingency** | | | 25% | $ 332,250.00 |
| **TOTAL** | | | | **$ 1,661,250.00** |

## 5. BUILDING SERVICES

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Lot Services (Water, Sewer and Storm) | 252 | ea | $ 4,500.00 | $ 1,134,000.00 |
| 2. Lot Service to Apartment Complex | 1 | ea | $ 25,000.00 | $ 25,000.00 |
| **Subtotal** | | | | $ 1,159,000.00 |
| **Contingency** | | | 25% | $ 289,750.00 |
| **TOTAL** | | | | **$ 1,448,750.00** |

## 6. CONCRETE WORK

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. 1.40m Rolled Monolithic Sidewalk | 4,240.0 | lm | $ 360.00 | $ 1,526,400.00 |
| **Subtotal** | | | | $ 1,526,400.00 |
| **Contingency** | | | 25% | $ 381,600.00 |
| **TOTAL** | | | | **$ 1,908,000.00** |

## 7. PAVED ROADS

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Asphalt Roads | 2,120.0 | lm | $ 800.00 | $ 1,696,000.00 |
| 2. Retaining Walls | 200.0 | lm | $ 2,400.00 | $ 480,000.00 |
| 3. TC Energy Full R/W Crossing including Utilities | 1.0 | ea | $ 1,000,000.00 | $ 1,000,000.00 |
| **Subtotal** | | | | $ 3,176,000.00 |
| **Contingency** | | | 25% | $ 794,000.00 |
| **TOTAL** | | | | **$ 3,970,000.00** |

## 8. SHALLOW UTILITY

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Shallow Utilities (Electrical, Gas Telecom,Road Lighting) | 316.0 | ea | $ 12,500.00 | $ 3,950,000.00 |
| **Subtotal** | | | | $ 3,950,000.00 |
| **Contingency** | | | 25% | $ 987,500.00 |
| **TOTAL** | | | | **$ 4,937,500.00** |

## 9. LANDSCAPING & IRRIGATION

| DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1. Open Space Development (2 Hectares Assumed) | 20,000.0 | sm | $ 30.00 | $ 600,000.00 |
| 2. Community Fencing (Not Included) | | | | $ - |
| **Subtotal** | | | | $ 600,000.00 |
| **Contingency** | | | 25% | $ 150,000.00 |
| **TOTAL** | | | | **$ 750,000.00** |

**Municipality of the Crowsnest Pass**
**Southmore Phase 2 - Option 2**
**Order of Magnitude Cost**

January 29, 2024

Project Number: 116549078
File: Pre-Design

| A. CONSTRUCTION COSTS | | |
|---|---|---|
| 1. GENERAL GRADING & EROSION CONTROL | $ | 3,288,000.00 |
| 2. SANITARY SEWER SYSTEM | $ | 901,000.00 |
| 3. STORM SEWER SYSTEM | $ | 2,004,000.00 |
| 4. WATER DISTRIBUTION SYSTEM | $ | 1,662,000.00 |
| 5. BUILDING SERVICES | $ | 1,449,000.00 |
| 6. CONCRETE WORK | $ | 1,908,000.00 |
| 7. PAVED ROADS | $ | 3,970,000.00 |
| 8. SHALLOW UTILITY | $ | 4,938,000.00 |
| 9. LANDSCAPING & IRRIGATION | $ | 750,000.00 |
| **CONSTRUCTION SUBTOTAL** | **$** | **20,870,000.00** |
| Contingencies Included | **$** | **4,173,550.00** |

| B. CONSULTING SERVICES & ADMINISTRATION | 15% | $ | 3,130,500.00 |
|---|---|---|---|

| 1. LEGAL FEES AND LAND TITLES (2023) | | | | | | |
|---|---|---|---|---|---|---|
| - Subdivision Application Fees | 6 | ea | $ | 750.00 | $ | 4,500.00 |
| - Subdivision Base Fee | 316 | Lots | $ | 350.00 | $ | 110,600.00 |
| - Final Endorsement Fees | 316 | Lots | $ | 220.00 | $ | 69,520.00 |
| - Land Titles Registration Fees | 316 | Lots | $ | 50.00 | $ | 15,800.00 |
| | | | | **Total** | **$** | **195,920.00** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2. OFFSITE LEVIES** | 17 | ha @ | $ | - | **$** | **-** |
| **3. FORTIS ADMINISTRATION** | 6 | ea | $ | 35,000.00 | **$** | **210,000.00** |
| **4. TC ENERGY PRELIMINARY ENGINEERING** | 1 | ea | $ | 250,000.00 | **$** | **250,000.00** |

| C. TOTAL ESTIMATED COSTS (GST Excluded) | $ | 24,657,000.00 |
|---|---|---|
| D. TOTAL ESTIMATED COST/LOT | $ | 78,028.48 |
| E. TOTAL ESTIMATED COST/ha | $ | 986,280.00 |

**Order of Magnitude Opinions of Cost Excluding Land Costs and assuming 6 Development Phases.**
**Shallow Utility Rebates not included**

Reviewed By: Brad Schmidtke

Prepared By: Rynel Wickend

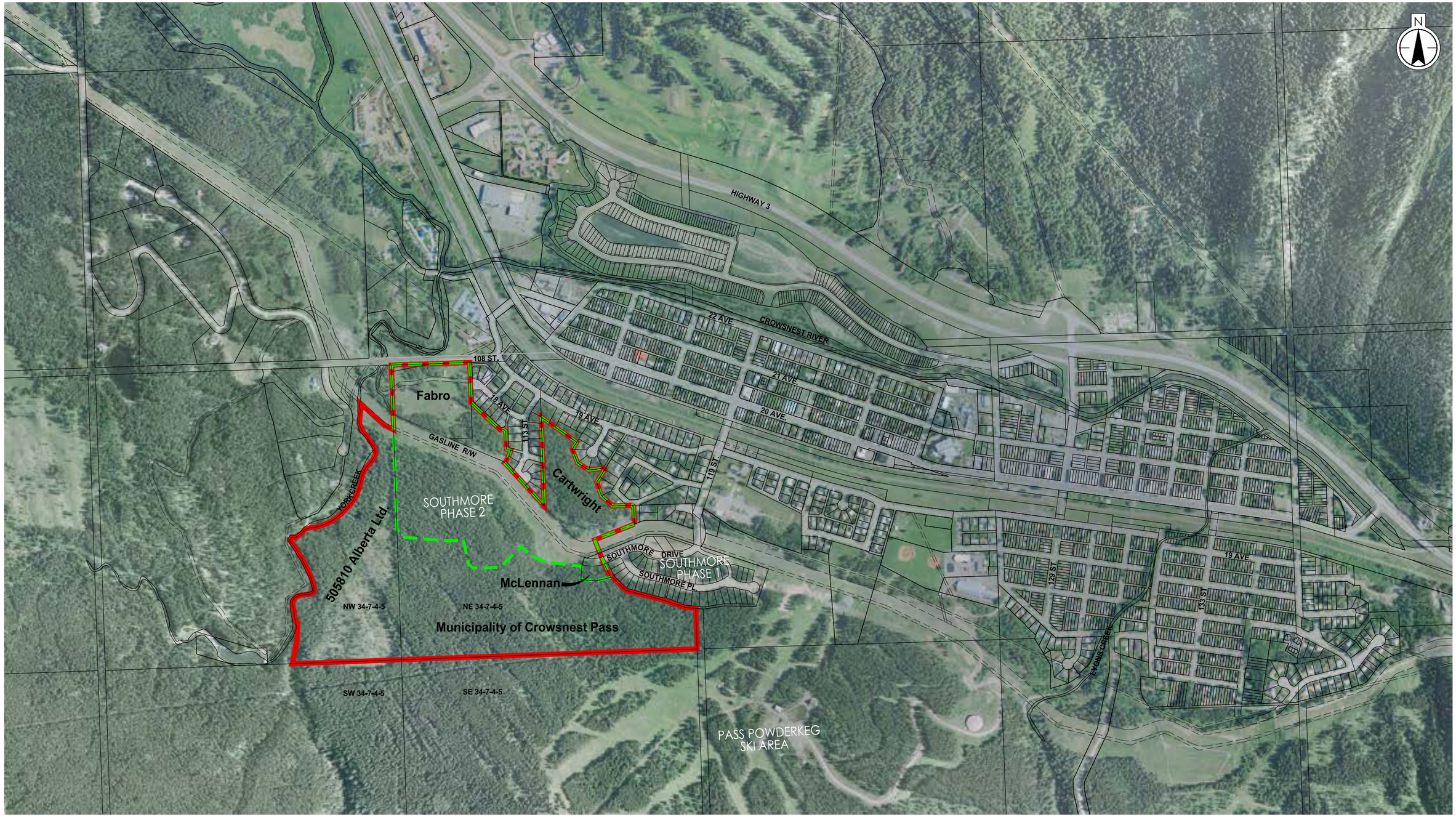


FIGURE 1.0 | Blairmore

# Southmore Phase 2

Site Context

PREPARED FOR: ORRSC

ASP BOUNDARY

SOUTHMORE PHASE 2 CONCEPT

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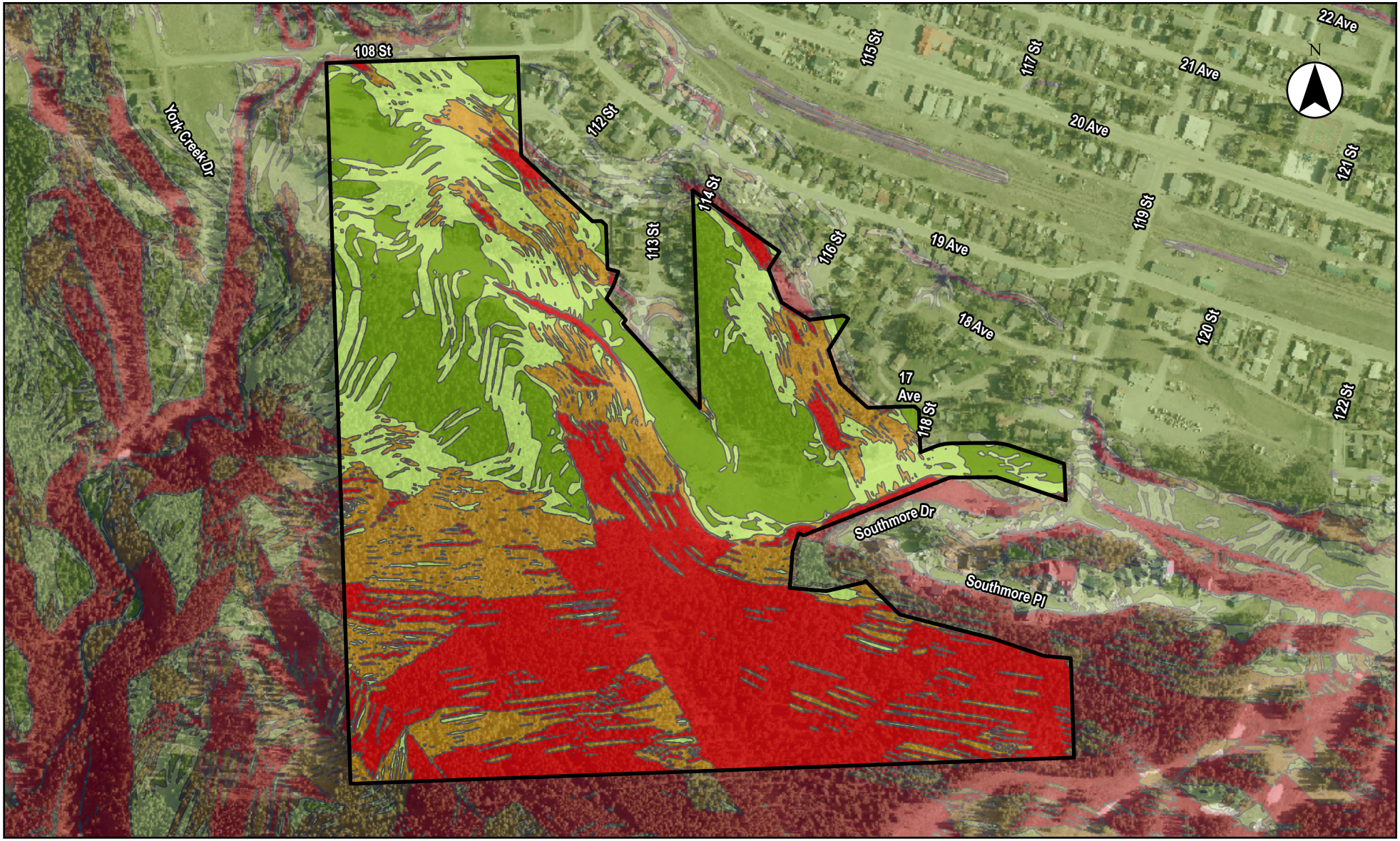


F E 0 | Blairmore

# Sout more P ase

Existin errain Slope Percenta e

P EPA E FO O SC

116549078 is map mxd Blairmore Sout more Blairmore Sout more aprx
10 1 0 10 10 AM By e ew o

Pro ect Boundary

Slope

0 10
10 0
0 0
0

| lope | Proportion o Project Area |
|---|---|
| 0 - 10 | 21.5 |
| 10.1 - 20 | 19.9 |
| 20.1 - 30 | 22.3 |
| > 30 | 36.2 |

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CO CEP O S A SA A S C EP ESE A O SOF ES SP EPA E B SA EC
CO S SCO CEP A A EA S BEC OC A E COP ESE E

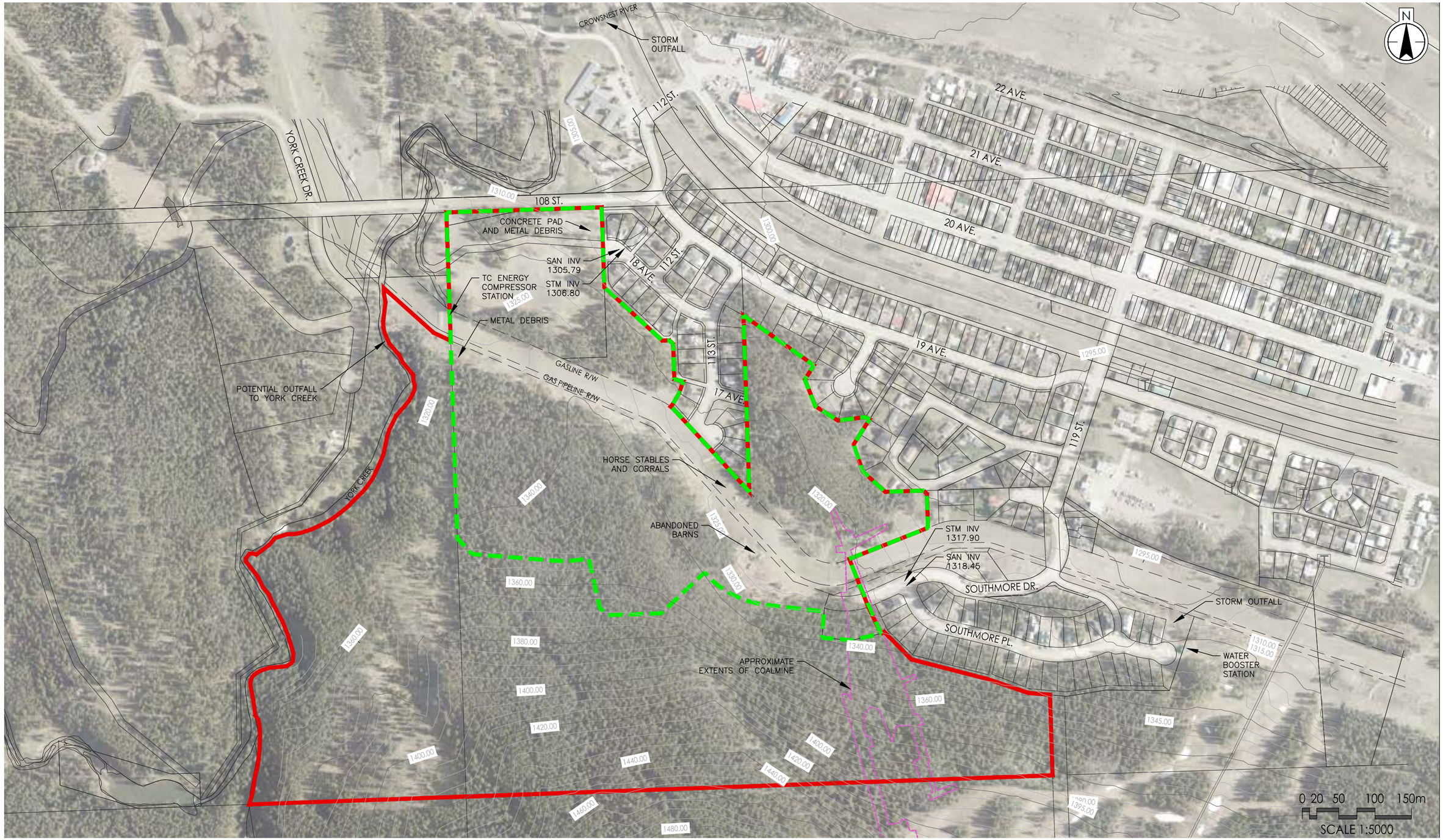


FIGURE 3.0 | Blairmore

# Southmore Phase 2

Opportunities and Constraints

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ASP BOUNDARY

SOUTHMORE PHASE 2 CONCEPT AREA

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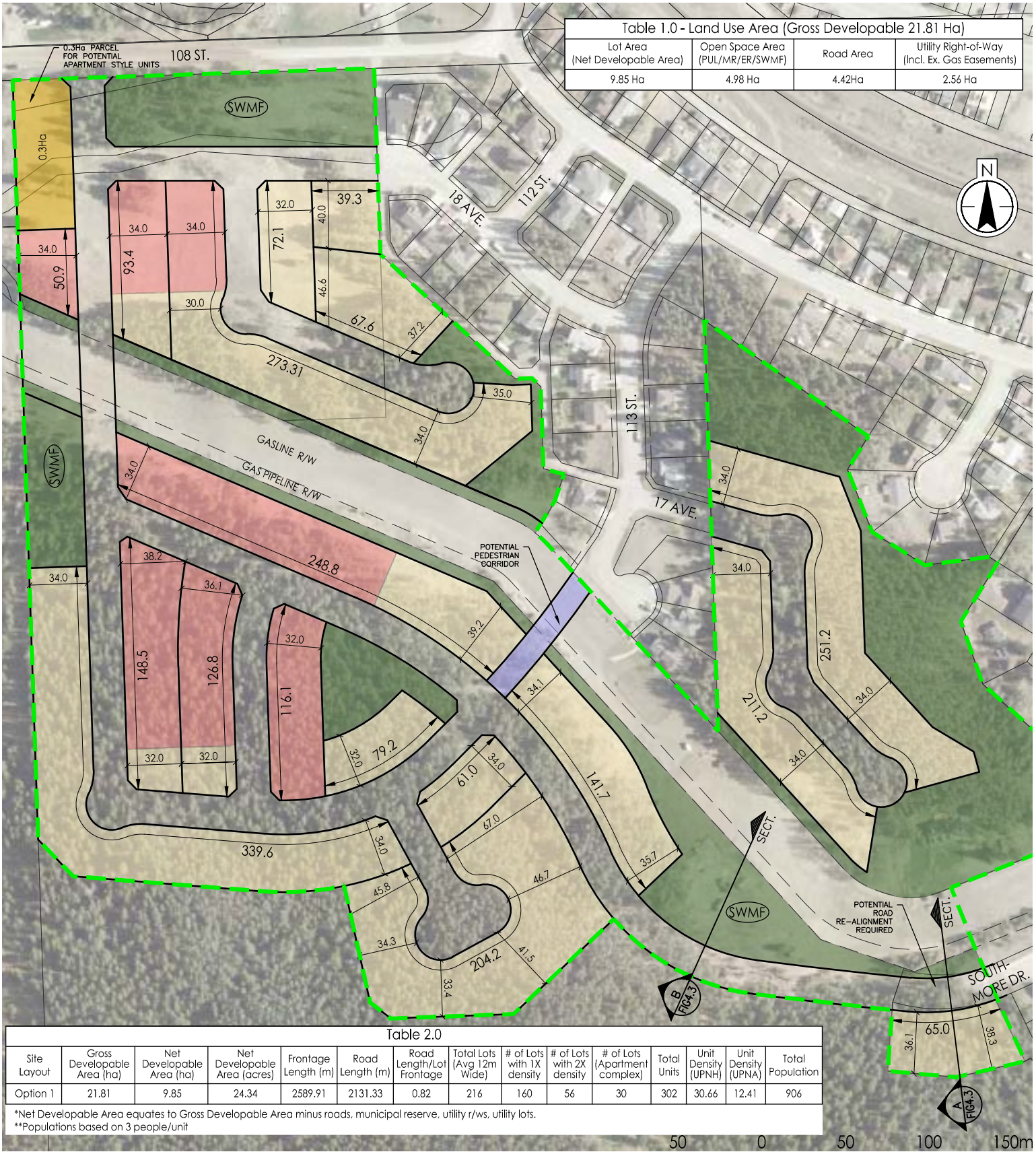


| Table 1.0 - Land Use Area (Gross Developable 21.81 Ha) | | | |
|---|---|---|---|
| Lot Area (Net Developable Area) | Open Space Area (PUL/MR/ER/SWMF) | Road Area | Utility Right-of-Way (Incl. Ex. Gas Easements) |
| 9.85 Ha | 4.98 Ha | 4.42Ha | 2.56 Ha |

| Table 2.0 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site Layout | Gross Developable Area (ha) | Net Developable Area (ha) | Net Developable Area (acres) | Frontage Length (m) | Road Length (m) | Road Length/Lot Frontage | Total Lots (Avg 12m Wide) | # of Lots with 1X density | # of Lots with 2X density | # of Lots (Apartment complex) | Total Units | Unit Density (UPNH) | Unit Density (UPNA) | Total Population |
| Option 1 | 21.81 | 9.85 | 24.34 | 2589.91 | 2131.33 | 0.82 | 216 | 160 | 56 | 30 | 302 | 30.66 | 12.41 | 906 |

*Net Developable Area equates to Gross Developable Area minus roads, municipal reserve, utility r/ws, utility lots.
**Populations based on 3 people/unit

NOTE: AREA SUITABLE FOR DENSIFICATION DETERMINED BY SLOPE <10%

FIGURE 4.1A|Blairmore

# Southmore Phase 2

Layout Option 1

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*ALL ROAD R/W 20m WIDE

SOUTHMORE PHASE 2 CONCEPT AREA

SWMF STORM WATER MANAGEMENT FACILITY

POTENTIAL PUL/MR/ER

AREA SUITABLE FOR DENSIFICATION (2x UNIT DENSITY)

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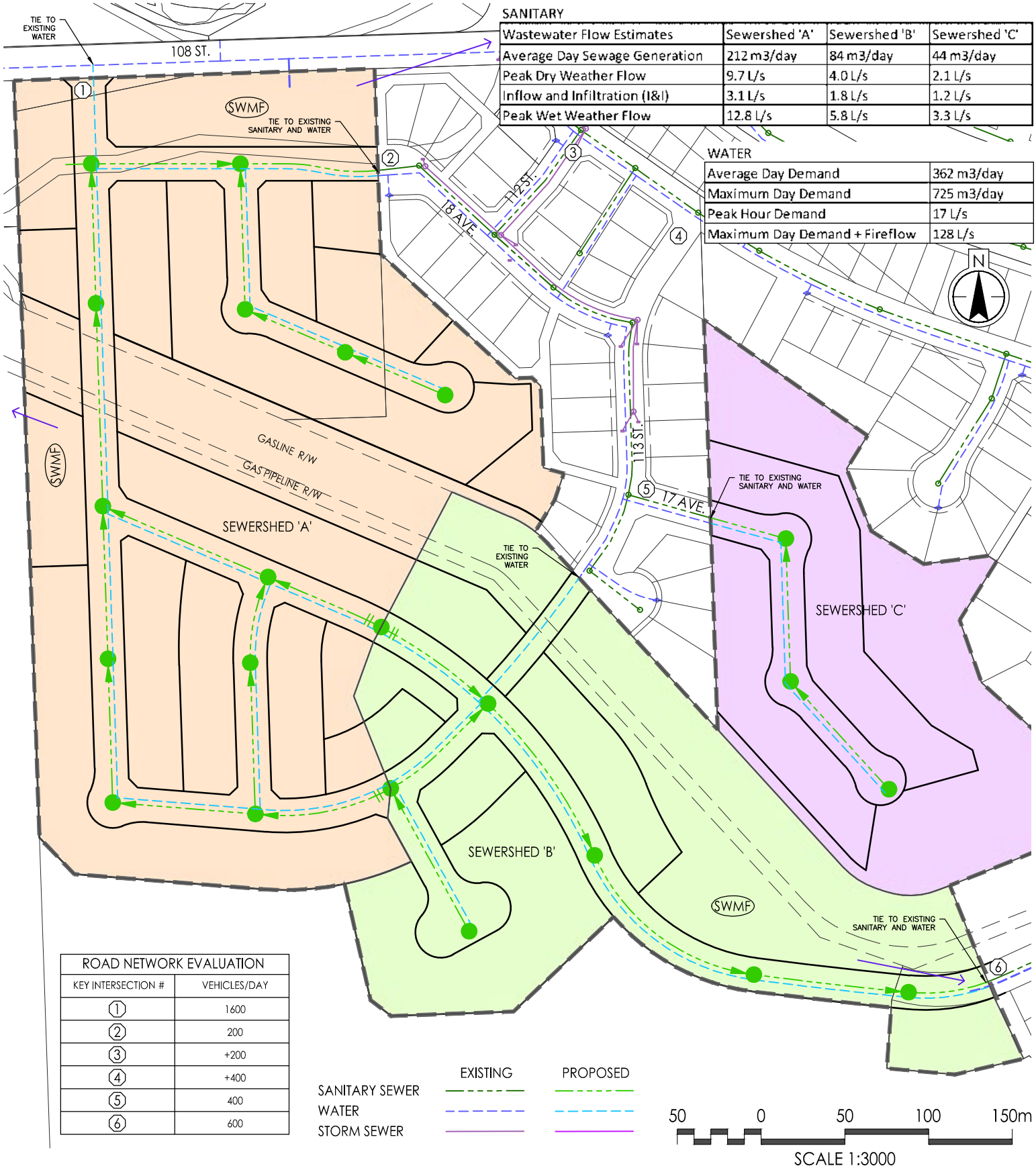
January 25, 2024




SANITARY

| Wastewater Flow Estimates | Sewershed 'A' | Sewershed 'B' | Sewershed 'C' |
|---|---|---|---|
| Average Day Sewage Generation | 212 m3/day | 84 m3/day | 44 m3/day |
| Peak Dry Weather Flow | 9.7 L/s | 4.0 L/s | 2.1 L/s |
| Inflow and Infiltration (I&I) | 3.1 L/s | 1.8 L/s | 1.2 L/s |
| Peak Wet Weather Flow | 12.8 L/s | 5.8 L/s | 3.3 L/s |

WATER

| | |
|---|---|
| Average Day Demand | 362 m3/day |
| Maximum Day Demand | 725 m3/day |
| Peak Hour Demand | 17 L/s |
| Maximum Day Demand + Fireflow | 128 L/s |

ROAD NETWORK EVALUATION

| KEY INTERSECTION # | VEHICLES/DAY |
|---|---|
| 1 | 1600 |
| 2 | 200 |
| 3 | +200 |
| 4 | +400 |
| 5 | 400 |
| 6 | 600 |

| | EXISTING | PROPOSED |
|---|---|---|
| SANITARY SEWER | | |
| WATER | | |
| STORM SEWER | | |

50 0 50 100 150m

SCALE 1:3000

FIGURE 4.1B | Blairmore

# Southmore Phase 2

Servicing Option 1

PREPARED FOR: ORRSC

SOUTHMORE PHASE 2 CONCEPT AREA

SWMF STORM WATER MANAGEMENT FACILITY

STORMWATER OUTLET

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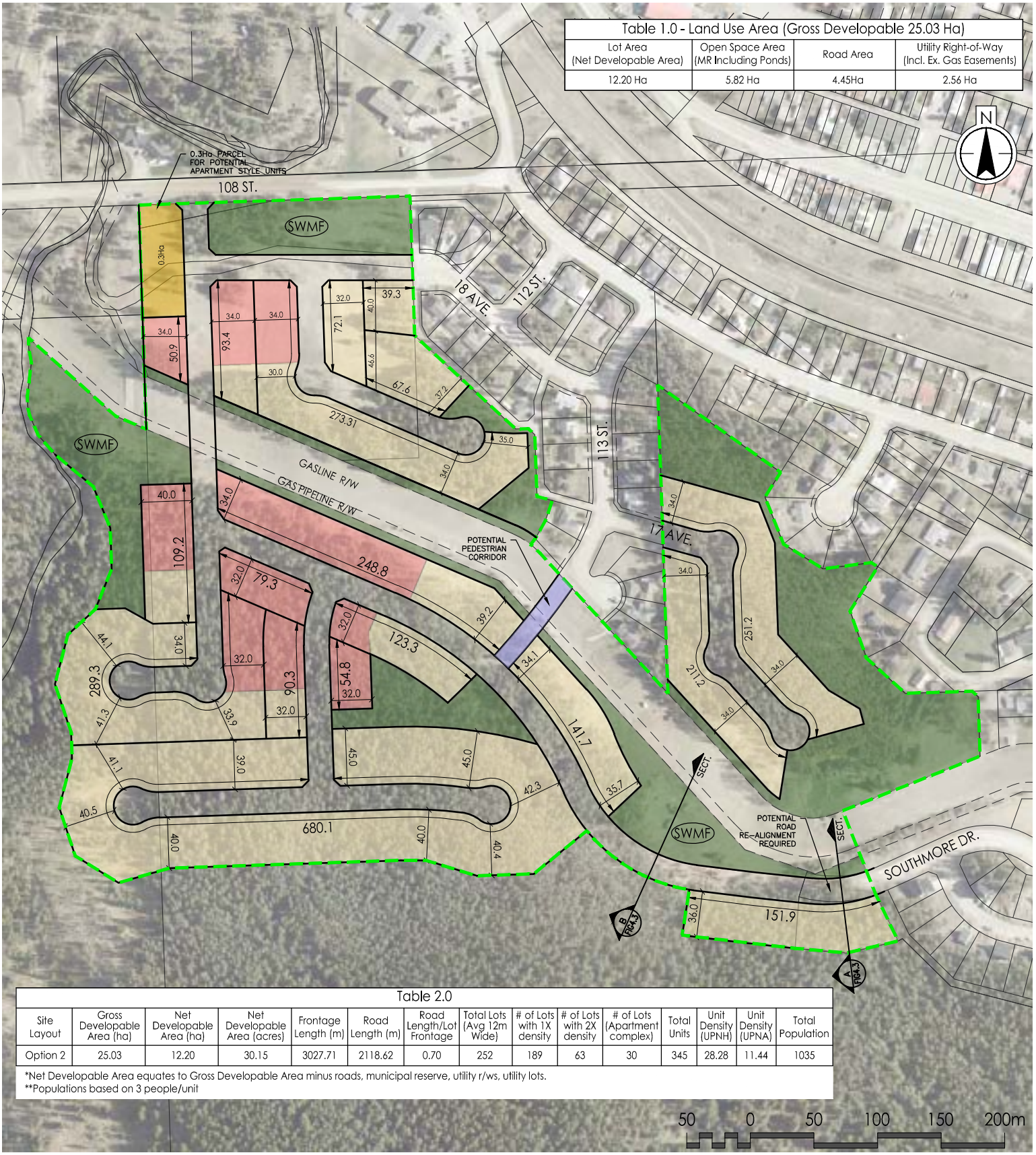


| Table 1.0 - Land Use Area (Gross Developable 25.03 Ha) | | | |
|---|---|---|---|
| Lot Area (Net Developable Area) | Open Space Area (MR Including Ponds) | Road Area | Utility Right-of-Way (Incl. Ex. Gas Easements) |
| 12.20 Ha | 5.82 Ha | 4.45Ha | 2.56 Ha |

Table 2.0

| Site Layout | Gross Developable Area (ha) | Net Developable Area (ha) | Net Developable Area (acres) | Frontage Length (m) | Road Length (m) | Road Length/Lot Frontage | Total Lots (Avg 12m Wide) | # of Lots with 1X density | # of Lots with 2X density | # of Lots (Apartment complex) | Total Units | Unit Density (UPNH) | Unit Density (UPNA) | Total Population |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Option 2 | 25.03 | 12.20 | 30.15 | 3027.71 | 2118.62 | 0.70 | 252 | 189 | 63 | 30 | 345 | 28.28 | 11.44 | 1035 |

*Net Developable Area equates to Gross Developable Area minus roads, municipal reserve, utility r/ws, utility lots.
**Populations based on 3 people/unit

NOTE: AREA SUITABLE FOR DENSIFICATION DETERMINED BY SLOPE <10%

SCALE 1:4000

FIGURE 4.2A|Blairmore

# Southmore Phase 2

Layout Option 2

PREPARED FOR: ORRSC

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*ALL ROAD R/W 20m WIDE

SOUTHMORE PHASE 2 CONCEPT AREA

SWMF STORM WATER MANAGEMENT FACILITY

POTENTIAL PUL/MR/ER

AREA SUITABLE FOR DENSIFICATION (2x UNIT DENSITY)

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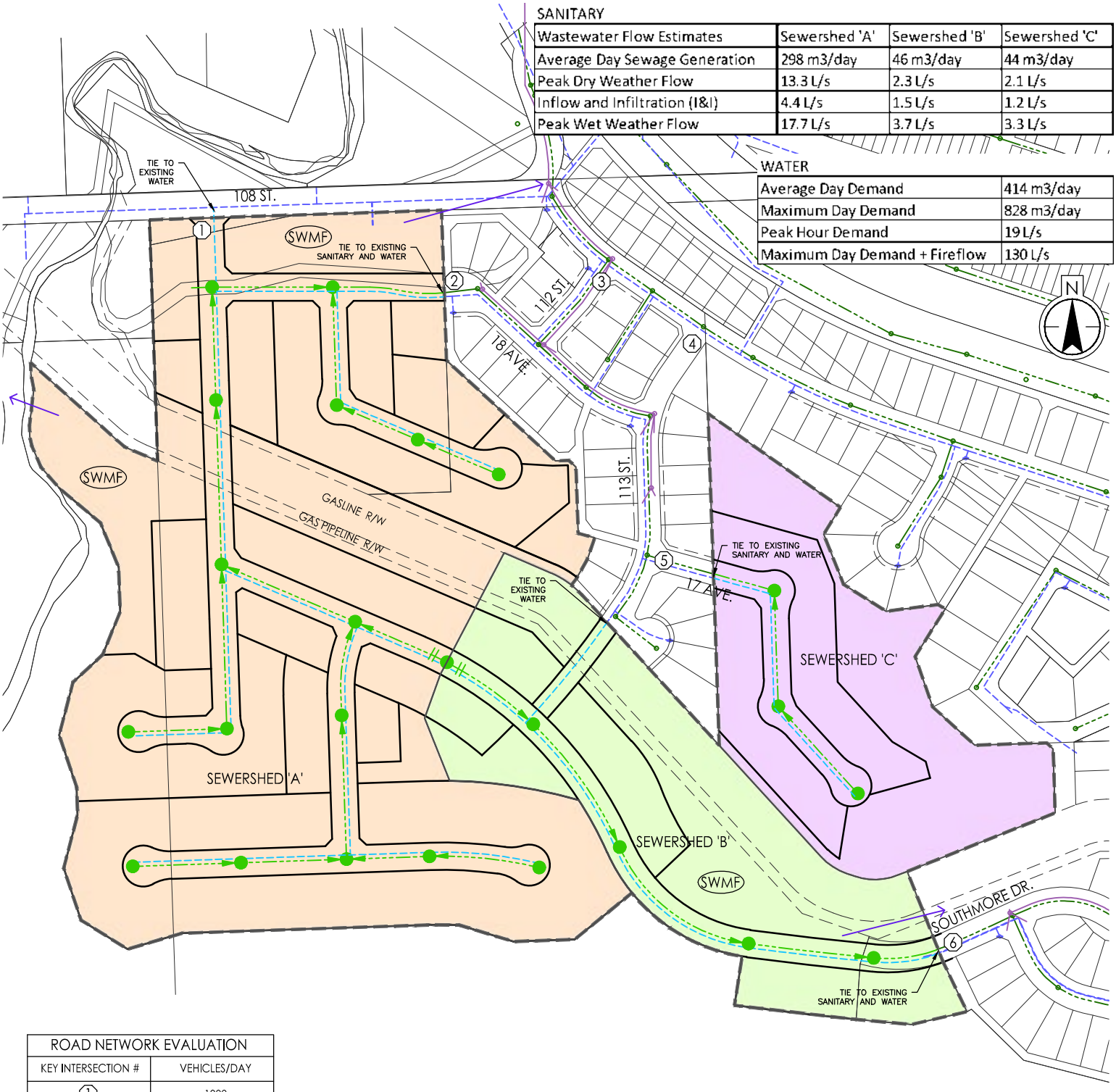
January 25, 2024




| ROAD NETWORK EVALUATION | |
|---|---|
| KEY INTERSECTION # | VEHICLES/DAY |
| ① | 1800 |
| ② | 200 |
| ③ | +200 |
| ④ | +400 |
| ⑤ | 400 |
| ⑥ | 600 |

| | EXISTING | PROPOSED |
|---|---|---|
| SANITARY SEWER | | |
| WATER | | |
| STORM SEWER | | |

50 0 50 100 150 200m

SCALE 1:4000

FIGURE 4.2B | Blairmore

# Southmore Phase 2

Servicing Option 2

PREPARED FOR: ORRSC

SOUTHMORE PHASE 2 CONCEPT AREA

SWMF STORM WATER MANAGEMENT FACILITY

STORMWATER OUTLET

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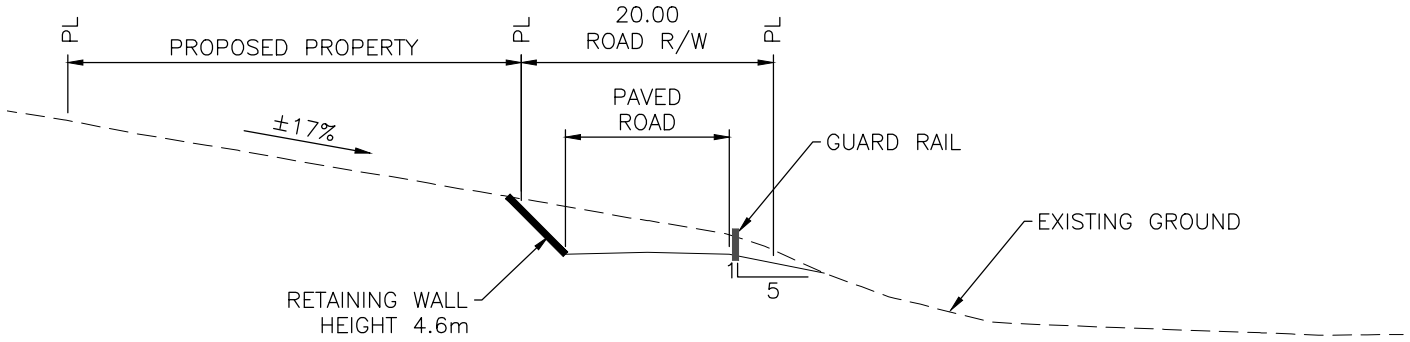
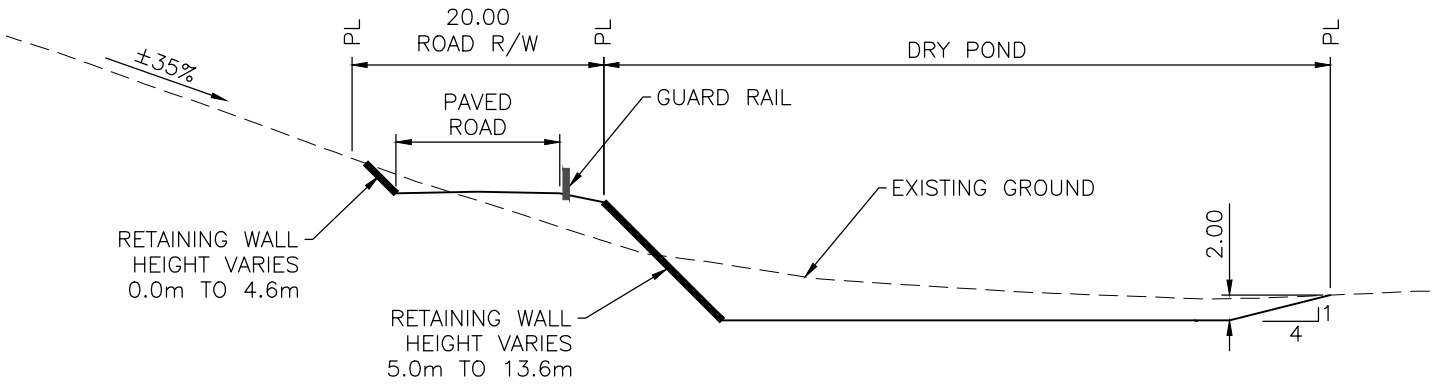


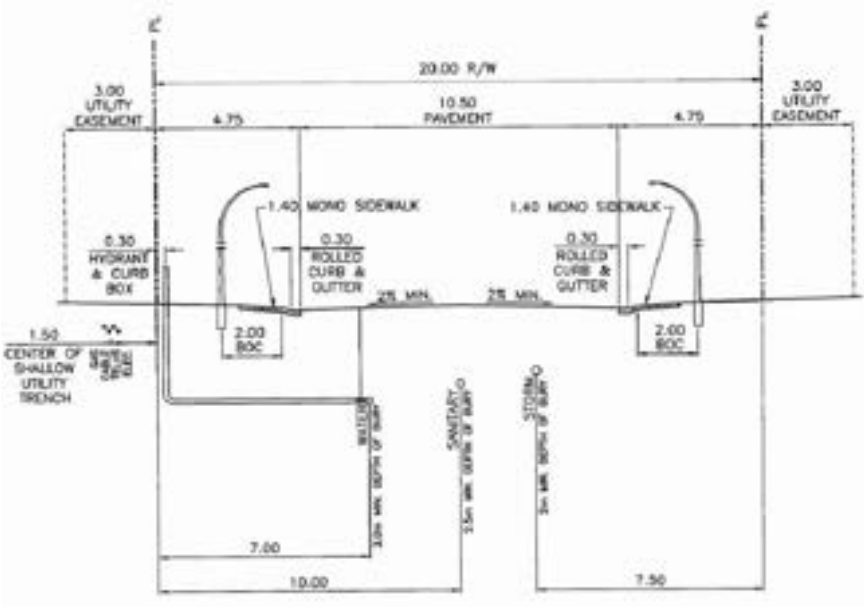

A 4.1A SOUTHMORE DRIVE

1:600




B 4.1A SOUTHMORE DRIVE AND POTENTIAL DRY POND

1:600




TYPICAL 20.00m R/W SECTION

NTS

FIGURE 4.3 | Blairmore

# Southmore Phase 2

Typical Sections

PREPARED FOR: ORRSC

Stantec

116549078

January 25, 2024

U:\116549078\drawings\figures\49078_Southmore Drive And Pond Section.dwg
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# Appendix I: Phase 1 Environmental Site Assessment

**FINAL -**
**Phase I Environmental Site Assessment**

Southmore Phase 2
, Blairmore, AB

Prepared for:
Oldman River Regional Services Commission

Prepared by:
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200, 325 – 25 Street SE
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**Job No.: 116549078**

January 25, 2024

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## Executive Summary

### Site Description and Current Operations

Stantec Consulting Ltd. (Stantec) conducted a Phase I Environmental Site Assessment (Phase I ESA) of the property located at Northeast Quarter of Section 34, Township 007, Range 04 and West of the Fifth Meridian (NE 34-007-04-W5M) in Blairmore, Alberta, hereinafter referred to as the "Site". The Phase I ESA was conducted for Oldman River Regional Services Commission (ORRSC) in support of a Feasibility Assessment of the Site for a proposed residential development. The purpose of the Phase I ESA was to assess if evidence of potential or actual environmental contamination exists in connection with the Site, as a result of current or past activities on the Site or neighbouring properties.

The Site is currently owned by the Municipality of Crowsnest Pass with three privately owned properties; one in the northwest and the other two within the northeast portion of the Site. The Site is mostly vegetated with grasses, shrubs and dense forest. Pipelines and their associated right-of-ways are located within the northern portions of the Site.

### Records Review

Based on the historical information gathered during the Phase I ESA including the information from a current land title search, the Municipality of Crowsnest Pass owned the majority of the Site since circa 2007. The northwest and northeast portions of the Site have been occupied by private residential homesteads since at least the mid 1990s. The records review indicated that four pipelines and their associated right-of-ways have crossed the Site or its immediate vicinity. Blairmore Coal Co. of Alberta was identified in a database included in ERIS report to operate an underground mine within the area. While the approximate extent of the former mine was reported in an Alberta Energy Regulator database, additional information is required to identify the exact location of this mine.

### Site Visit/Interviews

At the time of the Site visit, the Site was mostly covered with vegetation consisting of grasses, shrubs and dense forest. Several areas of potential environmental concerns (APECs) including pipelines and their right-of-ways, compressor station, metal debris, an abandoned concrete pad, stick-up pipes, horse stable, corrals, abandoned barn/shed etc. were identified within the northern portion of the Site. Three residential properties were observed to be located on the north and northeast portions of the Site but were not accessible during the site visit.

### Conclusions

The Phase I ESA has revealed evidence of the following potential environmental concerns associated with the Site:

- **Pipelines**: An Abadata search identified four pipelines that cross the Site or are located in its immediate vicinity. A pipeline right-of-way was visible within the northern site limits during the site visit.
- **Compressor Station**: A compressor station was identified to be located to the northwest of the Site.
- **Debris**: Metal debris, an abandoned concrete pad, and stick-up pipes of unknown purposes were located on the northwest portion of the Site.
- **Other APECs**: Horse stables, corrals, abandoned barns/shed, and the residential properties were located on the north and northeast portions of the Site. The residential properties located on the north and northeast portions of the Site were developed between 1995 and 2004. Stantec did not have access to these on-site private residential properties during the site visit; therefore, the environmental condition of this portion of the site could not be assessed. During development, if buried materials, soil material with unusual odours and/or staining, burn pits, septic systems, and buried structures are identified, further assessment by an environmental consultant will be required at that time. Any water wells identified during development should be decommissioned in accordance with provincial guidelines.
- **Other APECs**: It should be noted that the ERIS report identified an underground mine for Blairmore Coal Co. of Alberta near or in the vicinity of the eastern portion of the Site. While the approximate extent of the former underground mine was reported in the AER database, additional information is required to identify locations of mine spoil storage, coal storage, drainage discharge areas, etc. No ground features (e.g., surface staining, stressed vegetation, pits, tunnels, open excavations, mine shafts, etc.) were observed in this area that would correspond to historical use of this area as an underground coal mine. Additional

## Conclusions (continued)

background searches including a review of the Blairmore archives is recommended to gather pertinent information about the former underground coal mine.

All debris materials identified on the Site should be disposed of appropriately. It should be noted that prior to Site development, other investigations (e.g., pre-demolition and hazardous building materials assessments, geotechnical assessments, historical resources assessments, biophysical assessments, etc.) may be required.

The statements made in this Executive Summary are subject to the same limitations included in the Closure (Section 7.0) and are to be read in conjunction with the remainder of this report.

## 1.0 General Information

**Client Information:**
Oldman River Regional Services Commission
Mr. Ryan Dyck
3105 - 16 Avenue North
Lethbridge, AB T1H 5E8

**Project Information:**
Southmore Phase 2 Site Development Feasibility Assessment
116549078

**Site Information:**
Southmore Phase 2

Blairmore, AB

**Consultant Information:**
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**E-mail Address:** ripon.banik@stantec.com
**Site Visit Date:** October 20, 2023
**Report Date:** January 25, 2024
**Site Assessor:** Kirstin Young
**Report Preparer:** Ripon Banik
**Senior Reviewer:** Amin N. Kassam, B.Sc.

**Site Assessor:**

Kirstin Young
Field Technician

**Report Preparer:**

Ripon Banik
Environmental Engineer

**Senior Reviewer:**

Amin N. Kassam, B.Sc.
Senior Principal/Technical Area Leader, Environmental Services

The environmental site assessment and preparation of this report were completed in general accordance with the objectives, requirements or standards of the Canadian Standards Association (CSA) Z768-01 *Phase I Environmental Site Assessment* Standard (R2022).

## 2.0 Introduction

## 2.1 Objectives

Stantec Consulting Ltd. (Stantec) conducted a Phase I Environmental Site Assessment (Phase I ESA) of the property located at Northeast Quarter of Section 34, Township 007, Range 04 and West of the Fifth Meridian (NE 34-007-04-W5M) in Blairmore, Alberta, hereinafter referred to as the "Site". The Phase I ESA was conducted for Oldman River Regional Services Commission (ORRSC) in support of a Feasibility Assessment of the Site for a proposed residential development. The purpose of the Phase I ESA was to assess if evidence of potential or actual environmental contamination exists in connection with the Site, as a result of current or past activities on the Site or neighbouring properties.

A Site Location Plan and a Site Plan are included in **Appendix A.** A Locations of Site Photographs plan is also included in **Appendix A**. Selected photographs of the Site are included in **Appendix B**.

## 2.2 Scope of Work

The Phase I ESA carried out by Stantec on this Site was conducted in general accordance with Stantec's Proposal Number 971052 dated September 12, 2023 and the Canadian Standards Association's (CSA) Z768-01 *Phase I Environmental Site Assessment* Standard (R2022). The Phase I ESA consisted of the following:

- records review including, but not limited to, publicly available city directories, aerial photographs, fire insurance plans, geological and topographic maps
- provincial government regulatory search
- review of available environmental databases and records
- review of previous environmental reports and existing title searches, if made available
- interviews with persons having knowledge of the Site
- a site visit
- evaluation of information and preparation of the report provided herein

A Phase I ESA does not include sampling or testing of air, soil, groundwater, surface water or building materials. For this Phase I ESA, no enhancements to the CSA standard were made.

This assessment did not include a review or audit of operational environmental compliance issues, or of any environmental management systems, which may exist for the Site.

The assessment of the Site for the potential presence of hazardous building materials was based on the absence of buildings and their components on areas of the Site that were accessible to Stantec during the site visit, and a non-intrusive visual review of the Site. No sampling of materials was conducted. A Phase I ESA does not constitute a Hazardous Materials Survey or Designated Substances Survey.

No buildings were observed to be located within portions of the Site owned by the Old River Regional Services Commission and/or the Municipality of Crowsnest Pass. The assessment of buildings, located within the privately owned portions of the Site, for hazardous building materials, microbial contamination and moisture damage was not conducted as they were inaccessible during the site visit. No sampling or intrusive investigation was conducted.

The professional qualifications of the project team are provided in **Appendix C**.

The site visit was conducted by Kirstin Young, Environmental Technician, of Stantec, on October 20, 2023. The Site and readily visible and publicly accessible portions of adjoining and neighbouring properties were observed for the presence of potential sources of environmental contamination. Stantec was unaccompanied during the site visit.

## 2.3 Regulatory Framework

In Alberta, the management and investigation of contaminated sites is regulated under the Environmental Protection and Enhancement Act (EPEA) and the Water Act. EPEA prohibits the release of substances in an amount that causes or may cause a significant adverse effect. When a release occurs, the release must be reported, and remedial measures must be implemented. The EPEA authorizes the Director (i.e., a person

## 2.0 Introduction (continued)

## 2.3 Regulatory Framework (continued)

designated as the Director by the Minister as per EPEA) to issue Remediation Certificates when contaminated land has been remediated. The Remediation Certificate protects the responsible party from future environmental protection orders related to the remediated site. The Water Act regulates the management of water supplies and water quality, including groundwater.

In August 2022, Alberta Environment and Parks (AEP), now referred to as Alberta Environment and Protected Areas (AEPA), released updated remediation guidelines (*Alberta Tier 1 and Tier 2 Soil and Groundwater Remediation Guidelines*), which came into effect on January 1, 2023. These guidelines allow three management options: Tier 1, Tier 2, and Exposure Control. Remediation of a site under a Tier 1 approach involves the use of generic guidelines. A Tier 2 approach allows for the consideration of site-specific conditions through the modification of generic (Tier 1) guidelines. Exposure Control management involves risk management through exposure barriers or administrative controls based on site-specific risk assessment. Unconditional regulatory closure is available for sites managed to Tier 1 and Tier 2 objectives (AEP 2022a and AEP 2022b).

During a Phase I ESA samples are not collected, however, if there are previous soil or groundwater sample results available, the results are compared to applicable federal and provincial regulations and guidelines.

A Phase I ESA involves a review of any site buildings for the potential presence of hazardous materials related to building components and materials. Specific federal or provincial regulations, guidelines or codes of practice exist for these individual hazardous materials. Where required, this documentation was utilized to determine appropriate conclusions and formulate appropriate recommendations.

## 3.0 Records Review

### 3.1 Information Sources

The applicable search distance for the records review included the Site, properties immediately adjacent to the Site and other neighbouring properties where activities considered to be potential sources of environmental contamination were apparent. Information sources obtained and reviewed as part of the records review are listed below.

| SOURCE | INFORMATION/CONTACT |
|---|---|
| **Aerial Photographs** | Alberta Environment and Protected Areas (AEPA):<br>1953<br>1965<br>1974<br>1984<br>1995<br>2004<br>2016<br>2022 |
| **Fire Insurance Plans** | No Fire Insurance Plans (FIPs) were available for the Site. |
| **City Directories** | A search of City Directories through ERIS was completed on October 4, 2023. |
| **Previous Environmental Reports** | No previous environmental reports were available for the Site or its surrounding within 100 m radius. |
| **Company Records** | None provided. |
| **Geological and Geotechnical Reports** | Surficial Geology of Alberta, Generalized Digital Mosaic (DIG 2013-0002) - Alberta Geological Survey. https://geology-ags-aer.opendata.arcgis.com/datasets/ags-aer::surficial-geology-of-alberta-generalized-digital-mosaic-dig-2013-0002/explore?location=49.604119%2C-114.438227%2C12.63.<br><br>Bedrock Geology of Alberta (DIG 2013-0018) - Alberta Geological Survey. https://geology-ags-aer.opendata.arcgis.com/datasets/ags-aer::bedrock-geology-of-alberta-dig-2013-0018/explore?location=54.295054%2C-115.002399%2C6.89. |
| **Environmental Control Orders, Stop Orders, Prosecutions, or Tickets** | AEPA, Regulatory Approval Centre, Authorization/Approvals Viewer https://avx.alberta.ca/ApprovalViewer.aspx |
| **Reportable Spill/Release Occurrences** | AEPA FOIP office, Edmonton, Alberta<br><br>AEPA Historical Environmental Enforcement Search: https://www.alberta.ca/lookup/environmental-historical-enforcement-search.aspx<br><br>Abacus Datagraphics: Alberta Energy Regulator (AER) pipeline and oil well database http://abadata.abacusdatagraphics.com/index.asp |

## 3.0 Records Review (continued)

## 3.1 Information Sources (continued)

| SOURCE | INFORMATION/CONTACT |
|---|---|
| **Contaminated Sites** | AEPA, Regulatory Approval Centre, Authorization/Approvals Viewer https://avx.alberta.ca/ApprovalViewer.aspx<br><br>AEPA, ESAR http://www.esar.alberta.ca/esarmain.aspx |
| **Environmental Approvals, Licences, Registrations, and Permits** | AEPA, Regulatory Approval Centre, Authorization/Approvals Viewer https://avx.alberta.ca/ApprovalViewer.aspx<br><br>AEPA, ESAR http://www.esar.alberta.ca/esarmain.aspx |
| **Landfill Records** | Environmental Risk Information Services (ERIS) Report<br><br>Help End Landfill Pollution (HELP) database (1998)<br><br>Alberta Environment (AENV) and Environment Canada: Active and Inactive Land Disposal Sites (1982)<br><br>AENV Industrial Landfill Sites (1982) |
| **Underground & Aboveground Storage Tanks** | AEPA, ESAR http://www.esar.alberta.ca/esarmain.aspx<br><br>ERIS Report:<br><br>Federal Registry for Storage Tank Systems<br><br>Fuel Storage Tanks database<br><br>Retail Fuel Storage Tanks database<br><br>Safety Codes Council, Alberta Safety Codes Authority |
| **Other Available Information** | Abacus Datagraphics: AER pipeline and oil well database http://abadata.abacusdatagraphics.com/index.asp<br><br>AEPA, 2022a. "Alberta Tier 1 Soil and Groundwater Remediation Guidelines". Edmonton, Alberta<br><br>AEPA, 2022b. "Alberta Tier 2 Soil and Groundwater Remediation Guidelines". Edmonton, Alberta<br><br>Government of Alberta Spin II database, https://alta.registries.gov.ab.ca/spinii/logon.aspx |
| **Water Well Records** | AEPA Water Well Information Database http://groundwater.alberta.ca/WaterWells/d/ |
| **Operating and Abandoned Mines** | Alberta Energy Regulator (AER) Coal Mine Map Viewer. https://extmapviewer.aer.ca/AERCoalMine/Index.html<br><br>AER Serial Publication ST45. Coal Mine Atlas Operating and Abandoned Coal Mines in Alberta. |

## 3.0 Records Review (continued)

## 3.1 Information Sources (continued)

| SOURCE | INFORMATION/CONTACT |
|---|---|
| **Operating and Abandoned Mines** | https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fstatic.aer.ca%2Fprd%2Fdocuments%2Fsts%2FST45-CoalMineDataListing.xlsx&wdOrigin=BROWSELINK |

## 3.2 Previous Reports

No AEPA ESAR records were reported through the AEPA ESAR database or the ERIS search report for the Site or for properties located within a 100 m radius of the Site.

## 3.3 Regulatory Information

Available environmental databases and records were searched to determine if the Site, adjacent or neighbouring properties were listed. The databases and search results are presented below. The federal, provincial and municipal departments which provide regulatory information for the Site are listed in Section 3.0 and the responses are included in **Appendix D**.

**Regulatory Information:**

**Abacus Datagraphics (Abadata):** A search of the Abacus Datagraphics Database identified four pipelines associated with the Site and its immediate vicinity. No additional pipelines, oil and gas wells, spills/complaints or oil and gas facilities were located within 100 m of the Site. Details pertaining to the pipeline records are listed below:

License # AB00002072-4
Company: Nova Gas Transmission Ltd.
Substance: Natural Gas (NG)
Status: Abandoned (A)
Location: Along the northern portion of the Site, running southeast-northwest

License # AB00003754-1
Company: ATCO Gas and Pipelines Ltd.
Substance: Natural Gas (NG)
Status: Operating (O)
Location: Along the northern portion of the Site, running south-north

License # AB00080096-19
Company: Nova Gas Transmission Ltd.
Substance: Natural Gas (NG)
Status: Operating (O)
Location: Along the northern portion of the Site, running southeast-northwest

License # AB00080201-46
Company: Nova Gas Transmission Ltd.
Substance: Natural Gas (NG)
Status: Operating (O)
Location: Along the northern portion of the Site, running southeast-northwest

**AEPA Regulatory Approvals Center:** Information obtained from the Regulatory Approvals Centre Internet Search Service (Authorizations/Approval Viewer) indicated several active approvals associated with the Blairmore Crowsnest Pass Waterworks System for the site area.

## 3.0 Records Review (continued)

## 3.3 Regulatory Information (continued)

**AEPA Freedom of Information and Protection of Privacy (FOIP) office:** The AEPA FOIP office did not identify any routinely available records pertaining to the Site.

**AEPA Environmental Site Assessment Repository (ESAR):** A search of the AEPA ESAR database did not identify any records for the Site or properties located within a 100 m radius of the Site.

**AEPA Water Well Information Database:** The AEPA Water Wells database search did not identify any water wells associated with the Site. However, the database identified nine water wells within 500 m of the Site. Six of these water wells were listed for domestic use, two were listed for municipal use and one was listed for unknown use. A record of an abandoned water well was also reported. The depths of these water wells varied between 4.3 (well ID #374110) and 99.1 (Well ID #1250624) metres below grade (mbg). The static water level reported for the six domestic water wells varied between 3.0 and 20.1 mbg.

**AEPA Environmental Enforcement Search:** The environmental enforcement search did not identify any records pertaining to the Site.

**ERIS:** An ERIS database report was commissioned for the Site and surrounding properties located within a 100 m radius of the Site. The ERIS report identified one record pertaining to the Site. No records were identified for surrounding properties within 100 m of the Site.

Records pertaining to the Site are as follows:

- Blairmore Coal Co. of Alberta

**Fire Insurance Plans (FIPs):** There were no FIPs available for the Site or surrounding properties located within 100 m of the Site.

**Government of Alberta Spin II Database:** A land title search identified that The Municipality of Crowsnest Pass has owned majority of the Site since at least 2007. A review of the land title indicated that utility right of ways were granted to The Alberta Gas Truck Line Co Ltd. since 1960. A caveat with a development agreement to Southmore Corporation was also included in the land title.

Three private properties, two located within the northeast portion of the Site (one owned by Avner Perl and Madeleine Perl of Calgary since 1996 and the other owned by William Randal Cartwright of Blairmore since 2004) and the third one located within the northwest portion of the Site (owned by Wendy Lee Fabro and David Beric Fabro of Coleman since 2018), were part of the Site considered for the Area Structure Plan for the Project. Land titles of these private properties included caveats and/or utility right of ways. Copies of the land titles of properties located within the Site are included in **Appendix D**.

**AER Coal Mine Map Viewer and AER Serial Publication ST45:** The former underground mine referred to as Sunburst, was operated by Blairmore Coal Co. Ltd. between 1919 and 1930 with depths reaching 63 mbg. Although it is listed as abandoned, given that the mine is 100+ years old, it would not have been abandoned to the current regulatory standards. No reclamation certificates were identified for this mine based on the record searches completed during this Phase I ESA. While the approximate extent of the former mine was reported in an AER database, additional information is required to identify locations of mine spoil storage, coal storage, drainage discharge areas, etc.

## 3.4 Physical Setting

### 3.4.1 Surficial Geology

Based on an available surficial geology map, the native surficial soils of the Site generally consist of poorly to well-sorted stratified-to-massive sand, gravel, silt, clay and organic sediments with patches of exposed bedrock with the northern portion of the Site likely consisting of artificial fill and mine waste. The characteristic permeability of these soils is moderate to high. A site-specific determination (i.e., Geotechnical Investigation) would be required in order to obtain detailed soil profile and permeability information.

## 3.0 Records Review (continued)

## 3.4 Physical Setting (continued)

### 3.4.2 Surface Water Drainage

The surfaces of the Site was mostly covered with vegetation consisting of grasses, shrubs and dense forest at the time of the site visit. No stormwater drains or catch basins were observed on-site and therefore, stormwater is anticipated to drain by infiltration, overland flow and/or catch basins observed in nearby off-site areas.

### 3.4.3 Topography and Regional Drainage

The Site appeared to be mostly vegetated with a higher elevation compared to its surroundings. Based on an available topographic map and the observed site topography, regional surface drainage (anticipated shallow groundwater flow direction) is anticipated to flow radially from the Site and flow towards Lyon Creek located at approximately 1.2 kilomteres (km) east of the Site or towards the Crowsnest River located at approximately 1.1 km north of the Site.

It should be noted that the direction of the shallow groundwater flow in limited areas can also be influenced by the presence of underground utility corridors and is not necessarily a reflection of regional or local groundwater flow or a replica of the Site or area topography.

### 3.4.4 Bedrock Geology

Based on an available bedrock geology map, bedrock in the area of the Site likely consists of sandstone, mudstone or shale of the Blairmore or Alberta and Smoky group.

## 4.0 Site Description

### 4.1 Property Information

Majority of the Site is currently owned by the Municipality of Crowsnest Pass and consists mostly of an undeveloped parcel of land covered with grasses, shrubs and dense forest. The land use of the Site currently consists of non-urban area or comprehensive ski village as per the Crowsnest Pass land use map.

| | |
|---|---|
| **Current Site Owner:** | The Municipality of Crowsnest Pass for the majority of the Site. Three privately owned properties were located on the northeast and the northwestern portions of the Site considered for the Area Structure Plan for the project. |
| **Legal Description:** | NE 34-007-04 W5M, legal subdivisions 9, 10, 15 and 16, Plan 9510566, Block 6 and Lot 13 |
| **Property Area:** | 71.8 hectares (177.42 acres) - approximately |
| | |
| **Utility Providers:** | |
| **Water:** | Majority of the Site is not serviced. Stantec did not have access to the three privately owned properties included in the Area Structure Plan for the project and could not confirm their utility services or providers. |
| **Storm and Sanitary Sewers:** | Majority of the Site is not serviced. Stantec did not have access to the three privately owned properties included in the Area Structure Plan for the project and could not confirm their utility services or providers. |
| **Electricity:** | Majority of the Site is not serviced. Stantec did not have access to the three privately owned properties included in the Area Structure Plan for the project and could not confirm their utility services or providers. |
| **Natural Gas:** | Majority of the Site is not serviced. Stantec did not have access to the three privately owned properties included in the Area Structure Plan for the project and could not confirm their utility services or providers. |

### 4.2 On-Site Buildings and Structures

No buildings or structures were observed on-site at the time of the site visit with the exception of three residential buildings located north and northeast of the Site within privately owned properties. A horse stable and barn areas and abandoned barns were also observed within the north portion of the Site and were likely associated with the north residential property. An abandoned concrete pad with unknown stick-up pipes and overgrown vegetation was observed northwest of the Site. Stantec did not have access to these buildings and as such, no assessment could be conducted for these buildings.

### 4.3 Historical Land Use

Historical land use for the Site was determined through historical records listed in Section 3.0. A summary of the historical information is presented below and are also presented in Figures 4 through 11 in **Appendix A**.

| Period/Date: | Land Use: |
|---|---|
| 1953 | The Site and surrounding properties appeared undeveloped and mostly vegetated. A homestead appeared to be located to the northwest of the Site (near the intersection of 19 Avenue and 108 Street). |
| 1965 | No significant changes were observed on the Site or surrounding properties immediately adjacent to the Site since 1953. Tree clearing along the northern boundary of the Site was visible and likely associated with installation of pipelines within their right of ways. The Ranger Station appeared to be under construction off-site to the northeast of the Site (near the intersection of 19 Avenue and 119 Street). |
| 1974 | No significant changes were observed on the Site or surrounding properties immediately adjacent to the Site since 1965. The Ranger Station, located near the intersection of 19 Avenue and 119 Street, appeared to have been constructed with additional residential properties to the north and east. The property located to the northwest appeared to be decommissioned. |

## 4.0 Site Description (continued)

## 4.3 Historical Land Use (continued)

| Period/Date: | Land Use: |
|---|---|
| 1984 | Additional residential developments were visible north of the Site. Tecumseh Mountain Manor (Senior's home) and McMan South Youth Family and Community Association appeared to have been developed off-site to the northwest. The remaining portions of the Site appeared unchanged since 1974. |
| 1995 | No significant changes were observed on the Site or surrounding properties immediately adjacent to the Site since 1984 except for some additional residential developments north of the Site. |
| 2004 | No significant changes were observed on the Site or surrounding properties immediately adjacent to the Site since 1995. Two residential properties located within the north/northeast portion of the Site were visible. |
| 2016 | No significant changes were observed on the Site or surrounding properties immediately adjacent to the Site since 2004. The Southmore Drive and Southmore Place roadways were visible. |
| 2022 | No significant changes were observed on the Site or surrounding properties immediately adjacent to the Site since 2016. Residential properties surrounding Southmore Drive and Southmore Place were visible. |

## 5.0 Site Visit Findings

### 5.1 Current Site Operations

At the time of the site visit, the Site mostly consisted of an undeveloped parcel of land that was covered with grasses, shrubs and dense forest. Bare areas related to a pipeline right of way (ROW) running east-west through the northern portion of the Site was also observed. Selected photographs of the Site are included in **Appendix B**.

### 5.2 Waste Generation and Storage

#### 5.2.1 Solid and Liquid Wastes

No wastewater discharges, and no domestic waste generation or storage was identified on the accessible areas of the Site at the time of the site visit with the exception of the following:

- Metal debris and garbage was observed in the northwestern portion of the Site.
- Abandoned concrete pad and stick-up pipes related to unknown activities, some gravel and overgrown vegetation was also located in the northwestern portion of the Site.

#### 5.2.2 Drains, Sumps, Septic Systems and Oil Water Separators

No sumps, septic systems, interceptors, or separators were identified on the Site at the time of the site visit. A residential property with horse stables, corrals, and barn areas and a residential property with a suspected water well were observed in the north and northeast portions of the Site. However, it is currently unknown whether any of these properties have sumps, septic systems or septic fields.

#### 5.2.3 Air Discharges and Odours

No sources of air emissions suspected to result in residual contamination were identified on the Site during the site visit. A vent pipe was observed on the roof of the compressor station, located immediately outside of the Site's northwestern limit. The compressor station is owned by TC Energy who would be responsible for compliance with provincial and federal emissions requirements.

### 5.3 Fuel and Chemical Storage

#### 5.3.1 Underground Storage Tanks (USTs)

No chemical or fuel storage USTs were identified on the accessible areas of the Site at the time of the site visit. Further, no vent or fill pipes indicating the potential presence of an abandoned or decommissioned UST were observed. Stick-up pipes related to unknown activities and a concrete pad and graveled areas were observed on a property located in the northwest portion of the Site. No USTs were reported to be present on this northwest property.

#### 5.3.2 Aboveground Storage Tanks (ASTs)

No chemical or fuel storage ASTs were identified on the accessible areas of the Site or on properties located within 100 m radius of the Site at the time of the site visit.

#### 5.3.3 Other Storage Containers

No chemical storage was observed on the accessible area of the Site at the time of the site visit.

### 5.4 Building Systems/Equipment

#### 5.4.1 Heating and Cooling Systems

No heating or cooling systems were observed on the accessible areas of the Site, as the Site was mostly undeveloped. The residential properties located in the north and northeast portion of the Site were inaccessible

## 5.0 Site Visit Findings (continued)

## 5.4 Building Systems/Equipment (continued)

### 5.4.1 Heating and Cooling Systems (continued)

during the site visit and as such, the types of heating and cooling systems used on these properties are currently unknown.

### 5.4.2 Hydraulic Equipment

No hydraulic equipment was observed on the accessible areas of the Site at the time of the site visit.

## 5.5 Exterior Site Observations

### 5.5.1 Surface Features

The Site was mostly covered with grasses, shrubs and dense forest, and was situated at a higher elevation compared to its surroundings. The Site slopes north with a steep grade towards its surroundings. Some scrap metals (including metal sheets and drums) were observed in the northwest portion of the Site. No surface staining was observed within the accessible areas of the Site at the time of the site visit. It should be noted that although the ERIS report identified an underground mine for Blairmore Coal Co. of Alberta near or in the vicinity of the northeast portion of the Site. The former underground mine referred to as Sunburst, was operated by Blairmore Coal Co. Ltd. between 1919 and 1930 with depths reaching 63 mbg. Although it is listed as abandoned, given that the mine is 100+ years old, it would not have been abandoned to the current regulatory standards. No reclamation certificates were identified for this mine based on the record searches completed during this Phase I ESA. While the approximate extent of the former underground mine was reported in the AER database, additional information is required to identify the exact location of this mine. No ground features (e.g., surface staining, stressed vegetation, pits, tunnels, open excavations, mine shafts, etc.) were observed in this area that would correspond to historical use of this area as an underground coal mine.

### 5.5.2 Fill Materials

No evidence of imported fill was observed on the accessible areas of the Site at the time of the site visit. However, fill material may be expected in the areas of the pipeline right-of-way located along the northern portion of the Site, the compressor station located to the northwest of the Site, and the residential properties located on the north and northeast portions of the Site.

### 5.5.3 Wells

No abandoned or existing wells (water, oil, gas or disposal) were identified on the accessible areas of the Site with the exception of a suspected water well observed within the residential property located on the northeast portion of the Site. The residential property was inaccessible during the site visit and as such, the status of the suspected water well could not confirmed.

## 5.6 Hazardous Building Materials

### 5.6.1 Asbestos-Containing Materials (ACMs)

The common use of friable (crumbles easily by hand pressure) asbestos-containing materials (ACMs) in construction generally ceased voluntarily in the mid to late 1970s. Non-friable asbestos-containing products continued to be manufactured, imported and used in Canada until asbestos products were formally banned in December 2018. Asbestos was used in thousands of building products and the common uses of friable ACMs included boiler and pipe insulation, and spray-on fireproofing. Asbestos was also used in many manufactured products such as floor tiles, ceiling tiles, transite cement products and various other construction materials. Vermiculite used as insulation may be contaminated with asbestos fibres.

As the Site was mostly undeveloped, no suspected ACMs were identified on the accessible areas of the Site during the site visit. The residential properties located on the north and northeast portions of the Site were inaccessible during the site visit and as such the presence of ACMs in these properties could not be confirmed.

## 5.0 Site Visit Findings (continued)

## 5.6 Hazardous Building Materials (continued)

### 5.6.1 Asbestos-Containing Materials (ACMs) (continued)

As discussed in Section 4.0, these properties were developed between 1995 and 2004 and as such, the potential for presence of ACMs on these residential properties is considered low at this time.

### 5.6.2 Polychlorinated Biphenyls (PCBs)

From the 1930s to the 1970s, PCBs were widely used as coolants and lubricants for electrical equipment, including transformers and capacitors, and in a number of industrial materials, including sealing and caulking compounds, inks and paint additives. The use of PCBs was prohibited in heat transfer and electrical equipment installed after September 1, 1977, and in transformers and capacitors installed after July 1, 1980. Regulations now require that PCB containing equipment be taken out of service prior to regulated deadlines.

As the Site was mostly undeveloped, no buildings or associated electrical equipment with the potential to contain PCBs was identified on the accessible areas of the Site at the time of the site visit. The residential properties located on the north and northeast portions of the Site was inaccessible during the site visit. As discussed in Section 4.0, these properties were developed between 1995 and 2004 and as such, the potential for presence of PCBs on these properties is considered low at this time.

### 5.6.3 Lead-Based Materials

In 1976, the lead content in interior paint was limited to 0.5% by weight under the federal Hazardous Products Act. Lead based water supply pipes were used greater than 50 years ago. Between 1930 and 1986, most buildings used copper pipe with lead-solder joints. Other lead-based products include wall shielding (x-ray rooms).

As the Site was mostly undeveloped, no lead-based building materials were identified on the accessible areas of the Site at the time of the site visit. The residential properties located on the north and northeast portions of the Site were inaccessible during the site visit. As discussed in Section 4.0, these properties were developed between 1995 and 2004 and as such, the potential for presence of lead-based materials on these properties is considered low at this time.

### 5.6.4 Urea Formaldehyde Foam Insulation (UFFI)

Urea Formaldehyde Foam Insulation (UFFI) was used as an insulation product for existing houses between the mid-1970s and its ban in Canada in 1980. It was not commonly used for commercial or industrial buildings.

As the Site was mostly undeveloped, no UFFI was identified on the accessible areas of the Site at the time of the site visit. The residential properties located on the north and northeast portions of the Site were inaccessible during the site visit. As discussed in Section 4.0, these properties were developed between 1995 and 2004 and as such, the potential for presence of UFFI on these properties is considered low at this time.

### 5.6.5 Ozone-Depleting Substances (ODSs)

Refrigeration and air conditioning equipment in place before 1998 may contain refrigerants containing Ozone-Depleting Substances (ODSs). Non-ODS refrigerants have been developed and are available to replace these materials in newer equipment.

As the Site is mostly undeveloped, no building equipment containing ODSs was identified on the accessible areas of the Site at the time of the site visit. The residential properties located on the north and northeast portions of the Site was inaccessible during the site visit. As discussed in Section 4.0, these properties were developed between 1995 and 2004 and as such, the potential for presence of UFFI on these properties is considered low at this time.

## 5.0 Site Visit Findings (continued)

## 5.7 Special Attention Items

### 5.7.1 Radon Gas

Radon is a radioactive gas associated with uranium rich black shale and/or granite bedrock. Radon emits alpha particles and produces several solid radioactive products called radon daughters. Harmful levels of radon and radon daughters can accumulate in confined air spaces, such as basements and crawl spaces.

There is insufficient existing data available to make an accurate assessment of the potential for radon gas issues at this Site. Given the underlying geology, it is anticipated that radon gas issues would not be significant at this location; however, such conditions would have to be determined by the completion of a study which is beyond the scope of work of this project.

### 5.7.2 Microbial Contamination (Mould) and Indoor Air Quality

The growth of mould in indoor environments is typically due to a moisture problem related to building envelope or mechanical systems deficiencies or design and can produce adverse health effects. There is no practical way to eliminate all mould and mould spores in the indoor environment. The way to control mould is to control moisture.

The residential properties located on the north and northeast portions of the Site were inaccessible during the site visit for Stantec to assess the potential for the presence of mould or indoor air quality issues.

### 5.7.3 Electromagnetic Frequencies (EMFs)

Electrical currents induce electromagnetic fields. No scientific data supports definitive answers to questions about the existence or non-existence of health risks related to electromagnetic fields.

No power lines or electrical substations that could generate significant electromagnetic fields were observed onsite during the site visit.

### 5.7.4 Noise and Vibration

The effects of noise and vibration on human health vary according to the susceptibility of the individual exposed, the nature of the noise/vibration and whether exposure occurs in the working environment or in the home.

No major or persistent sources of noise and vibration were identified on the Site at the time of the site visit.

## 5.8 Neighbouring Property Information

The current activities on neighbouring properties observed at the time of the site visit and a summary of historical information gathered through the records review are presented in the following section. The surrounding land uses observed during the site visit are also depicted on Figure 2.0, in **Appendix A**.

**North:**
At the time of the site visit, the properties located north of the Site consisted mostly of residential properties. Tecumseh Mountain Manor (Senior's home) and McMan South Youth Family and Community Association were located adjacent to the northwest of the Site. A compressor station was located to the northwest in the vicinity of the Site. The Ranger Station was located approximately 85 m northeast of the Site. Commercials properties such as Austrialpin Inc. and the Crowsnest Pass Food Bank and Community Garden were located at a distance of more than 100 m to the northeast of the Site. A Canadian Pacific Railway (CPR) line was located to the north running east-west and at a distance of more than 100 m from the Site.

**East:**
The Site was bounded by undeveloped forested land and a ski area to the east. The Southmore Pumphouse was also located at approximately 150 m east of the Site.

**South and West:**

## 5.0 Site Visit Findings (continued)

## 5.8 Neighbouring Property Information (continued)

The Site was bounded by grassed and forested areas to the south and to the west of the Site at the time of the site visit.

## 5.9 Client-Specific Items

No specific client requests were made with respect to this Phase I ESA.

## 6.0 Conclusions

The Phase I ESA has revealed evidence of the following potential environmental concerns associated with the Site:

- **Pipelines**: An Abadata search identified four pipelines that cross the Site or are located in its immediate vicinity. A pipeline right-of-way was visible within the northern site limits during the site visit.
- **Compressor Station**: A compressor station was identified to be located to the northwest of the Site.
- **Debris**: Metal debris, an abandoned concrete pad, and stick-up pipes of unknown purposes were located on the northwest portion of the Site.
- **Other environmental concerns**: Horse stables, corrals, abandoned barns/shed, and the residential properties were located on the north and northeast portions of the Site. The residential properties located on the north and northeast portions of the Site were developed between 1995 and 2004. Stantec did not have access to these on-site private residential properties during the site visit; therefore, the environmental condition of this portion of the site could not be assessed. During development, if buried materials, soil material with unusual odours and/or staining, burn pits, septic systems, and buried structures are identified, further assessment by an environmental consultant will be required at that time. Any water wells identified during development should be decommissioned in accordance with provincial guidelines.
- **Other environmental concerns**: It should be noted that the ERIS report identified an underground mine for Blairmore Coal Co. of Alberta near or in the vicinity of the eastern portion of the Site. While the approximate extent of the former underground mine was reported in the AER database, additional information is required to identify locations of mine spoil storage, coal storage, drainage discharge areas, etc. No ground features (e.g., surface staining, stressed vegetation, pits, tunnels, open excavations, mine shafts, etc.) were observed in this area that would correspond to historical use of this area as an underground coal mine. Additional background searches including a review of the Blairmore archives is recommended to gather pertinent information about the former underground coal mine.

All debris materials identified on the Site should be disposed of appropriately. It should be noted that prior to Site development, other investigations (e.g., pre-demolition and hazardous building materials assessments, geotechnical assessments, historical resources assessments, biophysical assessments, etc.) may be required.

## 7.0 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

This report is limited by the following:

- *Stantec was unaccompanied and no interviews were conducted during the site visit.*
- *No private properties located on the north and northeast portions of the Site were accessed during the site visit. Observations were made from the client owned or publicly accessible areas.*
- *The densely forested areas were not accessed due to safety concerns.*

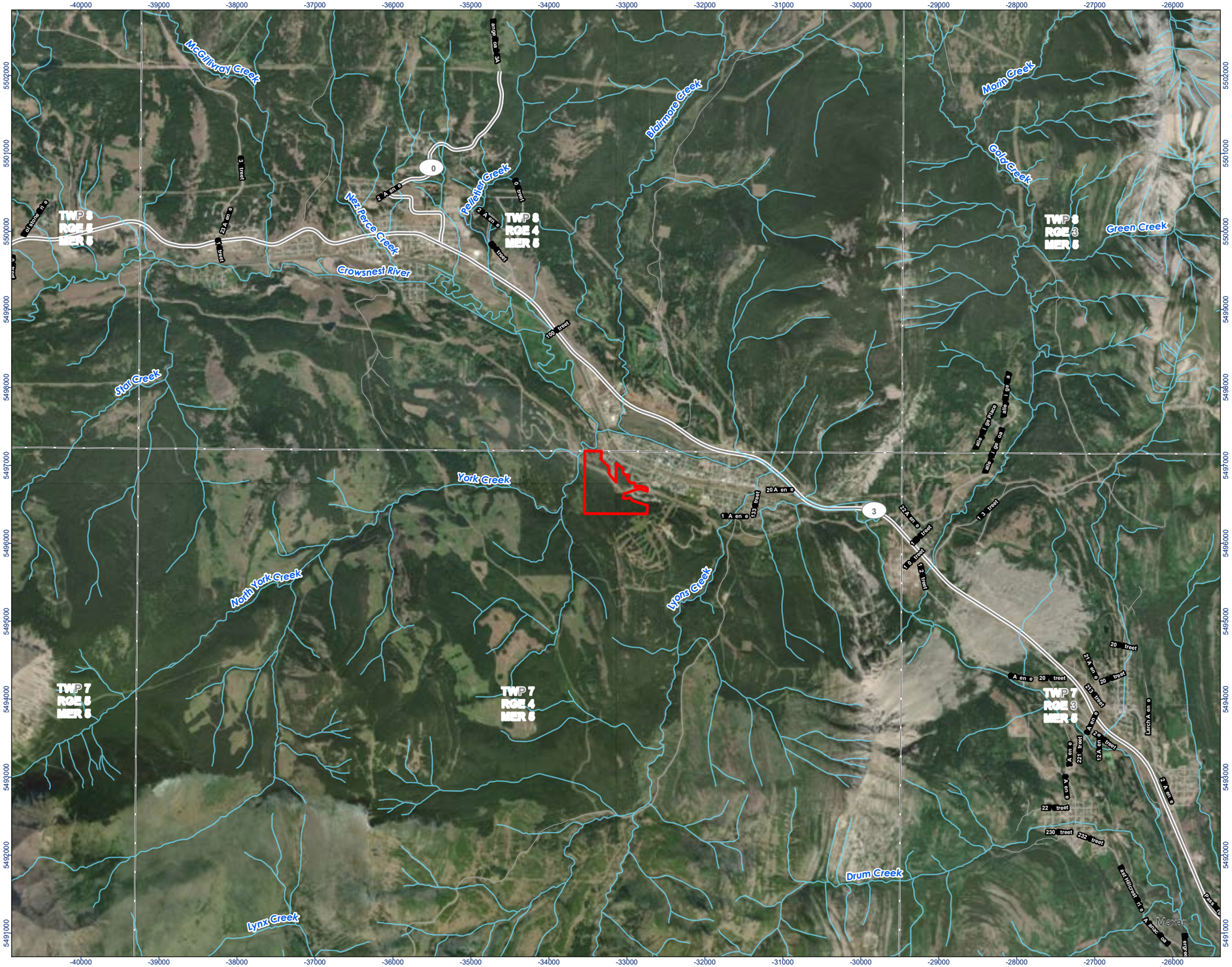
The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire Site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the Site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report. The site visit was completed by Kirstin Young on October 20, 2023. This report was prepared by Ripon Banik and reviewed by Amin Kassam.

# Appendix A

# Site Plans




Stantec

- Approximate Site Boundary
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- Minor oad
- atercourse
- owns ip

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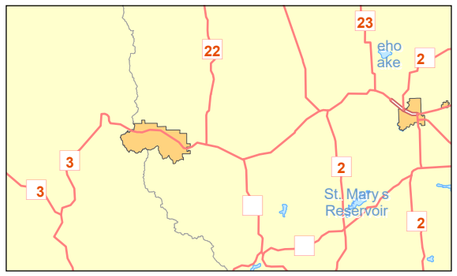


*Project Location*
NE 34-007-04 W5, Blairmore, Alberta

Prepared by VM on 2023-11-29
TR by RB on 2023-11-29

*Client/Project* 116549078
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

*Figure No.*
**1**

*Title*
**ite Location Plan**

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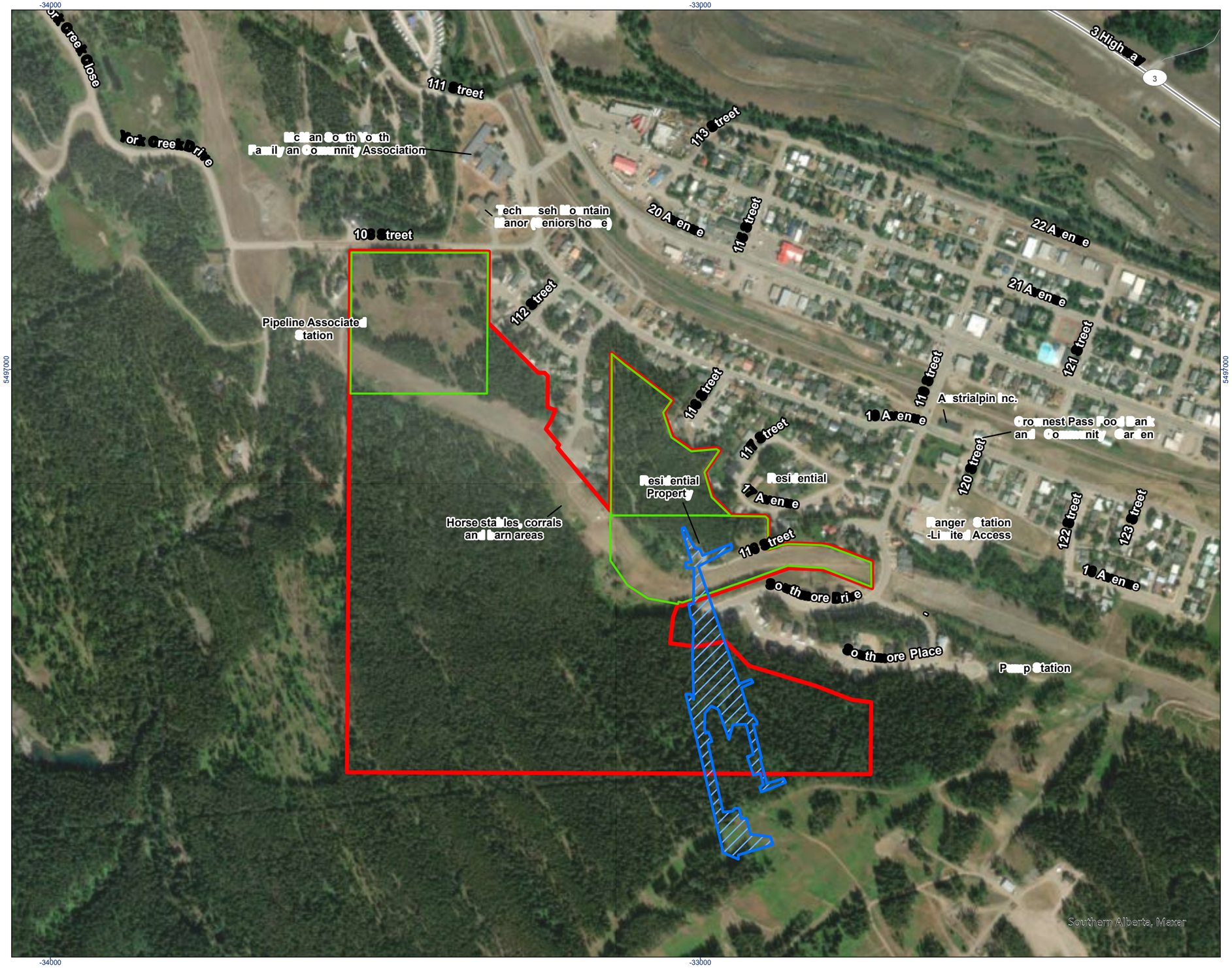


Stantec

- Approximate Extent of Former Coal Mine
- Approximate Site Boundary
- Privately Owned Properties

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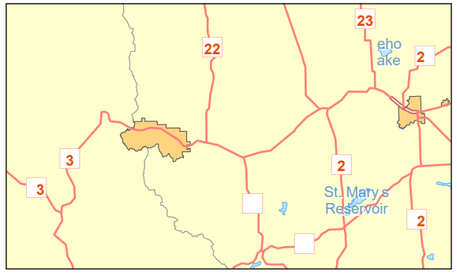


*Project Location*
NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2023-12-18
TR by RB on 2023-12-18

*Client/Project* 116549078
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

*Figure No.*
**2**

*Title*
**ite Plan**

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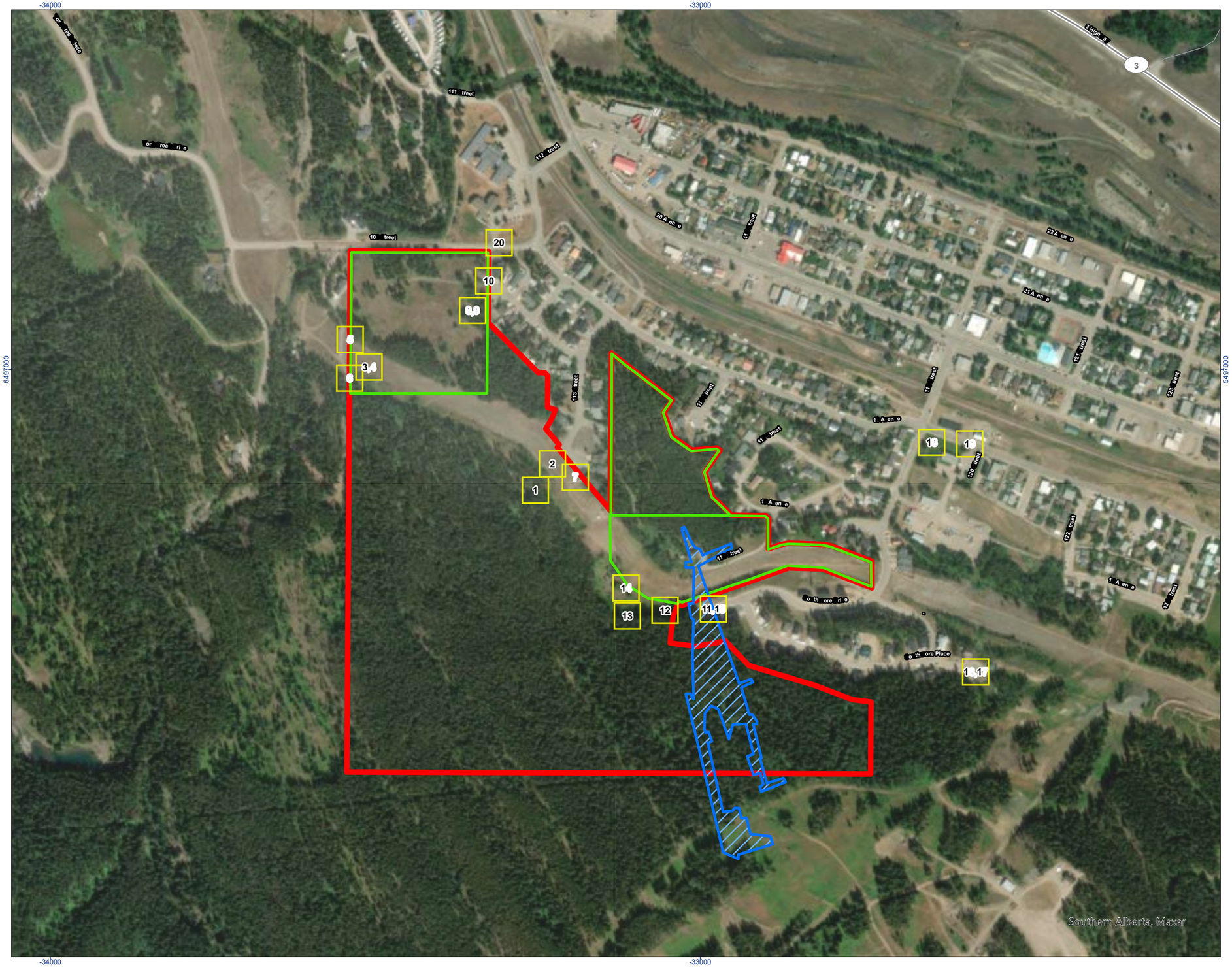


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Stantec

- Approximate Extent of Former Coal Mine
- 1 Approximate location of Photograph taken during the site visit corresponding Photographs are included in Appendix B
- Privately Owned Properties
- Approximate Site Boundary

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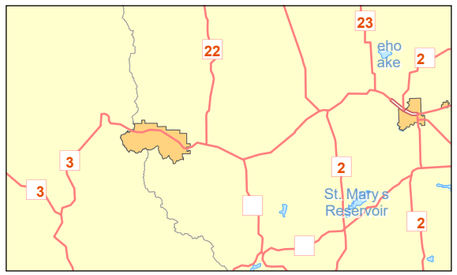


*Project Location*
NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2023-12-18
TR by RB on 2023-12-18

*Client/Project* 116549078
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

*Figure No.*
**3**

*Title*
**Locations of Site Photographs**

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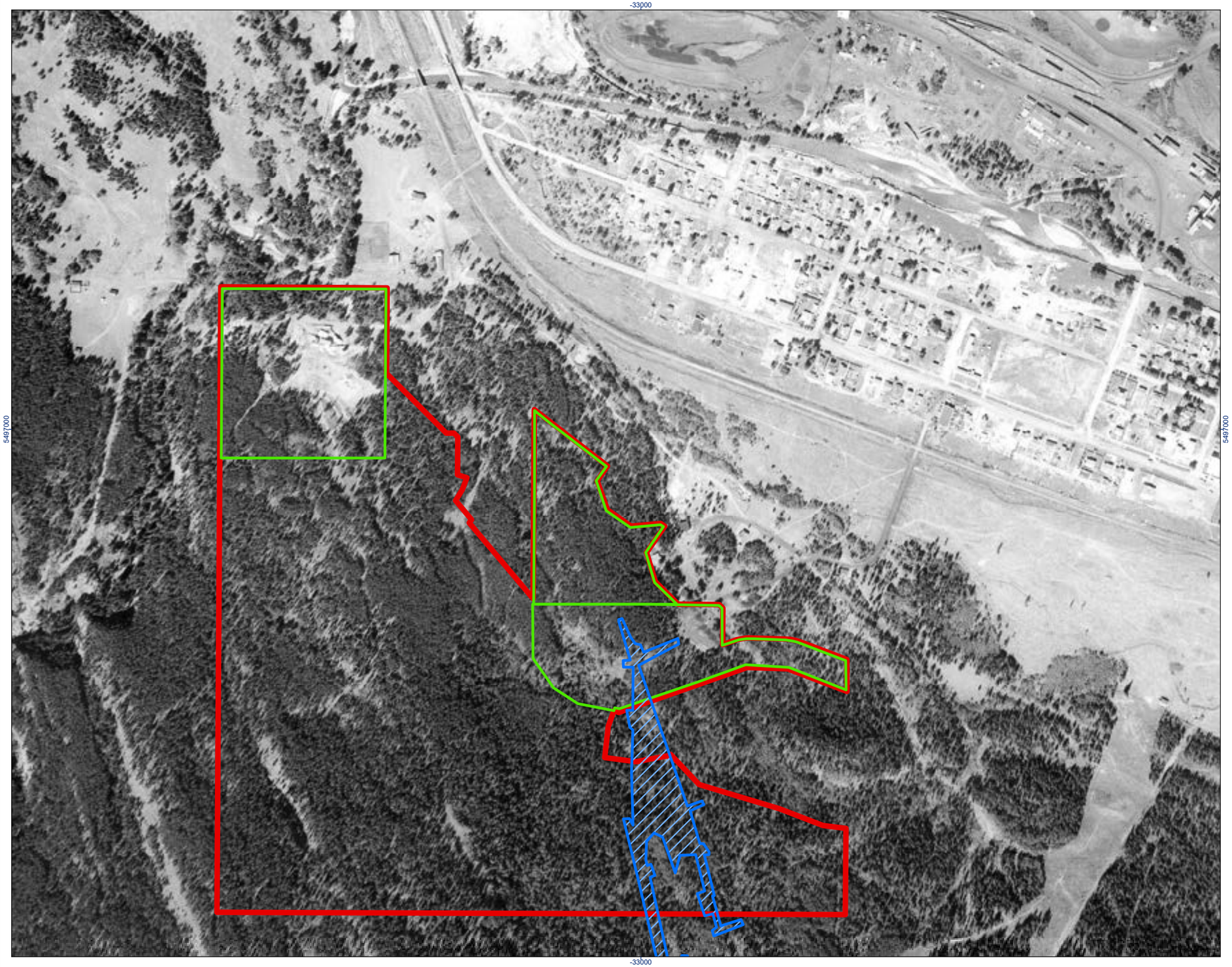

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Stantec

- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

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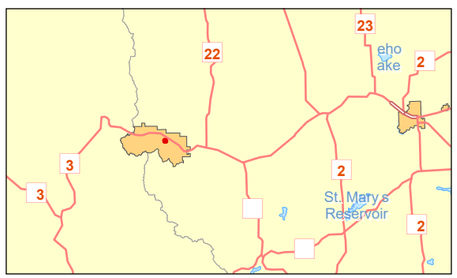


*Project Location*

NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project* 116549078

Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

*Figure No.*

*Title*

**Historical Aerial Photograph - 1 3**

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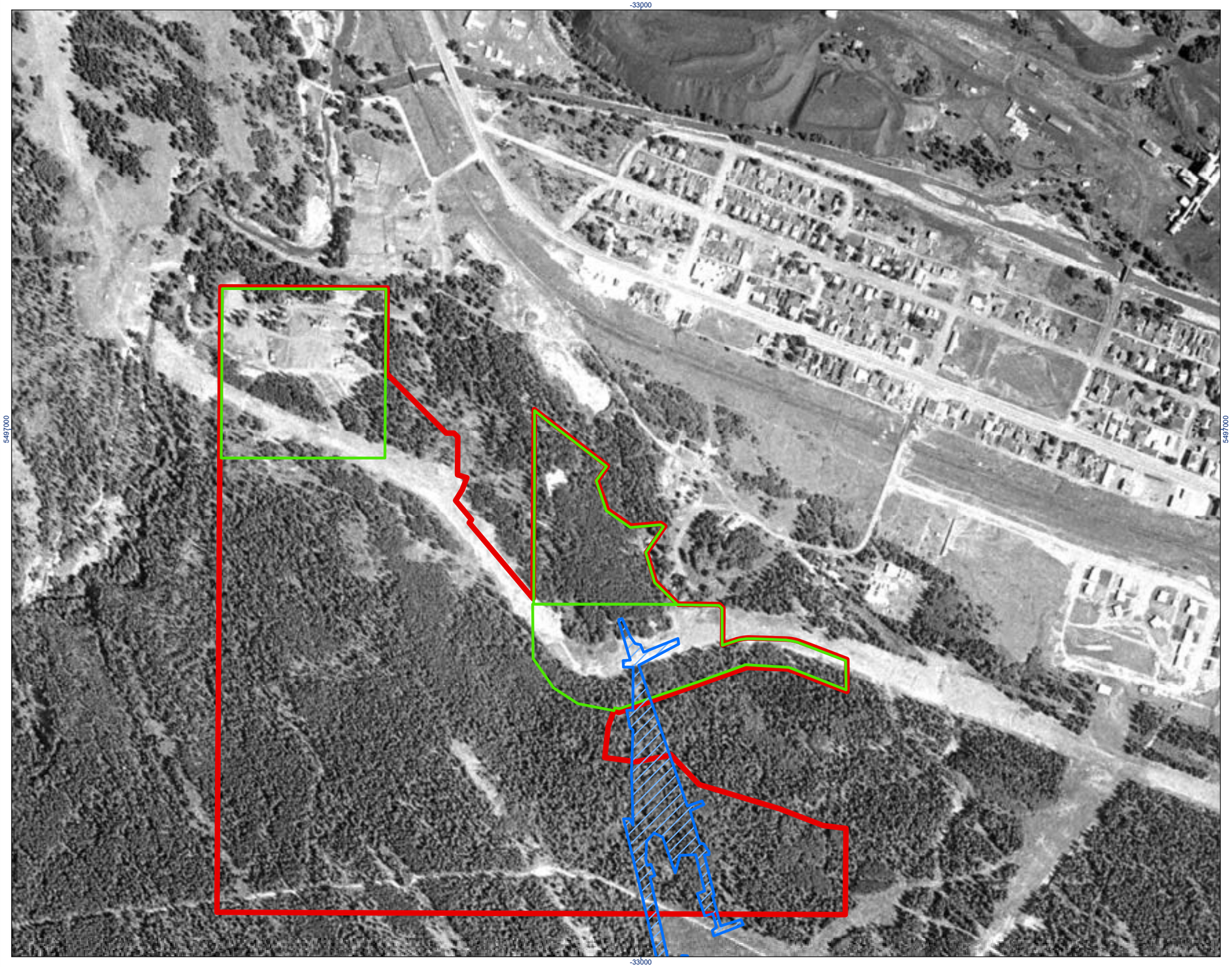

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Stantec

- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

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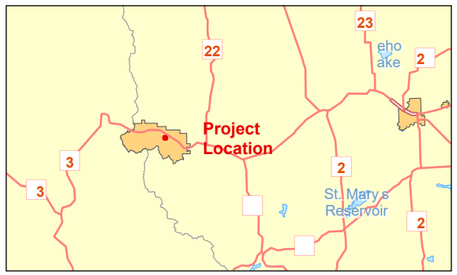
***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*

NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project*

Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

116549078

*Figure No.*

*Title*

**Historical Aerial Photograph - 1**

\\Ca0002-pnfs01\workgroup\1108active\116549078\App A GISFig-5 Historical 1965.mapx Revised: 2024-01-25 By: vmontanez


Stantec

- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

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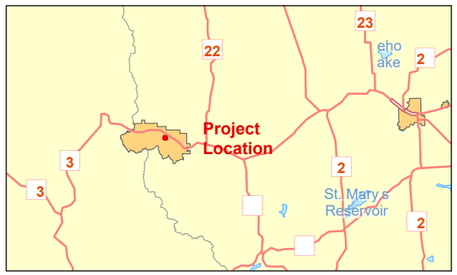
***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*

NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project*

Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

116549078

*Figure No.*

*Title*

**Historical Aerial Photograph - 1**

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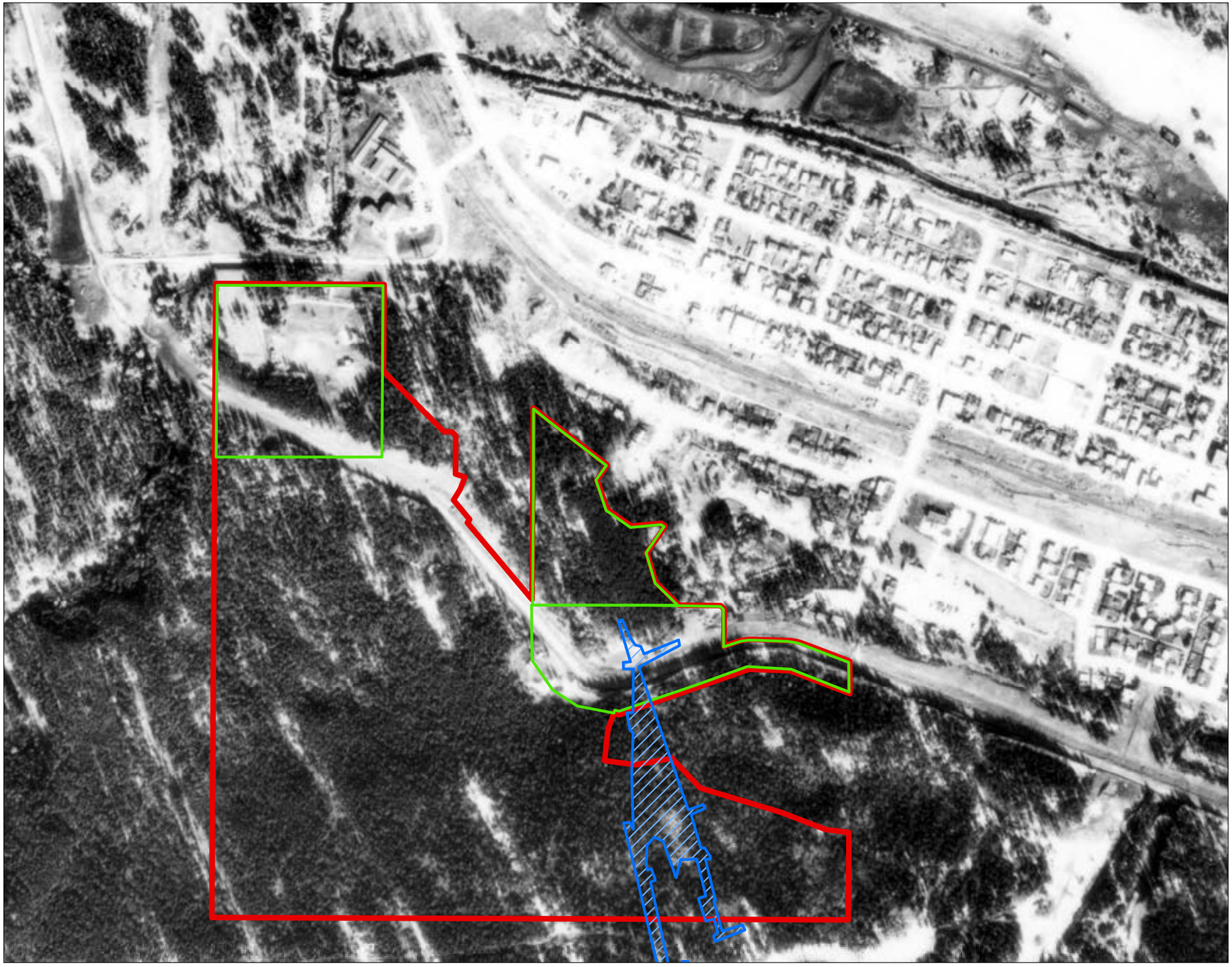

Stantec

- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

N

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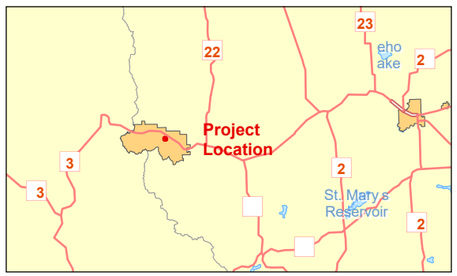
***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*
NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project*
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

116549078

*Figure No.*

*Title*
**Historical Aerial Photograph - 1**

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Stantec

- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

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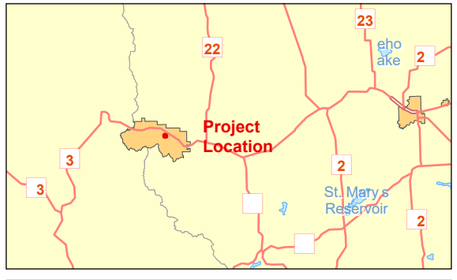
***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*

NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project* 116549078

Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

*Figure No.*

*Title*

**Historical Aerial Photograph - 1**

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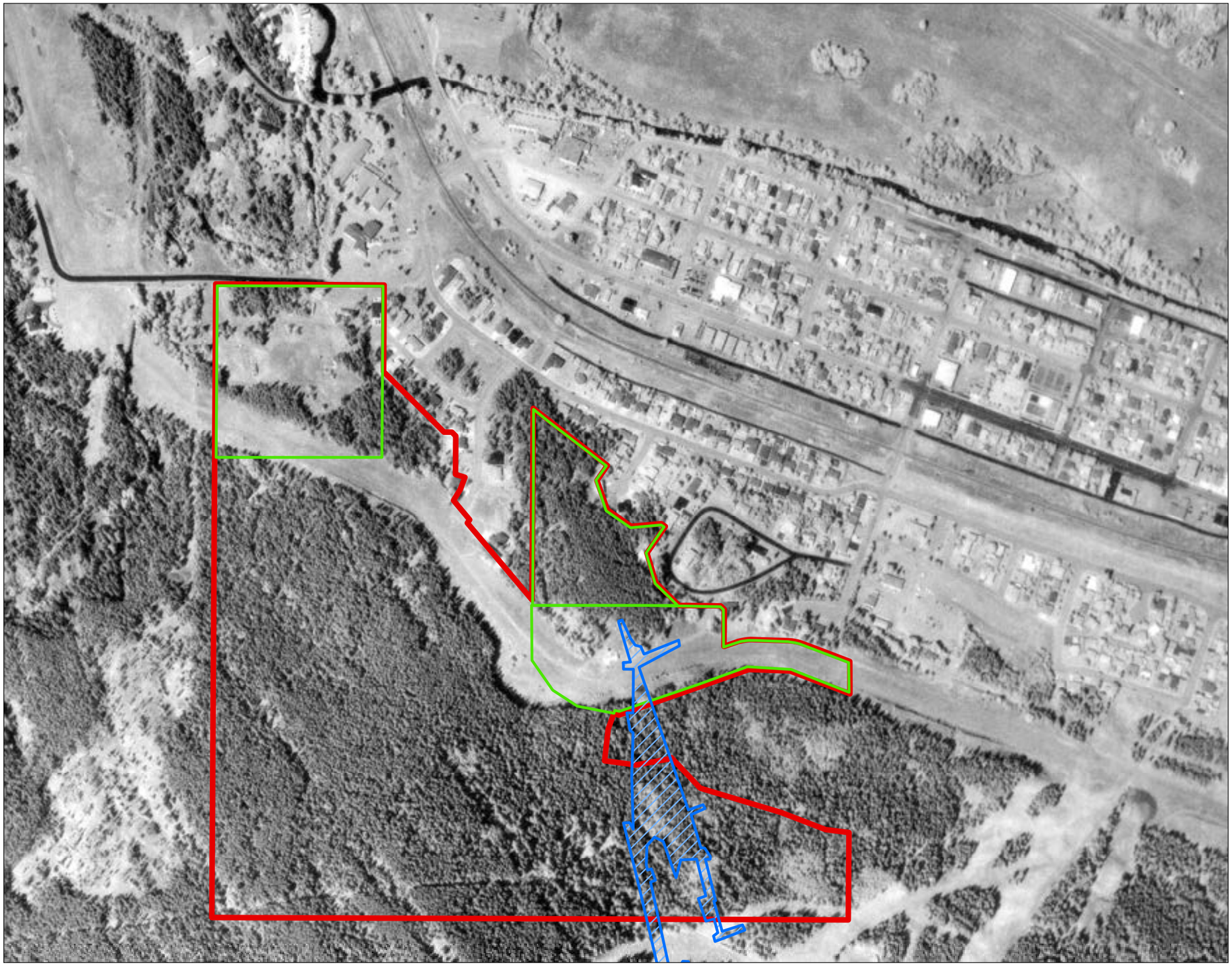

Stantec

- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

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0 100 200 metres

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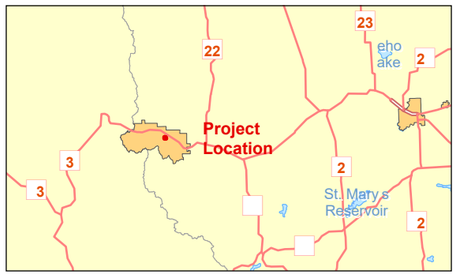
***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*
NE 34-07-04 W5, Blairmore, Alberta

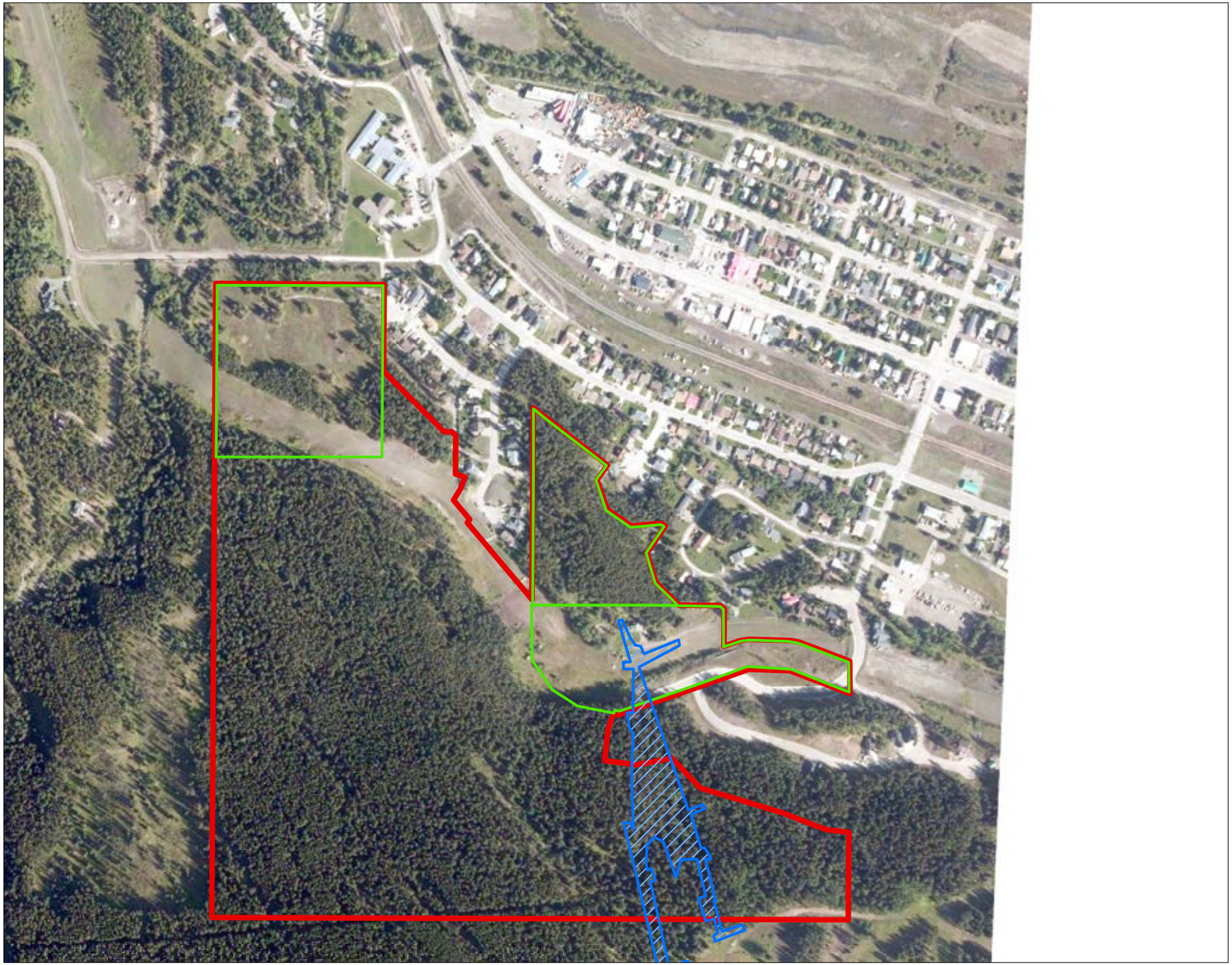
Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project*
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

116549078

*Figure No.*

*Title*
**Historical Aerial Photograph - 200**



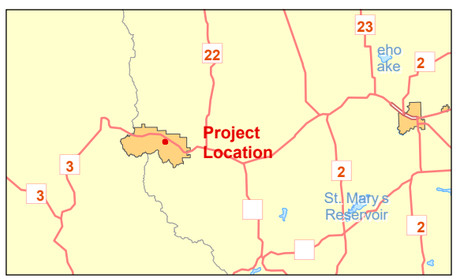
Approximate Extents of Former Coal Mine
Privately Owned Properties
Approximate Site Boundary
Quarter Section

N

0 100 200 metres

(At original document size of 11x17)
1:5,000

***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*
NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

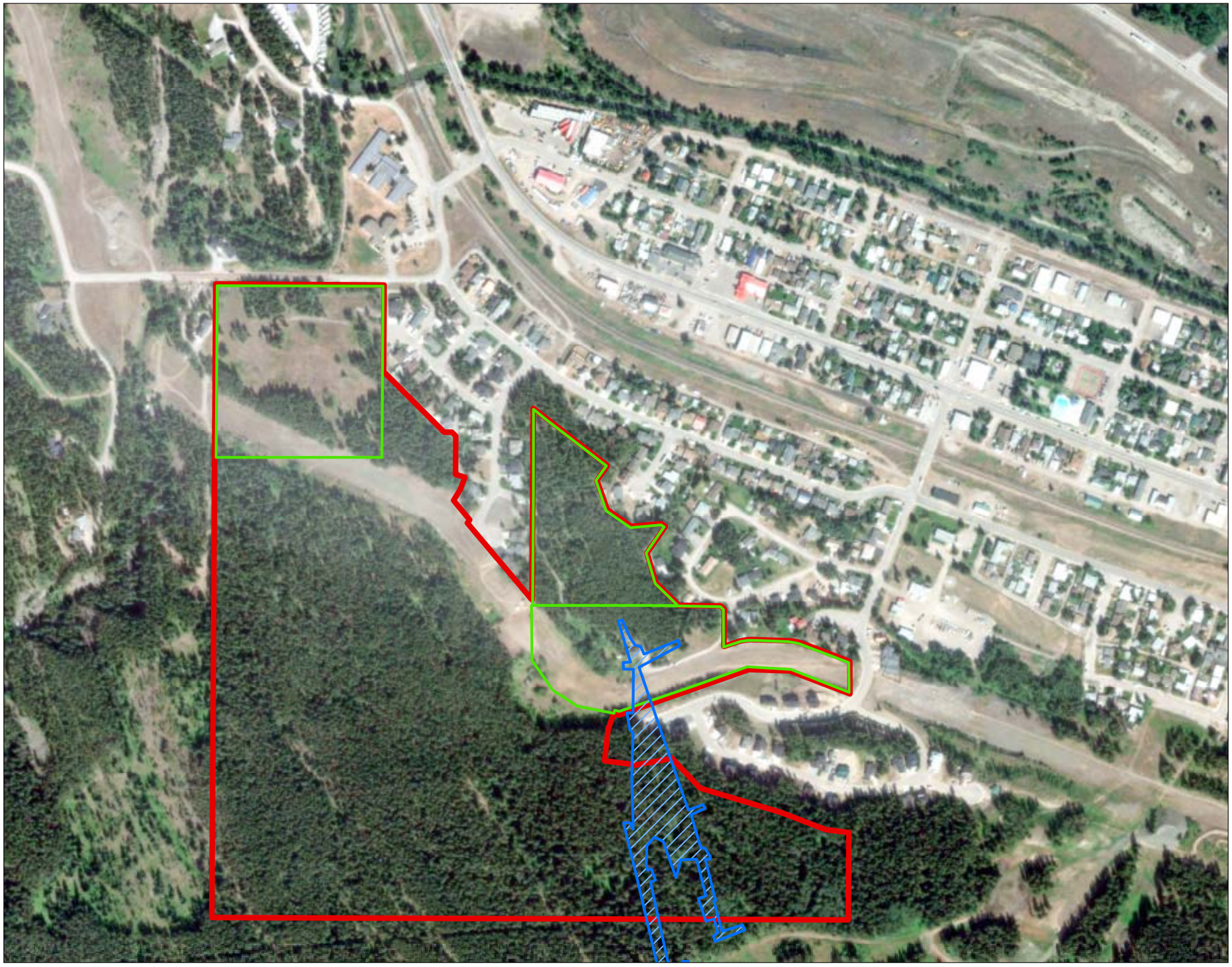
*Client/Project*
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

116549078

*Figure No.*
**10**

*Title*
**Historical Aerial Photograph - 201**

\\Cal0002-pnfs01\workgroup\1108active\116549078\App A - GIS\Fig-10_Historical_2016.mxd Revised: 2024-01-25 By: vmontanez



Stantec

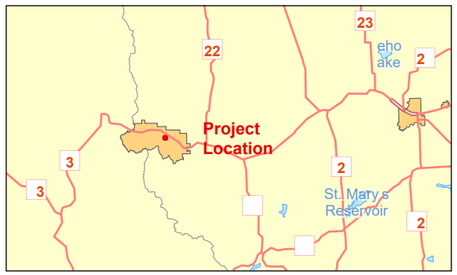
- Approximate Extents of Former Coal Mine
- Privately Owned Properties
- Approximate Site Boundary
- Quarter Section

N

0 100 200 metres

(At original document size of 11x17)
1:5,000

***Notes*1.** Coordinate System: NAD 1983 10TM AEP Forest**2.** Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.**3.** Background: City of Blairmore




*Project Location*
NE 34-07-04 W5, Blairmore, Alberta

Prepared by VM on 2024-01-25
TR by RB on 2024-01-25

*Client/Project*
Oldman River Regional Services Commission
Phase I Environmental Site Assessment
Southmore Phase 2, Blairmore, Alberta

116549078

*Figure No.*
**11**

*Title*
**Historical Aerial Photograph - 2022**

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# Appendix B

# Photographs

Stantec

# Photographic Log

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 1<br>**Photo Location:**<br>Site - northwest portion<br>**Direction:**<br>Photograph taken facing southwest<br>**Survey Date:**<br>10/20/2023<br>**Comments:**<br>Looking at the Site from the northwest portion of the Site. |  |
| **Photograph ID:** 2<br>**Photo Location:**<br>Site - northwest portion<br>**Direction:**<br>Photograph taken facing northwest<br>**Survey Date:**<br>10/20/2023<br>**Comments:**<br>Looking at the Site facing northwest from the south end of 113 Street. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 3<br>**Photo Location:** Site - northwest portion<br>**Direction:** Photograph taken facing southwest<br>**Survey Date:** 10/20/2023<br>**Comments:** Observed metal debris. |  |
| **Photograph ID:** 4<br>**Photo Location:** Site - northwest portion<br>**Direction:** Photograph taken facing northeast<br>**Survey Date:** 10/20/2023<br>**Comments:** Observed metal debris. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 5<br>**Photo Location:** Site - northwest portion<br>**Direction:** Photograph taken facing northwest<br>**Survey Date:** 10/20/2023<br>**Comments:** Compressor station and pipeline right of way. |  |
| **Photograph ID:** 6<br>**Photo Location:** Site - northwest portion<br>**Direction:** Photograph taken facing northwest<br>**Survey Date:** 10/20/2023<br>**Comments:** Surrounding properties to the west. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 7<br>**Photo Location:**<br>Site - north portion<br>**Direction:**<br>Photograph taken facing southeast<br>**Survey Date:**<br>10/20/2023<br>**Comments:**<br>Residential property with horse stables, corrals and barn areas. |  |
| **Photograph ID:** 8<br>**Photo Location:**<br>Site - northwest portion<br>**Direction:**<br>Photograph taken facing north<br>**Survey Date:**<br>10/20/2023<br>**Comments:**<br>Concrete pad and gravel associated potentially with the former building located at the intersection of 108 Street and 18 Avenue. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 9<br>**Photo Location:** Site - northwest portion<br>**Direction:** Photograph taken facing northeast<br>**Survey Date:** 10/20/2023<br>**Comments:** Unknown stick up piping and wires associated potentially with the former building located at the intersection of 108 Street and 18 Avenue. |  |
| **Photograph ID:** 10<br>**Photo Location:** Off-site - northwest of the Site<br>**Direction:** Photograph taken facing southeast<br>**Survey Date:** 10/20/2023<br>**Comments:** Residential properties located north of 18 Avenue. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 11<br>**Photo Location:** Off-site - north of the Site<br>**Direction:** Photograph taken facing southeast<br>**Survey Date:** 10/20/2023<br>**Comments:** Residential properties located at the intersection of Southmore Drive and Southmore Place. |  |
| **Photograph ID:** 12<br>**Photo Location:** Off-site - north of the Site<br>**Direction:** Photograph taken facing northeast<br>**Survey Date:** 10/20/2023<br>**Comments:** Looking downhill through the cleared area. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 13<br>**Photo Location:** Off-site - north of the Site<br>**Direction:** Photograph taken facing southwest<br>**Survey Date:** 10/20/2023<br>**Comments:** Looking towards the forested area on the Site. |  |
| **Photograph ID:** 14<br>**Photo Location:** Site - north portion<br>**Direction:** Photograph taken facing east<br>**Survey Date:** 10/20/2023<br>**Comments:** Abandoned barn/shed located within the north portion of the Site. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

**Photograph ID:** 15

**Photo Location:**
Site - north portion

**Direction:**
Photograph taken facing northwest

**Survey Date:**
10/20/2023

**Comments:**
Residential property located north of the intersection of Southmore Drive and Southmore Place.

**Photograph ID:** 16

**Photo Location:**
Off-site - east of the Site

**Direction:**
Photograph taken facing south

**Survey Date:**
10/20/2023

**Comments:**
Southmore pumphouse

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 17<br>**Photo Location:** Off-site - east of the Site<br>**Direction:** Photograph taken facing east<br>**Survey Date:** 10/20/2023<br>**Comments:** Looking down the hill towards the east from the east end of Southmore Place. |  |
| **Photograph ID:** 18<br>**Photo Location:** Off-site - north of the Site<br>**Direction:** Photograph taken facing west<br>**Survey Date:** 10/20/2023<br>**Comments:** Blairmore Ranger Station located near the intersection of 19 Avenue and 119 Street. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

| | |
|---|---|
| **Photograph ID:** 19<br>**Photo Location:** Off-site - north of the Site<br>**Direction:** Photograph taken facing east<br>**Survey Date:** 10/20/2023<br>**Comments:** Crowsnest Pass Food Bank located north of the Ranger Station. |  |

| | |
|---|---|
| **Photograph ID:** 20<br>**Photo Location:** Off-site - northwest of the Site<br>**Direction:** Photograph taken facing north<br>**Survey Date:** 10/20/2023<br>**Comments:** Tecumseh Mountain Manor Crowsnest Pass Food Bank located north of the intersection of 19 Avenue and 108 Street. |  |

| | | | |
|---|---|---|---|
| **Client:** | **Oldman River Regional Services Commission** | **Project:** | **116549078** |
| **Site Name:** | **Southmore Phase 2** | **Site Location:** | **Blairmore, Alberta** |

**Photograph ID:** 21

**Photo Location:**
Site - central-north portion

**Direction:**
Photograph taken facing north

**Survey Date:**
10/20/2023

**Comments:**
Undeveloped land.

# Appendix C

# Assessor Qualifications

# Kirstin Young B.Sc.

Environmental Technician
1 years of experience · Calgary, Alberta

Kirstin is a graduate of the University of Calgary with a Bachelor of Science in Biology. As a member of the Site Investigation, Remediation, and Revitalization team at Stantec, Kirstin has worked on small to large scale projects on upstream, midstream, and downstream oil and gas sites, as well as commercial and industrial sites. She has experience in environmental site assessments that include groundwater, surface water, soil vapour sampling, and has assisted with environmental drilling. Kirstin has experience in writing Phase I Environmental Site Assessment reports, assisting with annual groundwater monitoring reports, and is proficient in gINT, R Studio, excel and Microsoft office.

## EDUCATION

Bachelors of Science, Biology: Zoology specilization, University of Calgary, Calgary, Alberta, Canada, 2023

## CERTIFICATIONS & TRAINING

Petroleum Oriented Safety Training (POST-BBS), Calgary, Alberta, Canada, 2023

First Aid Instructor, Emergency and Standard First Aid and Level A-C CPR and AED, Canada Red Cross, Calgary, Alberta, Canada, 2021

Bear Spray Training, Bear Safety, Calgary, Alberta, Canada, 2022

H2S Alive, Energy Safety Canada, Calgary, Alberta, Canada, 2023

Ground Disturbance Level II, Global Training Centre, Calgary, Alberta, Canada, 2022

Wildlife Awareness Online (incl. Bear Awareness), Enform, Calgary, Alberta, Canada, 2022

UTV Training, Canada Safety Council, Calgary, Alberta, Canada, 2022

Construction Safety Training System (CSTS 2020)-Fundamentals, Alberta Construction Safety Association, Calgary, Alberta, Canada, 2022

ATCOs Natural Gas Division's Contractors Safety Orientation, ATCO, Calgary, Alberta, Canada, 2022

Pipeline Construction Safety and Training, Oil Sands and Construction Safety Training Ltd., Calgary, Alberta, Canada, 2022

## PROJECT EXPERIENCE

### GROUNDWATER MONITORING

Bow Island Annual Groundwater Monitor and Sample | ATCO | Bow Island, Alberta, Canada | 2022, 2023 | Field Technician, Environmental Technician

Monitoring and sampling groundwater wells using low flow techniques.

Multiple commercial FCAM projects | FCAM | Calgary, Alberta, Canada | 2022-present | Field Technician, Environmental Technician

Conducted groundwater monitoring and sampling for various commercial FCAM sites in Calgary Alberta.

Shell/Pierade Canada Multiple Locations Groundwater Monitor and Sample | Shell Canada | Environmental Technician

Completed groundwater monitoring and sampling at multiple mid-stream sites including purge, no purge and bailer samples. Project experience includes logistics coordination and data entry. Sites include: Waterton and Burnt Timber.

Greymont Groundwater Programs: Exshaw and Summit | Greymont | 2022,2023 | Field Technologist, Environmental Technician

Groundwater monitoring and sampling.

Former Southhill Mowhawk | Husky | Calgary, Alberta, Canada | 2022-present | Field Technician, Environmental Technician

Groundwater monitoring and sampling as well as assisting with soil vapour sampling.

Wildcat Gas Plant Groundwater Programs | Canlin Energy | Cochrane, Alberta, Canada | 2022 | Field Technician

Groundwater monitor, purge and sample.

SR1 Fall Groundwater Program | Calgary, Alberta, Canada | 2022 | Environmental Technician

Assisted with groundwater monitoring and sampling in addition to residential well sampling.

### REPORTING

Various Commercial Phase I Environmental Site Assessments | Various | 2022, 2023 | Field Technician, Environmental Technician

Completed multiple Phase I Environmental Site Assessments in the Calgary and Edmonton area.

Various Oil and Gas Phase I Environmental Site Assessments | Environmental Technician

Assisted with several Oil and Gas specific Phase I Environmental Site Assessments.

Various Annual Groundwater Monitoring and Sampling Reports | 2023 | Environmental Technician

Assisted with various annual groundwater reports.

## DRILLING, SAMPLING AND INSTRUMENTATION SERVICES

Shell Canada Drilling Program (Limestone 10, Limestone 6, and Ram 4) | Shell Canada | 2022 | Environmental Technician

Assisted with drilling of boreholes, installation of monitoring wells and stockpile sampling at various Shell locations.

Lamb Weston Soil Sampling and Irrigation Assessment | Lamb Weston | Taber, Alberta, Canada | 2022-2023 | Environmental Technician

Conducted soil sampling with hand augers and assisted with irrigation assessments.

# Ripon Banik M.A.Sc., P.Eng., PMP

Environmental Engineer
18 years of experience · Calgary, Alberta

Ripon is a professional engineer with seventeen years of experience in the environmental science and engineering. Over the last fifteen years, he has been focusing on site assessment and remediation primarily in western Canada. His practical experience includes intrusive assessments including groundwater and soil remediation and risk management planning of oil/gas facilities and environmental monitoring and risk management for construction projects including commercial/residential developments. Ripon's role in projects to date varied from planning, client liaison, budgeting, scheduling, contracting, interpretation of investigation results, waste management and report preparation. Prior to joining environmental consulting, Ripon had considerable time studying micro-pollutant's (e.g., mercury) environmental behavior and circulations in different environmental mediums (e.g., air, soil, vegetation) and their relationship to various meteorological variables and global warming.

## EDUCATION

Environmental Engineering, University of Windsor, Masters of Applied Sciences, Ontario, Canada, 2004

Chemical Engineering, Bangladesh University of Engineering and Technology, Bachelor of Science, Dhaka, Bangladesh, 2002

## REGISTRATIONS

Professional Engineer #118716, Association of Professional Engineers and Geoscientists of Alberta, 2012 - present

Project Management Professional (PMP)® #2930381, Project Management Institute, 2020-Present

Professional Engineer #100574377, Professional Engineers Ontario, 2022

## PROJECT EXPERIENCE

### AUTOMOTIVE

Ford Canada Environmental Site Assessments Phase I, II, III* | Fort Canada | Cochrane, Alberta | 2011 | Field Supervisor

Supervised drilling and remedial excavation at a car dealership in Calgary. Due to poor installation of concrete slabs on the drainage trench, fluids used within the shop were leaking into subsurface and impacted the area in the vicinity of the trench. Boreholes were drilled to delineate the extent of impact and an excavation was later performed to remediate the impacted area. Excavated materials were transported to landfill following proper documentation (waste manifest) as approved by the client following appropriate TDG regulations

Ford Canada Environmental Assessment and Environmental Site Remediation* | Ford Canada | Calgary, Alberta | 2011 | Field Supervisor

Supervised drilling and remedial excavation at a car dealership in Calgary. Due to poor installation of concrete slabs on the drainage trench, fluids used within the shop were leaking into subsurface backfill (coarse-grained) and impacted the area in the vicinity of the trench. Boreholes were drilled to delineate the extent of impact and an excavation was later performed to remediate the impacted area. Excavated materials were transported to landfill facility as approved by the client following appropriate TDG regulations.

### OIL AND GAS DOWNSTREAM

Shell Environmental Site Assessments Phase I, II, III | Shell Canada | Multiple Sites, Alberta | 2012-2015 | Project Manager

Acted as project manager for several phase II Environmental Site Assessments (ESA) that included assessment of soil, groundwater and soil vapour. These ESAs were designed from a risk-based perspective to determine environmental risk at the Site and to determine the requirements for further work to achieve an end goal (e.g., site closure, conditional site closure etc.).

UFA Environmental Site Assessments Phase I, II, III | UFA | Multiple Sites, Alberta | 2014-present | Project Manager

Acting as project manager for the UFA Groundwater Monitoring Program for multiple years, several Phase II Environmental Site Assessments (ESA) including domestic use aquifer (DUA) assessment and facility upgrade/remedial excavations that included contaminated soil transportation to applicable landfills. Coring of bedrock using HQ was conducted to assess confining bedrock and to determine if exclusion of DUA pathway would be feasible. Most of them included multiple stakeholders (monitoring and/or drilling on offsite areas including municipal and residential properties) to delineate PHC impacts. Hydraulic conductivity testing was conducted at select locations to characterize hydrogeological properties at these sites.

Imperial Oil Environmental Site Assessments Phase I, II, III* | Imperial Oil Limited | Multiple Sites, Alberta and Saskatchewan | 2008-2012 | Field Tech/Field Supervisor/ Project Manager

Conducted several phase II ESAs at sites in Alberta and Saskatchewan to delineate for PHC and inorganic (fertilizer) parameters. The general responsibilities for these projects involved historical file review, preparing cost estimates, coordinate sub-contractors, participating health and safety meetings, providing project progress to the client, selecting soil samples for laboratory analyses, selecting locations for hydraulic conductivity tests, data analysis, preparing groundwater contour drawing and environmental reports.

** denotes projects completed with other firms*

Imperial Oil Environmental Monitoring* | Imperial Oil Limited | Multiples Sites, Alberta and Saskatchewan | 2008-2012 | Field Tech/Field Supervisor/ Project Manager

These projects were conducted to field verify the presence of domestic/municipal/other water wells within a pre-defined distance from the site to assist with risk evaluation of groundwater based (aquatic) pathways. Not all water wells (especially in a rural community) are recorded by publicly available database. Therefore, these studies added great value in determining current status of recorded well and/or determining if wells, not recorded, were present that would influence the aquatic pathway evaluation.

Husky Oil Environmental Site Assessments Phase I, II, III | Husky Oil Limited | Multiple Sites, Alberta | 2013-2014 | Project Coordinator/Field Supervisor

Coordinated several Phase II ESAs on active service station and cardlocks to delineate lateral and vertical delineation of PHC parameters in soil and groundwater. Nested pair of monitoring wells including DUA assessment wells was also installed. Due to coarse-grained lithology, hammer rig was used at select sites to advance boreholes. Professional traffic control services were also used for drilling on offsite areas with heavy traffic.

### HAZARDOUS WASTE

City of Calgary Environmental Assessment | The City of Calgary | Multiple Sites, Alberta | 2014-present | Project Coordinator

Acting as project coordinator for several receiving sites in Calgary to stockpile sediments generated from storm water detention ponds located in various communities in Calgary. Geotechnical and environmental assessments of the stockpiled sediments were conducted to determine suitability of re-using the sediments for side grading, capping of landfill, daily cover etc. A limited soil and groundwater assessment is also conducted post removal of the stockpiled sediment and prior to return the lease to the site owner.

### BROWNFIELD DEVELOPMENT

Confidential, Third Party Review, Land Transfer | 2014-2018

Third party confirmation of environmental expenses in a land transfer between Party A and Party B involving the construction and maintenance of a groundwater remediation system.

### COMMUNITY INSTITUTIONAL

Qualico Communities and Brookfield Residential, Residential development Environmental Assessment | Qualico Communities and Brookfield Residential | Multiple Sites, Alberta | 2014-2015 | Project Manager

Acted as project manager for the environmental assessments for various communities in Calgary. Both soil and groundwater assessment were conducted to delineate and remediate the site and for baseline purposes.

### WASTEWATER

South Highfield Stormwater Management Facility | City of Calgary | Calgary, Alberta, Canada | 2019-2022 | Environmental Site Assessment Lead

Acting as project manager for ESA activities for the proposed construction of the South Highfield Stormwater Pond. This is proposed to be built as a Nautilus Pond. Environmental assessments are conducted to determine impacts of potential contaminant of concern in soil and groundwater and to develop any mitigation or management measures for soil and/or groundwater impacts, if present, prior to the construction.

City of Calgary, Bonnybrook Wastewater Treatment Plant (BBWWTP) | The City of Calgary | Calgary, Alberta | 2014-present | Task Manager

Acted as project manager for environmental assessment work for the proposed Plant D expansion project of the BBWWTP. Environmental assessments were conducted to determine impacts of potential contaminant of concern in soil and groundwater. Methane assessment in the soil vapour was also conducted to determine if any methane inhalation risk was present at the Site. Based on the findings, a soil and groundwater environmental management plan was prepared to assist with the Plant D expansion construction.

### TRANSPORTATION

Green Line LRT Project | City of Calgary | Calgary, AB, Canada | 2017-todate | Task Manager (Environmental Site Assessment)

Acting as the environmental site assessment (ESA) task manager for the Green Line LRT, a linear infrastructure project. Responsibilities to date included (but not limited to) client communication, managing soil and groundwater contamination assessment and handling, providing support with updating technical performance requirements, providing support to other disciplines on issues related to environmental soil and groundwater management.

Stoney Trail 11 Street NE Interchange | City of Calgary | Calgary, AB, Canada | CAD 20M | 2020-2021 | Task Manager (Environmental Site Assessment)

Acted as the environmental site assessment (ESA) task lead and provided support with client and stakeholder communication, completing a Phase I ESA and in determining the suitability of soil from borrow sources for use for the project construction.

## PUBLICATIONS & WHITEPAPERS

Banik, R., P. Constant, M. Pilote and L. Poissant. Measurements of Total Gaseous Mercury Concentration and Flux in the Tundra. *ArcticNet Annual Conference Proceedings, Kuujjuarapik, Quebec*, 2006.

Banik, R., X. Xu, P. Henshaw and L. Poissant. The Effects of Soil Temperature and Radiation on Air-soil Exchange of Mercury in a Controlled Environment. *The 8th International Conference on Hg as a Global Pollutant*, 2006.

Banik, Ripon. Effects of Temperature and Radiation on Air-Soil Exchange of Mercury. *M.A.Sc. Thesis. Faculty of Graduate Studies and Research, University of Windsor.*, 2004.

## PRESENTATIONS

Farmland to Residential Community - Environmental Assessment, Remediation and Challenges. *Remtech, Banff, Alberta*, 2016.

** denotes projects completed with other firms*

# Amin Kassam B.Sc.

Technical Area Leader - Environmental Services
28 years of experience · Calgary, Alberta

Amin has conducted over 1,500 Phase I and Phase II ESAs of undeveloped, industrial, commercial and residential lands in Alberta, British Columbia, Saskatchewan and Manitoba for acquisition, financing, disposition, environmental compliance and due diligence. He has also completed Phase II field work, proposals and reports for commercial, residential and undeveloped properties in western Canada.

As a senior project manager with over 23 years of consulting experience, Amin provides technical and management input into environmental due-diligence, commercial and oil & gas projects. For this project, his responsibilities will include budgeting, scheduling, planning, interpretation of field investigation results, quality review, and providing guidance to the project team regarding management of contaminated materials.

## EDUCATION

B.Sc., Biological Sciences, University of Alberta, Edmonton, Alberta, Canada, 1996

## CERTIFICATIONS & TRAINING

Certificate, Environmental Technology, Mount Royal College, Calgary, Alberta, Canada, 1998

Executive Development Program, Queen's School of Business, Kingston, Ontario, Canada, 2011

Princeton Groundwater - Groundwater Pollution and Hydrology Course, San Francisco, California, United States, 2017

## PROJECT EXPERIENCE

### FINANCIAL, INSURANCE, & REAL ESTATE

Phase I and II Environmental Site Assessments | CREIT Management Ltd. | Alberta and Saskatchewan | Senior Reviewer and Project Manager

Managed Phase I ESAs of properties in Fort McMurray, Alberta and Prince Albert, Saskatchewan for the purpose of corporate acquisition. Identified potential environmental liabilities with radioactive uranium contaminated soil at a former uranium transportation facility in Fort McMurray, Alberta and developed a proposal for initial subsurface soil and groundwater investigation to quantify these liabilities (Phase II ESA). Identified potential environmental liabilities with creosote-contaminated soil at a former wood treatment facility in Prince Albert, Saskatchewan and developed a proposal for subsurface soil and groundwater investigation to quantify these liabilities (Phase II ESA). Conducted an extensive review of previous environmental reports prepared for these two properties on behalf of the client.

### POST-SECONDARY EDUCATION

Phase I and II Environmental Site Assessments, University of Calgary Research Park | University of Calgary | Calgary, Alberta | 2020-Present | Senior Resource and Quality Reviewer

Conducted a Phase I ESA, Phase II ESA and Hazardous Building Materials Assessment of the University of Calgary Research Park property in Calgary, Alberta. The assessments were completed for pre-acquisition due-diligence purposes for lands acquired from Alberta Infrastructure. A supplemental sampling program and a Phase II ESA are currently being planned for 2023.

University of Calgary West Campus Lands, Environmental Site Assessments Phase I, II, III | University of Calgary | Calgary, Alberta | 2013-2020 | Senior Project Manager and Senior Reviewer

Phase I Environmental Site Assessment of over 113 hectares (280 acres) of land within the University of Calgary's West Campus Lands. The Phase I ESA was completed for due-diligence purposes to secure mortgage financing and to support an Outlined Plan for the City of Calgary. The purpose of the project was to assess if evidence of potential or actual environmental contamination existed in connection with the Study Area, as a result of current or past activities on the Study Area or neighbouring properties. Amin was responsible for project management for the initial phases of the project, client liaison, and review. Subsequent Phase II and III ESAs were completed during this project and Phase I ESAs for individual parcels were prepared for developers for development due-diligence and mortgage financing due-diligence purposes.

### TRANSPORTATION & INFRASTRUCTURE

Phase II Environmental Site Assessment | City of Calgary | Calgary, Alberta | 2016-2018 | Technical Advisor and Quality Reviewer

Completed a Phase II ESA along a 4.5 km roadway located within Calgary, Alberta. The objective of the program was to assess the soil and groundwater conditions for potential impacts as a result of historical and current activities occurring on properties located adjacent to the roadway. The Phase II ESA consisted of advancing 27 boreholes, with nine being completed as groundwater monitoring wells. Issues of environmental concern included dry cleaners, gasoline service stations and auto repair garages. Responsibilities included identification of potential environmental liabilities associated with adjacent and on-site land uses that would impact road works and providing solutions during the planning, design and construction phases.

Phase I Environmental Site Assessment | City of Calgary | Calgary, Alberta | 2016-2018 | Technical Advisor and Quality Reviewer

Completed a Modified Phase I ESA for 51 properties located along a 4.5 km roadway located within Calgary, Alberta. The purpose of the assessment for due diligence was to identify potential environmental liabilities associated with historical land use, operations, or management practices. The Phase I ESA consisted of a site visit, historical information gathering and completion of a report providing an overview of the 4.5 km roadway in addition to summary reports for the 51 properties.

Phase I and II Environmental Site Assessments, Various Transportation Projects in Calgary, Alberta | Data Analysis, Document Review, and Technical Advisor, Senior Quality and Independent Reviewer

Projects have included the Bowfort Road Interchange, McKnight Boulevard Road Improvements, 17 Avenue SW Road Works, 15 and 16 Avenue SW Triple Bottom Line Study, Peigan Trail Transportation Corridor Extension, Southwest Ring Road connections, Southwest Transitway Project, 17 Avenue SE Transitway Project, Green Line North LRT Corridor Functional Planning, Environmental Discipline Lead for Southwest Calgary Ring Road P3 pursuit team. Roles and responsibilities have consisted of identifying potential environmental liabilities associated with adjacent and on-site land uses that would impact road works and providing solutions to the transportation team as required during the planning, design and construction phases.

City of Calgary Manchester Yard Upgrades Project - Hazardous Materials Testing | City of Calgary | Calgary, AB | 2020-2021 | Technical Advisor and Quality Reviewer

During construction for new buildings at the City of Calgary Manchester Yards site, the general contractor uncovered bags containing asbestos. As a result, work on the site stopped following this discovery. The Stantec environmental team was engaged including a hazardous materials specialist. A sampling program was developed and implemented immediately, and sample collection of soil materials and the bagged materials was completed to determine the extent of surface and subsurface contamination. The results of the field findings and the laboratory testing were shared with the City of Calgary's general contractor and a soil management plan was developed to help the contractor continue with the construction activities safely and appropriately.

Green Line North Light Rail Transit (LRT) Environmental Assessment Program | Hatch on behalf of The City of Calgary | Calgary, AB | 2016-Present | Technical Advisor and Quality Reviewer

Technical advisor and quality reviewer for Phase I and Phase II Environmental Site Assessments (ESA's) conducted for the proposed alignment for the Green Line North Light Rail Transit (LRT). The ESA programs were conducted for the 14 km long alignment from Calgary City Centre to North Pointe, for due diligence purposes to support the functional design and to identify potential environmental liabilities during property transactions for the project.

90th Avenue and Southland Drive Connections - Environmental Assessment Program | City of Calgary | Calgary, AB | 2017-2018 | Technical Advisor and Quality Reviewer

An environmental assessment program was completed for due diligence purposes and to provide information to the design team for the 90th Ave and Southland Drive construction project in southwest Calgary. The construction project consisted of new road construction and pavement rehabilitation, pedestrian underpasses, retaining walls, and utility installations. Provided technical guidance to the environmental team and completed quality review of environmental reports prepared for the project.

Seton Storm Trunk & Ogden Water Feedermain - Desktop Environmental Review | City of Calgary | Calgary, AB | 2019-Present | Technical Advisor and Quality Reviewer

A desktop environmental review was completed to assess potential environmental liabilities associated with the proposed alignment of the Seton Storm Trunk and Ogden Water Feedermain alignments. The information from the environmental review will be used to select areas to complete soil sampling during construction in coordination with the design team and the contractor. Soil materials identified to be contaminated during construction will require disposal at an appropriate facility. Provided technical guidance to the environmental team and completed quality review of environmental reports prepared for the project. Construction is proposed to commence in spring 2022.

MAX Purple Bus Rapid Transit, Phase 2 (17 Avenue SE BRT) - Environmental Assessment Program | City of Calgary | Calgary, AB | 2016-2018 | Technical Advisor and Quality Reviewer

This project was part of a larger BRT program developed by the City of Calgary and was initiated with funding from the federal government's Green Trip program. The project consisted of preliminary design, geotechnical investigation, Phase I and II ESA, detailed design, tender preparation, and construction administration. The Phase I ESA consisted of assessing 51 properties located along a 4.5 km roadway and provided an overall environmental overview of this roadway located within Calgary, Alberta. The purpose of the assessment was for due diligence including to identify potential environmental liabilities associated with historical use, operations, or management practices. Following the completion of the Phase I ESA, a Phase II ESA was completed to assess the soil and groundwater conditions for potential impacts due to historical and current activities occurring on properties located adjacent to the roadway. The Phase II ESA consisted of advancing 27 boreholes, with nine being completed as groundwater monitoring wells. The information collected from the Phase II ESA was used to develop a contamination management plan to be used by the construction contractor during construction. Provided technical guidance to the environmental team and completed quality review of environmental reports prepared for the project.

Sunnyside Flood Barrier - Phase I and II Environmental Site Assessment Program | City of Calgary | Calgary, AB | 2018-2023 | Technical Advisor and Quality Reviewer

Initially involving groundwater and geotechnical investigations, followed by modelling to confirm design parameters, this project involved significant stakeholder, and public engagement. The Sunnyside flood barrier will protect the community against up to 1,230 m3/s flows in the Bow River. With additional 0.5 m freeboard on the barrier and the current operational changes at the Ghost Dam, the community will be protected against flows of up to a naturalized flow of 1,830 m3/s, equivalent to a 1:60-70 year return period flood. A Phase I and II Environmental Site Assessment (ESA) was completed for due diligence purposes and to provide information to the design team for preliminary engineering and detailed design. Provided technical guidance to the environmental team and completed quality review of environmental reports prepared for the project. Construction is proposed to commence in 2023.

Highway 3 Twinning Project, West of Burdett to West of Taber - Environmental Assessment Program | Alberta Transportation | Taber, AB | 2021-Present | Technical Advisor and Quality Reviewer

A desktop environmental review, followed by a site visit to verify environmental concerns and a Phase II Environmental Site Assessment (ESA) were completed for the Highway 3 Twinning Project (West of Burdett to West of Taber). Subsequent subsurface investigations were completed to delineated known soil and groundwater contamination related to specific areas of the project for remediation and construction purposes. Provided technical guidance to the environmental team and completed quality review of environmental reports prepared for the project. Construction is proposed to commence in 2023.

City of Lethbridge Warehouse District, Area Redevelopment Plan - Environmental Overview | City of Lethbridge | Lethbridge, AB | 2022-Present | Technical Advisor and Quality Reviewer

Stantec's multi-disciplinary team was retained by the City of Lethbridge to assist with preparing the Area Redevelopment Plan for the Warehouse District Area which consists largely of a commercial and light industrial neighbourhood. As part of this project, an Environmental Overview is being prepared for the City of Lethbridge for due diligence to identify potential environmental liabilities associated with current and historical use and operations on more than 80 parcels of land located within the Warehouse District. Amin provided technical guidance and quality review to the environmental team and the project was completed in June 2023.

City of Calgary 6th Street SE Underpass - Phase I Environmental Site Assessment | The City of Calgary | Calgary, AB | 2022 | Technical Advisor and Quality Reviewer

Stantec was retained by The City of Calgary to conduct a Phase I Environmental Site Assessment (ESA) of the proposed 6th Street Underpass Project connecting 9th Avenue SE and 11th Avenue SE underneath the Canadian Pacific Railway (CPR) located in Calgary, Alberta. The Phase I ESA was prepared for the for due diligence purposes to identify potential environmental liabilities associated with current and historical land uses on the site and within a 100 m radius of the site prior to the proposed planning and construction of the new underpass. Amin provided technical guidance to the project team and quality review of the Phase I ESA report.

TransCanada Sanitary Trunk - Desktop Environmental Site Assessments | The City of Calgary | Calgary, Alberta, Canada | 2017-2023 | Technical Advisor and Quality Reviewer

Stantec was retained by The City of Calgary to complete the preliminary design of an 8.3km, 1500mm diameter sanitary trunk sewer along the TransCanada Highway to provide wastewater collection and treatment service to the Town of Cochrane, as well as to accommodate future growth in the northwestern parts of the city. The design scope included identification and Triple Bottom Line evaluation of alignment options, review of trenchless construction methods, pipe material evaluation, detailed pipe hydraulic modeling, and various geotechnical and environmental studies. Project scope included trenchless crossings of 4 roadway interchanges and a crossing of CP Rail. Amin provided technical guidance to the project team and quality review of several Desktop Environmental Site Assessments, also referred to as Desktop Environmental Reviews.

North Water Servicing Options - Desktop Environmental Reviews | The City of Calgary | Calgary, Alberta, Canada | 2022-Present | Technical Advisor and Quality Reviewer

The North Water Servicing Options water feedermain alignments (the Project) evaluation included Options 1 and 2 pre-defined pipe alignment routes. The Project included conceptual design (alignment review and refinement; modeling of pipe hydraulics and transients analysis; identification, location and preliminary sizing of required facilities (pump stations and reservoirs); development of a Class 4 Opinion of Probable Cost, (including energy use and energy recovery cost estimates), identification of design risks development of mitigation strategies, in-person visual route review and Workshop with The City Operations teams; desktop site assessments (Geotechnical, Environmental, Historical Resources, and Biophysical impacts, plus project-specific Regulatory Requirements assessment); and completion of a Concept Design Report (CDR) summarizing the design methods used and findings to support selection of a preferred alignment. To further support the alignment selection process, a Triple Bottom Line (TBL) evaluation of Options 1 and 2 open cut was included in the original work plan. An evaluation was subsequently commissioned for another Option following Options 1 and 2. Amin has provided technical guidance to the project team and quality review of the Desktop Environmental Review report.

## FINANCIAL, INSURANCE, AND REAL ESTATE

Phase I Environmental Site Assessment | City of Calgary | Calgary, Alberta | Site Assessor, Report Writer

Phase I Environmental Site Assessment, proposed re-development of 46 ha of vacant land, roadways, light-rail transit infrastructure and commercial, industrial and residential developments. Purpose of the project was to report potential environmental liabilities associated with current and historical land uses and provide recommendations for further assessment, if necessary. Project deliverables included GIS database and maps. Responsible for historical research for the entire study area, site visits, data collection and report writing.

## RESTAURANTS

Phase I Environmental Site Assessment | Yum! Restaurants International (Canada) LP | Calgary, Alberta | Project Manager, Site Assessor, Report Writer, Senior Reviewer

Phase I Environmental Site Assessment of 15 fast food establishments in Southern Alberta (portion of a 120-site portfolio across Canada) for pre-disposition due diligence purposes. Purpose of the project was to report potential environmental liabilities associated with current and historical land uses and provide recommendations for further assessment. Responsible for project management, historical research, site visits, data collection and report writing.

## MANUFACTURING - PULP & PAPER / WOOD PRODUCTS

Ainsworth Lumber OSB Plant, Phase I and II Environmental Site Assessments and Air Quality Assessment | Ainsworth Lumber Co. Ltd. | Grande Prairie, Alberta | Project Manager

On-going management of the Phase I and II ESAs and the Air Quality Assessment of Ainsworth Lumber OSB Plant for corporate due diligence and application for approvals from Alberta Environment.

## OIL & GAS UPSTREAM, CONVENTIONAL

Phase I and II Environmental Site Assessments | Nexen Inc. | Alberta | Data Analysis, Document Review, and Report Writer

Projects included Upstream Oil & Gas Phase I ESAs at various oil and gas leases, well sites and gas plants across Alberta for the purpose of asset due diligence. Potential environmental liabilities identified associated with both management practices and material concerns.

## RESIDENTIAL DEVELOPMENT

Phase I Environmental Site Assessment | City of Calgary East Village | Calgary, Alberta | Site Assessor, Report Writer

Phase I Environmental Site Assessment, proposed re-development of 46 ha of vacant land, roadways, light-rail transit infrastructure and commercial, industrial and residential developments. Purpose of the project was to report potential environmental liabilities associated with current and historical land uses and provide recommendations for further assessment, if necessary. Project deliverables included GIS database and maps. Responsible for historical research for the entire study area, site visits, data collection and report writing.

## GOVERNMENT

Canada Post Phase I and II Environmental Site Assessments | Calgary, Alberta | Project Manager, Overall Project Coordinator and Senior Reviewer for the Environmental Component

Conducted a Phase I and II ESA of an existing Canada Post Depot located in a commercial district within Calgary, Alberta. Stantec also conducted a Property Condition Assessment (PCA), a Geotechnical Assessment, Hazardous Materials Assessment, and a Physical Planning Assessment concurrently with this Phase I and II ESA for pre-acquisition due-diligence purposes.

## TRANSMISSION & DISTRIBUTION, TRANSMISSION LINES

AltaLink Heartland Transmission Project | AltaLink Management Ltd. | Alberta | Project Manager and Senior Reviewer

Responsible for ensuring the successful completion of a large-scale Phase I ESA of AltaLink's Heartland Transmission Project. The Phase I ESA included an extensive and comprehensive review of available current and historical information. Systematically compiled and organized the current and historical records according to each parcel of land so that the information could be clearly documented in the report.

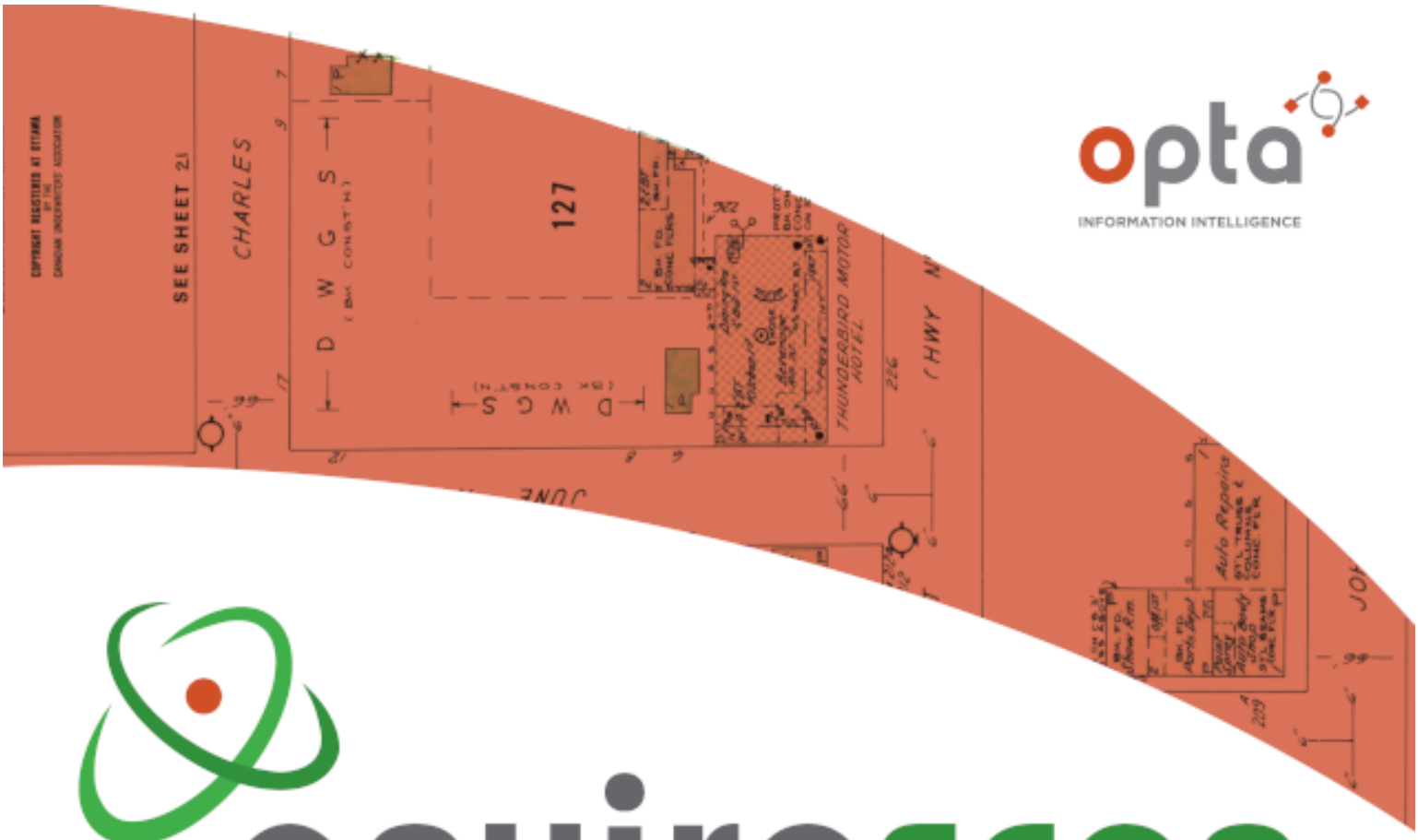
## RENEWABLE ENERGY, WIND

Phase I ESA Blackspring Ridge | Vulcan County, Alberta | 2011-2012 | Project Manager and Senior Reviewer

In 2011, conducted a Phase I ESA on Canada's largest wind energy project. The project consisted of assessing 89 sections of land in general accordance to the CSA Phase I ESA Standard Z768-01 (R2012). Responsible for making important project management decisions, meeting with the Client and providing feedback and updates to the Client contact throughout the project. The report was delivered to the Client on time and on budget.

# Appendix D

# Supporting Documentation




opta
INFORMATION INTELLIGENCE

# enviroscan

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 1 877 244 9437
W: optaintel.ca

Stephanie

Blairmore AB

Project No:
23092700661

Opta Order ID:
135251

Requested by:
Eleanor Goolab
ERIS

Date Completed:
10/5/2023 2:41:58 PM

Project Name: Blairmore Feasibility Assessment

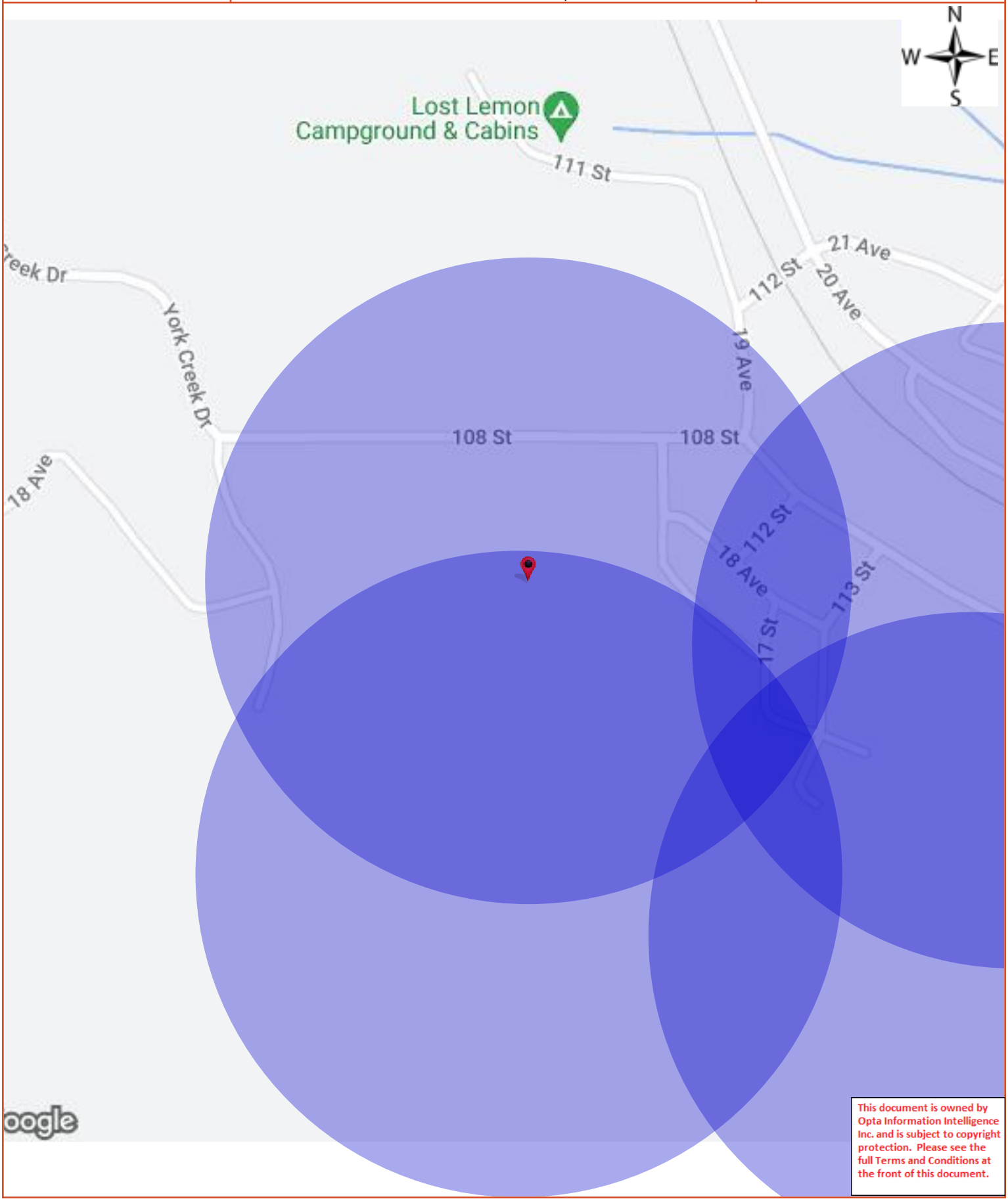
Project #: 23092700661
P.O. #: 116549068

## ENVIROSCAN Report

**Search Area: Blairmore AB**

**Requested by:**
Eleanor Goolab
Date Completed: 10/05/2023 14:41:58

enviroscan
OPTA INFORMATION INTELLIGENCE



# Opta Historical Environmental Services Enviroscan™ Terms and Conditions

## Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

## Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

## Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

## Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

## Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

**ENVIROSCAN Report**

**No Records Found**

**Requested by:**
Eleanor Goolab
Date Completed: 10/05/2023 14:41:58

OPTA INFORMATION INTELLIGENCE

# No Records Found



N
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S

ERIS

CITY DIRECTORY

| | |
|---|---|
| **Project Property:** | *Blairmore Feasibility Assessment*<br>*Blairmore*<br>*Blairmore,AB* |
| **Project No:** | *116549068* |
| **Requested By:** | *Stantec Consulting Ltd.* |
| **Order No:** | *23092700661* |
| **Date Completed:** | *October 04, 2023* |

Environmental Risk Information Services
*A division of Glacier Media Inc.*
1.866.517.5204 | info@erisinfo.com | erisinfo.com

October 04, 2023
RE: CITY DIRECTORY RESEARCH
Blairmore
Blairmore,AB

Thank you for contacting ERIS regarding our City Directory Search services. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. When searching a range of addresses, all civic addresses within that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on highly developed areas, while newly developed areas may be covered in the more recent years, older directories tend to cover only "central" parts of the city. To complete the search, we have either utilized the Toronto Reference Library, Library & Archives Canada and multiple digitized directories. While these do not claim to be a complete collection of all reverse listing city directories produced, ERIS has made every effort to provide accurate and complete information. ERIS shall not be held liable for missing, incomplete, or inaccurate information. If you believe there are additional addresses or streets that require searching, please contact us.

**Search Criteria:**

11100-11200 of 108 Street
1800-1850 of 112 Street
1700-1750 of 113 Street
1800-1850 of 116 Street
1700-1750 of 117 Street
1700-1800 of 118 Street
1700-1800 of 119 Street
11700-11815 of 17 Avenue
11100-11850 of 18 Avenue
11300-11905 of 19 Avenue
202 of Powderkeg Drive
100-150 of Southmore Drive
200-300 of Southmore Place

**Search Notes:**

Blairmore, Alberta is last listed in 2012.

## Search Results Summary

| Date | Source | Comment |
|---|---|---|
| 2021 | DIGITAL BUSINESS DIRECTORY | |
| 2017 | DIGITAL BUSINESS DIRECTORY | |
| 2012 | DIGITAL BUSINESS DIRECTORY | |

## 2021 108 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 112 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

1810 **YORK CREEK LODGE**...*SENIOR CITIZENS HOUSING*

## 2021 113 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 116 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 117 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 118 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 119 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 17 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 18 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 19 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

11902 **AUSTRIALPIN INC**...*SAFETY EQUIPMENT & CLOTHING (WHLS)*

## 2021 POWDERKEG DRIVE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 SOUTHMORE DRIVE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2021 SOUTHMORE PLACE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 108 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 112 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

1802 **CROWSNEST PASS SENIOR HOUSING**...*HOMES FOR THE ELDERLY*
1810 **YORK CREEK LODGE**...*HOMES FOR THE ELDERLY*

## 2017 113 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 116 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 117 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 118 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 119 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 17 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 18 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 19 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

11437 **J J HAIR DESIGN**...*BEAUTY SALONS*
11605 **LYNX CREEK TAXIDERMY**...*SUPPORT ACTIVITIES FOR ANIMAL PRODUCTION*

## 2017 POWDERKEG DRIVE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 SOUTHMORE DRIVE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2017 SOUTHMORE PLACE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 108 STREET
*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 112 STREET
*SOURCE: DIGITAL BUSINESS DIRECTORY*

1802 **CROWSNEST PASS SENIOR HOUSING**...*HOMES FOR THE ELDERLY*
1810 **YORK CREEK LODGE**...*HOMES FOR THE ELDERLY*

## 2012 113 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 116 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 117 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 118 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 119 STREET

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 17 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 18 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 19 AVENUE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

11437 **J J HAIR DESIGN**...*BEAUTY SALONS*
11605 **LYNX CREEK TAXIDERMY**...*SUPPORT ACTIVITIES FOR ANIMAL PRODUCTION*

## 2012 POWDERKEG DRIVE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

## 2012 SOUTHMORE DRIVE

*SOURCE: DIGITAL BUSINESS DIRECTORY*

**NO LISTING FOUND**

**NO LISTING FOUND**

ERIS

# DATABASE REPORT

| | |
|---|---|
| **Project Property:** | *Blairmore Feasibility Assessment*<br>*Blairmore*<br>*Blairmore AB* |
| **Project No:** | *116549068* |
| **Report Type:** | *Quote - Custom-Build Your Own Report* |
| **Order No:** | *23092700661* |
| **Requested by:** | *Stantec Consulting Ltd.* |
| **Date Completed:** | *October 2, 2023* |

**Environmental Risk Information Services**
*A division of Glacier Media Inc.*
1.866.517.5204 | info@erisinfo.com | erisinfo.com

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# Executive Summary

***Property Information:***

| | |
|---|---|
| **Project Property:** | *Blairmore Feasibility Assessment*<br>*Blairmore  Blairmore AB* |
| **Project No:** | *116549068* |

***Order Information:***

| | |
|---|---|
| **Order No:** | *23092700661* |
| **Date Requested:** | *September 27, 2023* |
| **Requested by:** | *Stantec Consulting Ltd.* |
| **Report Type:** | *Quote - Custom-Build Your Own Report* |

***Historical/Products:***

| | |
|---|---|
| **Aerial Photographs** | *Aerials - National Collection* |
| **City Directory Search** | *CD - QUOTE Custom City Directory Search* |
| **ERIS Xplorer** | *ERIS Xplorer* |
| **Insurance Products** | *Fire Insurance Maps/Inspection Reports/Site Plans* |

# Executive Summary: Report Summary

| Database | Name | Searched | Project Property | Boundary to 0.10km | Total |
|---|---|---|---|---|---|
| AERW | Well Licenses | Y | 0 | 0 | 0 |
| AGR | Agriculture and Fisheries - Certificates of Approval | Y | 0 | 0 | 0 |
| AOGW | Alberta Oil and Gas Wells | Y | 0 | 0 | 0 |
| AUTH | Authorizations | Y | 0 | 0 | 0 |
| AUWR | Automobile Wrecking & Supplies | Y | 0 | 0 | 0 |
| CAWD | Waste Management Facilities - Certificates of Approval | Y | 0 | 0 | 0 |
| CBL | Commercial Activity Risk - City of Calgary Business Licenses | Y | 0 | 0 | 0 |
| CDRY | Dry Cleaning Facilities | Y | 0 | 0 | 0 |
| CFO | Confined Feeding Operations | Y | 0 | 0 | 0 |
| CHEM | Chemical Processing Operations - Certificates of Approval | Y | 0 | 0 | 0 |
| CHM | Chemical Register | Y | 0 | 0 | 0 |
| CMPS | Compost Facilities | Y | 0 | 0 | 0 |
| CNG | Compressed Natural Gas Stations | Y | 0 | 0 | 0 |
| CONV | Compliance and Convictions | Y | 0 | 0 | 0 |
| CTNK | Fuel Sales and Storage | Y | 0 | 0 | 0 |
| DRWD | Approved Oilfield Waste Management Facilities | Y | 0 | 0 | 0 |
| EAS | Enforcement Action Summary | Y | 0 | 0 | 0 |
| EBL | Commercial Activity Risk - City of Edmonton Business Licenses | Y | 0 | 0 | 0 |
| ECMP | Environmental Compliance Prosecutions | Y | 0 | 0 | 0 |
| EEM | Environmental Effects Monitoring | Y | 0 | 0 | 0 |
| EHS | ERIS Historical Searches | Y | 0 | 0 | 0 |
| EIIS | Environmental Issues Inventory System | Y | 0 | 0 | 0 |
| EPST | Alberta Environment & Parks Storage Tanks | Y | 0 | 0 | 0 |
| EPWN | Environment Protection & Enhancement Act and Water Act Public Notices | Y | 0 | 0 | 0 |
| ESAR | Environmental Site Assessment Repository | Y | 0 | 0 | 0 |
| ETNK | Edmonton Vehicle Fueling Stations | Y | 0 | 0 | 0 |
| FAC | Facility List | Y | 0 | 0 | 0 |
| FCON | Federal Convictions | Y | 0 | 0 | 0 |
| FCS | Contaminated Sites on Federal Land | Y | 0 | 0 | 0 |
| FIS | AER Incidents & Spills | Y | 0 | 0 | 0 |
| FOOD | Food Processing Operations - Certificates of Approval | Y | 0 | 0 | 0 |
| FRST | Federal Identification Registry for Storage Tank Systems (FIRSTS) | Y | 0 | 0 | 0 |
| FST | Fuel Storage Tanks | Y | 0 | 0 | 0 |
| GEN | Waste Generators Summary | Y | 0 | 0 | 0 |
| GHG | Greenhouse Gas Emissions from Large Facilities | Y | 0 | 0 | 0 |

| Database | Name | Searched | Project Property | Boundary to 0.10km | Total |
|---|---|---|---|---|---|
| GPP | Gas Processing Plants | Y | 0 | 0 | 0 |
| HELP | Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database | Y | 0 | 0 | 0 |
| HORW | Horizontal Wells | Y | 0 | 0 | 0 |
| IAFT | Indian & Northern Affairs Fuel Tanks | Y | 0 | 0 | 0 |
| LDS | Identification and Verification of Active and Inactive Land Disposal Sites | Y | 0 | 0 | 0 |
| LDSI | Land Disposal Sites on Indian Reserves | Y | 0 | 0 | 0 |
| LNDF | Landfill Registrations | Y | 0 | 0 | 0 |
| LUM | Lumber Related Operations - Certificates of Approval | Y | 0 | 0 | 0 |
| MINE | Canadian Mine Locations | Y | 0 | 0 | 0 |
| MMB | Metals, Minerals and Building Materials Operations - Certificates of Approval | Y | 0 | 0 | 0 |
| MNR | Mineral Occurrences | Y | 0 | 0 | 0 |
| NATE | National Analysis of Trends in Emergencies System (NATES) | Y | 0 | 0 | 0 |
| NCST | PTMAA Non-Compliant Storage Tanks | Y | 0 | 0 | 0 |
| NDFT | National Defense & Canadian Forces Fuel Tanks | Y | 0 | 0 | 0 |
| NDSP | National Defense & Canadian Forces Spills | Y | 0 | 0 | 0 |
| NDWD | National Defence & Canadian Forces Waste Disposal Sites | Y | 0 | 0 | 0 |
| NEBI | National Energy Board Pipeline Incidents | Y | 0 | 0 | 0 |
| NEBP | National Energy Board Wells | Y | 0 | 0 | 0 |
| NEES | National Environmental Emergencies System (NEES) | Y | 0 | 0 | 0 |
| NPCB | National PCB Inventory | Y | 0 | 0 | 0 |
| NPR2 | National Pollutant Release Inventory 1993-2020 | Y | 0 | 0 | 0 |
| NPRI | National Pollutant Release Inventory - Historic | Y | 0 | 0 | 0 |
| OAM | Operating and Abandoned Mines | Y | 1 | 0 | 1 |
| OGF | Oil and Gas Facilities - ST102 & ST50 | Y | 0 | 0 | 0 |
| OGWW | Oil and Gas Wells | Y | 0 | 0 | 0 |
| ORD | Enforcement Orders | Y | 0 | 0 | 0 |
| ORP | Alberta Orphan Wells | Y | 0 | 0 | 0 |
| PAP | Canadian Pulp and Paper | Y | 0 | 0 | 0 |
| PCFT | Parks Canada Fuel Storage Tanks | Y | 0 | 0 | 0 |
| PCG | Petrochemical, Coal and Gas Operations - Certificates of Approval | Y | 0 | 0 | 0 |
| PES | Pesticide Register | Y | 0 | 0 | 0 |
| PFCH | NPRI Reporters - PFAS Substances | Y | 0 | 0 | 0 |
| PFHA | Potential PFAS Handers from NPRI | Y | 0 | 0 | 0 |
| PITS | Conglomerate and Waste Management Facilities | Y | 0 | 0 | 0 |
| PSP | Alberta Private Sewage Disposal Permits | Y | 0 | 0 | 0 |
| PTAP | PTMAA Approved (Open) Permits | Y | 0 | 0 | 0 |
| REC | Hazardous Waste Receivers Summary | Y | 0 | 0 | 0 |
| RECY | Alberta Recyclers | Y | 0 | 0 | 0 |
| RST | Retail Fuel Storage Tanks | Y | 0 | 0 | 0 |

| Database | Name | Searched | Project Property | Boundary to 0.10km | Total |
|---|---|---|---|---|---|
| SCT | ***Scott's Manufacturing Directory*** | *Y* | *0* | *0* | *0* |
| SPEC | ***Special Operation Classifications - Certificates of Approval*** | *Y* | *0* | *0* | *0* |
| WDS | ***Inventory of Waste Disposal Sites*** | *Y* | *0* | *0* | *0* |
| WSTE | ***Wastewater Operations*** | *Y* | *0* | *0* | *0* |
| WWIS | ***Alberta Water Well Information Database*** | *Y* | *0* | *0* | *0* |
| | | ***Total:*** | *1* | *0* | *1* |

# Executive Summary: Site Report Summary - Project Property

| Map Key | DB | Company/Site Name | Address | Dir/Dist (m) | Elev diff (m) | Page Number |
|---|---|---|---|---|---|---|
| 1 | OAM | Blairmore Coal Co. | AB | ENE/0.0 | -25.44 | 13 |

# Executive Summary: Site Report Summary - Surrounding Properties

| Map Key | DB | Company/Site Name | Address | Dir/Dist (m) | Elev Diff (m) | Page Number |
|---|---|---|---|---|---|---|

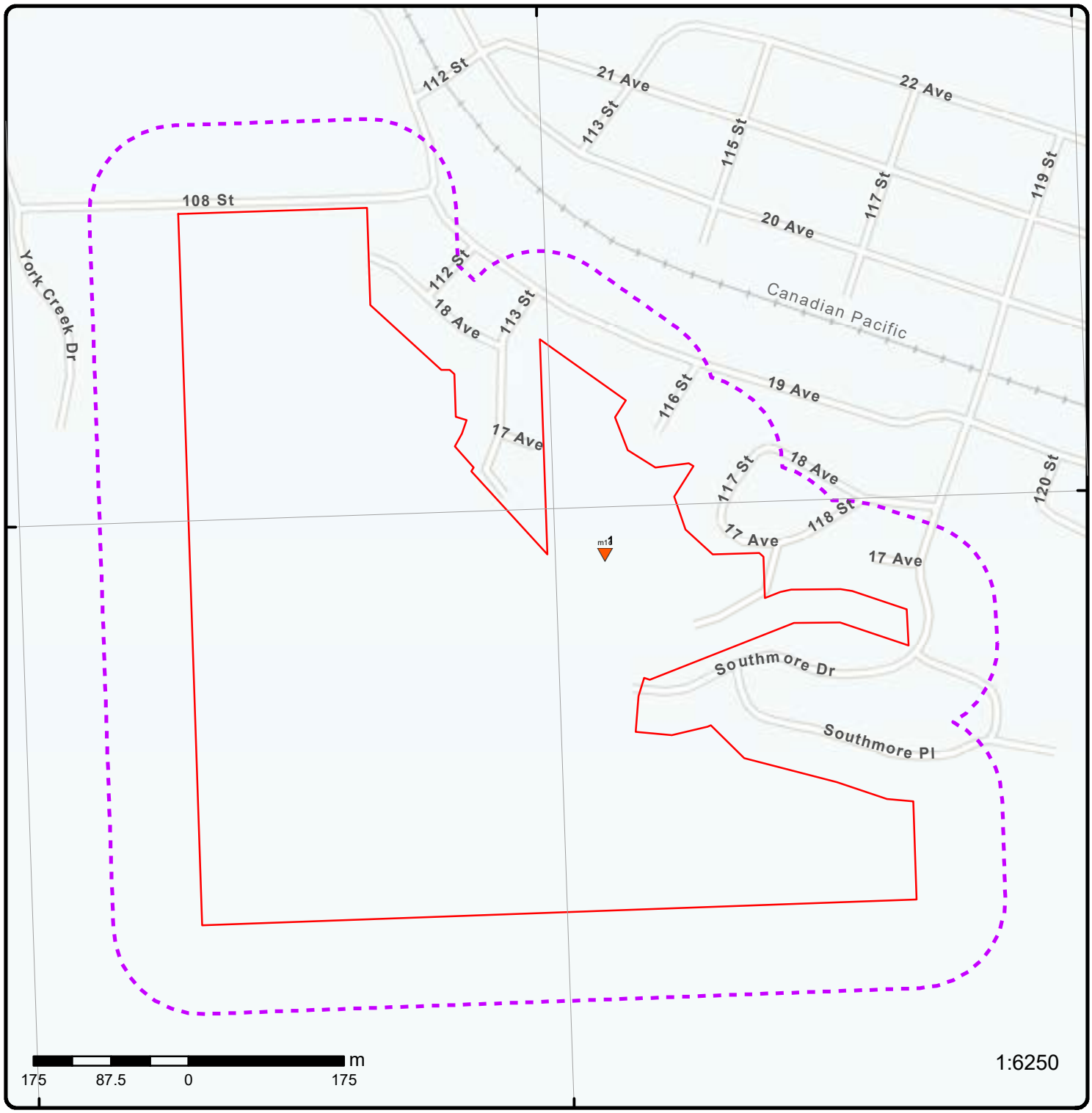
No records found in the selected databases for the surrounding properties.

# Executive Summary: Summary By Data Source

## OAM - Operating and Abandoned Mines

A search of the OAM database, dated 2001, 2003* has found that there are 1 OAM site(s) within approximately 0.10 kilometers of the project property.

| Site | Address | Distance (m) | Map Key |
|---|---|---|---|
| Blairmore Coal Co. | AB | 0.0 | 1 |




# Map: 0.1 Kilometer Radius

Order Number: 23092700661

Address: Blairmore, Blairmore, AB

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major Arterial; Minor Arterial
- Local Road
- Service Road; Traffic Circle; Ramp
- Rail
- Beach
- Airport
- Industrial Area
- Military Base
- Aircraft Roads
- Native Reservation
- Hospital
- Shopping & Sports Area
- University/College
- Cemetery; Golf Course
- Parkt (National)
- Park (City/County)

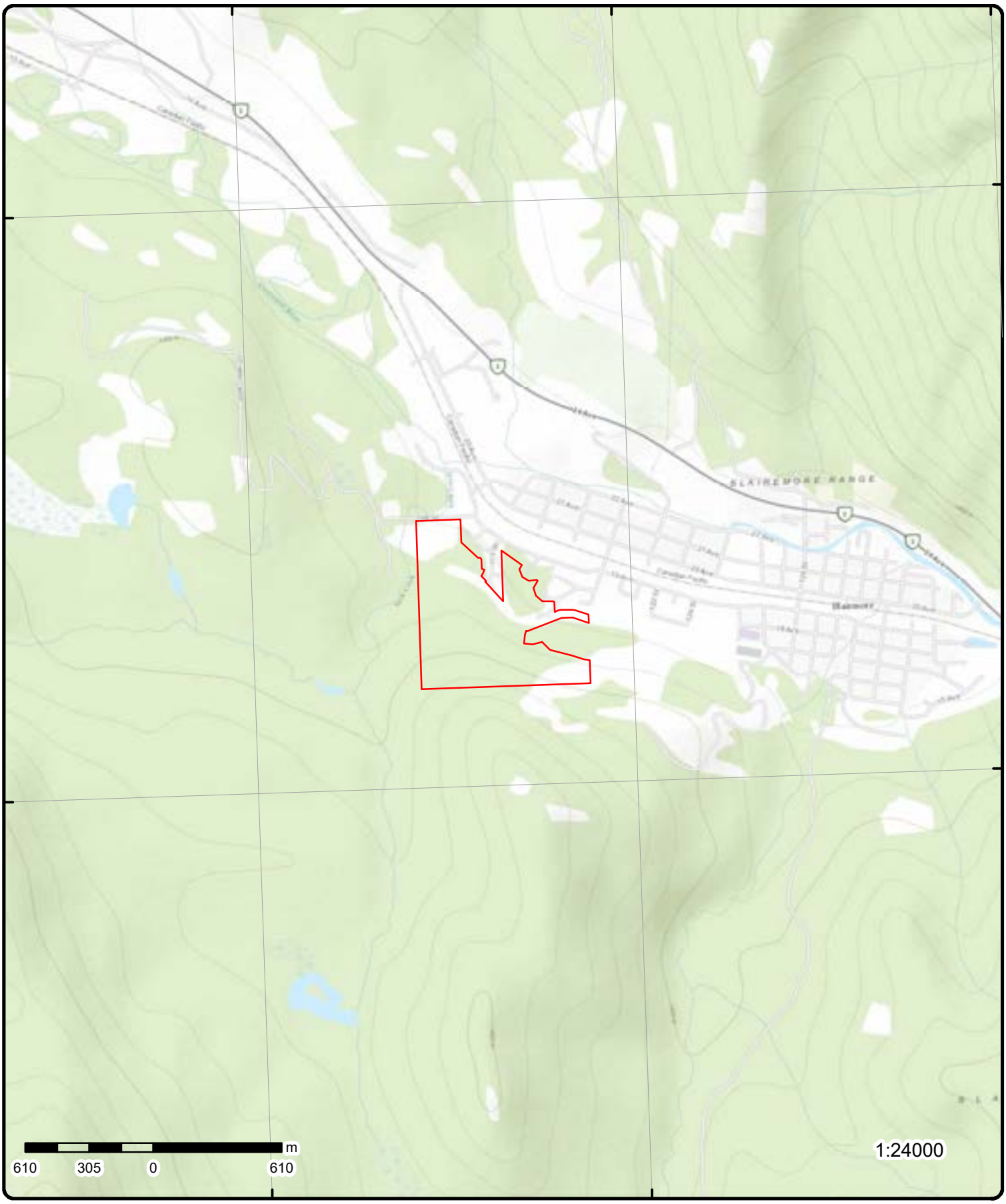

# Aerial

**Year: 2022**

Order Number: 23092700661

**Address: Blairmore, Blairmore, AB**

**Source:** ESRI World Imagery




# Topographic Map

**Address: Blairmore, AB**

**Source:** ESRI World Topographic Map

Order Number: 23092700661

# Detail Report

| Map Key | Number of Records | Direction/ Distance (m) | Elev/Diff (m) | Site | DB |
|---|---|---|---|---|---|
| 1 | 1 of 1 | ENE/0.0 | 1,323.6 / -25.44 | Blairmore Coal Co.<br>AB | OAM |

| | | | |
|---|---|---|---|
| **Mine NO:** | 0802 | **Lifespan:** | 1919-1930 |
| **Mine Name:** | Sunburst | **Amt Prod (K tons):** | 18.8 |
| **Mining Description:** | Underground mine | **DLS:** | NE-34-7-4-5 |
| **Rank Description:** | Low-, medium-, and/or high-volatile bituminous | **Location:** | 007-04-34 |
| **Depth (m):** | | **Remarks:** | multiple owners |
| **Thickness (m):** | 2.1 | | |

# Unplottable Summary

**Total: 0 Unplottable sites**

| DB | Company Name/Site Name | Address | City | Postal |
|---|---|---|---|---|

# Unplottable Report

No unplottable records were found that may be relevant for the search criteria.

# Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update.* ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

***Well Licenses:*** Provincial AERW

Locations of Well Licenses made available by the Alberta Energy Regulator (AER) as ST37. Includes Active, Suspended, Abandoned, Drilled and Cased Oil, Gas, Crude Bitumen well licenses, as well as Observation, Injection, Disposal, and Undefined well licences.

***Government Publication Date: Mar 31, 2022***

***Agriculture and Fisheries - Certificates of Approval:*** Provincial AGR

This database contains approvals for processes pertaining to drying of alfalfa/forage/peat, feedlots, fish farms and feed/seed mills. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Alberta Oil and Gas Wells:*** Provincial AOGW

The Alberta Energy Utilities Board - now the Alberta Energy Regulator (AER) - maintained a database of oil and gas wells drilled in the province of Alberta. The database contains information on well name, licensee name, license number, location, status, total well depth and date of final drilling. Please note that this database will not be updated, information on wells drilled after September 2003 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

***Government Publication Date: 1883-Sept 2003****

***Authorizations:*** Provincial AUTH

Locations associated with Water Act and Environmental Protection and Enhancement Act (EPEA) documents issued by Alberta Environment and Parks (AEP). Includes approvals, licences, registrations, authorizations, permits, and certificates. This list is made available by the Alberta Environment and Parks (AEP).

***Government Publication Date: Jan 2023***

***Automobile Wrecking & Supplies:*** Private AUWR

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

***Government Publication Date: 1999-Feb 28, 2022***

***Waste Management Facilities - Certificates of Approval:*** Provincial CAWD

This database contains approvals for processes pertaining to waste management facilities (hazardous waste manifesting, waste disposal/incineration/open burning/processing/storage/treatment). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993 - Jan 2020***

***Commercial Activity Risk - City of Calgary Business Licenses:*** Provincial CBL

List of locations with Business Licences for the follow commercial activities: apartment building with 4 or more stories, auto-body shop, fabric cleaning, manufacturing, motor vehicle dealerships and service/repair, and salvage yard/auto wrecking. Data made available by the City of Calgary.

***Government Publication Date: Jun 30, 2023***

***Dry Cleaning Facilities:*** Federal CDRY

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

***Government Publication Date: Jan 2004-Dec 2021***

***Confined Feeding Operations:*** Provincial CFO

In 1991, the Natural Resources Conservation Board (NRCB) was created to review applications for approval of major natural resource development projects in Alberta. In January 2002, the NRCB was given the responsibility to regulate the Confined Feeding Operation industry. The Agricultural Operation Practices Act defines a confined feeding operation to be: "an activity on land that is fenced or enclosed or within buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing, but does not include seasonal feeding and bedding sites." Under the AOPA regulations, all new or expanding confined feeding operations (CFOs) or manure storage facilities are required to make an application for Approval, Registration or Authorization to the NRCB before construction or expansion commences. Geographic coordinates were provided in DLS (Dominion Land Survey) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the Quarter section only.

***Government Publication Date: 2002-Mar 2023***

***Chemical Processing Operations - Certificates of Approval:*** Provincial CHEM

This database contains approvals for processes pertaining to the manufacturing and use of chemical products and pesticides. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Chemical Register:*** Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

***Government Publication Date: 1999-Feb 28, 2023***

***Compost Facilities:*** Provincial CMPS

A list of compost facility registrations made available by Alberta Environment and Parks (AEP). Composting facilities operating under a registration are required to follow the requirements in the Code of Practice for Compost Facilities, which outlines the minimum requirements for the design, construction, operation, and reclamation of compost facilities that accept up to 20,000 tonnes of feedstock per year.

***Government Publication Date: Dec 31, 2019***

***Compressed Natural Gas Stations:*** Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

***Government Publication Date: Dec 2012 -May 2023***

***Compliance and Convictions:*** Provincial CONV

This listing of enforcement actions under the Alberta Environment and Protected Areas' current legislation is maintained by the Government of Alberta. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Unfortunately, from state of the data, the location that the address pertains to cannot be confirmed.

***Government Publication Date: 1993-Dec 2022***

***Fuel Sales and Storage:*** Provincial CTNK

List of locations with Business Licences for fuel sales and storage. Data made available by the City of Calgary.

***Government Publication Date: Jun 30, 2023***

***Approved Oilfield Waste Management Facilities:*** Provincial DRWD

A list of approved first and third party oilfield waste management facilities. First-party receivers can only accept upstream oilfield waste generated by one oil and gas company, but can come from various sites. Third-party receivers can accept upstream oilfield waste from various sites and various generators. This data is made available by the Alberta Energy Regulator (AER).

***Government Publication Date: Mar 2023***

***Enforcement Action Summary:*** Provincial EAS

This database maintained by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB) - summarizes high risk enforcement action 1, high risk enforcement action 2 (persistent noncompliance), high risk enforcement action 3 (failure to comply or demonstrated disregard), low risk enforcement action - global REFER and legislative/regulatory enforcement action. Fields will include licensee/company name, non-compliance event, date of enforcement, location, etc.

***Government Publication Date: 2007-Feb 2023***

***Commercial Activity Risk - City of Edmonton Business Licenses:*** Provincial EBL

List of locations with Business Licenses for the follow commercial activities: cannabis processing or cultivation, construction vehicle and equipment sales/rentals, livestock operation, general industrial, and vehicle repair. Data made available by the City of Edmonton.

***Government Publication Date: Feb 28, 2023***

***Environmental Compliance Prosecutions:*** Provincial ECMP

A list of concluded prosecutions made under environmental legislation. Listing made available by the Government of Alberta. This is not a complete and comprehensive list of environmental compliance outcomes: in Alberta, enforcement tools include warning letters, violation tickets, administrative penalties and orders, in addition to prosecutions.

***Government Publication Date: Dec 31, 2022***

***Environmental Effects Monitoring:*** Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

***Government Publication Date: 1992-2007****

***ERIS Historical Searches:*** Private EHS

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

***Government Publication Date: 1999-Jun 30, 2023***

***Environmental Issues Inventory System:*** Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

***Government Publication Date: 1992-2001****

***Alberta Environment & Parks Storage Tanks:*** Provincial EPST

List of storage tanks under the purview of Alberta Environment and Parks.

***Government Publication Date: Jul 31, 2016***

***Environment Protection & Enhancement Act and Water Act Public Notices:*** Provincial EPWN

A list of Public Notices of Applications, Decisions, and Revisions pertaining to applications made to Alberta Environment and Parks under the Water Act (WA) and Alberta Environment Protection and Enhancement Act (EPEA). Dominion Land Survey (DLS) locations provided by the source are subject to accuracy limitations inherent to the DLS system.

***Government Publication Date: Sep 30, 2022***

***Environmental Site Assessment Repository:*** Provincial ESAR

Environmental site assessments determine the quality of soil and groundwater of a site, particularly at retail gas stations and other commercial and industrial sites. A site assessment does not necessarily mean a site is, or ever was, contaminated. Alberta's Environmental Site Assessment Repository (ESAR) is an online, searchable database that provides scientific and technical information about assessed and/or reclaimed sites throughout Alberta. Search Alberta's ESAR using meridian, range, township, and section values at http://www.esar.alberta.ca/esarmain.aspx to gain access to reclamation certificates and/or associated files (applications, reports).

***Government Publication Date: 1960-Mar 2021***

***Edmonton Vehicle Fueling Stations:*** Provincial ETNK

A list of sites that have a City of Edmonton business license for Vehicle Fueling Stations. Listing made available by the City of Edmonton.

***Government Publication Date: Feb 28, 2023***

***Facility List:*** Provincial FAC

This database contains a complete list of new, active and suspended facilities in Alberta including batteries, gas plants, meter stations, and other facilities. Information provided includes: facility id, facility name, operator name, sub type description, location, facility l license no, and operational status; now includes EDCT (Energy Development Category Type) type and description. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

***Government Publication Date: Up to Aug 31, 2023***

***Federal Convictions:*** Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

***Government Publication Date: 1988-Jun 2007****

***Contaminated Sites on Federal Land:*** Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

***Government Publication Date: Jun 2000-Jun 2023***

***AER Incidents & Spills:*** Provincial FIS

Received from the Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) and EUB (Energy Utilities Board) - this database, which used to be called EISL (Environmental Information System Listing), contains reported environmental incidents beginning in 1975. Descriptions include noise infractions, air quality emissions, oil spills and failures for pipelines, wells, plants, and batteries. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1975 - Aug 2023***

***Food Processing Operations - Certificates of Approval:*** Provincial FOOD

This database contains approvals for processes pertaining to the manufacturing of food products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Federal Identification Registry for Storage Tank Systems (FIRSTS):*** Federal FRST

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

***Government Publication Date: May 31, 2018***

***Fuel Storage Tanks:*** Provincial FST

List tank sites in unaccredited areas of the Province. Includes active tank sites, sites with tanks temporarily out of service, and sites at which tanks have been removed from the ground. Information in this database was collected according to Alberta Regulation AR 291/95 Storage Tank System Management and to AR 52/98 Fire Code which was formerly the Alberta Fire Code Regulation, 1992 (AR 204/92). The Petroleum Tank Management Association of Alberta (PTMAA) regulated Storage Tanks in unaccredited areas of Alberta from 1994 until June 2020, at which point the Safety Codes Council assumed responsibility for services related to storage tank management.

***Government Publication Date: 1985-May 2023***

***Waste Generators Summary:*** Provincial GEN

Under Alberta's Waste Control Regulation, Alta. Reg. 192/96, a generator is a person who consigns hazardous waste for storage, transport, treatment or disposal. As of 2007, Alberta Environment no longer provides detailed information on each waste generator, such as approval number, class, and class description.

***Government Publication Date: 1993-Aug 2018***

***Greenhouse Gas Emissions from Large Facilities:*** Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO2 eq).

***Government Publication Date: 2013-Dec 2019***

***Gas Processing Plants:*** Provincial GPP

The Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) - has an inventory of all Gas Processing Plants in Alberta, with information such as location, names of plant, facility type, operator name, facility license, design capacities, etc.

***Government Publication Date: Oct 2016-Sep 30, 2022***

***Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database:*** Provincial HELP

The H.E.L.P. Data Tracking and Management Control System was created to provide tracking and management capabilities of industrial landfills in Alberta for the Department of Environment. Detailed information including company name, location, type of landfill, priority, score, status, use and much more is included in this database.

***Government Publication Date: June 1988****

***Horizontal Wells:*** Provincial HORW

A horizontal well is created by drilling the lower part of the wellbore parallel to the zone of interest. These wells must be drilled directionally at an angle exceeding 80 degrees. Horizontal drilling can help increase resource recovery while minimizing surface impacts. While horizontal drilling has been used for decades, technological improvements have made it possible to combine horizontal drilling with hydraulic fracturing to help coax oil and natural gas out of tight rock. Today, more than half of western Canada's wells are being drilled horizontally. Horizontal well list includes: well location, licence number, well name, licensee name, final drilling date, total depth, and true vertical depth. List is made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

***Government Publication Date: Mar 2015-Feb 28, 2023***

***Indian & Northern Affairs Fuel Tanks:*** Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

***Government Publication Date: 1950-Aug 2003****

***Identification and Verification of Active and Inactive Land Disposal Sites:*** Provincial LDS

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. A point scoring system was used to classify the sites into potential priority 1, priority 2 or priority 3 groups on the basis of the type of waste received at the sites and the site environment. Sites that, according to available information, may pose a hazard to public health and safety or the environment are classified as potential priority 1 sites.

***Government Publication Date: Oct 1982****

***Land Disposal Sites on Indian Reserves:*** Provincial LDSI

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. This database specifically identifies land disposal sites on Indian Reserves. Information on each site is limited to: location, band, size and general comments.

***Government Publication Date: Oct 1982****

***Landfill Registrations:*** Provincial LNDF

A list of landfill registrations made available by Alberta Environment and Parks (AEP). Landfills operating under a registration are required to follow the requirements in the Code of Practice for Landfills, which outlines the minimum requirements for the construction, operation and reclamation of landfills that accept 10,000 tonnes or less per year of non-hazardous and inert waste.

***Government Publication Date: Mar 31, 2020***

***Lumber Related Operations - Certificates of Approval:*** Provincial LUM

This database contains approvals for processes pertaining to the manufacturing of wood products, pulp and paper including the associated water treatment processes. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Canadian Mine Locations:*** Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

***Government Publication Date: 1998-2009****

***Metals, Minerals and Building Materials Operations - Certificates of Approval:*** Provincial MMB

This database contains approvals for processes pertaining to the manufacturing of building materials, metals, and mineral products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Mineral Occurrences:*** Provincial MNR

The AMDO (Alberta Mineral Deposits and Occurrences) application was created by the Minerals and Coal Geoscience Section of the Alberta Geological Survey as a database for mineral deposits in Alberta in the early 1990s. This is a one time inventory and will not be updated.

***Government Publication Date: 1993-2003****

***National Analysis of Trends in Emergencies System (NATES):*** Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

***Government Publication Date: 1974-1994****

***PTMAA Non-Compliant Storage Tanks:*** Provincial NCST

The Alberta Fire Code requires that storage tanks be registered. Tanks may not be registered because they do not meet minimum equipment standards or the owners have not made the annual registration application or paid the necessary registration fees. Some tank owners have installed tanks without a permit. This source contains information on facilities which have tanks that have ceased to be registered or have never been registered. It is maintained and updated by the Petroleum Tank Management Association of Alberta (PTMAA).

***Government Publication Date: Sep 2016-May 31, 2020***

***National Defense & Canadian Forces Fuel Tanks:*** Federal NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

***Government Publication Date: Up to May 2001****

***National Defense & Canadian Forces Spills:*** Federal NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

***Government Publication Date: Mar 1999-Oct 2022***

***National Defence & Canadian Forces Waste Disposal Sites:*** Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

***Government Publication Date: 2001-Apr 2007****

***National Energy Board Pipeline Incidents:*** Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

***Government Publication Date: 2008-Jun 30, 2021***

***National Energy Board Wells:*** Federal NEBP

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

***Government Publication Date: 1920-Feb 2003****

***National Environmental Emergencies System (NEES):*** Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

***Government Publication Date: 1974-2003****

***National PCB Inventory:*** Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

***Government Publication Date: 1988-2008****

***National Pollutant Release Inventory 1993-2020:*** Federal NPR2

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of pollutant releases (to air, water and land), disposals, and transfers for recycling. The inventory, managed by Environment and Climate Change Canada, tracks over 300 substances. Under the authority of the Canadian Environmental Protection Act (CEPA), owners or operators of facilities that meet published reporting requirements are required to report to the NPRI.

***Government Publication Date: Sep 2020***

***National Pollutant Release Inventory - Historic:*** Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances. This data holds historic records; current records are found in NPR2.

***Government Publication Date: 1993-May 2017***

***Operating and Abandoned Mines:*** Provincial OAM

This data is based on the 2001 edition (revised in 2003), published by the Alberta Energy and Utilities Board (EUB) now the Alberta Energy Regulator (AER). It was a one time inventory of Operating and Abandoned Coal Mines in Alberta. In 1905, Alberta began to catalogue coal mines by assigning a unique number to each operation. This database will provide information on location, mine #, mine name, mine company, life span, amount of coal produced, depth, thickness and other important information concerning the mine.

***Government Publication Date: 2001, 2003****

***Oil and Gas Facilities - ST102 & ST50:*** Provincial OGF

This list of batteries, gas plants, meter stations, and other facilities in the province of Alberta, made available as Reports ST102 (Parts A and B) and ST50 (A and B), is provided by the Alberta Energy Regulator (AER).

***Government Publication Date: Jul 31, 2023***

***Oil and Gas Wells:*** Private OGWW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

***Government Publication Date: 1988-Aug 31, 2023***

***Enforcement Orders:*** Provincial ORD

List of enforcement orders issued by Alberta Environment and Parks (AEP). Alberta Environment and Parks encourages compliance with environmental legislation. When individuals, companies, or municipalities fail to comply with legislation, the department has several options to ensure compliance. This listing, made available by the Alberta Government, includes Compliance Orders, Enforcement Orders, Environmental Protection Orders, Orders to Vacate, and Water Management Orders.

***Government Publication Date: Jul 31, 2023***

***Alberta Orphan Wells:*** Provincial ORP

The Orphan Well Association (OWA) maintains lists of properties designated as orphan by the Alberta Energy Regulator (AER). Includes the location, well ID, licensee name and license number of orphan wells, sites, and facilities that have been identified for the purpose of abandonment, suspension, decommission, and reclamation. Legacy wells under long term care and custody are excluded. Please note that the OWA Orphan List also includes properties with production information from the AER. The OWA makes no representation, warranties, or guarantees, expressed or implied, for the fitness of the data with respect to its use.

***Government Publication Date: Jan 2007-Aug 31, 2021***

***Canadian Pulp and Paper:*** Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

***Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014***

***Parks Canada Fuel Storage Tanks:*** Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

***Government Publication Date: 1920-Jan 2005****

***Petrochemical, Coal and Gas Operations - Certificates of Approval:*** Provincial PCG

This database contains approvals for processes pertaining to petroleum, coal, and oil and gas processing. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Pesticide Register:*** Provincial PES

This is a list of Registered Pesticide Vendors in Alberta (retail and wholesale). The pesticide vendor list is comprised of vendors who have both audited AWSA pesticide storage facilities as part of their operation, and those vendors that do not have an audited AWSA pesticide storage facilities. Non-audited retail and wholesale vendors may be selling products that are not covered by the AWSA program, or may be utilizing external AWSA pesticide warehouses. Registration numbers and expiry dates are identified for each operation. If a registration number is not present, the operation's vendor registration is in the process of renewal.

***Government Publication Date: 1998-Aug 2015***

***NPRI Reporters - PFAS Substances:*** Federal PFCH

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of releases, disposals, and transfers, tracking over 320 pollutants. Per - and polyfluoroalkyl substances (PFAS) are a group of over 4,700 human-made substances for which adverse environmental and health effects have been observed. This listing of PFAS substance reporters includes those NPRI facilities that reported substances that are found in either: a) the Comprehensive Global Database of PFASs compiled by the Organisation for Economic Co-operation and Development (OECD), b) the US Environmental Protection Agency (US EPA) Master List of PFAS Substances, c) the US EPA list of PFAS chemicals without explicit structures, or d) the US EPA list of PFAS structures (encompassing the largest set of structures having sufficient levels of fluorination to potentially impart PFAS-type properties).

***Government Publication Date: Sep 2020***

***Potential PFAS Handers from NPRI:*** Federal PFHA

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of releases, disposals, and transfers, tracking over 320 pollutants. Per - and polyfluoroalkyl substances (PFAS) are a group of over 4,700 human-made substances for which adverse environmental and health effects have been observed. This list of potential PFAS handlers includes those NPRI facilities that reported business activity (NAICS code) included in the US Environmental Protection Agency (US EPA) list of Potential PFAS-Handling Industry Sectors, further described as operating in industry sectors where literature reviews indicate that PFAS may be handled and/or released. Inclusion of a facility in this listing does not indicate that PFAS are being manufactured, processed, used, or released by the facility - these are facilities that potentially handle PFAS based on their industrial profile.

***Government Publication Date: Sep 2020***

***Conglomerate and Waste Management Facilities:*** Provincial PITS

This database contains approvals for processes pertaining to the use of gravel pits, sand pits, and clay pits. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Alberta Private Sewage Disposal Permits:*** Provincial PSP

These permits are private sewage disposal permits that have been issued to owners and contractors. They would include various types of installations including holding tanks, septic tanks, packaged treatment plants, sand filters, fields, mounds, lagoons and open discharges. In 2003 Alberta Municipal Affairs started collecting information and issuing permits using an electronic permitting system. These records include all private sewage disposal permits within the jurisdiction of Alberta Municipal Affairs.

***Government Publication Date: 2003-2013***

***PTMAA Approved (Open) Permits:*** Provincial PTAP

The Petroleum Tank Management Association of Alberta maintains a list of open permits it has issued within its jurisdiction. Prior to installing, removing, or altering tanks, storage tanks owners must receive approval in the form of a permit from the Authority Having Jurisdiction (in this case, PTMAA).

***Government Publication Date: Apr 2016-Apr 30, 2020***

***Hazardous Waste Receivers Summary:*** Provincial REC

A waste receiving location is any site or facility to which waste is transferred through a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents receivers of regulated wastes under Alberta's Waste Control Regulation, Alta. Reg. 192/96. As of 2007, Alberta Environment no longer provides detailed information on each waste receiver, such as approval number, class, and class description.

***Government Publication Date: 1993-Aug 2018***

***Alberta Recyclers:*** Provincial RECY

List of Alberta Recyclers under the following recycling programs: electronics processors, paint processors, tire processors, and used oil processors. Listing made available by the Alberta Recycling Management Authority (ARMA).

***Government Publication Date: Jul 2023***

***Retail Fuel Storage Tanks:*** Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

***Government Publication Date: 1999-Feb 28, 2023***

***Scott's Manufacturing Directory:*** Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

***Government Publication Date: 1992-Mar 2011****

***Special Operation Classifications - Certificates of Approval:*** Provincial SPEC

This database contains approvals for processes pertaining to classifications listed as special operations (i.e. locations owned/operated by municipalities, operations that involve the presence of pesticides). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Inventory of Waste Disposal Sites:*** Private WDS

This one time inventory is a compilation of information collected from each region and pertains to active, regulated waste disposal sites within the province of Alberta. In the past, waste disposal sites were registered with both regional and health offices. That process was dissolved and regional landfills were developed. There is no central source of this information. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1998****

***Wastewater Operations:*** Provincial WSTE

This database contains approvals for processes pertaining to wastewater treatment systems. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

***Government Publication Date: 1993-2012***

***Alberta Water Well Information Database:*** Provincial WWIS

List of wells in the Alberta Water Well Information Database made available by Alberta Environment and Parks, containing approximately 500,000 records with nearly 5,000 drilling reports added annually. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location; some locations will be accurate to the quarter section only. The Province of Alberta advises that the data may not be fully checked, and disclaims all responsibility for its accuracy. This data was previously collected from the Groundwater Information Center of the Natural Resource Service.

***Government Publication Date: 1880-Feb 28, 2023***

# Definitions

***Database Descriptions:*** This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

***Detail Report***: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

***Distance:*** The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

***Direction:*** The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

***Elevation:*** The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

***Executive Summary:*** This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

***Map Key:*** The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

***Unplottables:*** These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Financial and Administrative Shared Services
FOIP Office
Suite 402, Standard Life
10405 Jasper Avenue NW
Edmonton, Alberta T5J 4R7
Telephone: 780-427-4429
Email: aep.foip@gov.ab.ca

November 06, 2023

Jonathan Lautermilch
Environmental Scientist
Stantec Consulting Ltd.
200- 325
Calgary, AB T2A 7H8

Dear Jonathan Lautermilch:

**Freedom of Information and Protection of Privacy Request #: EA000-2023-S-1384**

On October 26, 2023, Environment and Protected Areas received your request under the *Freedom of Information and Protection of Privacy Act* (FOIP Act) for a copy of:

**Location:** **NE Sec 34 Twp 7 Rge 4 W5M, Municipality of Crowsnest Pass.**

**Name(s):**

**Time Frame:** **From October 26, 1920, to October 26, 2023**

**Records:** **Scientific/Technical Records not available on ESAR.**

A thorough search conducted by Environment and Protected Areas staff did not yield any records responsive to your request.

You may ask for a review under Part 5 of the FOIP Act by the Information and Privacy Commissioner (Commissioner). To request a review, you must submit a completed Request for Review form within 60 days from the date of this letter to the Commissioner at Suite 410, 9925 – 109 Street, Edmonton, Alberta, T5K 2J8. The form is available under 'Resources' on the Commissioner's website, www.oipc.ab.ca, or you can call 1-888-878-4044 to request a copy.

If you have any questions, please contact me at 780-415-4925, Osa.Aghedo@gov.ab.ca.

Sincerely,

OSA AGHEDO
Osa Aghedo
FOIP Advisor
Serving Environment and Protected Areas
Government of Alberta

Financial and Administrative Shared Services
FOIP Office
Suite 402, Standard Life
10405 Jasper Avenue NW
Edmonton, Alberta T5J 4R7
Telephone: 780-427-4429
Email: aep.foip@gov.ab.ca

November 06, 2023

Jonathan Lautermilch
Environmental Scientist
Stantec Consulting Ltd.
200- 325
Calgary, AB T2A 7H8

Dear Jonathan Lautermilch:

**Routine Disclosure Request #: EA000-2023-R-1430**

The following is in response to your request for routinely available information for the following subject records:

**Location:** **NE Sec 34 Twp 7 Rge 4 W5M, Municipality of Crowsnest Pass.**

**Name(s):**

**Time Frame:** **From October 26, 1920, to October 26, 2023**

**Records:** **Scientific/Technical Records not available on ESAR**

A search of Environment and Protected Areas (EPA) publicly available records has not identified any records relating to the subject of your request, based on the search parameters you provided to this office. Public records on the Environmental Site Assessment Repository (ESAR) were not included in this search, as you have already obtained them.

Your Routine Disclosure Request is now closed.

If you have any questions or concerns, please contact me at 780-415-4925, Osa.Aghedo@gov.ab.ca.

Sincerely,
OSA AGHEDO
Osa Aghedo
FOIP Advisor
Serving Environment and Protected Areas
Government of Alberta

# Pipeline Information

NOVA GAS TRANSMISSION LTD. | AB00080201 - 46

Government Pipeline Data Current to October 1, 2023

| | | | |
|---|---|---|---|
| **Permit Date:** | | **License Date:** | June 3, 2009 |
| **From Location:** | 15-31-7-3 W5M PL | **To Location:** | 9-4-8-4 W5M PL |
| **Length:** | 7.34 kms \| 4.59 mi | **Status:** | O |
| **Substance:** | NG | **$H_2S$:** | 0 mol/kmol \| 0 ppm |
| **Outside Diameter:** | 1067 mm \| 42.01 " | **Wall Thickness:** | 14 mm \| 0.55 " |
| **Material:** | S | **Type:** | Z245.1 |
| **Grade:** | 4832 | **Max Operating Pressure:** | 5560 kPa \| 806 psi |
| **Joints:** | W | **Internal Coating:** | Y |
| **Stress Level:** | 44 % | **Environment:** | RC |
| **Original Permit Date:** | | **Construction Date:** | |
| **Original License/Line No:** | 0 - 0 | **NEB Registration:** | Yes |
| **Last Occurrence Year:** | 2009 | **Abacus No:** | N/A |

# Pipeline Information

NOVA GAS TRANSMISSION LTD. | AB00080096 - 19

Government Pipeline Data Current to October 1, 2023

| | | | |
|---|---|---|---|
| **Permit Date:** | | **License Date:** | June 1, 2009 |
| **From Location:** | 15-31-7-3 W5M PL | **To Location:** | 9-4-8-4 W5M PL |
| **Length:** | 7.3 kms \| 4.56 mi | **Status:** | O |
| **Substance:** | NG | **$H_2S$:** | 0 mol/kmol \| 0 ppm |
| **Outside Diameter:** | 914 mm \| 35.98 " | **Wall Thickness:** | 9.8 mm \| 0.39 " |
| **Material:** | S | **Type:** | Z245.1 |
| **Grade:** | 4832 | **Max Operating Pressure:** | 5830 kPa \| 846 psi |
| **Joints:** | W | **Internal Coating:** | U |
| **Stress Level:** | 56 % | **Environment:** | RC |
| **Original Permit Date:** | | **Construction Date:** | |
| **Original License/Line No:** | 0 - 0 | **NEB Registration:** | Yes |
| **Last Occurrence Year:** | 2009 | **Abacus No:** | N/A |

# Pipeline Information

NOVA GAS TRANSMISSION LTD. | AB00002072 - 4

Government Pipeline Data Current to October 1, 2023

| | | | |
|---|---|---|---|
| **Permit Date:** | | **License Date:** | June 2, 2009 |
| **From Location:** | 14-34-7-4 W5M BE | **To Location:** | 9-4-8-4 W5M BE |
| **Length:** | 1.49 kms \| 0.93 mi | **Status:** | A |
| **Substance:** | NG | **$H_2S$:** | 0 mol/kmol \| 0 ppm |
| **Outside Diameter:** | 914 mm \| 35.98 " | **Wall Thickness:** | 10.31 mm \| 0.41 " |
| **Material:** | S | **Type:** | 5LX |
| **Grade:** | X52 | **Max Operating Pressure:** | 0 kPa \| 0 psi |
| **Joints:** | W | **Internal Coating:** | U |
| **Stress Level:** | 0 % | **Environment:** | |
| **Original Permit Date:** | | **Construction Date:** | |
| **Original License/Line No:** | 2072 - 4 | **NEB Registration:** | |
| **Last Occurrence Year:** | 1960 | **Abacus No:** | N/A |

# Pipeline Information

ATCO GAS AND PIPELINES LTD. | AB00003754 - 1

Government Pipeline Data Current to October 1, 2023

| | | | |
|---|---|---|---|
| **Permit Date:** | | **License Date:** | October 4, 2002 |
| **From Location:** | 6-3-8-4 W5M PL | **To Location:** | 10-3-8-4 W5M RS |
| **Length:** | 0.57 kms \| 0.36 mi | **Status:** | O |
| **Substance:** | NG | **$H_2S$:** | 0.01 mol/kmol \| 10 ppm |
| **Outside Diameter:** | 42.2 mm \| 1.66 " | **Wall Thickness:** | 3.56 mm \| 0.14 " |
| **Material:** | S | **Type:** | Z245.3 |
| **Grade:** | 2901 | **Max Operating Pressure:** | 5830 kPa \| 846 psi |
| **Joints:** | W | **Internal Coating:** | U |
| **Stress Level:** | 12 % | **Environment:** | RC |
| **Original Permit Date:** | | **Construction Date:** | |
| **Original License/Line No:** | 3754 - 1 | **NEB Registration:** | |
| **Last Occurrence Year:** | 1984 | **Abacus No:** | N/A |

# Reconnaissance Report

View in Metric

Export to Excel

## Groundwater Wells

Please click the water Well ID to generate the Water Well Drilling Report.

| GIC Well ID | LSD | SEC | TWP | RGE | M | DRILLING COMPANY | DATE COMPLETED | DEPTH (ft) | TYPE OF WORK | USE | CHM | LT | PT | WELL OWNER | STATIC LEVEL (ft) | TEST RATE (igpm) | SC_DIA (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 357732 | NW | 35 | 7 | 4 | 5 | CAMFIELD DRILLING SERVICES LTD. | 1990-03-15 | 60.00 | New Well | Domestic | | 7 | | HAY, TREVOR | 10.00 | 6.00 | 7.00 |
| 357733 | NW | 35 | 7 | 4 | 5 | CAMFIELD DRILLING SERVICES LTD. | 1990-09-12 | 40.00 | New Well | Domestic | | 3 | | CHOMYN, JOHN | 12.00 | 5.00 | 6.62 |
| 374110 | NW | 35 | 7 | 4 | 5 | UNKNOWN DRILLER | 1984-01-25 | 14.00 | Chemistry | Unknown | 1 | | | ALTA GOVT | | | 0.00 |
| 401934 | NW | 35 | 7 | 4 | 5 | UNKNOWN DRILLER | | 0.00 | Chemistry | Municipal | 1 | | | EDL, E. | | | 0.00 |
| 401935 | NW | 35 | 7 | 4 | 5 | UNKNOWN DRILLER | | 120.00 | Chemistry | Municipal | 1 | | | FRANK | | | 0.00 |
| 1250620 | NW | 35 | 7 | 4 | 5 | DOLLMAN'S WATER WELL DRILLING INC. | 2013-10-08 | 205.00 | Dry Hole-Decommissioned | Unknown | | 2 | | HAY, TREVOR | | | |
| 1250621 | NW | 35 | 7 | 4 | 5 | DOLLMAN'S WATER WELL DRILLING INC. | 2013-10-09 | 85.00 | New Well | Domestic | | 6 | 20 | HAY, TREVOR | 23.12 | 11.00 | 6.63 |
| 1250622 | NW | 35 | 7 | 4 | 5 | DOLLMAN'S WATER WELL DRILLING INC. | 2013-10-11 | 85.00 | New Well | Domestic | | 4 | 20 | HAY, TREVOR | 14.27 | 4.00 | 6.63 |
| 1250623 | NW | 35 | 7 | 4 | 5 | DOLLMAN'S WATER WELL DRILLING INC. | 2013-10-24 | 285.00 | New Well | Domestic | | 11 | 20 | HAY, TREVOR | 67.97 | 1.50 | 6.63 |
| 1250624 | NW | 35 | 7 | 4 | 5 | DOLLMAN'S WATER WELL DRILLING INC. | 2013-10-26 | 325.00 | New Well | Domestic | | 16 | 20 | HAY, TREVOR | 30.90 | 4.00 | 6.63 |

# LAND TITLE CERTIFICATE

S

| LINC | SHORT LEGAL | TITLE NUMBER |
|---|---|---|
| 0032 930 372 | 5;4;7;34;;9,10,15 | 071 603 252 +3 |

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 4 TOWNSHIP 7
SECTION 34
LEGAL SUBDIVISIONS 9, 10 AND 15 IN THE NORTH EAST QUARTER
CONTAINING 48.6 HECTARES (120 ACRES) MORE OR LESS
EXCEPTING THEREOUT:
FIRST:
OUT OF LEGAL SUBDIVISION 15
(A) THE NORTHERLY 675 FEET OF THE WESTERLY 700 FEET
CONTAINING 4.37 HECTARES (10.80 ACRES) MORE OR LESS

| (B) | PLAN | NUMBER | HECTARES | ACRES (MORE OR LESS) |
|---|---|---|---|---|
| | RAILWAY | RY27 | 0.036 | 0.09 |

SECONDLY:
(A) THOSE PORTIONS OF LEGAL SUBDIVISIONS 9 AND 10 WHICH LIE TO
THE NORTH AND EAST OF THE SOUTH WESTERLY LIMIT OF THE GAS
LINE RIGHT OF WAY ON PLAN 4970IA, CONTAINING 4.13 HECTARES
(10.2 ACRES) MORE OR LESS
(B) PLAN 9510566 - SUBDIVISION CONTAINING 5.34 HECTARES (13.2 ACRES)
CONTAINING 5.34 HECTARES (13.2 ACRES) MORE OR LESS
(C) PLAN 9511777 - SUBDIVISION
CONTAINING 0.394 HECTARES (0.97 ACRES) MORE OR LESS
(D) PLAN 0716250 - SUBDIVISION
CONTAINING 4.13 HECTARES (10.21 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPALITY OF CROWSNEST PASS

REFERENCE NUMBER: 951 170 558 +12

REGISTERED OWNER(S)

| REGISTRATION | DATE(DMY) | DOCUMENT TYPE | VALUE | CONSIDERATION |
|---|---|---|---|---|
| 071 603 252 | 14/12/2007 | SUBDIVISION PLAN | | |

OWNERS

THE MUNICIPALITY OF CROWSNEST PASS.
OF P.O. BOX 370, COLEMAN

( CONTINUED )

ALBERTA T0K 0M0

---

ENCUMBRANCES, LIENS & INTERESTS

| REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS |
|---|---|---|
| 3409HW . | 16/02/1960 | UTILITY RIGHT OF WAY<br>GRANTEE - THE ALBERTA GAS TRUNK LINE CO LTD.<br>AS TO PORTION OR PLAN:4970IA |
| 1339KY . | 06/01/1971 | UTILITY RIGHT OF WAY<br>GRANTEE - THE ALBERTA GAS TRUNK LINE CO LTD.<br>AS TO PORTION OR PLAN:7912JK |
| 051 397 611 | 22/10/2005 | CAVEAT<br>RE : DEVELOPMENT AGREEMENT , ETC.<br>CAVEATOR - SOUTHMORE CORPORATION.<br>47, 100-1039 17 AVE SW<br>CALGARY<br>ALBERTA T2T0B2<br>AGENT - F MURRAY PRITCHARD |

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 20 DAY OF OCTOBER, 2023 AT 09:19 A.M.

ORDER NUMBER: 48662391

CUSTOMER FILE NUMBER:

REGISTRAR OF LAND TITLES

*END OF CERTIFICATE*

---

# LAND TITLE CERTIFICATE

S

| LINC | SHORT LEGAL | TITLE NUMBER |
|---|---|---|
| 0026 340 224 | 9510566;6;13 | 951 053 230 +36 |

LEGAL DESCRIPTION
PLAN 9510566
BLOCK 6
LOT 13
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 1.054 HECTARES (2.6 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 5;4;7;34;NE

MUNICIPALITY: MUNICIPALITY OF CROWSNEST PASS

REFERENCE NUMBER: 881 030 364

---

REGISTERED OWNER(S)

| REGISTRATION | DATE(DMY) | DOCUMENT TYPE | VALUE | CONSIDERATION |
|---|---|---|---|---|
| 951 053 230 | 06/03/1995 | SUBDIVISION PLAN | | |

OWNERS

THE MUNICIPALITY OF CROWSNEST PASS.
OF P.O. BOX 370, COLEMAN
ALBERTA T0K 0M0

---

ENCUMBRANCES, LIENS & INTERESTS

| REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS |
|---|---|---|

NO REGISTRATIONS

TOTAL INSTRUMENTS: 000

( CONTINUED )

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 30 DAY OF OCTOBER, 2023 AT 12:38 P.M.

ORDER NUMBER: 48741298

CUSTOMER FILE NUMBER:

*END OF CERTIFICATE*

---

# LAND TITLE CERTIFICATE

S

| LINC | SHORT LEGAL | TITLE NUMBER |
|---|---|---|
| 0021 338 363 | 5;4;7;34;;9,10 | 961 039 446 |

LEGAL DESCRIPTION

MERIDAIN 5 RANGE 4 TOWNSHIP 7
SECTION 34
THOSE PORTION OF LEGAL SUBDIVISIONS 9 AND 10 IN THE NORTH EAST QUARTER
WHICH LIE TO THE NORTH AND EAST OF THE
SOUTH WESTERLY LIMIT OF THE GAS LINE RIGHT OF WAY ON PLAN 4970IA
CONTAINING 4.13 HECTARES (10.2 ACRES) MORE OR LESS
EXCEPTING THEREOUT THE PLAN OF SUBDIVISION 7811675
CONTAINING .789 HECTARES (1.95 ACRES) MORE OR LESS
IN LEGAL SUBDIVISION 9
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPALITY OF CROWSNEST PASS

REFERENCE NUMBER: 861 073 258

REGISTERED OWNER(S)

| REGISTRATION | DATE(DMY) | DOCUMENT TYPE | VALUE | CONSIDERATION |
|---|---|---|---|---|
| 961 039 446 | 23/02/1996 | TRANSFER OF LAND | $45,000 | $45,000 |

OWNERS

AVNER PERL

AND
MADELEINE PERL
BOTH OF:
188 BERWICK DRIVE NW
CALGARY
ALBERTA T3K 1P4
AS JOINT TENANTS

( CONTINUED )

| REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS |
|---|---|---|
| 3409HW . | 16/02/1960 | UTILITY RIGHT OF WAY<br>GRANTEE - THE ALBERTA GAS TRUNK LINE CO LTD.<br>AS TO PORTION OR PLAN:4970IA<br>"100 FT. R/W" |
| 1339KY . | 06/01/1971 | UTILITY RIGHT OF WAY<br>GRANTEE - THE ALBERTA GAS TRUNK LINE CO LTD.<br>AS TO PORTION OR PLAN:7912JK<br>"25 FT. R/W" |
| 761 119 444 | 28/09/1976 | CAVEAT<br>RE : DEFERRED RESERVE<br>CAVEATOR - THE OLDMAN RIVER REGIONAL PLANNING COMMISSION. |
| 921 088 935 | 22/04/1992 | CAVEAT<br>RE : EASEMENT<br>CAVEATOR - MYA SANDOVER<br>C/O DOUGLAS G. YOUNG<br>P.O. BOX 450<br>BLAIRMORE<br>ALBERTA<br>AGENT - DOUGLAS G YOUNG |
| 001 079 177 | 27/03/2000 | CAVEAT<br>RE : ENCROACHMENT AGREEMENT |
| 061 298 249 | 25/07/2006 | ENCROACHMENT AGREEMENT |

TOTAL INSTRUMENTS: 006

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 26 DAY OF OCTOBER, 2023 AT 07:31 P.M.

ORDER NUMBER: 48722952

CUSTOMER FILE NUMBER:

*END OF CERTIFICATE*

( CONTINUED )

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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# LAND TITLE CERTIFICATE

S

| LINC | SHORT LEGAL | TITLE NUMBER |
|---|---|---|
| 0021 338 389 | 5;4;7;34;;15 | 181 025 789 |

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 4 TOWNSHIP 7
SECTION 34
THE NORTH 675 FEET OF THE WEST 700 FEET OF LEGAL SUBDIVISION 15
IN THE NORTH EAST QUARTER
CONTAINING 4.37 HECTARES (10.80 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPALITY OF CROWSNEST PASS

REFERENCE NUMBER: 181 025 788

---

REGISTERED OWNER(S)

| REGISTRATION | DATE(DMY) | DOCUMENT TYPE | VALUE | CONSIDERATION |
|---|---|---|---|---|
| 181 025 789 | 31/01/2018 | TRANSFER OF LAND | $307,500 | ESTATE |

OWNERS

WENDY LEE FABRO

AND
DAVID BERIC FABRO
BOTH OF:
P.O. BOX 756
COLEMAN
ALBERTA T0K 0M0
AS JOINT TENANTS

---

ENCUMBRANCES, LIENS & INTERESTS

| REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS |
|---|---|---|
| 6488HV . | 16/02/1960 | UTILITY RIGHT OF WAY<br>GRANTEE - THE ALBERTA GAS TRUNK LINE CO LTD. |

( CONTINUED )

| REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS |
|---|---|---|
| | | AS TO PORTION OR PLAN:4970IA<br>"100 FOOT" |
| 1332KY . | 06/01/1971 | UTILITY RIGHT OF WAY<br>GRANTEE - THE ALBERTA GAS TRUNK LINE CO LTD.<br>AS TO PORTION OR PLAN:7912JK<br>"25 FOOT R/W" |

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 30 DAY OF OCTOBER, 2023 AT 12:38 P.M.

ORDER NUMBER: 48741298

CUSTOMER FILE NUMBER:

*END OF CERTIFICATE*

# LAND TITLE CERTIFICATE

S

| LINC | SHORT LEGAL | TITLE NUMBER |
|---|---|---|
| 0021 338 397 | 5;4;7;34;;16 | 041 258 811 |

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 4 TOWNSHIP 7
SECTION 34
THAT PORTION OF LEGAL SUBDIVISION 16 IN THE NORTH EAST QUARTER
LYING SOUTH OF THE RIGHT OF WAY OF THE CANADIAN PACIFIC RAILWAY
COMPANY, AS SAID RIGHT OF WAY IS SHOWN ON PLAN RY27
CONTAINING 10.6 HECTARES (26.22 ACRES) MORE OR LESS
EXCEPTING FIRSTLY:

| PLAN | NUMBER | HECTARES | (ACRES) |
|---|---|---|---|
| SUBDIVISION | 2703GY | 2.68 | ( 6.62) |
| REPLOTTING SCHEME | 8010276 | 5.73 | (14.15) |

SECONDLY: THAT PORTION DESCRIBED IN TRANSFER 751142346
CONTAINING .174 HECARES (0.43 ACRES)
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPALITY OF CROWSNEST PASS

REFERENCE NUMBER: 117L118 .

REGISTERED OWNER(S)

| REGISTRATION | DATE(DMY) | DOCUMENT TYPE | VALUE | CONSIDERATION |
|---|---|---|---|---|
| 041 258 811 | 12/07/2004 | TRANSFER OF LAND | $150,000 | NOMINAL |

OWNERS

WILLIAM RANDAL CARTWRIGHT
OF BOX 194
BLAIRMORE
ALBERTA T0K 0E0

( CONTINUED )

| REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS |
|---|---|---|
| 751 142 365 | 16/12/1975 | CAVEAT<br>RE : DEFERRED RESERVE<br>CAVEATOR - THE OLDMAN RIVER REGIONAL PLANNING COMMISSION. |

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 26 DAY OF OCTOBER, 2023 AT 07:31 P.M.

ORDER NUMBER: 48722952

CUSTOMER FILE NUMBER:

*END OF CERTIFICATE*

# Appendix C

TC Energy: Development Near Pipelines

# Living and working near pipelines.

**What you need to know - Natural gas**

Please keep this brochure for future reference in case of an emergency.
*To request additional copies for tenants, please contact us. See inside cover for details.*

## Why are you receiving this brochure?

This brochure contains important safety information for those who live and work near pipelines. This includes information about:

- What you can do to ensure safety around pipelines
- How to recognize a pipeline in your area
- Recognizing the signs of a pipeline leak
- What kind of activities are permitted on a pipeline right-of-way
- How TC Energy works to ensure the safety of pipelines

To help you understand the role you play in contributing to pipeline safety, we ask that you review the information provided. If you would like more information, have questions or to request additional copies of this brochure, please contact us at **public_awareness@tcenergy.com** or call **1-855-458-6715**.

**In the case of a pipeline emergency or to report suspicious activity along the right-of-way, please call 911 and local law enforcement, and then call TC Energy's emergency number at 1-888-982-7222. The emergency telephone number can also be found on the nearest pipeline marker, or on the back of this brochure.**

*TC Energy respects your privacy. To find out more about TC Energy's commitment to privacy and protecting your personal information, please see* ***www.TCEnergy.com/privacy.***

*The majority of TC Energy's pipelines are regulated by the Canada Energy Regulator in Canada, with some pipelines regulated provincially. This brochure is intended to provide safety information in compliance with regulatory requirements. For more information, visit www.cer-rec.gc.ca or www.tcenergy.com.*

## Purpose of pipelines and pipeline facilities

Pipelines are the safest and most efficient method to transport the energy that we need and use every day. Our pipelines and pipeline facilities are built using industry best practices, which include using the highest quality materials during construction and implementing a rigorous pipeline maintenance program. This includes the facilities required to safely operate the pipeline, like meter stations and compressor stations.

Meter stations measure the volume of natural gas transported through the pipeline, both at entry points (receipt station) and delivery points (sales station).

Compressor stations are necessary to maintain controlled and appropriate pressure levels along the length of the pipeline to ensure continuous and safe gas flow.

## Prevent an incident, *before* it happens

**Click or call before you dig—it's free**

The best safety practices stop accidents before they happen. Just like you won't drill into a wall without knowing where the studs are, it makes sense to find out where the underground utilities are located. Unfortunately, digging without a locate is the leading cause of pipeline incidents.

Before conducting any excavation, either by hand or with machinery, contact your local One-Call Center at least 3 business days (5 in Ontario) in advance by visiting www.clickbeforeyoudig.com - Canada's source for provincial One-Call rules, regulations and contact information.

The One-Call Center will notify the facility owners in your area, who will send representatives to mark these facilities with flags, paint or other marks, helping you to avoid damaging them. Even with a locate, any excavation on a TC Energy right-of-way requires a TC Energy representative be present.

A notification to the One-Call Center is required by law in some areas, and not making a One-Call could result in fines or penalties. The service is free and could prevent accidents, injuries or deaths.

**Learn more about the One-Call requirements in your province by visiting www.clickbeforeyoudig.com.**

## Know what utility markings mean

When you request a locate, coloured flags and/or paint are used to mark the location and type of underground utility.

| |
|---|
| Proposed excavation |
| Temporary survey markings |
| Electric power lines, cables, conduit and lighting cables |
| Gas, oil, steam, petroleum or gaseous materials |
| Communication, alarm or signal lines, cables or conduit |
| Potable water |
| Reclaimed water, irrigation and slurry lines |
| Sewers and drain lines |

## Recognizing a pipeline in your area

The general location of pipelines can be determined by two characteristics: a pipeline right-of-way (ROW) and pipeline markers.

**Right-of-way**

- A ROW can usually be recognized as a cleared strip of land in a linear or fairly straight line, cleared of structures and trees.
- The ROW contains the pipeline and the prescribed area that extends 30 metres on either side of the pipeline where certain activities require written consent from the pipeline operator to ensure the continued safety and integrity of the pipeline.
- The ROW must be kept clear of fences, buildings, trees or any other type of structure. The impact of a fence post, weight of a shed or the roots of a tree can cause either immediate or long-term damage to the pipeline.
- Structures or development could also impede access to the area for any required maintenance or emergency situations, resulting in safety risks and possible costly impacts to structures on the ROW.
- **The existence of the prescribed area does not necessarily mean development of the land cannot occur within the prescribed area, so contact TC Energy early to discuss your plans.**

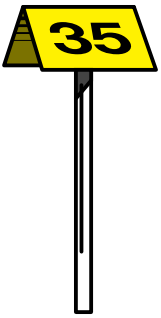
## Pipeline markers

- Found within line-of-sight on a ROW and at locations where the pipeline crosses streets, highways, waterways and railways.
- Markers only show the approximate location of the pipeline, and the depth of the line may vary. **You CANNOT use pipeline markers as a determination of where or where not to dig.**
- Pipeline markers display the pipeline operator, emergency number and the product transported in the pipeline.
- It is against the law to willfully deface, damage, remove or destroy any pipeline sign.
- Only a TC Energy representative can determine the location and depth of the pipeline. Pipelines may not follow a straight course between marker signs.

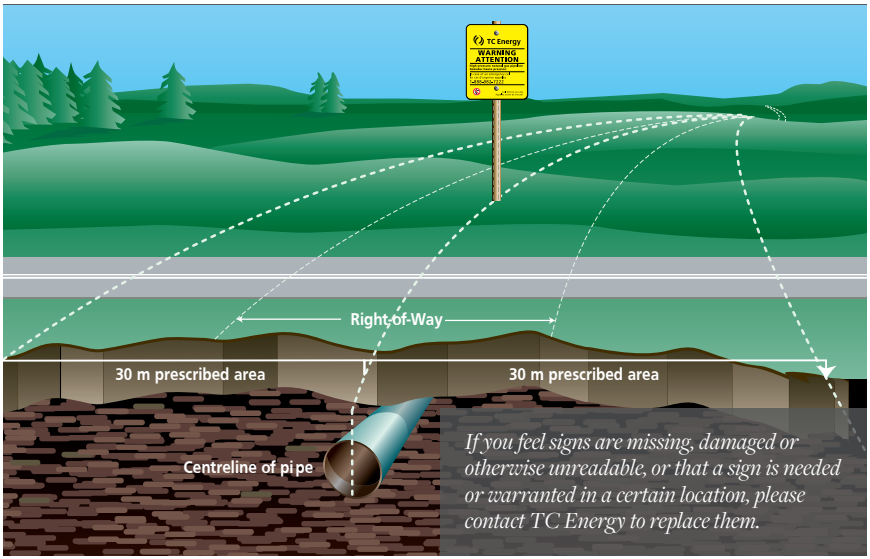

Warning sign


Line marker

Vent marker




Aerial marker



## Recognizing a gas pipeline leak

Although a pipeline leak is rare, it is important to know how to recognize the signs. Use your senses of sight, smell and hearing to detect a potential pipeline leak.

**You might see:**

- Dead or dying vegetation on/near the right-of-way in an area that is usually green.
- Bubbles in a body of water.
- Dirt being blown into the air.
- Ground frosting in summer.
- Possible fire or flames above the ground, if the leak has been ignited.

**You might smell:**

- An odour similar to fuel, oil or propane.
- No odour. Natural gas transmission lines are not usually odourized, though smaller gas distribution lines often have an additive to give it a sulphur or “rotten egg” smell.

**You might hear:**

- A roaring, hissing or whistling noise.

## Possible hazards of a gas pipeline leak or rupture

- Dizziness or suffocation if a leak occurs in a confined space or high concentration
- Ignition/fire if a spark or other ignition source is present
- Potential explosion if the natural gas is mixed with air
- Projectiles from site of leak or rupture propelled by the force of escaping gas

## Responding to a leak or pipeline strike

A “strike” is any contact with a pipeline and can include mechanical equipment like a backhoe, or hand tools such as a shovel.

Any contact with a pipeline can affect the pipeline’s integrity or the protective corrosion coating, so it’s important to follow these steps so that a TC Energy representative can inspect the pipeline and its coating for any damage.


**If you strike a pipeline or witness any of the typical signs of a leak, or any other unusual sights, sounds or smells near a pipeline location, it is important that you follow these steps:**

1. Stop all excavation and construction. Shut off all machinery if safe to do so and move away from the area on foot – warn others to do the same.
2. Do not attempt to repair the pipe or operate any valves.
3. Call ‘911’ as soon as you are in a safe location. Describe the situation and inform the operator of any injuries, leaking product or fire.
4. Call TC Energy’s emergency number at **1-888-982-7222** and explain the incident. This number is available on all pipeline marker signs.
5. Do not continue your project until authorized by a TC Energy representative.

If you cause or witness even minor damage to a pipeline or it’s coating, please notify TC Energy immediately. A gouge, scrape, dent or crease requires an inspection and possible repairs for the long-term safety of all parties and the surrounding area.

Do not cover a pipeline that has been disturbed, as it will make it more difficult to find the damaged area.

## Consequences of unsafe digging

Unsafe excavations can have potential consequences for those individuals conducting the work, and negatively impact the greater community.

**Risk of serious injuries and death.**

**Interrupted services such as electricity, gas and water.**


**Fines and repair costs to fix the underground utility line(s).**

# What if I need to use the right-of-way?

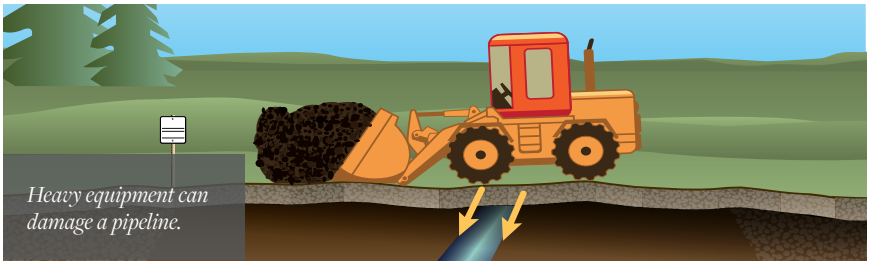
Depending on your plans or activity, it can still be possible for you to work on or use the ROW. Some activities are permitted under normal farming practices, while crossings and encroachments require approval and oversight from TC Energy.

A crossing or encroachment is a temporary or permanent structure across, on, along or under a facility or pipeline right-of-way. A crossing can also mean equipment or machinery crossing over the pipeline right-of-way or facility site. Both need an agreement so that the pipeline operator can understand the scope of work, the risk and what measures need to be taken to mitigate those risks.

You can learn more about permitted activities and crossing agreements at www.tcenergy.com/sustainability/safety/safe-digging. Often written consent for minor activities can be obtained directly from a regional TC Energy representative through a locate request.

**We're here to help.** If you think your activity might require a crossing agreement with TC Energy, you can use our online application form at **writtenconsent.tcenergy.com** or contact us by phone at **1-877-872-5177** or email at **crossings@tcenergy.com**. To better serve you and speed up your request, please provide the following information:

- Proposed activity – what are you planning to do?
- Location of proposed work (GPS coordinates are preferred)
- Make and model of any equipment that will cross/encroach the pipeline facilities
- Proposed activity date
- Axle load (weight)
- Your name and phone number
- Email address




## What does TC Energy do to ensure pipeline safety?

TC Energy conducts a rigorous pipeline maintenance program to ensure the integrity and safety of our systems. This includes but is not limited to:

- 24/7 Monitoring of our facilities
- In-line inspections of pipelines that can identify the smallest of issues or defects for repair
- Regular patrols of the right-of-way
- Multiple shut-down valves to isolate and limit potential releases
- Cathodic protection to prevent corrosion
- Hydrostatic testing
- Investigative digs
- Ground surveys

In addition to this, TC Energy invests millions every year in research and development to improve and enhance the safety of our pipelines, from smart drone patrolling, fiber optic monitoring, greenhouse gas reduction and environmental sustainability. TC Energy's employees are trained to meet or exceed all regulated training in Canada.

In the interests of public safety, some segments along TC Energy's pipelines have been designated as High Consequence Areas (HCAs) where extra precautions are taken, known as Integrity Management Programs (IMPs). For information regarding these measures, contact TC Energy at **public_awareness@tcenergy.com.**

*Pipeline Inspection Gauges, or "PIGs" travel through the pipeline to collect information that can then be analyzed to spot imperfections, corrosion, dents or other signs that maintenance may be needed.*

# TC Energy's response to a pipeline incident

A pipeline incident could involve an uncontrolled or unplanned release of natural gas or oil from the pipeline system. TC Energy's state-of-the-art leak detection systems, elevated safety features and specially trained staff ensure that leaks will be quickly identified and addressed.

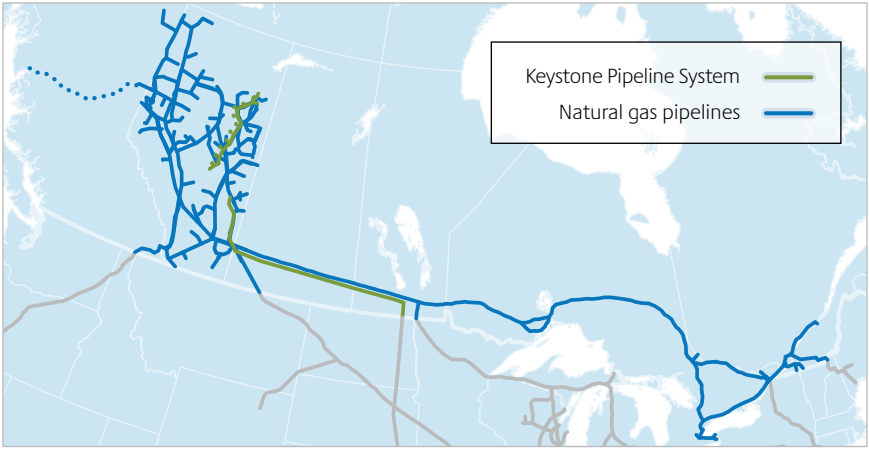
In the unlikely event an incident should occur, TC Energy's top priorities are to ensure the safety of the public and emergency responders, and to minimize effects on the environment and surrounding properties. TC Energy will immediately respond by:

- Shutting down the affected pipeline if necessary
- Isolating the impacted section of the pipeline through either automatic valve shutoff or manual valve operation
- Dispatching emergency personnel to the location of the incident

Trained crews that are dispatched to the site will coordinate a response with local emergency services. TC Energy will not restart the pipeline until the issue has been addressed and it is safe to do so, with the approval of industry regulators.

TC Energy's policies and practices for emergency response planning go above and beyond the standard regulatory requirements for emergency response.


*Emergency responders and TC Energy staff work together at a emergency exercise to ensure all are prepared in the rare event of an emergency.*




# Important contact information

**Emergency . . . . . 1-888-982-7222**

### Canadian One-Call centres

British Columbia . . . . . 1-800-474-6886
Alberta . . . . . 1-800-242-3447
Saskatchewan . . . . . 1-866-828-4888
Manitoba . . . . . 1-800-940-3447
Ontario . . . . . 1-800-400-2255
Quebec . . . . . 1-800-663-9228
www.clickbeforeyoudig.com

### Mobile phone apps

Saskatchewan . . . . . Sask1st Call
Quebec . . . . . Info-Excavation

### General inquiries

Phone . . . . . 1-855-458-6715
Email . . . . . public_awareness@tcenergy.com

### Applying for written consent

Online . . . . . writtenconsent.tcenergy.com
Phone . . . . . 1-877-872-5177

### Crossings inquiries

Email . . . . . crossings@tcenergy.com
Quebec Email . . . . . quebec_crossings@tcenergy.com

TC Energy

Click Before You Dig .com

# Appendix D

Historical Resources Clearance

**Appendix D to be added**
(Historical Resources Application currently in screening)

# Appendix E

Approval from Alberta Transportation

# Transportation and Economic Corridors Notice of Referral Decision

Statutory Plan in Proximity of a Provincial Highway

| | | | |
|---|---|---|---|
| **Municipality File Number:** | Bylaw 1227-2025 | **Highway(s):** | 3X |
| **Legal Land Location:** | QS-NW SEC-34 TWP-007 RGE-04 MER-5 | **Municipality:** | Municipality of Crowsnest Pass |
| **Decision By:** | Leah Olsen | **Issuing Office:** | Southern Region / Lethbridge |
| **Issued Date:** | June 13, 2025 | **AT Reference #:** | RPATH0051420 |
| **Description of Development:** | The Southmore Phase 2 Area Structure Plan presents a policy framework for the future land use, subdivision and development of approximately 55 hectares (137 acres) of land on a north-facing slope in south Blairmore. The Plan Area is within the north half of 34–7–4–W5, west of the existing Southmore neighbourhood. It is projected to house more than 900 residents at full build-out. | | |

This will acknowledge receipt of your circulation regarding the above noted proposal. Transportation and Economic Corridors primary concern is protecting the safe and effective operation of provincial highway infrastructure, and planning for the future needs of the highway network in proximity to the proposed development(s).

Transportation and Economic Corridors offers the following comments and observations with respect to the proposed development(s):

- Pursuant to Section 618.3(1) of the Municipal Government Act (MGA), the department expects that the municipality will comply with any applicable items related to provincial highways in an ALSA plan if applicable

- Pursuant to 618.4(1) of the Municipal Government Act, the department expects that the Municipality will mitigate the impacts of traffic generated by developments approved on the local road connections to the highway system, in accordance with Policy 7 of the Provincial Land Use Policies.

**Transportation and Economic Corridors has the following additional comments and/or requirements with respect to this proposal:**

1. A Traffic Impact Assessment (TIA) shall be prepared by a qualified transportation professional in accordance with Transportation and Economic Corridors' guidelines https://open.alberta.ca/publications/traffic-impactassessment-guideline. The TIA will provide information regarding the traffic that could be generated by the proposed development, and will identify any necessary upgrades to the Highway intersection. If upgrades are required, a geometric assessment must be prepared for the Highway intersection, based off the recommendations of the TIA. This geometric assessment must also provide a comprehensive design report, including pavement design and intersection design to allow a permit to be issued for its construction, which must be completed to the standards of, and at no cost to, Transportation and Economic Corridors. Upgrades to the Highway intersection must be completed prior to occupancy of the development. A separate approval will be required for the construction of the highway upgrades.

Please contact Transportation and Economic Corridors through the RPATH Portal if you have any questions, or require additional information

Issued by **Leah Olsen, Development and Planning Tech,** on **June 13, 2025** on behalf of the Minister of Transportation and Economic Corridors pursuant to *Ministerial Order 52/20 – Department of Transportation and Economic Corridors Delegation of Authority*