Highway 3 Improvements and the Municipality of Crowsnest Pass:

A Land Use Analysis 2004

Prepared by
Oldman River Regional Services Commission
March 2005

Report File No. R-884-1

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FOREWORD

Excerpt from
"Highway 3 Realignment for the Coleman Area:
Reassessing the Issue in Light of Changing Circumstances"

By Jim Kerr
Presented to the Crowsnest 3 Highway Committee
On Behalf of The Crowsnest Pass Citizens Tourist Association
Oldman River Regional Planning Commission 1981

"In 1898, the Crowsnest Pass Route of the CPR was completed. They apparently had free access of route; generally they followed the lines of least resistance, which followed the valley floor. They chose the north shore of Crowsnest Lake, which made it imperative, that any highway construction had no choice but to take the South shore. Phillips Pass was improved to some degree and used until 1921 when a goat trail was hacked out of the south shore. Immediately tourists began to arrive since this was the only "all Canadian route from Coast to Coast". I well remember the new breed of people. They travelled in open touring cars; their running boards piled high with luggage, canvas water bottles were hung fore and aft. The drivers wore goggles, gloves and leather leggings. They travelled in their own dust for they could not travel fast enough to get out of it. ....

The last major road building was done in 1950 with paving being completed in 1952 on a two-lane road without shoulders. This stimulated the building of several motels, service stations and restaurants and we enjoyed a few boom years. In July 1962, the rug was pulled out from under us with the opening of the Roger's Pass. Number 1 Highway received all the road building money, also all the publicity....

So much for the first 100 years, what about the next, and more important, what about the immediate future? First, let us assess our area. The valley varies in width as we go along but there are three very salient, physical facts along the route. At all three places, the valley narrows down; firstly, at the gap between Frank and Blairmore. All these things must be accommodated; two pipelines, two power transmission lines (a new steel structure to be built in 1973), a railroad and the need for a least a four-lane highway with shoulders.

Now, let us move to a point to the west of Coleman. All these afore mentioned things must be accommodated. Again, the gap is very small. Again, the highway must take last choice in location...

Ladies and Gentlemen, we are here to promote Crowsnest 3 publicity-wise and for the immediate upgrading of same as one of Canada's major routes, both tourist and commercial-wise. The upgrading, in our opinion, is the most urgent requirement."

ACKNOWLEDGEMENTS

The following organizations are thanked for their assistance and contribution to the development and publishing of this study:
Alberta Infrastructure and Transportation: Southern Region
Municipality of Crowsnest Pass
McElhanney Consulting Services Ltd.
EBA Consulting Ltd.

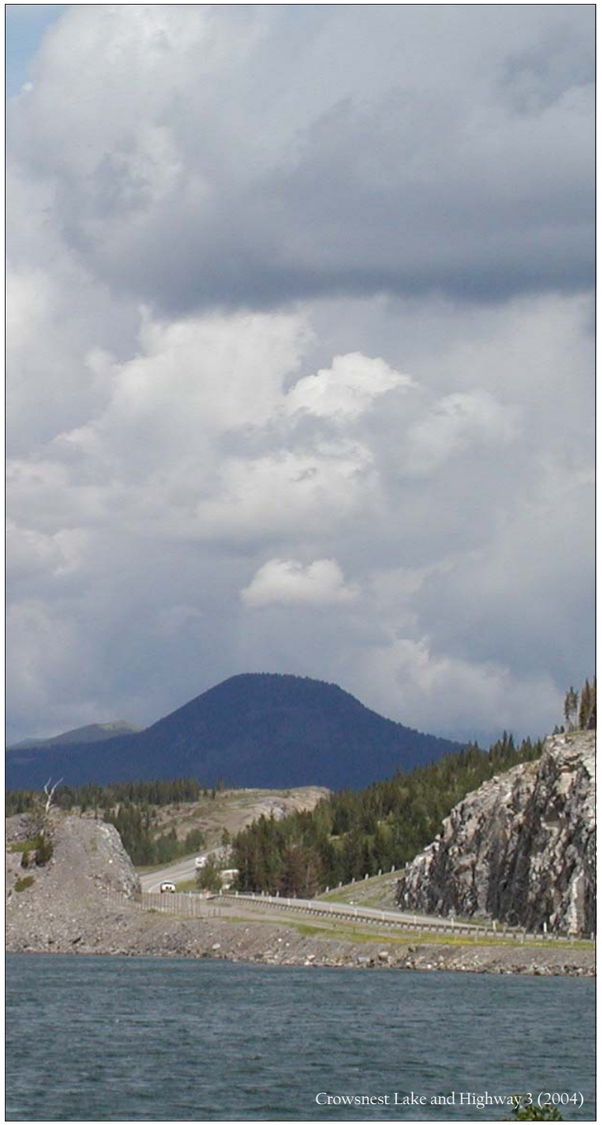
Highway 3 Improvements and the Municipality of Crowsnest Pass

A Land Use Analysis
2004

PART 1

INTRODUCTION

PART 1 INTRODUCTION


Crowsnest Lake and Highway 3 (2004)

Overview of the Study

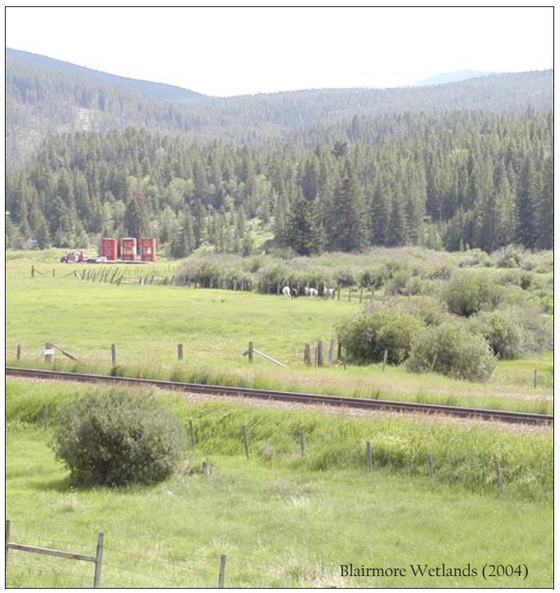
The influence of a highway bypass on any community's economy and quality of life has been of interest to many communities slated to receive a highway bypass. In general, the re-routing involves removing the roadway, usually located in the center of a community, to the periphery in order to provide a safer and more efficient alternative route for long distance travellers, resulting in changes in traffic patterns in the community.

Relocating a highway, like any other major development, stimulates a whole series of land use changes, which in turn influences the local economy and social structure of a community. Some changes can include the consumption of developable land, the displacement of existing land uses, the fragmentation of existing parcels, and the elimination or creation of access points which result in changes to local traffic flow.

These changes can occur adjacent to a new highway or they may be some distance from it but sooner or later the community will experience the effects of a new route. What may have been a relatively stable and established pattern of land use can become destabilized from both the physical presence of a new highway and the change in the activity patterns of local residents.

In a municipality like the Crowsnest Pass, where the terrain and historic pattern of development has greatly limited the access to and options for land use, the introduction of a new highway route is bound to have a tremendous impact. Land use planning, which is linked to the economic and social framework of a community, attempts to anticipate, measure and mitigate theses types of potential impacts. Those who are involved with transportation planning where major highway projects have been completed, use the experience of those communities to anticipate the future effects and benefits to other communities that may experience a bypass. However, in practice, no two communities are exactly alike. Each has its own pattern of development, its own history, its own goals, and its own citizens and their elected officials who have their own sense of priorities.

Historically, the Municipality of Crowsnest Pass has had the greatest concentration of population and development found in the far southern Eastern Slopes of the Rocky Mountains. Along with the benefits from development, the community has faced various social, economic and land use problems perhaps as a result of the Pass's strategic location and pattern of settlement. The Crowsnest Corridor represents the only major southern route through the Rockies that does not cross through a national park and therefore the Municipality finds itself in a unique position where local land use decisions are under their jurisdiction and outside the jurisdiction of the provincial and federal governments. (ORRPC, 1973)

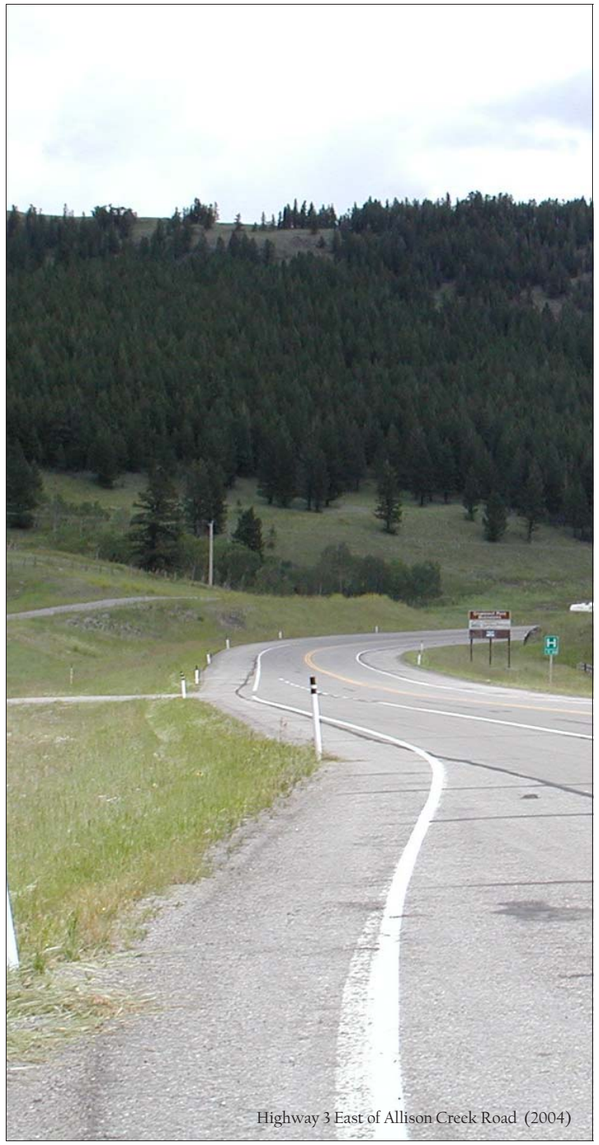

Blairmore Wetlands (2004)

Purpose of the Study

This socio-community planning exercise proposes to examine the potential large-scale social, economic and land use impacts associated with the eventual upgrading of Highway 3 from a community focus. Improvements to Highway 3 were first discussed in the early 1960s and since then most of the highway through the Municipality has been reconstructed to a two-lane stage, except the 11.5 km section through Coleman. The Municipality requested this study and it is intended to complement the Highway 3 Functional Planning Study currently being conducted by McElhanney Consulting Services Limited on behalf of Alberta Infrastructure and Transportation. The independent and impartial review of the potential land use challenges related to the eventual highway improvement should assist the municipality in understanding the lasting land use implications and opportunities associated with the recommended highway plan.

It is intended to be a two-phase study with the first phase a general analysis and the second phase a more detailed examination of the preferred route including mitigating policies for the Crowsnest Pass. The study objectives of Phase 1 are to examine the community's current social and economic situation, describe in a municipal planning context each of the three proposed base alternatives, and for each of the three highway alignment options, evaluate the potential positive and negative land use impacts. The study will be organized as follows:

PART 1 INTRODUCTION



Highway 3 East of Allison Creek Road (2004)

Theoretical Approaches to Highway Improvement

Much research has been gathered on the social and economic impacts of bypassing communities and an extensive volume of literature exists on the subject. The analyses of highway bypasses include several studies investigating impacts on small- and medium-sized communities in Texas (Handy, Kubly, Jarrett and Srinivasan, 2000), Wisconsin (Wisconsin DOT, 1998) and Kentucky (Thompson, Miller, and Roenker, 2001). Generally in these studies, impacts are measured in terms of congestion, safety, population, employment, sales, incomes, land value and development and industrial-commercial location.

Methodologies Relating to Highway Bypass Research

In order to gather data and research on the potential impacts of highway realignments and bypasses, several different methodologies have been used. They range from strictly quantitative to strictly qualitative and a combination of both and include:

- *Before and After Approach*
- *Case Study Approach*
- *Econometric Models*
- *Projected Development Models*
- *Matched Pairs and Survey Control Studies*
- *Input-Output Models*

Each method uses different factors to measure the real or potential impacts of transportation infrastructure investment and re-routing.

Highway 3 at Hillcrest, 2004

Theories Relating to Highway Bypass Research

Traditional economic theory can be applied and used to provide an initial understanding of the potential impacts bypass routes may have on communities. Most of the research conducted relies on basic economics to help identify the variables that may affect the impacts and changes to transportation routes.

Central place theory was developed by Walter Christaller and describes a hierarchy of central places that serve rural markets. It establishes that a small town will tend to have businesses and services that cater to the local population but does not draw customers from outside the area. Therefore residents must travel to larger towns to purchase less common items and to large urban areas for the most specialized products and services. With regards to highway bypasses, the central place theory suggests that the local economy may be affected in several ways. In general, as travel time decreases, consumers can travel farther in same amount of time to reach goods and services. Adjacent communities may benefit as their services become more attractive, while the bypassed community may suffer. On the other hand, if the community becomes more easily accessible in terms of travel time, potential for economic growth exists which in turn brings an increased number of residents and jobs. This growth in the local services may move the community up the hierarchy of service providers.

Industrial location theory is based on the idea that a number of factors influence the location choices of individual firms. These factors include access to markets, existence of a skilled or unskilled labour pool, raw materials, etc. Therefore, it is believed that a firm will locate in areas that offer the attributes that best meet their requirements. A bypass can lower transportation costs and improve access to a community for both the potential firm and workers. As a result, a community may become more attractive to industries due to the bypass.

Economic base theory makes a distinction between employment categories in a community. It theorizes that employment can be divided into two categories- employment that serves an export purpose, which is catering to people and firms from outside the local community, and employment that serves the local economy. This theory assumes that economic growth is stimulated by firms engaged in export employment and that an increase in this sector's employment will lead to an increase in the growth of the local economy. In terms of highway bypasses, if a new route draws new highway commercial businesses such as gas stations and truck stops, these businesses serve customers from outside the local area. It can be predicted that if employment in these businesses are created, economic spin-offs will be achieved in the local economy.

PART 1 INTRODUCTION

Planning Challenges Associated with Highway Improvements

In general, the literature reveals that different communities, and even different groups within those communities, identify different and, at times, conflicting anticipated impacts of a bypass than those identified by government transportation departments. From the various studies, research revealed several common community concerns:

- The challenge of eliminating heavy truck traffic without losing the through travellers customer base for local business. Some citizens feel that moving the highway would increase the opportunity for economic growth along the new route, while others anticipate the decline of existing commercial areas.

- Communities are concerned where the alternative route was located and how it was designed. Residents indicated that they had concerns about increased noise, division of properties, the cost of extending infrastructure into the vicinity of the new route, and the adequacy of access and signage to promote businesses along the route.

- Communities preferred uncontrolled access or access to roads along a new route. Access points and service roads are seen to be a stimulant of economic growth and prosperity and there is a desire by communities for direct and frequent access to the bypass route.

- Communities identified a need for better coordination between bypass planning, infrastructure planning and land use planning. Many community leaders indicated that with better coordination, small communities could take advantage of improved transportation access to promote commercial and industrial development.

Each highway bypass involves not only a community or rural area, but also a government department that is in charge of developing and maintaining a transportation network that serves as part of a larger national system. In the studies examined in the literature review, several common themes emerged as important to these departments when planning upgrades that, while extremely important, perhaps do not rank the same in the hierarchy of importance to the communities:

- That the proposed bypass improves statewide or provincial mobility. In general, that is achieved by minimizing the need to reduce speeds through towns along the route.

- That access to the bypass route is limited in order to increase safety. This concept is at odds with most communities as they feel that greater access will increase the potential for economic development along the bypass route. Bypass designers often are concerned that unlimited access will eventual hinder the ability of the bypass to function by generating additional traffic.

- Departments of Transportation need to comply with national and provincial legislation and long-term transportation goals. Most government departments have regulations and legislation that govern the ways in which decisions are made. They are also answerable to national guidelines and regulations.

The conclusion of the many studies completed provides a generally consistent story. They indicate that bypasses are seldom either devastating or the saviour to the area (Wiesbrod, 2001). A locational shift in traffic can cause negative impacts to existing businesses, which may either close or relocate, but a bypass can also create new business opportunities not previously available. Net economic impact on a community can be relatively small if community concerns are addressed and alternative sites are identified which take advantage of the new right-of-way.

Across all the studies, several positive and negative factors are common (Wiesbrod, 2001).

Positive benefits:

- Removal of heavy truck traffic from central areas.
- Opening up of additional developed industrial and commercial land along the new route.
- The attraction of outside investment to the community.

Negative impacts:

- Increases in sprawled development.
- Additional environmental and infrastructure costs.

As previously stated, different communities and different groups within those communities, have identified different and conflicting impacts of a bypass than those identified by government transportation departments. As a result of the differences in concerns and priorities, many communities prefer a route that differs from the one chosen by the government department (Handy, Kubly, Jarrett and Srinivasan, 2000).

Highway 3 through Coleman (2004)

PART 1 INTRODUCTION

Highway 3 between Blairmore and Coleman (2004)

Broad Community Framework

In all cases a highway bypass will impact a community. To what extent negative impacts can be mitigated and positive impacts exploited are dependant on several factors:

- Attention should be paid to public concerns regarding route selection.
- An effective information dissemination process should be developed to assist in gaining support for a preferred route.
- There is a need to address concerns raised by local municipal councils.
- It must be understood that a community requires sufficient time to adjust to a proposed highway bypass.
- Plans need to be developed that can act as a foundation from which consistent land use decisions based on the selected route can begin.

Alberta Infrastructure and Transportation intends to build a four-lane highway to National Highway Standards the entire length of Highway 3 at some time in the future. Although this study focuses on only approximately one-third of the proposed highway upgrade within the Crowsnest Pass, it is important to keep in mind the total impact the eventual highway improvement will have on the entire community. Further, the community as a whole is not isolating the study area and the potential impacts of that portion of the highway upgrade from the rest of the community.

Ongoing concerns expressed by the mayor and council of the Municipality of Crowsnest Pass of an eventual highway bypass has prompted the commencement of this study in order to explore those concerns. Council identified several specific barriers to route selection including:

- the topographical constraints of the Crowsnest Corridor including concerns with proposed river and wetland crossings,
- negative impacts on the livelihoods of residents of the Pass,
- servicing issues adjacent to proposed routes,
- potential impact to groundwater recharge areas and the community water supply, and
- determining construction horizons for final highway improvements.

Council has indicated that these concerns must be addressed prior to supporting a route.

The past 20 years has seen the Municipality of Crowsnest Pass experience many social, economic, and political changes that are in part due to factors and decisions beyond the municipal boundaries and beyond municipal control. A fluctuating local economy, shifts in employment from primary to tertiary industries, and changes to land use throughout the municipality are all indicators that forces are at work within the community.

During this 20-year period, several major employers shut down; amalgamation of the five separate communities into one unified local government occurred, and Highway 3 bypassed several of the urban areas within the corridor. As with other municipalities, the impact of these decisions is complex and it is difficult to isolate the influence of a highway bypass given these other factors.

In the end, the analysis of the proposed route options between the provincial border and Frank will reveal a significant amount of information regarding how the communities within the study area may be affected. Again, this is only a partial look at the total impact the Municipality may experience. Therefore, mitigation recommendation, to minimize impacts to this small section of the highway corridor, may need to reach further and encompass the entire community.

Highway 3 Improvements and the Municipality of Crowsnest Pass

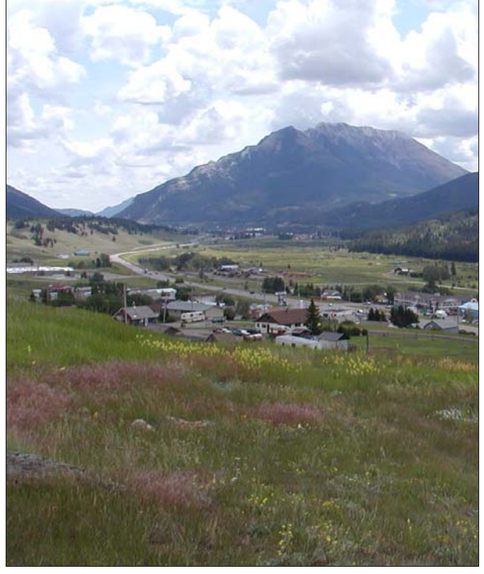
A Land Use Analysis
2004

PART 2

PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

PART 2

PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY



Top: Highway 3 Along the south shore of Crowsnest Lake
Left: Highway 3 and the Crowsnest Corridor looking east
Right: Highway 3 at the West access to Blairmore (2004)

History of Highway 3 Improvements

The modern version of Highway 3 within the Crowsnest Pass was constructed in 1950, with paving being completed in 1952. By 1962, the highway was considered insufficient and in light of predicted future growth of the area, studies for the improvement of Highway 3 began. Detailed alignment studies were initiated in 1967 and by 1969 a 1.5-mile section of Highway 3 from the British Columbia border east was upgraded.

In 1968, a number of possible alignment options were proposed for the remainder the of highway. Alberta Transportation was requested to put the process on hold after receiving notice that the Oldman River Regional Planning Commission had begun work on a sub-regional study for the Crowsnest area. The request included delaying a final decision on a preferred highway alignment until such time as the sub-regional plan was completed, as through the development of the plan, a number of concerns were raised with the routes proposed by Alberta Transportation.

By 1971, the highway improvement was developing into a political issue and additional government departments were becoming involved. In late 1974, Alberta Environment requested that Alberta Transportation undertake an Environmental Planning Study, including a provision for a public participation program.

The results of the environmental planning study released in 1976 indicated that the original preferred route was the best choice with one change and the roadway would be directed south of Coleman rather than north for the following reasons:

- The route would lessen the impact on existing and future land use.
- Differences in environmental impacts were not sufficiently substantial to form the basis for route choice.
- Construction of a south route could provide impetus for rehabilitation of the coal plant area.

The committee responsible for the report endorsed the change in preferred route and that route was officially gazetted February 15, 1979 and was known as Primary Highway 3X. In the following years, right-of-way purchase commenced by Alberta Transportation. Again in 1982, the newly formed Municipality of Crowsnest Pass requested that a north route for Highway 3 be reconsidered, but following an alignment further north than identified in 1972. After further investigation, Alberta Transportation found that the more northerly route was topographically challenging and on April 1, 1984 the Highway 3X route, south of Coleman and the river, was confirmed.

Incremental land purchases and right-of-way acquisition continued in the 1990s as Alberta Transportation worked towards consolidating the background and technical strategy for the South Coleman route. In the late 1990s, the Municipality of Crowsnest Pass initiated a review of their long-term statutory planning document which was last completed in 1983. Several issues relating to the highway construction timeline were still outstanding and once the document was adopted in 2001, policies were put in place to ensure future dialogue with Alberta Transportation would be maintained.

At the Municipality's request, Alberta Infrastructure and Transportation agreed to conduct a functional planning study to confirm long-term plans for future highway upgrading passing Coleman. The current functional planning study has been ongoing since the spring of 2003 and is intended to present alternatives at the first stage of project development.

The existing road network connections and corridor features for the current Highway 3 alignment is illustrated in Exhibit 2 (McElhanney Consulting Services Ltd, 2003).

BRITISH COLUMBIA

MUNICIPAL DISTRICT OF RANCHLAND NO 66

MUNICIPALITY OF CROWSNEST PASS

NORTHSTAR ENERGY CORPORATION

ALTALINK MANAGEMENT LTD

ATLAS FORESTRY ROAD

McGILLIVRAY CREEK

ALLISON CREEK

PERGE CREEK

PELLETIER CREEK

COLEMAN

77 STREET
CENTRE ACCESS

16 AVENUE
EAST ACCESS

NORTH 22 AVENUE
WEST ACCESS
10 AVENUE SOUTH

CARBONDALE

ROAD CLOSURE
BARRICADE/GATE

CROWSNEST RIVER

NOVA GAS TRANSMISSION LTD

VOLKER STEVIN
HIGHWAY MAINTENANCE
YARD

STAR CREEK

TECUMSEH ROAD

RAILWAY

CANADIAN PACIFIC

SENTINEL

TRAVEL
INFORMATION
SITE

CURRENT
STUDY LIMIT
(For Highway Twinning)

PHILLIPPS LAKE

CROWSNEST LAKE

EMERALD LAKE

CONTINENTAL
LIME LTD.

CANADA CEMENT
COMPANY LTD.

HAZELL

ISLAND LAKE

CROWSNEST

ISLAND CREEK

CROWSNEST CREEK

YORK CREEK

NORTH YORK CREEK

Twp. 8 Rge. 5 W.5 M.
Twp. 7 Rge. 5 W.5 M.

Twp. 8 Rge. 6 W.5 M.
Twp. 7 Rge. 6 W.5 M.

Twp. 8 Rge. 4
Twp. 7 Rge. 4

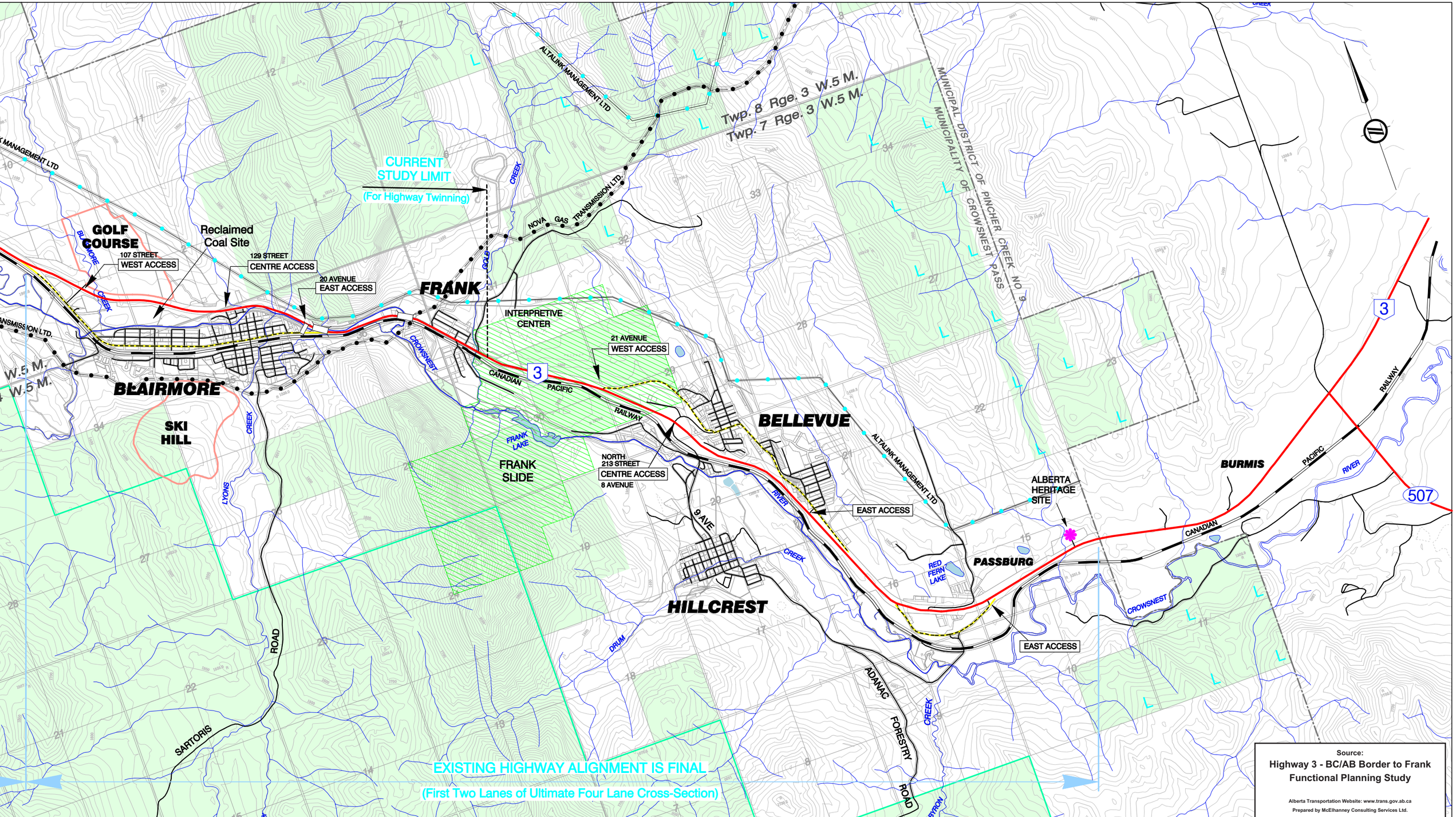
EXISTING HIGHWAY ALIGNMENT IS FINAL
(First Two Lanes of Ultimate Four Lane Cross-Section)

SECTION OF HIGHWAY ALIGNMENT UNDER REVIEW

3

40

01/26/2004 Q:\Jobs\43_Hwy3\dgn\roadnetwork.dgn



Source:
Highway 3 - BC/AB Border to Frank
Functional Planning Study

Alberta Transportation Website: www.trans.gov.ab.ca
Prepared by McElhanney Consulting Services Ltd.

LEGEND:

- Highway
- Local Roads
- Former Highway
- Bridge
- Restricted Development Area
- Crown Land
- Road Closed
- L Leased Crown Land
- Rocky Mountain Forest Reserve
- Municipal Boundary
- Power Transmission Lines
- Pipe Line

McElhanney Consulting Services Ltd.

Exhibit 2: Existing Conditions Road Network & Corridor Features

Highway 3 Crowsnest Pass
Functional Planning Study

Drawn by DF	Designed by --	Checked by HD	Approved by	JAN 19 2004	400m 0 800m	Plan No. P3261.02

Alberta TRANSPORTATION

PART 2

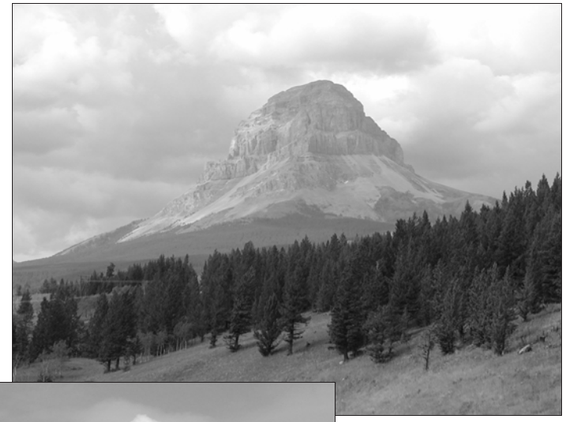
PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

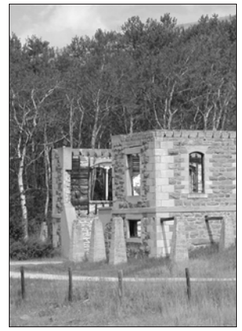
COMMUNITY OVERVIEW

The Municipality of Crowsnest Pass is located in the southwest corner of Alberta adjacent to the Alberta-British Columbia border. The Pass is a 32 km (20 mile) long corridor that encompasses approximately 373.04 km^2 (144.04 sq. miles) of land. The valley is situated on the Continental Divide of North America and as the Crowsnest River meanders eastward from Crowsnest Lake, it cuts through the Rocky Mountains and forms a broad valley.

The valley varies in elevation from 1,113 m (3,650 ft.) above sea level where the Crowsnest meets the Oldman River, to approximately 2,804 m (9,200 ft.) at the highest peak with the average elevation approximately 1,320 m (4,331 ft.) above sea level. The vast variation in elevation and vegetation plus the influence of the Chinook winds, provides for a rich variety of flora and fauna species within a fairly small region. The Crowsnest Pass has a moderate climate with warm summers and generally mild winters. The area enjoys four distinct seasons and has over 90 frost-free days a year. The average annual precipitation total is approximately 57 cm (22.36 in.) and it also receives over 2,370 hours of sunshine on average in a year.

(See Exhibits in Appendix A: McElhanney Consulting Services Ltd., 2004).





HISTORICAL BACKGROUND

The discovery of coal was the primary reason for settling the Crowsnest Pass at the turn of the century. Underground mining began near the end of the 19th century at Coal Creek, Michel, and Coleman and the first settlement was at Blairmore in 1898. The establishment of successive towns and hamlets in the Pass largely owe their existence to the early coal companies as many of the companies surveyed, developed and owned the various town sites in the region. The principal settlements included Bellevue, Hillcrest, Frank, Blairmore and Coleman. The pattern of development grew out of the necessity of locating near to the mines because of a lack of roads and transportation. Initial surveys for a rail line were carried out in 1892 and the CPR completed construction on the Crowsnest branch line in 1898. This lead to the initial Pass boom period as the line served logging and mining interests. In 1979, the various towns, villages and hamlets were amalgamated to form a single municipality and one unified local government.

The Pass has experienced the consequences of a boom and bust resource-based economy. The mines were vulnerable to the ups and downs of the Canadian economy and the market for coal. Demand for coal was generally high up to the early 1950s, dropped off during the 1960s, and then bounced back in the 1970s as new overseas markets for coal and a strong provincial economy helped the Pass region. However, a recession once again occurred in the 1980s and the coal industry has subsequently suffered along with the local economy.

PART 2

PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

DEMOGRAPHICS

The historical population of the Municipality of Crowsnest Pass between 1961 and 2001 is illustrated in Chart 1. Between 1961 and 1966, the Crowsnest Pass experienced a large drop in its population, however from 1966 to 1981, this negative trend reversed itself and the population grew by nearly 15 percent. This was largely the result of a strong provincial economy and new overseas markets for coal. In the early 1980s this positive growth change ceased, and the population of the Pass has been slowly declining ever since.

Over the most recent census period, 1996-2001, the Crowsnest Pass' population has experienced a 1.5 percent decrease in permanent population. Currently, the number of weekend residents that own property in the municipality has increased but as they are not permanent residents do not influence total population figures. Looking to the future, population projections can be used to forecast future growth within the Municipality and by 2006 the expected population could range from 6,420 to 6,581 persons, until the year 2021 when the population could range between 6,919 and 7,641.

Chart 1
Municipality of Crowsnest Pass
Historic Population

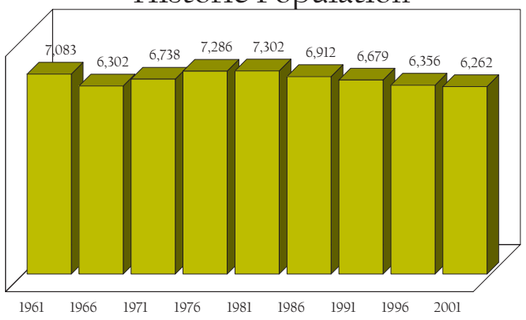
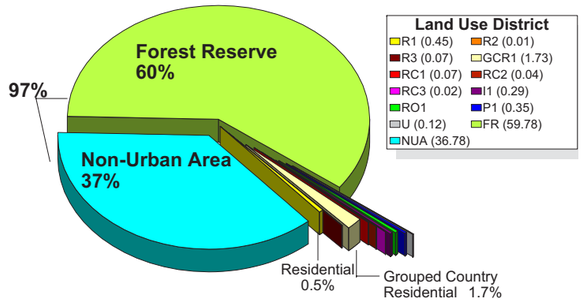


Chart 2
Municipality of Crowsnest Pass
Existing Land Use
Percentages of Total Land Area



EXISTING LAND USE & CONSUMPTION

While the municipality appears to have a large amount of land within the municipal boundary, over 60 percent of the land is dedicated as forest reserve and is almost exclusively owned by the provincial government. In addition to the 54,459 acres of forest reserve, the Crown owns an additional 11,980 acres of land within the non-urban areas of the municipality. Although the Crown leases some of its land to the public for grazing or recreational purposes, it is largely up to the Crown to make decisions regarding the use of its land.

With the increased interest in recreation property, several large country residential developments have occurred since the early 1990s. Many of the developing areas cannot feasibly connect to municipal services and have, as a result, been subdivided into large lots. These developments have consumed land at a high rate while keeping population density relatively low, which is a concern given the limited developable land available within the municipality.

ECONOMIC ACTIVITY AND GROWTH

Within the Crowsnest Corridor, the early economy was based on natural resource exploitation, including primary minerals and forest products. Presently, the economy is still largely based on traditional resource industries including forestry, milling, and mineral extraction, along with gas processing and tourism.

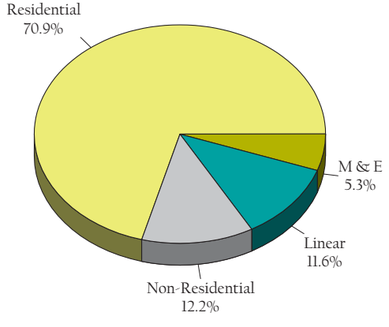
This is illustrated by a high percentage of the population which is engaged in primary industry. 'Mining and Oil and Gas Extraction' industries employ 15.4 percent of the labour force while 14.6 percent are employed by 'Retail Industries', followed by 11.7 percent employed in 'Health Care and Social Assistance' sectors.

Approximately 25 percent of Pass residents commute outside the municipality for employment purposes as the major employers are primary resource-based industries located in the Elk Valley in British Columbia.

According to the municipality's 2003 tax assessment breakdown, the majority of the assessment consists of property classified as residential. Approximately 70.9 percent of the Crowsnest Pass tax roll is considered residential compared to about 12.2 percent of assessment classified as 'non-residential', which includes both commercial and industrial property. Overall, the total equalized assessment is valued at over 381 million dollars.


Sentinel Industrial Park (2004)

Chart 3
Municipality of Crowsnest Pass
Equalized Assessment 2003



PART 2

PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

PREVIOUS LAND USE PLANS & STUDIES RELATED TO THE HIGHWAY CORRIDOR

Over the years, many development plans, regional land use initiatives, environmental studies and surveys have been conducted in the former communities and the amalgamated Municipality of Crowsnest Pass. The planning exercises and accompanying research is invaluable to understanding the conditions and pressures that, over time, have shaped and formed the community that exists today. Many different agencies and organizations have been involved and the following are only a few select plans that relate to the social and economic development of the Municipality with regards to transportation impacts.

- Coleman General Plan (1965)
- Crowsnest Pass Sub-Regional Plan (1969)
- Highway 3 – Crowsnest Pass Environmental Planning Study (1973)
- Municipality of Crowsnest Pass General Municipal Plan (1986)
- Pass to the Future Public Consultation Process (1999)

Coleman General Plan

The Oldman River Regional Planning Commission prepared the Coleman General Plan in September of 1965. The Planning Act (1963) outlined the statutory requirements and purpose of the plan, which was required to indicate the manner in which the municipality should develop, based on consideration of orderliness, economy and convenience.

Historically, general plans were developed in conjunction with a regional plan but at the time the regional plan for the area was only in its preliminary stages. Therefore, the General Plan for Coleman was not prepared within the framework of either a regional or sub-regional plan and may not have represented the best plan when considering development in the Pass as a whole.

The Existing Land Use section of the plan recognized several noteworthy characteristics of the land use pattern including:

- *Highway 3 splits the Town into two sections, and while this feature has not had too much bearing on Town development to date, it will in all likelihood be of major importance in the future.*
- *The main commercial developed on one edge of Town rather than at the centre and at the time was identified as an inconvenience rather than a problem.*
- *The influence of uneven topography is readily apparent in the pockets of development, and the development of actual roads in comparison to the original land survey that occurred.*

Although at the time, Highway 3 was undergoing reconstruction from Pincher Creek west to the provincial boundary, the General Plan proposed a number of main road improvements based on the assumptions that the highway route would remain in its present location and on the possibility that the downtown commercial area could be relocated. Two alternate proposals were discussed that included a proposed overpass and the relocation of the commercial district to an area north of the highway. As well, the plan identified a number of potential highway commercial areas along Highway 3 that could be utilized for highway commercial uses such as motels, service stations, etc. With regards to future residential development, the plan identified that the most suitable areas included the SE ¼ of Section 17 and suitable portions of NW ¼ of Section 9 and be reserved for that purpose.

The goals and objectives of the Coleman General Plan outlined a vision for the community's future. Unfortunately, over time funding constraints and an unstable local economy impacted the implementation of policies to encourage the type of growth to fulfill the vision. It should be noted that many of the ideas put forth in 1965 are still currently relevant in terms of future residential development, topographical constraints to development and transportation and utility corridor issues.

Highway 3 at Crowsnest Lake (2004)

Crowsnest Pass Sub-Regional Plan

The Central Mortgage and Housing Corporation and the Alberta Housing and Urban Renewal Corporation in partnership with the Municipalities of Blairmore, Coleman, Frank, Bellevue, the Municipal District of Pincher Creek and Improvement District No. 10, agreed to finance a sub-regional study which was completed by the Oldman River Regional Planning Commission in 1970. The objective of the study was to prepare a comprehensive development plan for the Crowsnest Pass within the framework of a long-range development plan supported by policies and a program of implementation.

The Sub-Regional Plan was divided into three parts: Part 1: Characteristics, Problems and Proposals; Part 2: Population and Economy; and Part 3: Regional Development and Urban Renewal. A number of goals were established that served as the basis for the plan including:

- *To provide the residents of the Crowsnest Pass with the opportunity to achieve a standard of living at least equal to the Alberta average.*
- *To broaden the economic base of the Crowsnest Pass to create increased employment opportunities.*
- *To make the Crowsnest Pass a more attractive place in which to live and visit by improving the urban environment through the conservation and enhancement of the area's natural attractions.*

The success of implementing the sub-regional plan was contingent upon both external and local factors. One major change that did occur was the amalgamation of the former communities to form one single local government that would govern in the best interest of the entire area.

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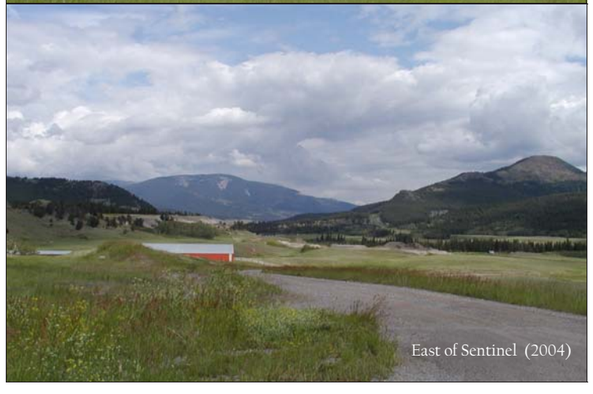
Crowsnest Lake (2004)


Blairmore Wetlands (2004)


East of Sentinel (2004)

Highway 3 – Crowsnest Pass Environmental Planning Study

As early as 1965, Alberta Transportation realized the need for an eventual upgrade and/or realignment of Highway 3 through the Crowsnest Pass. By the early 1970s, the new highway was becoming a political issue and came under more intensive scrutiny by various government departments. Although the plans were modified a number of times, construction was unable to proceed. Finally, in 1974, Alberta Environment requested that Alberta Transportation undertake an environmental impact study of the proposed highway within the Pass, ensuring a public participation program. The study area incorporated the entire Crowsnest Corridor from the Alberta-British Columbia Border to Burmis. The study served to more completely formalize the process whereby various non-engineering concerns were incorporated into the transportation planning process.

Two major characteristics of the time were used as a foundation of the study. First, it was assumed that the future economic prosperity of the area would be linked closely to the coal industry as coal was expected to become proportionally more dominant. The second was the role the new highway would play in the development of the area. Future economic projections for Coleman, and the Pass as a whole, were dependent on the future forecasts for coal activities. In the early 1970s, Coleman Collieries was the only operating mining company in the Crowsnest Pass and employed approximately 400 people. Both the Coleman Collieries and the Consolidated Coal Company were predicted to increase coal production from 1.5 million tons in 1976 to 5 million tons by 1990, and employ enough additional workers to swell the population of Coleman by 1250 people.

A large number of government agencies expressed interest in participating in the study due to the relatively complicated array of characteristics and issues found within such a confined area. Six sub-committees were struck and each represented a logical sub-grouping of issues as well as agency representatives. The sub-committee structure included groups assigned to deal with Hydrology, Life Forms, Terrain Analysis, Non-Price Issues, Land Use, and Economics. The Environmental Planning Study evolved to include a total of five volumes:

- Draft Executive Summary
- Draft Summary of Recommendations
- Draft Technical Report Part 1
- Draft Technical Report Part 2
- Draft Interaction Tables

Upon completion, a series of recommendations emerged from the study. The first set referred to the primary characteristics of the recommended highway plan, which focused on the major positive and negative implications for the Crowsnest Pass. The second set of recommendations referred to the auxiliary design features of the recommended highway plan and through the study methodology, provided a listing of additional benefits to the Crowsnest Pass. The third set referred to additional highway-related factors, which although not specifically identified within the study methodology, identified additional benefits for area. Finally, the last set of recommendations identified general planning problems in the Crowsnest Pass not directly related to the highway planning process. These recommendations were proposed to be implemented by the various participating government departments.

The Executive Summary of the Environmental Planning Study concluded the recommended route for Highway 3 would hold true to the original plan except for instances where significant improvements could be made to mitigate identified impacts. The study committee recommended that the original route proposed north of Coleman be changed to an alignment south of both Coleman and the Crowsnest River. This change would reduce the social and economic impacts to Coleman, and Blairmore would experience a reduced level of intrusion.

The committee also concluded that although a broad range of impact improvements were apparent from the study, the comparison of the positive and negative impacts of the recommended route illustrated that a highway plan could not be justified on the basis of the needs of the residents of the Crowsnest Pass alone. That is, the Crowsnest Corridor serves both a regional and interprovincial transportation function and this function provides the justification for the establishment of a high standard primary highway through the area. Therefore, the committee concluded that the goal was to minimize the social, economic and environmental impacts on the local population while still meeting the need to provide a high standard transportation system for non-locals.

The expected population and development pressures that were predicted to occur north of Coleman was a major factor in recommending that the highway alignment be shifted to the south of the community. It was felt that the original alignment north of Coleman would require the eventual upgrading and further realignment once the development pressures on the area were realized. In conclusion, the south alignment recommendation of the Environmental Planning Study represented the long-term solution to the transportation issues identified in the Crowsnest Pass, while the north alignment was essentially only a short-term solution.

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Crowsnest Mountain taken from Frank Lake (2004)

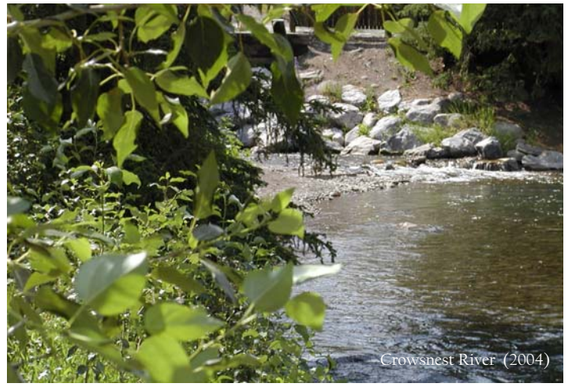
Municipality of Crowsnest Pass General Municipal Plan

The General Municipal Plan (GMP) for the newly-formed Municipality of Crowsnest Pass was prepared by the Oldman River Regional Planning Commission and adopted by council in 1986. It was the first planning document after amalgamation that considered land use in the context of the entire Crowsnest Corridor, including both urban and non- urban areas.

Policies included in the plan were put in place after the Highway 3 realignment through the Pass was gazetted and the bypasses of Bellevue, Hillcrest and Frank were already completed. Mapping found within the GMP clearly shows the Highway 3X route passing south of Coleman.

Several sections of the plan are relevant to the long-term social and economic development of the municipality in direct relation the Highway location. First, the section on external decision makers has several important considerations. Eight provincial government departments were identified as having the ability to influence decisions on land use activities (i.e. pipelines, transmission lines, communication towers, etc.) that are outside the local jurisdiction. It was noted that the municipality was often unaware of decisions beforehand and seldom had the opportunity to either make recommendations or adjust its own land use policies and commitments in anticipation of impending changes. Several objectives of the plan included achieving more effective communication with outside decision-makers and increasing the municipal role in decisions about programs and developments that affected the Crowsnest Pass.

A second relevant portion of the 1986 GMP included the Future Growth and Development section, which attempted to develop policies that minimized potential land use conflicts in newly developing areas, establish development criteria for land uses, and identify the most appropriate areas for new development and redevelopment based on the costs of servicing, site characteristics, accessibility to existing communities and compatibility with existing uses. Map 2 in the GMP identified future urban growth areas east of Bellevue, south of Blairmore and north of Coleman.



Crowsnest River (2004)

"Pass to the Future" Public Consultation Process

In the late 1990s, the preparation of a new Municipal Development Plan began which was to replace the former General Municipal Plan. This was in part due to legislative changes to the planning requirements for municipalities and the fact the previous plan was over ten years old. As part of the process, a graduate student was retained by the municipality to act as a consultant to help formulate, guide and report to council on the views and input expressed by the public in order to establish a baseline of public sentiment. This public participation component and subsequent reports has been referred to as the "*Pass to the Future" Public Consultation Process* occurring between January 1998 and December 1999 and involved:

- the development of an initial terms of reference to guide the preparation process for the Municipal Development Plan;
- undertaking an extensive community household survey;
- holding a series of focus group meetings, community workshops, and the creation of a "Community Ideas Book";
- and the final stage which involved a series of informal interviews with members throughout the community and a second open house for the public.

The initial stages of the public process led to the identification of seven general issues, which were later addressed in focus group meetings, community workshops and a follow-up survey. From the many topics identified, an agreement was observed that residents share a mutual concern with a number of community issues, including:

- the need for a strong, viable and sustainable local economy;
- the need for more educational and skill-developing opportunities;
- the need to protect the integrity and beauty of the surrounding natural environment;
- the desire to protect the quality of local neighbourhoods;
- the desire for slow to moderate growth;
- the need to ensure public safety, especially along the highway;
- the desire for increased services, both commercial and social.

It should be noted that overall response to the process was poor. A limited number of opinions and suggestions emerged from the input and represented approximately four percent of the total local population. As the response rate is not statistically significant, any conclusions from the report should be carefully considered.

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PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

CURRENT STATUTORY PLANNING DOCUMENTS

In 1995, the Alberta Planning Act was rescinded and matters relating to planning were incorporated into Part 17 of the Municipal Government Act. Created and adopted by bylaw for the purpose of planning and managing land use, statutory plans include Municipal Development Plans, Land Use Bylaws, Intermunicipal Development Plans, Area Structure Plans and Area Redevelopment Plans. All plans must comply with the Provincial Land Use Policies.

Under this system, the role of a Municipal Development Plan is to guide the general direction of future development and provide land use policies regarding development, while the Land Use Bylaw regulates land use and development on a site-specific basis. Current planning documents that guide the development of the land within the study area of the Functional Planning Study include a Municipal Development Plan, Land Use Bylaw and one Area Structure Plan.

Riverside Area Structure Plan Land with the Hospital (2004)

Municipal Development Plan No. 556

The preparation of a new Municipal Development Plan (MDP) for the Municipality of Crowsnest Pass (1999-2001) included an extremely detailed and exhaustive preparation process. Future land requirements, directions of growth, subdivision and development policies are technical matters managed by the MDP which, in turn may generate even more questions regarding municipal servicing, land availability, the environment, and topography to name a few.

An important step in the development of the Municipal Development Plan was the preparation of a comprehensive Background Report. This report provided a detailed review of the Crowsnest Pass including geographic characteristics, population and projected growth, economic activity and development trends and existing land use. In addition, the natural environment, historic sites, transportation and utility issues, municipal and community services, and future growth and development were also examined in detail. Some of the primary planning issues regarding the municipality which relate to this study include:

- *The municipality consists of five former communities located along Highway No. 3 with large gaps of undeveloped land situated in between. There are no significant linkages between the communities other than the primary highway. The non-urban land between the urban built-up areas also contains many environmental sites and wildlife habitats that will make infill development difficult.*

- *There is a limited supply of land in the municipality to accommodate all types of land uses - the location of future developments may encounter constraints with adjacent watercourses, forest reserves, prevailing steep topography, industrial and other adjacent land uses including gas pipelines, power transmission lines, utility rights-of-way and the highway.*

- *Only a small portion of existing vacant land is available for development, as nearly 60 percent of the land base is comprised of forest reserve.*

- *The Crowsnest Pass region contains a significant amount of archaeological, historic, cultural and environmental sites of major importance that may have adverse effects on future developments.*

- *A water and sewer engineering study focusing on the existing built-up urban areas indicates that water supplies for most communities within the Crowsnest Pass are sufficient to support predicted future growth. In respect to the sewer systems, Frank has sufficient future capacity but Hillcrest, Bellevue, Blairmore and Coleman would require upgrading of their systems to handle additional flow.*

- *The identification of readily serviceable areas of land to accommodate future development needs to be studied in more detail.*

- *The municipality's highway commercial acreage is slightly lower than other municipalities and there is very little land available to accommodate this type of land use activity.*

- *Highway 3 is the only major traffic route through the municipality, other than Highway 40, which flows north out of the municipality. Thus, the main arteries require protection to enable efficient traffic flow and for safety reasons.*

(Source: Municipality of Crowsnest Pass Municipal Development Plan, 2001)

Municipal Development Plan No. 556 has several sections of policy that deal with directing future growth and development, transportation and utilities, municipal and community services, and economic growth. Although each is a separate entity, they all are interconnected and rely on each other to successfully move the Crowsnest Pass towards the type of community they envision.

Land Use Bylaw No. 481

As required, the Municipality of Crowsnest Pass completed and adopted their most recent Land Use Bylaw in the fall of 2004.

A Land Use Bylaw controls the use and development of land and buildings within a municipality. It divides a municipality into districts and outlines uses for each district that may be permitted, discretionary, and in some cases, prohibited. The Land Use Bylaw establishes various standards such as development setbacks, lot sizes, parking requirements or building heights. In addition, it creates the approval process for development within the municipality.

Riverside Estates Area Structure Plan No. 470-1998

Within the study area of the Functional Planning Study, one statutory Area Structure Plan (ASP) exists. The Riverside Estates Area Structure Plan was adopted by bylaw by the council of the municipality in 1998. The ASP regulates a portion of the SE¼ of Section 3-8-4-W 5 and the SW¼ of Section 2-8-4-W 5, approximately 20.60 ha (50.90 acres) in size, located between Highway 3 and the Crowsnest River. The Area Structure Plan proposes a multitude of land uses including residential, recreational, and commercial to be connected via a single collector road.

Currently, private individuals own the land and for whatever reason have not proceeded with the proposed development. As an Area Structure Plan adopted by bylaw by council, it has statutory standing under the Municipal Government Act and therefore any changes to the plan requires a bylaw amendment process or the rescinding of the entire bylaw. This will be discussed in greater detail later in the study if the area is affected by any of the proposed highway realignment options.

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PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

Specific Planning Challenges Associated with Highway Improvements within the Crowsnest Pass

Historic land use issues and development problems along with changing economic circumstances over the past 40 years all represent certain challenges to planning improvements to Highway 3 within the Crowsnest Pass. The following represents a number of specific challenges and issues that should be considered during the highway planning process.

- **Limited land base and topographical constraints:** The total amount of accessible, buildable land in the Crowsnest Pass, outside the Forest Reserve boundaries, is probably less than 78 km^2 (30 m^2). This limited land base places a greater importance on the highest and best use of the scarce, developable land (ORRPC, 1973). In addition, the Municipality is a mountain community with difficult topography, a narrow valley floor in areas, and an extensive watershed that must be considered.

- **Municipality's role as a transportation and utility corridor:** Not only must the built-up urban areas be accommodated, but also over the years the Municipality has become a key transportation and utility corridor across the mountains. Currently it contains a railway, a highway, two natural gas pipelines and three major power transmission lines and if they were placed side by side, they would occupy a strip of land almost 300 metres wide. (ORRPC, 1973)

- **Amalgamation:** The creation of the Municipality of Crowsnest Pass in 1979 attempted to unify and strengthen the existing communities within the corridor. The transition has not been an easy one. Pass residents have a strong attachment to their individual communities. As one community rather than seven municipalities, there has been a natural shifting of economic, residential and recreational uses which seems to have caused tension.

- **Changing demographics of the Pass:** The past several decades have seen may non-locals choosing to make the Crowsnest Pass their adopted home. In addition, a renewed interest in the environment and preservation of the mountain ecosystem has become evident.

- **Development of Coleman:** In the early 1970s, the outlook for Coleman was bright, with the Coleman Collieries expected to increase production and employ enough people to swell the population to nearly 1250. The location of the Collieries was a major consideration when the preferred route was gazetted in 1979 due to coal haul routes and the need to expand residential development. The immediate area surrounding the collieries was less desirable for development due to pollution and dust and therefore development was encouraged north of Coleman to avoid the problems.

- **The closure of the Coleman Collieries:** The closure of the collieries in 1984 was a massive blow to the economy of the Crowsnest Pass. Many of the assumptions used to select a preferred highway route in the Coleman area 1979 never anticipated that in the future the impacts associated with the Collieries would no longer be a consideration.

- **The reprocessing and reclamation of the coal slag piles south of Coleman:** A massive reprocessing and reclamation project was undertaken to clean up the slag piles left by decades of coal processing. The grassy hills south of West Coleman are the result of the clean up and have improved the aesthetic quality of the area which may be affected by highway location.

- **Location of new domestic municipal water wells:** Since the gazetting of the preferred route, municipal water wells were developed in 1993 in the vicinity of the proposed route. Concerns have been raised by the council and the community about the potential effects on the water supply and recharge areas of the Crowsnest River as a result of highway construction.

- **Previous realignments:** As part of the improvements to Highway 3 in the eastern portion of the Municipality, the urban centres of Blairmore, Bellevue and Hillcrest have experienced the removal of the highway from the main streets of the communities. Local residents have indicated that changes to the traffic pattern have been detrimental to the economic viability of each community's former downtown cores.

- **Characteristics of highway users:** With the closure of several major primary industry employers and the shift to a more tourist-based economy, the reason people travel Highway 3 has changed (i.e. recreation versus employment).

- **The purchase of land by conservation organizations:** The last decade has seen a rise in the importance of conserving wilderness area. National and international conservation groups have been purchasing land in an effort to secure key wildlife habitat. In most cases the groups will place a conservation easement which freezes development for future generations. Currently, approximately 2.5 sections are either owned by conservation groups or have been sold after an easement has been placed on it within the entire Crowsnest Pass.

- **Highway right-of-way purchases by Alberta Infrastructure and Transportation.** Since gazetting the route in 1979, and the subsequent amendment in 1984, Alberta Infrastructure and Transportation has proceeded to purchase the necessary right-of- way when the opportunity presented itself. Although the acquisition of land is not a planning consideration, it does play a role in the overall planning of the highway.

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PROPOSED HIGHWAY PROJECT & AN OVERVIEW OF THE COMMUNITY

Crowsnest Corridor looking West (2004)

Establishment of Criteria for Evaluation

A roadway is a static structure that may be imposed upon an existing natural landscape or developed human environment. In the current situation, the standards to which this proposed bypass may be built, including the proposed capacity, anticipated speed, and even the scale of the interchange designs, are all based upon the goal of Alberta Transportation to build a highway which functions as an inter-regional route constructed to a national primary highway standard.

Therefore, the social and community impacts of a bypass should be measured by how well the existing natural and human environments can adapt to the eventual presence of a large fixed structure within their midst.

It is reasonable to establish a set of criteria for the purpose of evaluating proposed route alternatives from a community focus based on the following:

- previous research on highway relocations,
- the history of the Crowsnest Pass,
- the overview of the existing demographic and state of the local economy,
- the concerns identified by the community,
- the concerns identified by members of the municipal council, and
- the specific planning challenges identified for highway improvements within the Crowsnest Pass.

Given the above, the following is a list of key factors that should be considered when evaluating the potential impacts the Municipality may experience related to the highway upgrade:

1. Local Transportation and Community Access
2. Municipal Growth Areas and Servicing
3. Community Land Use Goals Related to the Natural Environment
4. Impacts on Existing Land Use and Development
5. Compatibility with Statutory Planning Documents
6. Phasing or Timing of Highway Construction

Highway 3 Improvements and the Municipality of Crowsnest Pass

A Land Use Analysis
2004

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

PART 3

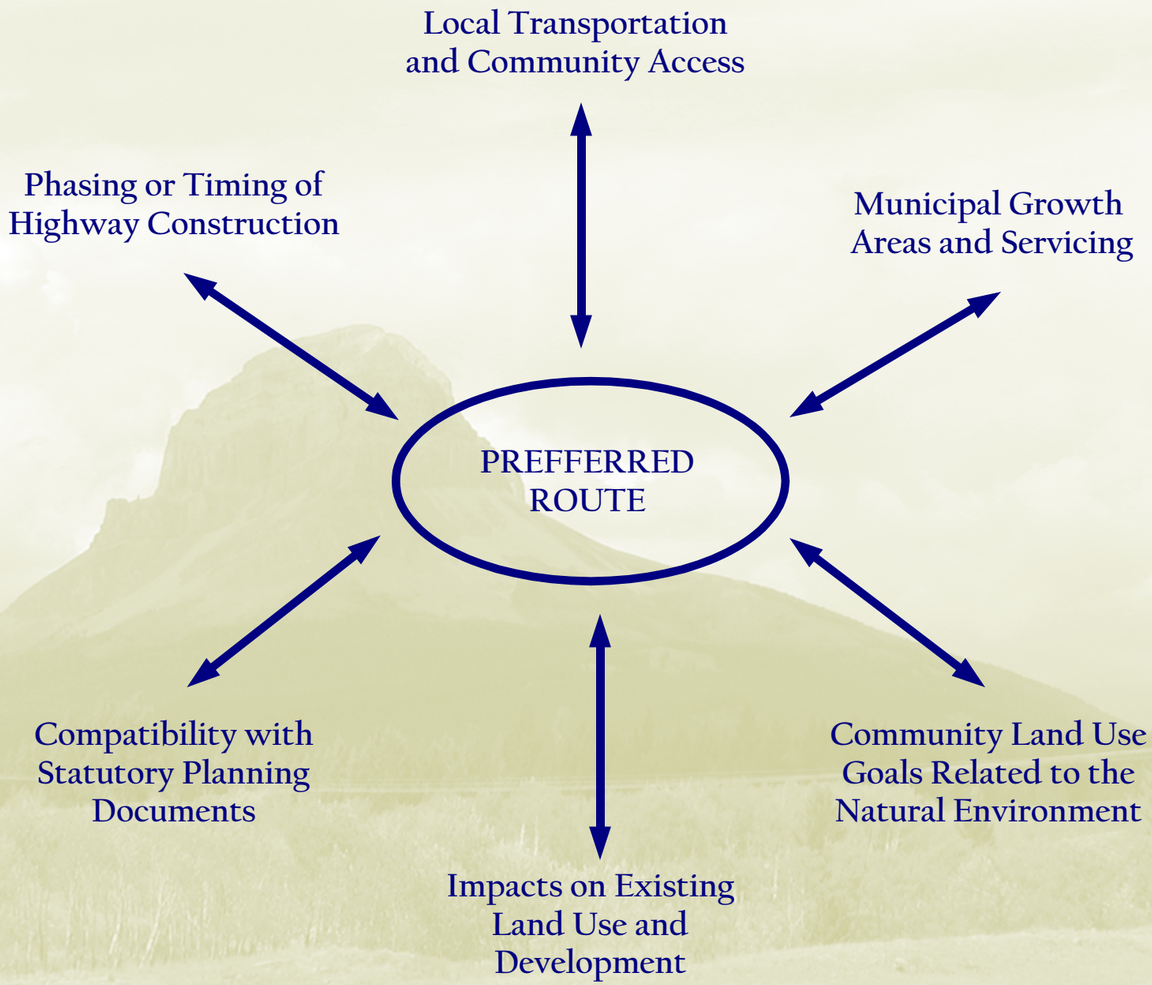
ALIGNMENT ANALYSIS

Land use decisions do not occur in isolation and consequently limit the ability to accurately predict the outcome or impact a highway bypass may have on a particular social or economic variable within a community. For the evaluation portions of this study, the development of criteria and ensuing assessment will incorporate the broad theoretical findings of previously utilized economic theories and research methodologies but will not strictly adhere any particular theory.

ROUTE ALIGNMENT EVALUATION CRITERIA

Each key factor has a subset of criterion that has been identified as important components of the major category. The following section will discuss the categories in greater detail and illustrate the relationships between the factors and the potential socio-community impacts. Part of the background information the will be utilized for analysis purposes was gathered from information created for the Functional Planning Study. Several of the criteria categories developed for this study appear to encroach on other areas of expertise but will only be used in a context that applies to the community and community perceptions.

In regards to criteria category *6: Phasing and Timing of Highway Construction*, the impacts on the different route alternatives are very similar. In all cases, the construction of a bypass in close proximity to existing urban areas would have less of an impact if construction is delayed because additional infrastructure will not be a burden. Conversely, if a route alternative is located farther away from urban development the community will be more sensitive to the construction timetable. For example, future decisions regarding the investment of infrastructure to either service an existing area that may decline due to the highway relocation or invest in new infrastructure to service an area that maybe opened for future growth sometime in the future will be much more difficult. Therefore, discussion on Phasing and Timing of Highway Construction will be limited to the above comments.

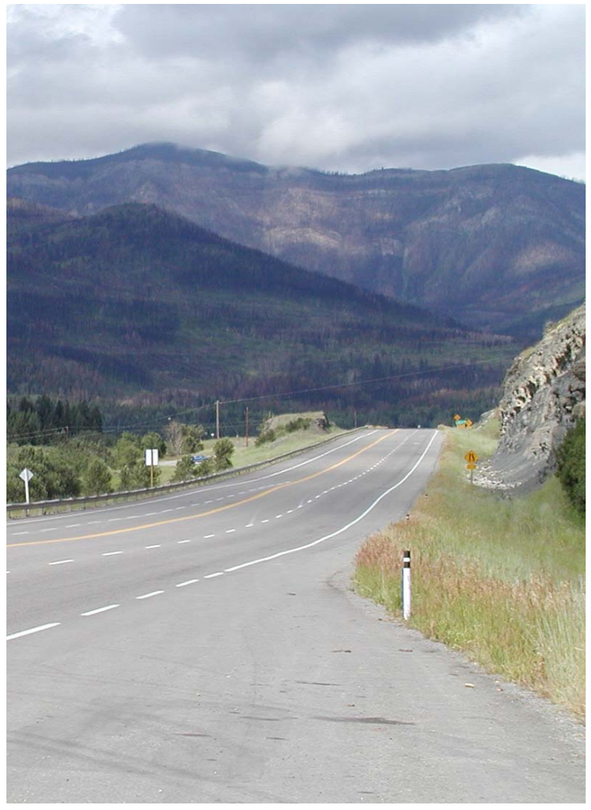


PART 3

ALIGNMENT ANALYSIS

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

The construction of a bypass, regardless of route, will affect some of the local mobility by altering community travel patterns. The criteria help define the important issues that influence the ability of the Crowsnest Pass to maintain the integrity of community access.



Access and egress to communities: The current ease or difficulty of access and egress to the affected urban areas within the study area are crucial to the ultimate level of impact that may be experienced. The construction of a bypass may result in improved access in terms of safety, speed and visibility. Current problems associated with the highway may be corrected. On the other hand, limited access and egress to the study area may move traffic through the study area without opportunities to easily enter or exit the urban areas. The proposed access points and interchanges of each base alternative will be examined.

Interaction with other Highways: Within the study area, Highway 3 intersects with Highway 40. From a community perspective, this intersection is fairly important as it acts to move larger vehicles from the north and as a local road to several large country residential developments north of Coleman. How the base alternatives integrate this interchange into the highway design and the benefits and disadvantages that may accompany the design concept will be considered.

Local road network: The local road network has evolved as a result of imposing a regular grid pattern on irregular terrain. This has resulted in a fairly disjointed secondary street system and the creation of numerous dead-end streets. Currently Highway 3 also acts as a major local road between the urban areas of Coleman, Blairmore and Sentential. Each base alternative will be evaluated on how it impacts the current road network and what improvements or deteriorations may be realized as a result of the realignment.

Community Safety Issues: While the technical design of the highway will address many of the safety issues related to the construction and speed rating, the community has concerns regarding safety issues that are more community-oriented rather than technically-based. For example, these include: the safety of local pedestrians and cyclists, removal of hazardous materials from both urban and environmentally sensitive areas, overall posted speeds, and mountain highway conditions.

MUNICIPAL GROWTH AREAS AND SERVICING

The future development within the Crowsnest Pass will include both residential and non-residential growth since one is not exclusive of the other. Demand for recreational and tourist-related facilities are also predicted to increase as the economy continues to diversify and population grows.

Impact on available growth areas: Limited land is available for development. The current highway, and subsequent realignment, represents a static structure on the landscape that can act as either a catalyst or barrier to potential growth. Considering the limited land open for development, the potential disruption to future development areas has been identified is critical to the long-term growth ability of the community. Each base alterative will be examined for impacts to available growth areas.

Ability to service: The ability to provide basic infrastructure services is an important consideration when identifying areas with future growth potential. Again, the constraints found within a mountain community are much different than those found in other urban areas. The topography and underlying bedrock can increase the difficulty and cost associated with providing extensions to services in new areas. Each of the base alternatives have the potential to disturb both existing and potential urban areas which has an impact on the overall public works function of the study area.

Capacity: Again, the importance of directing growth and development to areas of the Crowsnest Pass that has the infrastructure capacity to support growth is crucial. The Municipal Development Plan for the municipality reviewed the possible capacities available in both the water and sewer systems. Although the study area is limited to the western portion of the Crowsnest Pass, the infrastructure crosses this boundary and is integrated throughout the entire valley. Therefore, what affects the Coleman area may have ripple effects that would be felt at the eastern end of the municipality.

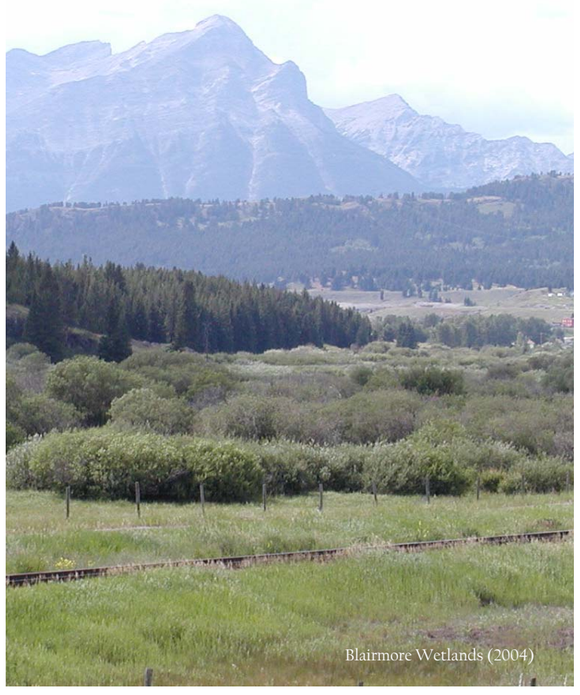
Cost of providing infrastructure to alternate areas: Balancing the physical constraints and the cost of providing either increased capacity to existing areas or extensions of services into new areas will need to be evaluated for each base alternative. Depending on the alternative examined, several different barriers may exist that will increase or decrease the estimated costs of providing servicing.

Relocation / removal of structures or improvements: The examination of the base alternatives will reveal whether the relocation or removal of structures or improvements will be required. There will be positive and negative impacts of changes to physical structures that will need to be evaluated in terms of social consequences, impact on quality of life, and the effect on the local economy.

PART 3 ALIGNMENT ANALYSIS

COMMUNITY LAND USE GOALS FOR THE NATURAL ENVIRONMENT

The Crowsnest Pass corridor has a wide variety of flora and fauna, largely a result of the great variation in elevation and vegetation. Numerous areas found within the river and creek valleys contain significant wildlife habitat and natural attributes that warrant protection. The ecological value of such natural areas, along with potential recreational or tourist possibilities, may be adversely affected by inappropriate development. Residents of the Pass appear to value the natural and scenic qualities of the Crowsnest Pass region and place a very high emphasis on the environment and the protection of it (MacNeil, 2001).



Blairmore Wetlands (2004)

Lakes, rivers and streams: When evaluating the potential impacts on water resources, the community's values towards potential impacts to the Crowsnest River and its tributaries should be considered. These impacts could include the number of river crossings planned, a change to wildlife and/or aquatic habitat, and potential effects to water quality.

Wetlands and floodplains: Both a wetland and floodplain area are found within the study area. The potential exists to directly impact the wetland area by constructing the highway corridor through the area. The impacts could take the form of altering water depths and velocities within the floodplain and wetland during flood events. As well, the potential exists to the impact the water quality function of a wetland area by decreasing the surface area of the wetland, which could eventually impact the groundwater recharge or discharge ability of the area. Beyond the practical function of the Blairmore wetlands, the aesthetic quality of the area may be compromised.

Groundwater and drinking water supply: The potential impacts to groundwater and the future drinking water supply should be examined for each base alternative. The current water supply and recharge areas will be referenced in relation to each route.

Impacts to wildlife: Residents of the Crowsnest Pass have identified wildlife protection in their long-term planning as an important consideration. Impacts to wildlife habitat will be considered in terms of loss or gain of habitat to the construction of a highway and the fragmentation of habitat through existing wildlife corridors.

Historic resources: Throughout the Crowsnest Corridor, an abundance of historic resources exist. The route alternatives will be evaluated in terms of if an identified resource is being impacted and how that might affect the social and cultural fabric of the community.

Air quality, noise, visual and aesthetic resources: The proximity of the bypass alternatives to current development will have an impact in terms of air quality, noise levels and future visual impacts. The positive and negative impacts of each route alterative with regard to the above will be examined to determine the potential effects on the community.

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

The shape and character of a community is directly related to the quality, quantity and location of land use within its boundary. The Municipality of Crowsnest Pass is an example of a complex combination of land uses that has evolved through the influence of historical development and topographic constraints. Impacts or changes to the existing urban environment and the non-developed open spaces will undoubtedly have some impact on the quality of life of the local population. It must be noted that due to the nature of existing land use, development within the study area will be affected by land uses outside the study area as the entire corridor is intrinsically linked.

Highway 3 (2004)

Institutional impacts: Institutional impacts relate to schools, churches, museums, institutional care facilities, and government facilities. These impacts can include both direct impacts due to loss of property, noise, and other environmental impacts and indirect impacts associated with access.

Non-Urban area impacts: Primary non-urban impacts include loss of farmland and grazing land due to the fragmentation of existing non-urban parcels. In addition potential highway runoff, increased noise levels and reduced air quality can also be identified as impacts to undeveloped urban areas.

Commercial districts: The commercial activity with the Crowsnest Pass is unique as commercial nodes were historically found in each of the separate communities. Once amalgamation occurred in 1979, Blairmore emerged as the prominent central business district, with the former Main Streets in the other four communities evolving into neighbourhood commercial uses.

Industrial: Current and future industrial development has several requirements to successfully operate a viable industry. The access, amount of land available, the servicing requirements, and the appropriateness of available land to promote industrial development will be considered for each of the proposed base alternatives.

Residential: Residential impacts will be studied in respect to direct and indirect impacts to neighbourhoods and housing. Direct impacts include the relocation of homes, the presence of noise and other nuisances, loss of property value, loss of direct access and pedestrian safety. Indirect impacts will incorporate the impact on the long-term attractiveness of the neighbourhood and the proximity of the residential areas to the highway.

Natural and conservation areas: The unique mountain setting of the Crowsnest Pass brings an entirely different set of land use issues with regards to future development options. Within the study area several important wildlife areas exist which act as movement corridors and habitat for numerous different wildlife species. As well, several conservation groups have purchased land throughout the Crowsnest Pass in an effort to protect endangered habitat. As a result, conservation easements may be in place, which has the potential to restrict development in several areas of the Crowsnest Corridor, which would effectively sterilize land for future development and as a consequence impact possible alignments.

PART 3

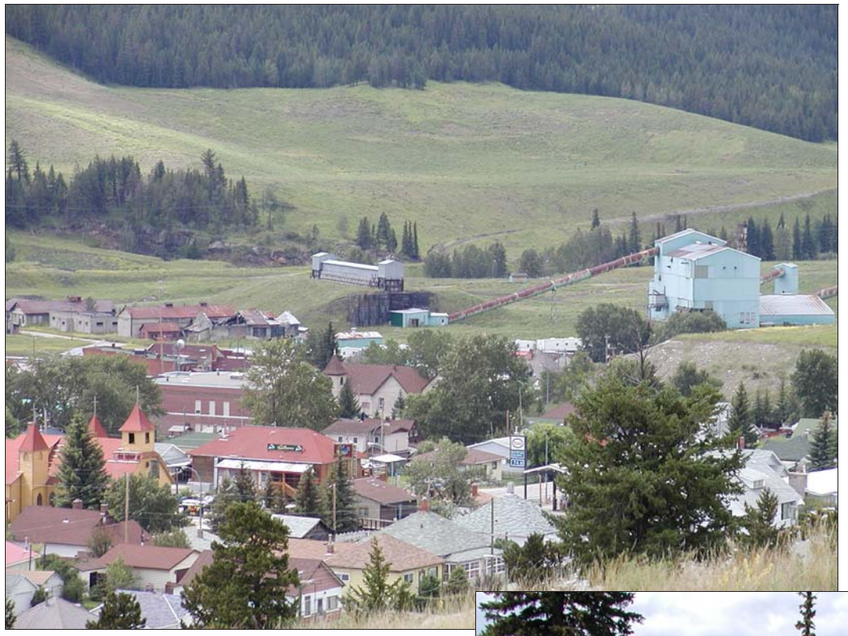
ALIGNMENT ANALYSIS

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

Currently, the Crowsnest Pass has several statutory planning documents that guide and control land use within the Municipality. The Municipal Development Plan was adopted in 2001, the Land Use Bylaw was adopted in 2004, and the Riverside Estates Area Structure Plan was adopted in 1998. Since the gazetting of the preferred route for the highway bypass around Coleman in 1979, land use plans have used the route to plan for future growth and development within the immediate area. In the 20 years, development has been shifted away from the proposed route to protect the integrity of the required right-of-way.

In terms of evaluating the compatibility and consistency with local statutory planning documents, each alternative will be carefully examined. In general, bypass alternatives that are within close proximity or adjacent to developed urban service areas tend to be the most consistent with land use plans. These alternatives generally provide the most convenient access to existing businesses, services, and industries and typically have less impact on existing residential neighbourhoods by not creating pedestrian and other mobility access barriers. On the other hand, the closer a bypass alternative is to the developed community the greater the disruption as a result of right-of-way widening. These disruptions could include business relocations and significant impacts to existing business districts.

Each route alternative will be considered in regards to the influence it may have on existing land use plans, identified potential future growth areas and the opportunities that may be created or lost as a result of routing the highway in a specific location.



Sentinel Industrial Area (2004)

Lost Lemon Campground (2004)

CHARACTERISTICS OF A COMMUNITY PREFERRED ROUTE

It may be useful to establish a benchmark for scoring the various proposed routes. By utilizing the criteria developed, the desirable characteristics of a community preferred route may include a route that:

- Provides the most access
- Has good access to other highways
- Is safe from a community perspective
- Does not use developable land
- Provides opportunities to utilize existing infrastructure
- Does not interfere with wildlife movement corridors
- Does not detract from the aesthetic resources of the Crowsnest Corridor
- Does not compromise municipal water supplies
- Minimizes impacts to existing land uses
- Is compatible with existing statutory planning documents developed by the municipality

The following sections will attempt to evaluate the routes selected by Alberta Infrastructure and Transportation and score each route against the criteria in order to establish an understanding of the social and economic impacts of each route.

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

BASE ALTERNATIVES

The Highway 3 Functional Planning Study has identified three general base alternatives within the study area. They include a North, Central and South Alignment in and around Coleman.

An analysis of each route in regards to the set of criteria defined is provided in point form. The criteria will then be evaluated and scored.

NORTH ROUTE BASE ALTERNATIVE

The North Route Base Alternative is one of the base routes proposed for the Highway 3 alignment through the study area. It parallels the existing highway from Sentinel to Carbondale where it swings north around Coleman to eventually rejoin Highway 3 west of Blairmore. This alternative includes five potential interchange locations including one west of Sentinel, one at Allison Creek Road, one west of Carbondale, one at the intersection of Highways 40 and the realigned 3, and the final one located west of Blairmore at 107 Street.

CENTRAL ROUTE BASE ALTERNATIVE

The Central Route Base Alternative is the second of three general routes proposed for the Highway 3 alignment through the study area. The alignment alternative closely parallels the existing highway with proposed interchange sites at the entrance to the Sentinel Industrial Park, Allison Creek Road, west of Carbondale, and at 107 Street west of Blairmore. While the highway alignment is fairly reflective of the current route, several portions of the route have been straightened.

SOUTH ROUTE BASE ALTERNATIVE

The South Route Base Alternative is the final route of three general routes proposed for Highway 3. It is similar to the 3X Route gazetted in 1979 and passes through the area on the south side of the valley floor. Travelling east, the route proposed to leave the existing highway alignment west of Sentinel, staying south of the Crowsnest River following a path close to the base of the mountains to traverse the Crowsnest River and Blairmore Wetlands to rejoin the highway between Coleman and Blairmore.

SCORING SCHEME

Each of the routes will be evaluated and scored using the Route Alignment Evaluating Criteria previously outlined. Each route will be scored in five categories, with a possible one to five points to be awarded in each category. The following legend explains the ranking system from a community perspective. The higher the score the more benefit is realized by the Municipality :

1	No benefits would be realized by the Municipality and several negative impacts are present
2	Limited benefits would be realized by the Municipality and several negative impacts are present
3	Limited benefits would be realized by the Municipality and limited negative impacts are present
4	Several benefits would be realized by the Municipality and limited negative impacts are present
5	Many benefits would be realized by the Municipality and no negative impacts are present

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

North Base Alternative

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Three proposed interchanges (west, central, and east)
- Only alternative to offer direct access to Coleman via Highway 40
- Access to Coleman remains adequate

Local road network

- Alignment would interfere with many of the local roads in country residential subdivisions north of Coleman
- Would not affect roads in Coleman proper
- Current Highway 3 alignment has the potential to act as a service road

Interaction with other highways

- Only alternative to reroute truck traffic from Highway 40 out of the centre of Coleman
- Only alternative to offer direct access to Coleman at interchange with Highway 40

Community safety issues

- Alignment affords possibility of reasonable community safety as it is separated from the urban area
- Alignment would be located on the north side of the valley
- Remove hazardous materials from Coleman proper
- Would move hazardous material to travel through populated country residential subdivisions

Highway 3-Coleman (2004)

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Directly uses identified lands available for development (north of Coleman S½ of 17-8-4 W 5)
- Bisects north growth area and new subdivisions
- Opportunity costs of replacing potential development areas

Ability to service

- Area varies from flat to precipitous
- Servicing of areas adjacent to bypass and interchanges could be challenging
- Potential exists for low water pressure

Capacity

- Water system currently has excess capacity – operating at 40 percent and could sustain infill development in current urban areas
- Sewage system has limited future capacity

Cost of providing infrastructure to alternative areas

- Current water storage site in SE¼ of 17-8-4-W5 would be affected
- If possible to develop additional residential in south Coleman – infrastructure investment would include extensions and upgrades to system already present

Relocation/removal of structures or improvements

- 17 homes
- 40 undeveloped residential lots/parcels
- 1 crown parcel
- 3 businesses
- 1 undeveloped commercial lot/industrial lot
- 14 unimproved parcels

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Crosses several drainage areas
- Does not require additional crossing of Crowsnest River

Wetlands and floodplains

- Route is significantly higher in elevation than other routes – no interaction with floodplain
- Does not cross the Blairmore Wetlands

Groundwater and drinking water supply

- Appears to interfere with water reservoir (SE¼ of 17-8-4-W5)

Impacts to wildlife

- Crosses through elk habitat (Appendix A: Exhibit 5)
- Interferes with 3 primary wildlife movement zones
- Route travels through undisturbed land and habitat
- Route is outside any identified ESA areas (Appendix A: Exhibit 4)

Historic resources

- Crosses through identified HRV3, HRV4 and HRV5 areas (Appendix A: Exhibit 7)
- Presence of historical coal mining along route (Appendix A: Exhibit 9)
- Avoids the Coleman Historic Site

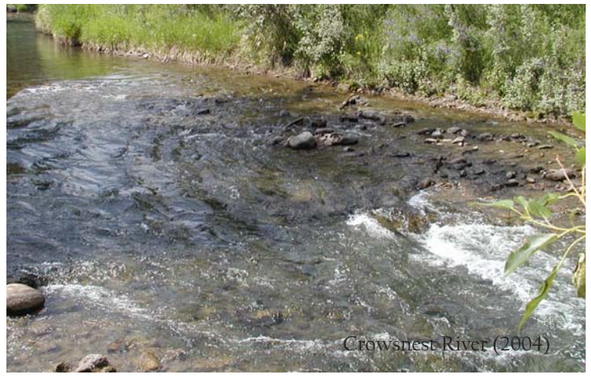
Air quality, noise and visual and aesthetic resources

- Route is located close to Pine View Subdivision
- More significant climb – resulting in additional noise of vehicles to make the climb
- North route does not visually disturb south view of Crowsnest river and valley – which is the most common view of Coleman residents

Scottinel Industrial Area (2004)

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES


Crowsnest River (2004)

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Public – Institutional

- No impact existing schools, churches, etc.
- Route will affect current substation and power lines located in North Coleman
- Proposed interchange option at Allison Creek Road would affect Level 3 Sour Gas Line which needs a 500 m setback

Non-urban area

- Significant amount of non-urban area is crossed in alignment
- Areas are affected by coal mining activity
- Significant non-urban area affected between Sentinel and West Coleman

Commercial

- Majority of existing commercial development will not effected
- Some businesses in Carbondale will be affected
- Limited opportunities for new development

Industrial

- Existing industrial development unaffected

Residential

- Existing and potential country residential development north of Coleman will be affected
- Residential development in Carbondale will be affected
- Several country residential developments between Sentinel and Coleman will be affected

Natural and conservation areas

- Route bypasses all identified natural and conservation areas (Exhibit 4)
- Potential to cross lands owned by Nature Conservancy of Canada (portion of the N½ 11-8-5-W5)
- Proposed interchange option planned on land owned by Nature Conservancy at Allison Creek Road intersection. (portion of the NW¼ 8-5-W5)

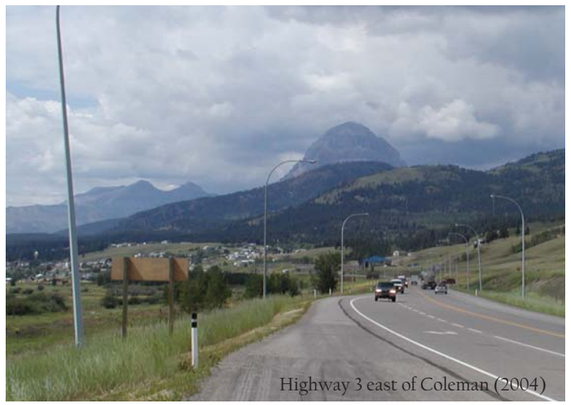
COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

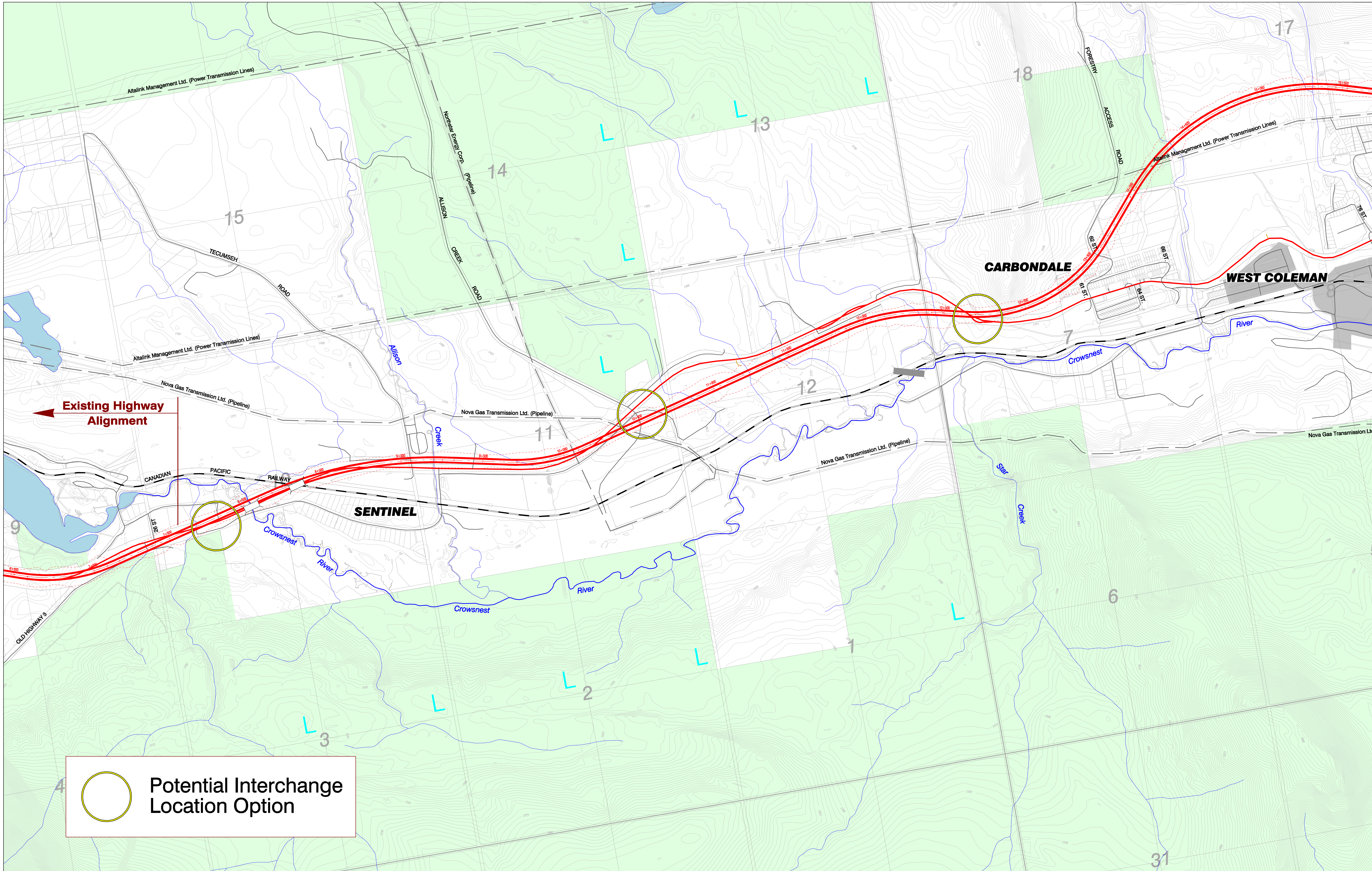
- Route is inconsistent with future land use policies found in the Municipal Development Plan.
- Least compatible base alternative with statutory plan policies regarding existing municipal growth areas.
- Development polices in Municipal Development Plans since 1979 directed growth to lands that were not going to be affected by proposed Highway 3X bypass.
- Several large country residential developments have been approved in North Coleman since 1992

OBSERVATIONS

- Three interchanges are proposed which is the most of any of the base alternatives.
- Access to the community is limited but still allows a level of access.
- The route would be out of the southern mountain shadow which might improve winter conditions.
- Increased costs to the municipality when required to boost water pressure to service particular areas.
- Route crosses several watersheds currently not affected by Highway 3.
- A greater amount of undisturbed land is crossed in the North Base Alternative than other alternatives.
- The bisection of current and future residential subdivisions reduces area's viability.
- No new commercial opportunities are created by the route.
- Residential development along the entire route will be affected by either having to be removed or by the highway crossing a portion of a property.

EVALUATION	
Criteria	**Score**
Local Transportation and Community Access	3
Municipal Growth Areas and Servicing	1
Community Land Use Goals Related to the Natural Environment	3
Impacts on Existing Land Use and Development	3
Compatibility with Statutory Planning Documents	1
TOTAL SCORE:	11


Highway 3 east of Coleman (2004)



Existing Highway Alignment
Potential Interchange Location Option
SENTINEL
CARBONDALE
WEST COLEMAN
Altalink Management Ltd. (Power Transmission Lines)
Altalink Management Ltd. (Power Transmission Lines)
Altalink Management Ltd. (Power Transmission Lines)
Nova Gas Transmission Ltd. (Pipeline)
Nova Gas Transmission Ltd. (Pipeline)
Nova Gas Transmission Ltd. (Pipeline)
Northstar Energy Corp. (Pipeline)
TECUMSEH ROAD
ALLISON CREEK ROAD
FORESTRY ACCESS ROAD
CANADIAN PACIFIC RAILWAY
OLD HIGHWAY 3
Allison Creek
Crowsnest River
Star Creek
62 ST.
61 ST.
64 ST.
66 ST.
76 ST.
17
18
13
14
15
11
12
7
8
9
5
6
1
2
3
4
31

North Base Alternative

COLEMAN

BLAIRMORE

Crowsnest Pass
Golf and Country Club

Pass
Powderkeg
Ski Hill

Existing Highway
Alignment

Crowsnest River

Blairmore Creek

York Creek

Lyons Creek

CANADIAN PACIFIC RAILWAY

OLD HWY 3

20 AVE

25 AVE

20 STREET

Nova Gas Transmission Ltd. (Pipeline)

Atlalink Management Ltd. (Power Transmission Lines)

Source:
Highway 3 Functional Planing Study
BC/AB Border to Frank
Alberta Transportation Website:
www.trans.gov.ab.ca

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

Central Base Alternative

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Route divides community in two and design accommodates limited access
- Two proposed interchanges (west and east)
- Former highway would provide some movement for local traffic between areas west of Coleman but no local route to Blairmore and points west

Interaction with other Highways

- Highway 40 intersects with Highway 3 in current location
- Highway 40 acts as a local access road for many country residential homeowners in subdivisions along the highway

Local road network

- Local road access into West Coleman will be forced onto a substandard road
- No improvement to road network within Carbondale, Coleman, or West Coleman

Community safety issues

- Mixes local and through traffic
- Truck traffic and dangerous goods travel through town core and residential areas, although somewhat mitigated by removal of housing along proposed route

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment does encroach on identified potential development land north of West Coleman
- The rest of the alignment does not affect identified potential development areas

Ability to service

- Area adjacent to West Coleman could be serviced but lacks access
- Services would need to be installed to service proposed interchange areas
- Can make limited use of existing servicing and infrastructure but limited land is available for development

Capacity

- No capacity is currently available in Sentinel for new development (UMA, 2000)
- Water pressure in extremities of Coleman currently fall below accepted levels and additional development would exacerbate the problem

Cost of providing infrastructure to alternative areas

- Higher costs involved due to location of interchanges
- No additional river crossings or CPR
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Would affect 105 homes
- Would affect 19 businesses
- Would affect 2 schools
- Would affect 12 undeveloped commercial parcels
- Would affect 29 undeveloped residential parcels

West Blairmore (2004)

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Does not affect lakes, rivers, and streams any more than the existing alignment

Wetlands and floodplains

- Alignment does not cross Blairmore wetlands
- Parallel alignment does not cross floodplain area

Groundwater and drinking water supply

- Current domestic water wells and supply system are not affected by route

Impacts to wildlife

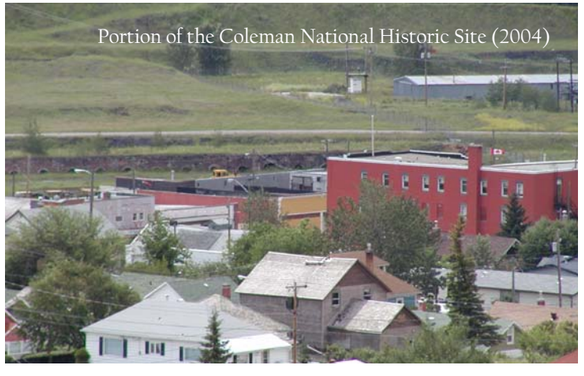
- No new habitat area is affected
- Crowsnest river and fish resources will not be disturbed with additional bridge crossings

Historic resources

- Widening of current highway will impact the Crowsnest Volcanics (ESA) (Appendix A: Exhibit 4)
- Removal of houses and businesses along current highway route of historic or community significance may impact community identity

Air quality, noise and visual and aesthetic resources

- Leaves traffic and truck noise levels in Coleman
- Air quality will be affected by truck traffic – possibility of increases due to the increased capacity of the highway
- Visual impact will be similar to current situation – will not affect views of study area from the communities
- Visual impact of a four-lane high-speed freeway through the core of Coleman would not be pleasing



Portion of the Coleman National Historic Site (2004)

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Public - Institutional

- Will affect the two schools located in Coleman – complete removal of Horace Allan Elementary and limited access to Crowsnest Consolidated High School

Non-urban area

- Vacant and undeveloped land will be affected by central route alignment, east and west of Coleman
- Proposed interchange at Allison Creek Road would affect Level 3 Sour Gas Line requiring a 500 m setback

Commercial

- High economic impacts to existing development
- Existing businesses lining the current highway alignment will be removed to make room for the twinning and right-of-way requirements
- Does not affect the Downtown area of Coleman, as it is located south of the existing alignment

Industrial

- No existing industrial development will be impacted by the proposed central alignment
- Interchange is proposed west of Sentinel industrial park may increase accessibility

Residential

- High impact to existing development
- Approximately 105 homes will be affected by the alignment – most of the development in West Coleman and between 19 Avenue and 21 Avenue in Coleman

Natural and conservation areas

- Does not affect a significant amount of natural landscape than is already disturbed
- Proposed interchange at Allison Creek Road require the use of natural land for the intersection
- Avoids crossing through the Blairmore Wetlands
- The highway alignment and west interchange is planned for land owned by the Nature Conservancy of Canada (E½ 11-8-5-W5)

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

- Statutory planning documents never contemplated the removal of large areas of Coleman and as such are not the subject of policies
- Reasonably compatible with land use policies directing growth found in the Municipal Development Plan and Land Use Bylaw
- Land use decisions have been made with the current highway alignment in position.
- Not compatible with Municipal Development Plan policies regarding Environmental, Historical, and Cultural Issues

OBSERVATIONS

- Route divides the community of Coleman in half.
- Alternative lacks an interchange with Highway 40. If one is contemplated it should be designed to limit impact to existing development.
- Local road access in West Coleman would require municipal upgrades.
- Potential risk exists when local and through traffic is mixed.
- Area adjacent to West Coleman could be serviced if access issues were resolved.
- The location of proposed interchanges away from existing service lines would be costly for the municipality to service.
- The proposed interchange option at Allison Creek Road is located near the Level 3 Sour Gas Line. This line requires a 500 m setback which would effectively eliminate any potential commercial node developing at this location.
- The removal of a large portion of the existing development along the route is a significant impact that would be difficult to overcome.

EVALUATION

Criteria	Score
Local Transportation and Community Access	2
Municipal Growth Areas and Servicing	3
Community Land Use Goals Related to the Natural Environment	4
Impacts on Existing Land Use and Development	1
Compatibility with Statutory Planning Documents	1
TOTAL SCORE:	11

Highway 3 west of Carbondale (2004)

Existing Highway Alignment

Potential Interchange Location Option

CARBONDALE

WEST COLEMAN

SENTINEL

Altalink Management Ltd. (Power Transmission Lines)

Nova Gas Transmission Ltd. (Pipeline)

Northern Energy Corp. (Pipeline)

TECUMSEH ROAD

ALLISON CREEK ROAD

FORESTRY ACCESS ROAD

62 ST.

56 ST.

51 ST.

78 ST.

CANADIAN PACIFIC RAILWAY

OLD HIGHWAY 3

Crowsnest River

Allison Creek

Star Creek

Central Base Alternative

COLEMAN

BLAIRMORE

Crowsnest Pass
Golf and Country Club

Pass
Powderkeg
Ski Hill

Existing Highway
Alignment

Crowsnest River

Blairmore Creek

York Creek

Lyons Creek

CANADIAN PACIFIC RAILWAY

Nova Gas Transmission Ltd. (Pipeline)

Source:
Highway 3 Functional Planing Study
BC/AB Border to Frank
Alberta Transportation Website:
www.trans.gov.ab.ca

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

South Base Alternative

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Two proposed interchanges (west and east)
- Poor access to Coleman if travellers miss interchange at either end

Interaction with other Highways

- No direct access from Highway 40 to Highway 3
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Improves local network by utilizing old highway alignment as a local commuter road between communities
- No improvement to disjointed local grid network
- Increased community road network and maintenance costs associated with additional local road

Community safety issues

- Perceived community concerns with icing of highway on southern route
- Removal of hazardous material from centre of communities
- Safer for local community pedestrians and cyclists by removing through traffic

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas
- Does not utilize existing infrastructure capacities

Ability to service

- Difficult to service along route as located outside built-up areas
- Little available land adjacent to the proposed interchanges to promote commercial nodes
- Development adjacent to the bypass in South Coleman would require services to cross the river, the CPR, and a NOVA pipeline

Capacity

- No capacity available currently in Sentinel for new development (UMA, 2000)
- Water pressure in extremities of Coleman currently fall below accepted levels and additional development would exacerbate the problem.
- Coleman has an adequate water supply for a projected population of 2731

Cost of providing infrastructure to alternative areas

- Higher costs involved due to location of interchanges
- River crossing, CPR
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Effect 16 unimproved parcels
- No direct business property impacts
- CPR right-of-way affected
- NOVA pipeline right-of-way affected

A Portion South Coleman and Bushtown (2004)

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Crowsnest River has one additional crossing
- Crosses 6 creeks/intermittent drainage areas (tributaries)
- doubles the number of watersheds currently exposed to highway development

Wetlands and floodplains

- Crosses the Blairmore wetlands
- Route travels outside of flood areas

Groundwater and drinking water supply

- Community perceived effects to Crowsnest River recharge areas
- Community perceived effects to function of wetlands

Impacts to wildlife

- Mostly passes through undisturbed land and habitat
- Is in close proximity to the Crowsnest River ESA (Appendix A: Exhibit 4)
- Affects several wildlife movement corridors – safety issues (Appendix A: Exhibit 5)
- Blairmore wetlands have been identified as critical wildlife areas for moose (Appendix A: Exhibit 5)
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk (Appendix A: Exhibit 5)

Historic resources

- Mapping indicates route passes through areas rated HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)

Air quality, noise and visual and aesthetic resources

- Improved air quality by removing heavy truck traffic from centre of Coleman
- Reduced noise within centre of Coleman.
- Increased noise to property owners in east Coleman and non-urban area
- Visual site line of highway will be exposed for the easterly half of the route
- Visual site line of highway will be treed for the westerly half of the route

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- No direct impact

Non-urban area

- Affects several undeveloped parcels throughout the study area
- Crosses public land in the forest reserve

Commercial

- Misses commercial development
- Provides little or no opportunity to expand existing commercial areas to benefit from the route location
- Access interchange options are located at points where commercial nodes would be very difficult to develop

Industrial

- Route does not directly affect any current industrial development
- By creating a bypass, heavy truck traffic will benefit by missing congestion in Coleman
- Sentinel industrial park has interchange planned in relatively close proximity

Residential

- No direct impact to existing residential development
- South Coleman and Willow Drive residents are within close proximity to the proposed route and right-of-way

Natural and conservation areas

- Crosses Blairmore Wetlands
- Crosses through forest reserve
- Proposed route and interchange on land owned by Nature Conservancy (NW¼ 1-8-5-W5)
- Proposed route crosses land owned by Rocky Mountain Elk Foundation (NW¼ 3-8-4-W5 and a portion of SE¼ 10-8-5-W5)

Frank Slide (2004)

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

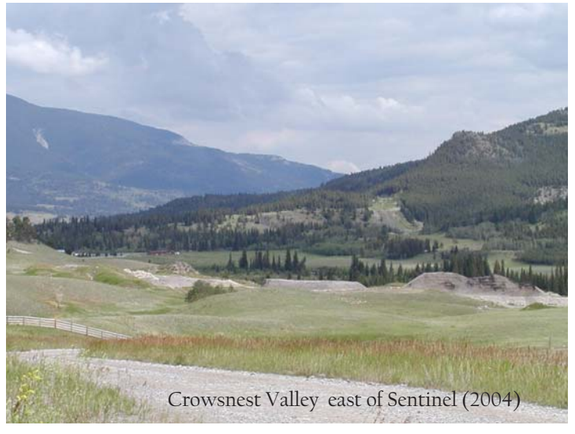
- Compatible with land use policies in the Municipal Development Plan and Land Use Bylaw
- Compatible as alignment mirrors gazetted 3X route, planning and planning documents have considered future route and planned according for the past 30 years

OBSERVATIONS

- Limited access to study area with only two interchanges planned.
- By utilizing the old Highway 3 alignment as a part of the local road network, local traffic would benefit. The increase in the road network would become the responsibility of the municipality which would incur the costs of maintaining the roadway for which they currently are not responsible.
- The location of another highway to the south would add a barrier to wildlife that would be required to navigate two barriers rather than one.
- The locations of the interchanges options make developing and servicing them expensive and in some cases impossible. The potential to relocate economic activity is minimal.
- Very little existing development is required to be removed or relocated which is good for the community.
- The route travels through the Blairmore Wetlands which are perceived to be of great value to the community.
- Key parcels of land owned by national conservation organizations are affected by the southern route.

EVALUATION

Criteria	Score
Local Transportation and Community Access	3
Municipal Growth Areas and Servicing	3
Community Land Use Goals Related to the Natural Environment	1
Impacts on Existing Land Use and Development	3
Compatibility with Statutory Planning Documents	4
TOTAL SCORE:	14



Crowsnest Valley east of Sentinel (2004)

Existing Highway Alignment

Potential Interchange Location Option

CARBONDALE

WEST COLEMAN

SENTINEL

Altalink Management Ltd. (Power Transmission Lines)

Nova Gas Transmission Ltd. (Pipeline)

Northern Energy Corp. (Pipeline)

TECUMSEH ROAD

ALLISON CREEK ROAD

FORESTRY ACCESS ROAD

62 ST.

56 ST.

51 ST.

54 ST.

78 ST.

CANADIAN PACIFIC RAILWAY

OLD HIGHWAY 3

Crowsnest River

Allison Creek

Star Creek

7+000

8+000

9+000

10+000

11+000

12+000

13+000

14+000

15+000

South Base Alternative

Existing Highway Alignment

COLEMAN

BLAIRMORE

Crowsnest Pass Golf and Country Club

Pass Powderkeg Ski Hill

Crowsnest River

Blairmore Creek

York Creek

Lyons Creek

CANADIAN PACIFIC RAILWAY

Nova Gas Transmission Ltd. (Pipeline)

Alberta Management Ltd. (Power Transmission Lines)

TRUNK ROAD

FORESTRY

20 STREET

100 STREET

OLD HWY 3

20 AVE

25 AVE

Source:
Highway 3 Functional Planing Study
BC/AB Border to Frank
Alberta Transportation Website:
www.trans.gov.ab.ca

PART 3

ALIGNMENT ANALYSIS: BASE ALTERNATIVES

Summary of Base Alternatives

NORTH

While adequate community access and minimal impact on the environment are encouraging characteristics of the North Base Alternative, the tremendous effect on future growth areas outweighs the positive benefits.

There is a two-fold impact on the current and future residential development opportunities north of Coleman. First, the alignment destroys the potential of a very important piece of land that cannot be replaced in any other area of the Municipality. The route is proposed to bi-sect a large area which would divide the parcel, limit internal access, and affect the style and attractiveness of future housing.

Secondly, the alignment proposed to run directly through several country residential subdivisions, both developed and undeveloped, and would require that the loss of these lots be recouped in other residential areas of the Crowsnest Pass.

Overall, the route alignment has many positive aspects that would make it a viable option if construction of the highway would have occurred 10-15 years earlier. The land use policy direction to direct and promote development north of Coleman has effectively increased social and economic effects to a point where the North Base Alternative would not be a viable option for the community.

CENTRAL

The Central Base Route, while following a similar route to the existing highway, impacts the developed community of Coleman enormously. The disruption and/or removal of homes, businesses, and schools, tears at the fabric of the community.

The limited access and available land base makes it very difficult to find commercial space to replace that which would be consumed by the highway and its right-of-way. Commercial relocation can be successful but the need exists to offset or balance the shift in commercial activity to ensure that the net economic gain remains constant.

The natural environment and wildlife gain with this proposed route due to the fact that historic migration patterns have not been altered and disturbances to the Crowsnest River and its tributaries are minimized to areas that have been previously disturbed.

Overall, the Central Route Alignment trades off the loss of urban development against the protection of the environment. The Blairmore Wetlands are avoided and the loss of habitat would be minimized by following the footprint of the existing highway. On the other hand, the economic impact that Coleman would endure as a result of the loss or negative impact on 105 homes, 19 businesses, and 2 schools would be devastating to the local economy with recovery long and uncertain. The Central Base Alternative would be an unattractive option for the community.

SOUTH

The South Base Alternative is proposed to follow the 3X route gazetted in 1979. This route effectively bypasses all current development by shifting the highway alignment to the southern portion of the valley floor.

In terms of economic and social impacts, this route again has a number of advantages and disadvantages. Advantages include:

- removing unwanted truck traffic,
- it keeps the community intact, and
- can achieve the speed and safety required by the national highway standards.

Disadvantages of going south include:

- severely impacting commercial uses that rely on highway traffic,
- limited ability for the community to open land for future development,
- no direct access is provided into Coleman,
- intrusion into land owned by conservation organizations, and
- the disruption of Blairmore Wetlands along with additional wildlife habitat.

South Coleman (2004)

CONCLUSION

Although the South Base Alternative has several drawbacks, it is not as devastating as either the North or Central Base Alternative. From a community perspective, the removal of existing urban development, homes and businesses, are not conducive to building a strong community identity and local economy.

Three options to the South Base Alternative and one to the Central Base Alternative were developed as a result of community input and technical research in order to address and mitigate the negative aspects of the broader base alternatives. The four options will be discussed in greater detail to evaluate the potential social and economic impacts of each proposed route.

Highway 3 Improvements and the Municipality of Crowsnest Pass

A Land Use Analysis
2004

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

OPTIONS TO SOUTH BASE ALTERNATIVES

CENTRAL/SOUTH OPTION

The Central/South Option follows the Central Route and parallels the existing Highway 3 alignment from Sentinel. At Carbondale, the alignment swings south and follows the balance of the South Route to the connection point with the current highway west of Blairmore.

SOUTH/SOUTH-EAST OPTION

The South/South-East Option follows the South Route from Sentinel travelling east. The alignment avoids crossing the Blairmore wetland by crossing the Crowsnest River further east in west Blairmore.

CENTRAL /SOUTH TO SOUTH/SOUTH-EAST OPTION

The Central/South to South/South-East Option follows the Central/South Route Option east from Sentinel. South of Willow Drive, the alignment crosses the South Route to join the South/South-East Option to connect back with Highway 3 in west Blairmore.

CENTRAL CPR OPTION

The Central CPR Option follows the Central Route from Sentinel travelling east to Carbondale. At this point, the alignment shifts south to follow a path similar to the current CPR alignment until it rejoins the current Highway 3 alignment west of Blairmore.

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

Central / South Option

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Two proposed interchanges: either W of Sentinel or E ½ 11-8-5-5, and at 107 Street
- Poor access to Coleman if travellers miss interchange at either end
- Current Highway 3 alignment acts as a local commuter road from Allison Creek Road to Blairmore

Interaction with other Highways

- No direct access from Highway 40 to Highway 3
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Improves local network by utilizing old highway alignment at local commuter road between communities
- No improvement to disjointed local grid network
- No direct access provided into Coleman along route
- Potential exists to improve local transportation

Community safety issues

- Perceived community concerns with crossing Blairmore wetlands - water quality
- Removal of hazardous material from centre of communities
- Perceived community concern with highway conditions on the shady side of the valley

Blairmore (2004)

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas
- Does not utilize existing infrastructure capacities to accommodate potential areas
- Infill development is still available in existing areas

Ability to service

- Difficult to service as located outside built-up areas
- Little available land adjacent to the proposed interchanges to promote commercial nodes
- Development adjacent to the bypass in South Coleman would require services to cross the river, the CPR, and possibility the NOVA pipeline

Capacity

- No capacity available currently in Sentinel for new development (UMA)
- Water pressure in extremities of Coleman currently fall below accepted levels and additional development would exacerbate the problem

Cost of providing infrastructure to alternative areas

- Higher costs involved due to location of interchanges
- Expense involved in extended services which include a river crossing and CPR crossing
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Removal of some development will be needed
- Route option crosses NOVA pipeline
- Western half of route follows the existing alignment - little or no interaction with existing development

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Crowsnest River has two additional crossings
- Alignment crosses Star Creek

Wetlands and floodplains

- Crosses the Blairmore wetlands
- Route is outside flood areas

Groundwater and drinking water supply

- Community perceived effects to Crowsnest River recharge areas and function of wetland with crossing

Impacts to wildlife

- Route passes mostly through undisturbed land
- Effects several wildlife movement corridors (Appendix A: Exhibit 5)
- Route travels through areas identified as critical wildlife areas for elk, moose, deer and cougars (Appendix A: Exhibit 5)
- Blairmore wetlands have been identified as critical wildlife areas for moose. (Appendix A: Exhibit 5)
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk (Appendix A: Exhibit 5)

Historic resources

- Mapping indicates route passes through areas rated HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)
- No removal of houses and businesses along current highway route of historic or community significance that would impact community identity

Air quality, noise and visual and aesthetic resources

- Improved air quality by removing heavy truck traffic from centre of Coleman
- Reduced noise within centre of Coleman
- Increased noise to property owners in east Coleman and non-urban area
- Visual site line of highway will be exposed for the easterly half of the route
- Route travels close to residences in Willow Drive, South Coleman, and country residential lots located in the NE ¼ 4-4-8-W5

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- Right-of-way interferes with Tourist Information Building (SW¼ 10-8-5-W5)

Non-urban area

- Effects several undeveloped parcels
- Crosses less forest reserve land than the South Route
- Proposed interchange at Allison Creek Road would affect Level 3 Sour Gas Line requiring a 500 m setback for any potential development

Commercial

- Route avoids commercial development in urban area
- Provides little or no opportunity to expand existing commercial areas to benefit from the route location
- Access interchanges are located at points where commercial nodes would be very difficult to develop
- Potential to increase economic activity is minimal given design

Industrial

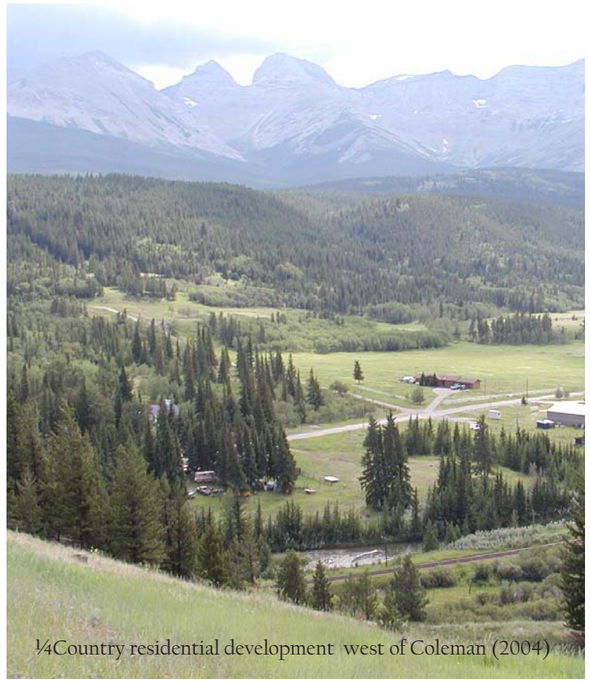
- Route does not directly affect any current industrial development
- By creating a bypass, heavy truck traffic will benefit by missing congestion in Coleman
- Sentinel industrial park has interchange planned in relatively close proximity

Residential

- Impacts to existing residential development—mainly country residential
- South Coleman and Willow Drive residents are close to the proposed route and right-of-way

Natural and conservation areas

- Crosses Blairmore Wetlands owned by Rocky Mountain Elk Foundation (NW 3-8-4W5).
- Route shift north of Sentinel crosses land owned by the Nature Conservancy of Canada (11-3-5W5).



¼Country residential development west of Coleman (2004)

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

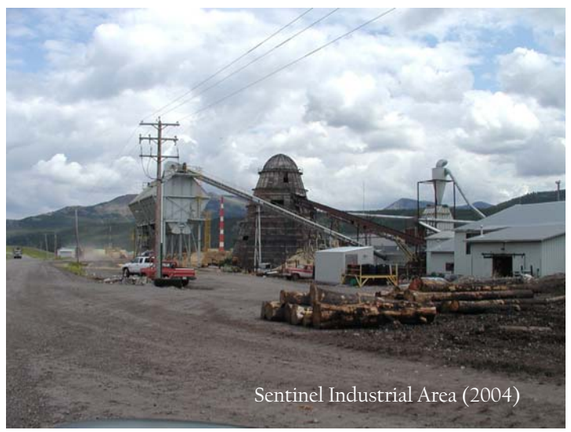
- Compatible with Municipal Development Plan and Land Use Bylaw policies on future growth
- As alignment mirrors gazetted 3X route, planning and planning documents have considered future route and planned accordingly for the past 30 years

OBSERVATIONS

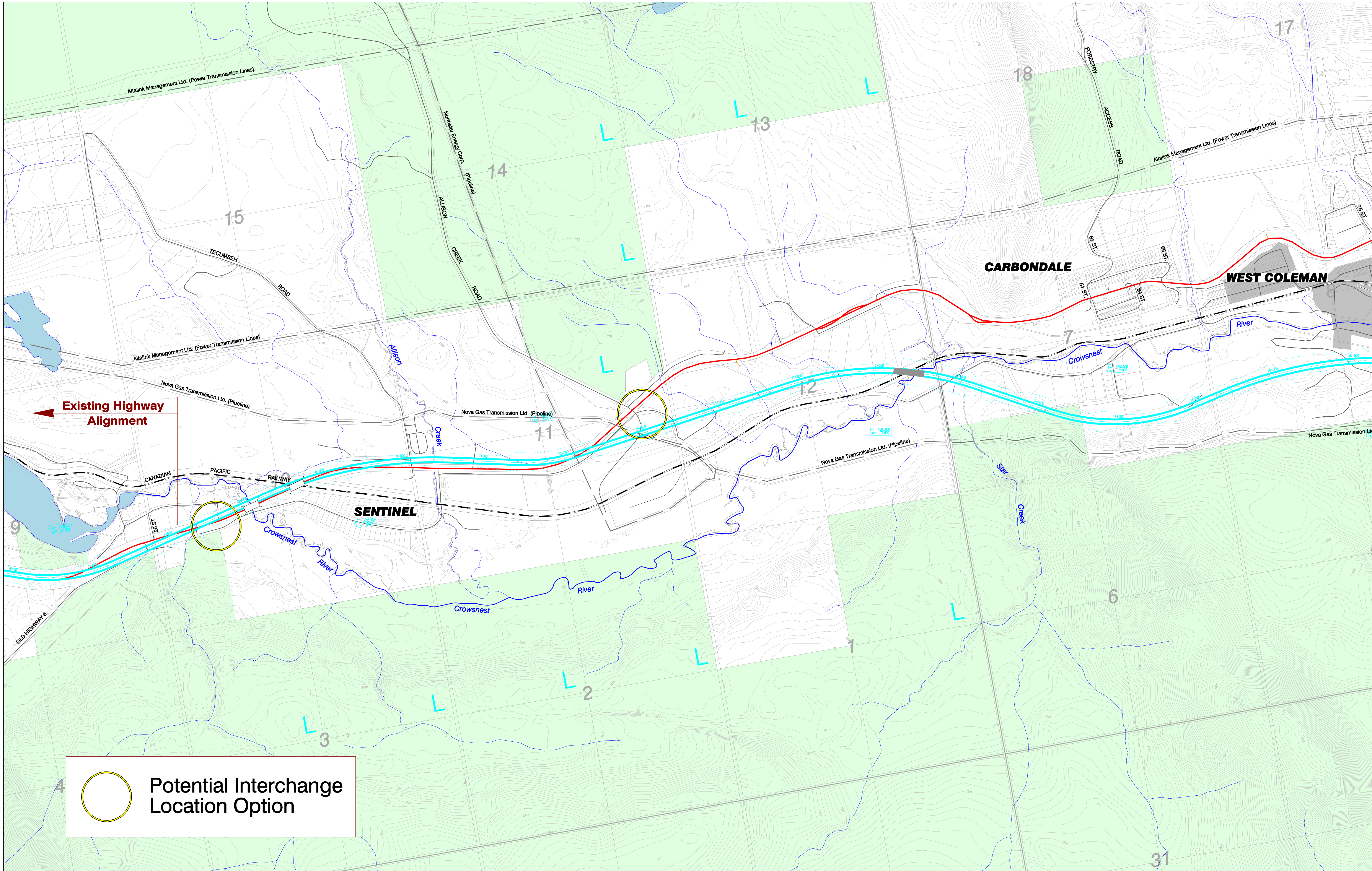
- Two proposed interchanges, neither of which provides direct access to Coleman.
- No interchange proposed with Highway 40.
- The locations of the interchanges make developing and servicing them expensive and in some cases impossible. The potential to relocate economic activity is minimal.
- The proposed interchange at Allison Creek Road is located near the Level 3 Sour Gas Line. This line requires a 500 m setback which would effectively eliminate any potential commercial node developing at this location.
- Very little existing development is required to be removed or relocated which is good for the community.
- The use of the current alignment west of Carbondale would decrease the amount of new land affected and would lessen the Municipality's responsibility of future road maintenance.
- Wildlife in the western portion of the route would only have one highway barrier to cross rather than two.
- The route travels through the Blairmore Wetlands which are perceived to be of great value to the community.
- Key parcels of land owned by national conservation organizations are affected by the southern portion of the route.

EVALUATION

Criteria	Score
Local Transportation and Community Access	3
Municipal Growth Areas and Servicing	3
Community Land Use Goals Related to the Natural Environment	1
Impacts on Existing Land Use and Development	3
Compatibility with Statutory Planning Documents	3
TOTAL SCORE:	13



Sentinel Industrial Area (2004)


Potential Interchange Location Option
Existing Highway Alignment
SENTINEL
CARBONDALE
WEST COLEMAN
Altalink Management Ltd. (Power Transmission Lines)
Nova Gas Transmission Ltd. (Pipeline)
Northstar Energy Corp. (Pipeline)
CANADIAN PACIFIC RAILWAY
TECUMSEH ROAD
ALLISON CREEK ROAD
FORESTRY ACCESS ROAD
OLD HIGHWAY 3
Allison Creek
Crowsnest River
Star Creek
62 ST.
61 ST.
64 ST.
66 ST.
78 ST.
82 ST.
17
18
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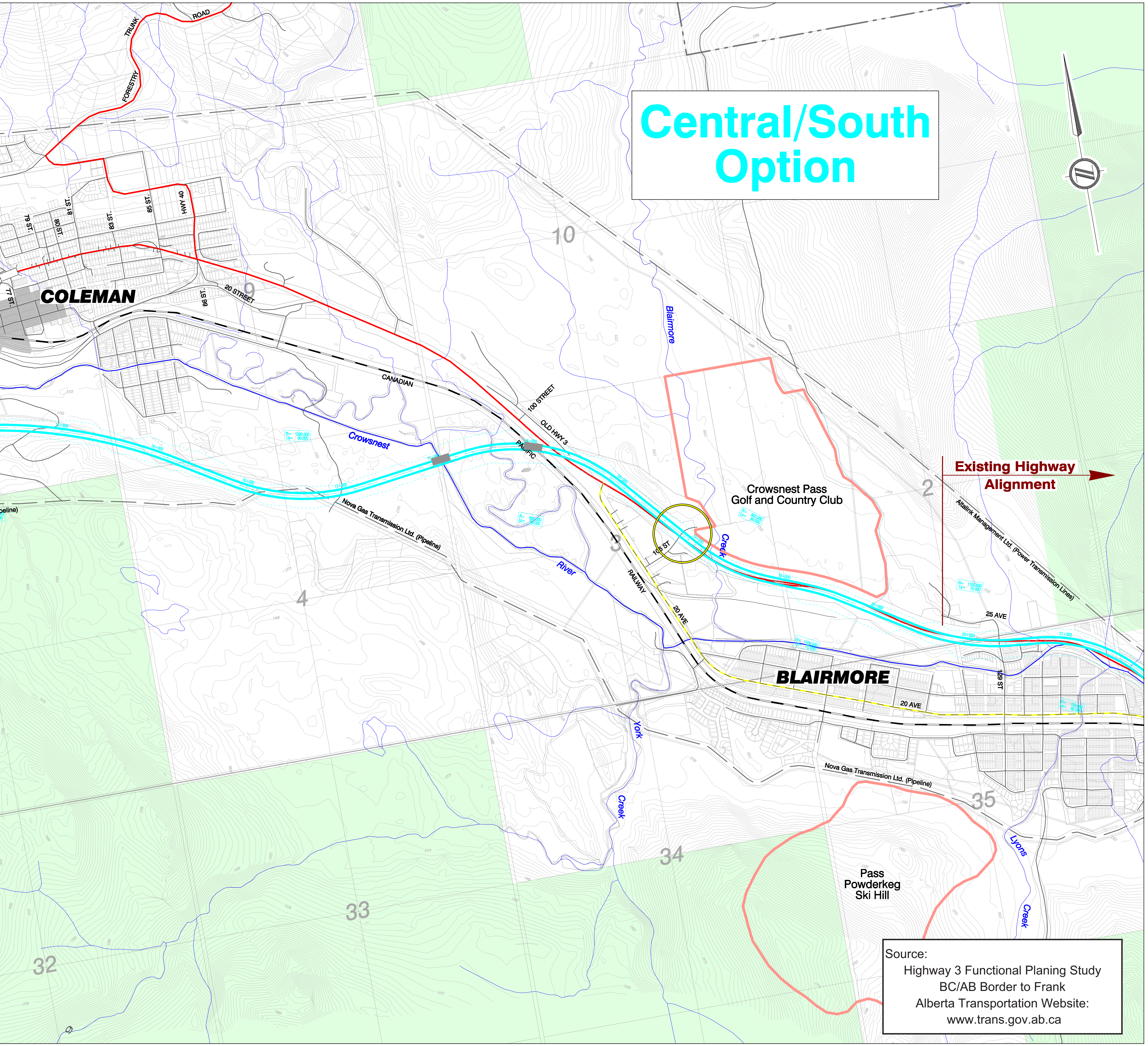


Central/South Option
COLEMAN
BLAIRMORE
Crowsnest Pass Golf and Country Club
Existing Highway Alignment
Pass Powderkeg Ski Hill
Crowsnest
River
Blairmore
Creek
York
Creek
Lyons
Creek
CANADIAN
PACIFIC
RAILWAY
100 STREET
OLD HWY 3
20 AVE
25 AVE
20 STREET
FORESTRY
TRUNK
ROAD
Nova Gas Transmission Ltd. (Pipeline)
AltaLink Management Ltd. (Power Transmission Lines)
10
9
4
3
2
35
34
33
32

Source:
Highway 3 Functional Planing Study
BC/AB Border to Frank
Alberta Transportation Website:
www.trans.gov.ab.ca

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

South / South-East Option

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Two proposed interchanges: west of Sentinel or NE¼ 1-8-5-5, and approximately at 119 Street
- Poor access to Coleman if travellers miss interchange at either end

Interaction with other Highways

- No direct access from Highway 40 to Highway 3
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Improves local network by utilizing old highway alignment at local commuter road between communities
- No improvement to disjointed local grid network

Community safety issues

- Perceived community concerns with icing of highway on southern route
- Removal of hazardous material from centre of communities.
- Safer for local community pedestrians and cyclists by removing through traffic

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas
- May be able to utilize infrastructure capacities in Blairmore
- Removes potential of a critical multi-use parcel of land which is prime for highway commercial and residential uses located adjacent to Blairmore

Ability to service

- Difficult to service as located outside built-up areas
- Little available land adjacent to the two proposed western interchanges to promote commercial nodes
- Potential exists to develop commercial in Blairmore
- Development adjacent to the bypass in South Coleman would require services to cross the river, the CPR, and possibility the NOVA pipeline

Capacity

- No capacity available currently in Sentinel for new development (UMA)
- Water capacity exists in Blairmore but not Coleman
- Both Blairmore and Coleman would need to upgrade sewer systems to handle additional development.

Cost of providing infrastructure to alternative areas

- Higher costs involved due to location of interchanges
- River crossing, CPR
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Direct business property impacts in Blairmore
- Route right-of-way crosses NOVA pipeline three times

Lost Lemon Campground (2004)

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Crowsnest River has one additional crossing
- Crosses Star Creek and several smaller creeks

Wetlands and floodplains

- Does not cross the Blairmore wetlands
- Route is outside of identified flood areas

Groundwater and drinking water supply

- Would eliminate community perceived effects to Crowsnest River recharge areas and function of wetlands
- Does effect emergency well near Sentinel (SW¼ 10-8-5-W5)

Impacts to wildlife

- Mostly passes through undisturbed land
- Is in close proximity to the Crowsnest River ESA. (Appendix A: Exhibit 4)
- Route travels through areas identified as critical wildlife areas for elk, moose, deer and cougars (Appendix A: Exhibit 5)
- Blairmore wetlands have been identified as critical wildlife areas for moose (Appendix A: Exhibit 5)
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk (Appendix A: Exhibit 5)

Historic resources

- Mapping indicates route passes through areas rated HRV1, HRV2, HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)
- Planned interchange in Blairmore is located in area identified as of high historic value (HRV1 & HRV2)

Air quality, noise and visual and aesthetic resources

- Reduced noise within centre of Coleman
- Route intrudes into developed areas of Blairmore
- Route is in very close proximity to the hospital
- Visually unappealing from north side of the valley from Blairmore to west of Willow Drive

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- No direct impact
- Indirect impact to the hospital

Non-urban area

- Affects several undeveloped parcels
- Crosses public land in the forest reserve
- Interchange affects Golf Course

Commercial

- Misses most commercial development
- Route impacts Lost Lemon Campground west of Blairmore
- Provides little or no opportunity to expand existing commercial areas in Coleman—some land available in Blairmore
- Access interchanges are located at points where commercial nodes would be difficult to develop but possible

Industrial

- Route does not directly effect any current industrial development
- Sentinel industrial park has interchange planned in relatively close proximity

Residential

- Direct impact to existing residential development – country residential development in Blairmore (York Creek Estates and Big Stone Acres)
- South Coleman and Willow Drive residents are within close proximity to the proposed route and right-of-way.

Natural and conservation areas

- Does not cross Blairmore Wetlands
- Proposed route and interchange on land owned by Nature Conservancy (NW¼ 1-8-5-W5)
- Proposed route crosses land owned by Rocky Mountain Elk Foundation (portion of SE¼ 10-8-5-W5)

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

- Compatible with Municipal Development Plan and Land Use Bylaw policies on future growth
- Route option violates a statutory plan. The Riverside Estates Area Structure Plan outlines a framework for the future subdivision and development of land located at the site of the old Blairmore slag piles. The vision for the property was supported by Council and the Area Structure Plan was adopted in 1998

PHASING OR TIMING OF HIGHWAY CONSTRUCTION

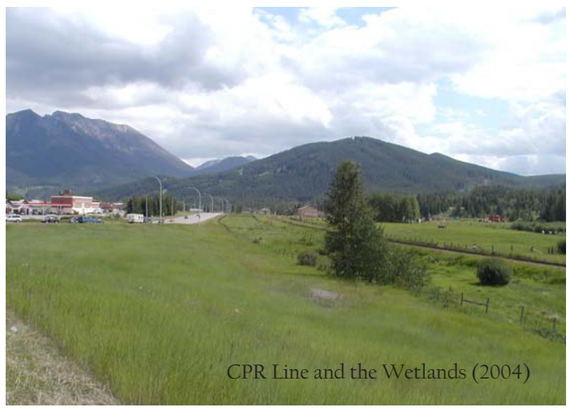
- The route presents timing challenges. The area identified in the Riverside Estates ASP is currently for sale and this would have a real effect on municipal land use decisions if the land was used for highway purposes
- A concrete time frame would enable the municipality to market itself more effectively because the uncertainty of the suitability of developable locations within the Pass hinge on defining the potential around Coleman

OBSERVATIONS

- Two proposed interchanges, neither of which provide direct access to Coleman and in this case one proposed interchange is considered on conservation land.
- Again, the locations of the proposed interchanges make developing and servicing them expensive and in some cases impossible. The potential to relocate economic activity is minimal.
- Little existing development is required to be removed or relocated which is good for the community.
- The creation of an alignment to south of the current Highway 3 would increase the amount of new land affected and increase the Municipality's responsibility and cost of future road maintenance along the entire length of the current Highway 3.
- Wildlife in the western portion of the route would have two major barriers to cross rather than one.
- The route has been altered to avoid the Blairmore Wetlands but as a result affects existing development and potential development areas in Blairmore that have economic and social costs associated with them.
- Key parcels of land owned by national conservation organizations are affected by the western portion of the proposed route.

EVALUATION

Criteria	Score
Local Transportation and Community Access	3
Municipal Growth Areas and Servicing	2
Community Land Use Goals Related to the Natural Environment	3
Impacts on Existing Land Use and Development	2
Compatibility with Statutory Planning Documents	2
TOTAL SCORE:	12



CPR Line and the Wetlands (2004)

Existing Highway Alignment

Potential Interchange Location Option

CARBONDALE

WEST COLEMAN

SENTINEL

Altalink Management Ltd. (Power Transmission Lines)

Nova Gas Transmission Ltd. (Pipeline)

Northern Energy Corp. (Pipeline)

TECUMSEH ROAD

ALLISON CREEK ROAD

FORESTRY ACCESS ROAD

62 ST.

56 ST.

51 ST.

84 ST.

78 ST.

CANADIAN PACIFIC RAILWAY

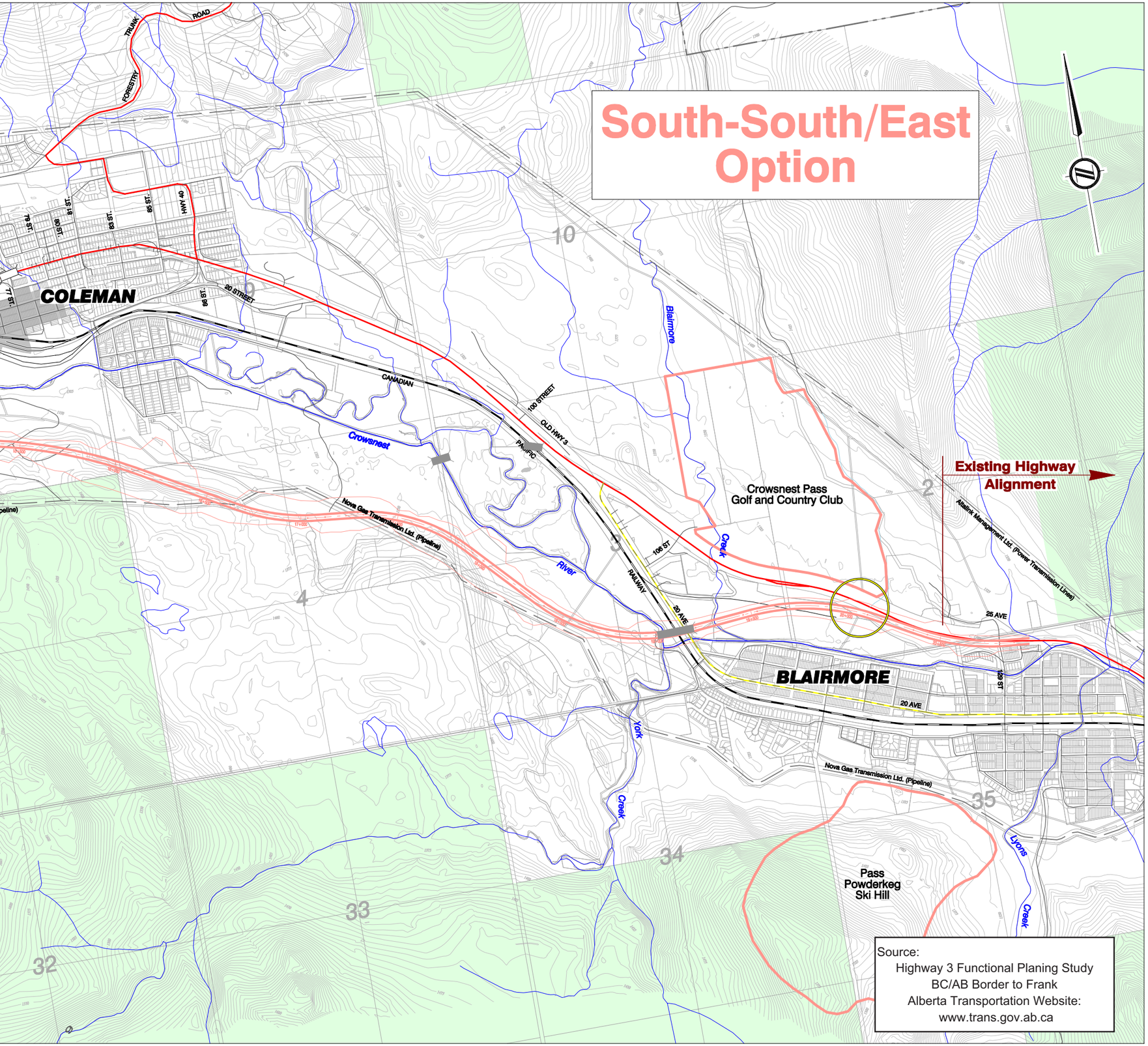
OLD HIGHWAY 3

Crowsnest River

Allison Creek

Star Creek

South-South/East Option



Source:
Highway 3 Functional Planing Study
BC/AB Border to Frank
Alberta Transportation Website:
www.trans.gov.ab.ca

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

Central/South to South/East Option

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Two proposed interchanges: west of Sentinel or Allison Creek Road, and at 119 Street in Blairmore
- Poor access to Coleman if travellers miss interchange at either end

Interaction with other Highways

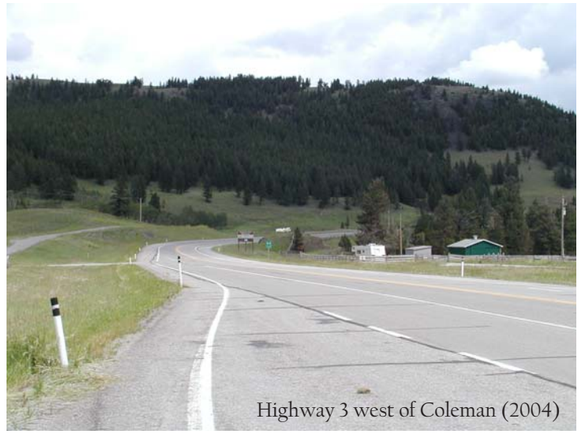
- No direct access from Highway 40 to Highway 3
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Utilizes more of the old highway alignment as a commuter road between communities than other options
- No improvement to disjointed local grid network

Community safety issues

- Perceived community concerns with icing of highway on southern route
- Removal of hazardous material from centre of communities
- Safer for local community pedestrians and cyclists by removing through traffic



Highway 3 west of Coleman (2004)

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas
- Does not utilize existing infrastructure capacities

Ability to service

- Difficult to service as located outside built-up areas
- Little available land adjacent to the proposed interchanges to promote commercial nodes
- Development adjacent to the bypass in South Coleman would require services to cross the river and CPR line

Capacity

- No capacity available currently in Sentinel for new development (UMA)
- Water capacity exists in Blairmore but not Coleman
- Both Blairmore and Coleman would need to upgrade sewer systems to handle additional development

Cost of providing infrastructure to alternative areas

- Higher costs involved due to location of interchanges
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Direct business property impacts in Blairmore
- Route right-of-way crosses the NOVA pipeline three times

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Crowsnest River has two additional crossing
- Crosses York Creek and Star Creek
- Increases the number of watersheds currently exposed to highway development.

Wetlands and floodplains

- Does not cross the Blairmore wetlands
- Out of flood areas

Groundwater and drinking water supply

- Community perceived effects to Crowsnest River recharge areas
- Community perceived effects to function of wetlands

Impacts to wildlife

- Mostly passes through undisturbed land
- Effects several wildlife movement corridors – safety issues (Appendix A: Exhibit 5)
- Route is outside the Blairmore wetlands which have been identified as a critical wildlife area for moose (Appendix A: Exhibit 5)
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk. (Appendix A: Exhibit 5)

Historic resources

- Mapping indicates route passes through areas rated HRV1, HRV2, HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)
- Planned interchange in Blairmore is located in an area identified as of high historic value (HRV1 & HRV2)

Air quality, noise and visual and aesthetic resources

- Improved air quality by removing heavy truck traffic from centre of Coleman
- Reduced noise within centre of Coleman
- Increased noise to property owners in east Coleman and non-urban area
- Increased noise levels for residents of west Blairmore

Blairmore Wetlands (2004)

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- No direct impact
- Indirect impact to the hospital

Non-urban area

- Affects several undeveloped parcels
- Crosses less land in the forest reserve
- Proposed east interchange affects Golf Course
- Proposed centre interchange in close proximity to Level 3 Sour Gas line (E1/2 11-8-5-W5)

Commercial

- Route impacts Lost Lemon Campground west of Blairmore.
- Provides little or no opportunity to expand existing commercial areas to benefit from the route location
- Access interchanges are located at points where commercial nodes would be very difficult to develop
- Potential to increase economic activity is minimal

Industrial

- Route does not directly affect any current industrial development
- By creating a bypass, heavy truck traffic will benefit by missing congestion in Coleman
- Sentinel industrial park has interchange planned in relatively close proximity

Residential

- Direct impacts to existing residential properties located in 12-8-5-W5, Willow Drive, and the York Creek and Big Stone Subdivision.
- South Coleman and Willow Drive residents are close to the proposed route and right-of-way as well as property owners in York Creek Estates and NE¼ 4-8-4-W5.

Natural and conservation areas

- Does not cross Blairmore Wetlands
- Crosses through less forest reserve than other route options
- Proposed route crosses land owned by Nature Conservancy (NW¼ 11-8-5-W5)

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

- Compatible with Municipal Development Plan and Land Use Bylaw policies on future growth
- Route option violates a statutory plan. The Riverside Estates Area Structure Plan outlines a framework for the future subdivision and development of land located at the site of the old Blairmore slag piles. The vision for the property was supported by Council and the Area Structure Plan was adopted in 1998

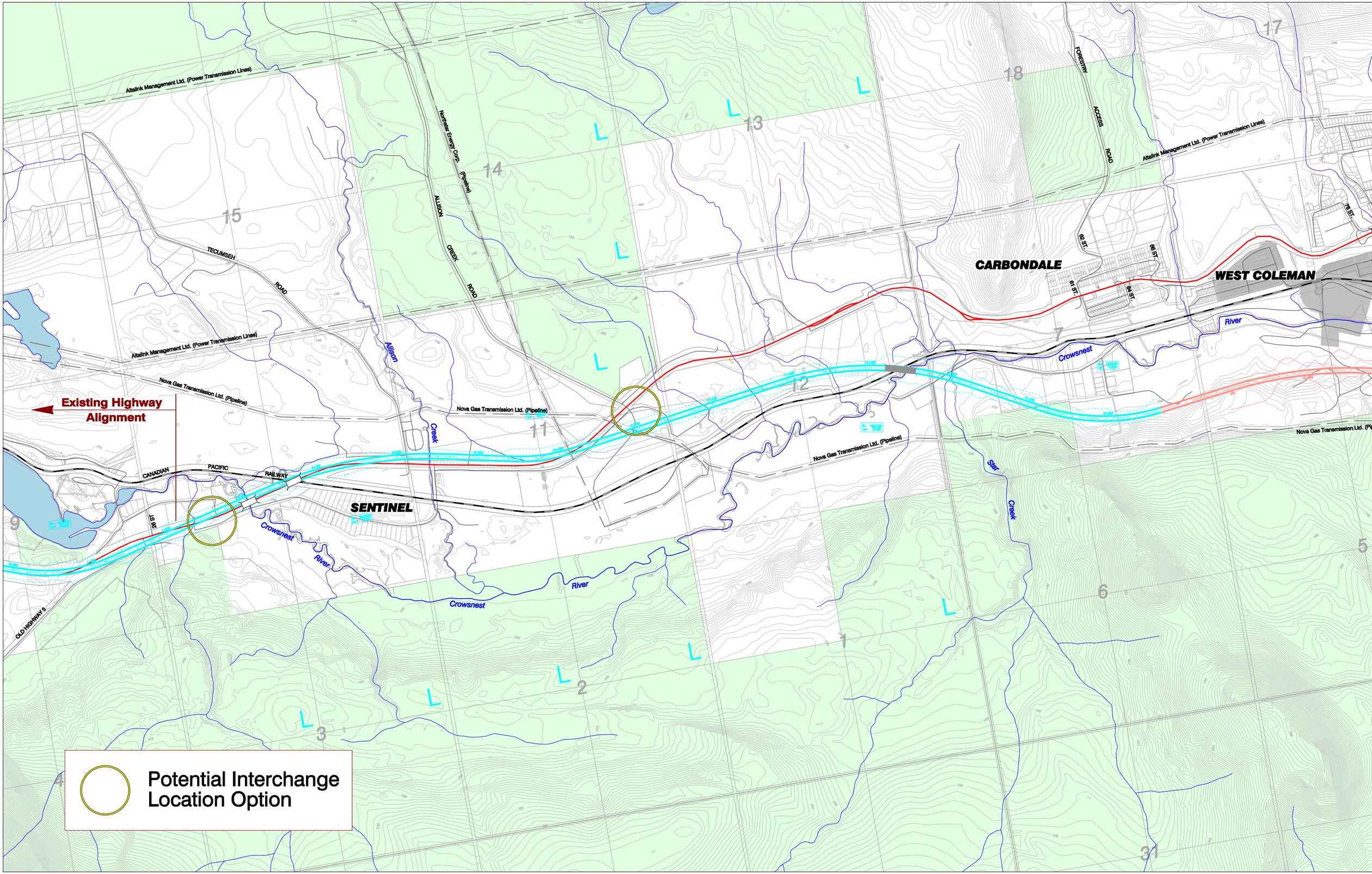
OBSERVATIONS

- Two proposed interchanges, neither of which provides direct access to Coleman.
- Again, the locations of the interchanges make developing and servicing them expensive and in some cases impossible. The potential to relocate economic activity is minimal.
- The proposed interchange at Allison Creek Road is located near the Level 3 Sour Gas Line. This line requires a 500 m setback which would effectively eliminate any potential commercial node developing at this location.
- The use of the current alignment west of Carbondale would decrease the amount of new land affected and would lessen the Municipality's responsibility of future road maintenance.
- The route has been altered to avoid the Blairmore Wetlands but as a result affects existing development and potential development areas in Blairmore that have economic and social costs associated with them.
- The combination presented in this avoids much of the land owned by national conservation organizations.

EVALUATION

Criteria	Score
Local Transportation and Community Access	3
Municipal Growth Areas and Servicing	2
Community Land Use Goals Related to the Natural Environment	3
Impacts on Existing Land Use and Development	2
Compatibility with Statutory Planning Documents	2
TOTAL SCORE:	12

IGA Parking Lot in Blairmore (2004)


Existing Highway Alignment
Potential Interchange Location Option
Altalink Management Ltd. (Power Transmission Lines)
Nova Gas Transmission Ltd. (Pipeline)
Northern Energy Corp. (Pipeline)
TECUMSEH ROAD
ALLISON CREEK ROAD
FORESTRY ACCESS ROAD
CANADIAN PACIFIC RAILWAY
OLD HIGHWAY 3
SENTINEL
CARBONDALE
WEST COLEMAN
62 ST.
63 ST.
64 ST.
76 ST.
Allison Creek
Crowsnest River
Star Creek
15
14
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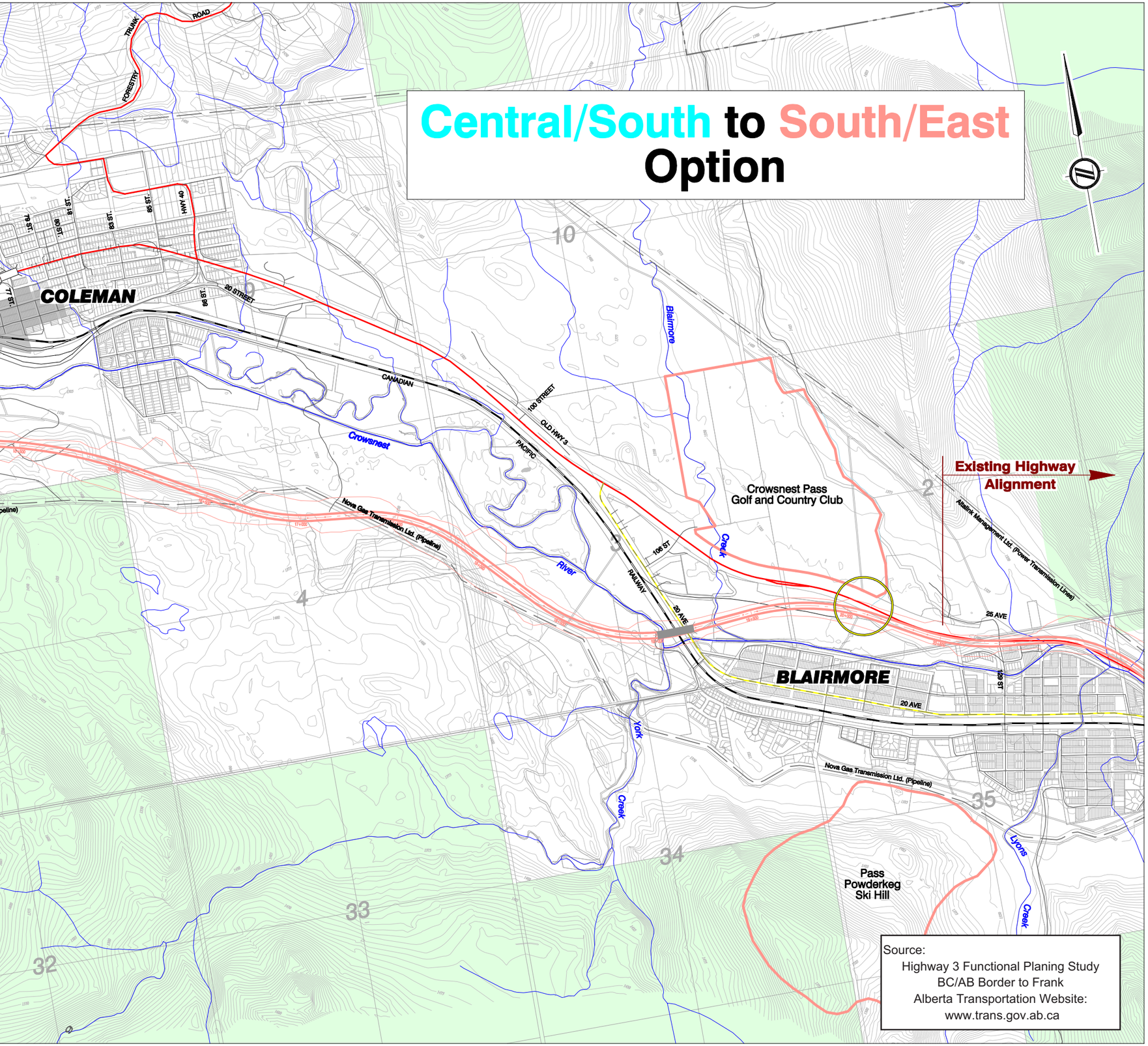
31

Central/South to South/East Option



PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

Central CPR Option

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Two proposed interchanges: Allison Creek Road and 119 Street or 107 Street in Blairmore
- Access to Coleman from alignment appears easy, but ease of access east to Blairmore from Coleman is uncertain

Interaction with other Highways

- No direct access from Highway 40 to new alignment
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Utilizes less of the old highway alignment as a commuter road between communities than other options
- Improvement to disjointed local grid network and connects South Coleman, Willow Drive and Carbondale to a greater degree

Community safety issues

- Hazardous material remains in the centre of communities
- Groups hazardous transportation into a 'corridor'
- Marginal improvement for local community pedestrians and cyclists by removing through traffic from Carbondale and Coleman

CPR Line near Crowsnest Lake (2004)

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas
- By following current alignment, potential exists to utilize existing infrastructure capacities

Ability to service

- Some available land adjacent to the proposed interchanges exist in Blairmore to promote commercial nodes

Capacity

- No capacity available currently in Sentinel for new development (UMA)
- Water capacity exists in Blairmore but not Coleman
- Both Blairmore and Coleman would need to upgrade sewer systems to handle additional development

Cost of providing infrastructure to alternative areas

- Ability to utilize infrastructure already in place in Blairmore and Coleman.
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Direct property impacts in Coleman, South Coleman, Willow Drive and country residential properties to the west
- Alignment would require removal of structure in the Coleman National Historic Site
- Requires the relocation of a portion of the CPR line

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- Highway alignment does not require additional Crowsnest River crossings — proposed local access roads require two
- No increases the number of watersheds currently exposed to highway development

Wetlands and floodplains

- Does not cross the Blairmore wetlands

Groundwater and drinking water supply

- Current domestic water wells and supply system are not affected by route

Impacts to wildlife

- No new habitat area is affected
- Crowsnest river and fish resources will not be disturbed with additional highway bridge crossings
- Route is outside the Blairmore wetlands which have been identified as a critical wildlife area for moose (Appendix A: Exhibit 5)
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk (Appendix A: Exhibit 5)

Historic resources

- Route directly impacts a significant portion of the Coleman National Historic Site
- Removal of houses and businesses of historic or community significance may impact community identity
- Mapping indicates route passes through areas rated HRV1, HRV2, HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)
- Planned interchanges in Blairmore possibly located in areas identified as of high historic value (HRV1 & HRV2)

Air quality, noise and visual and aesthetic resources

- Leaves traffic and truck noise levels in Coleman
- Air quality will be affected by truck traffic– possibility of increases due to the increased capacity of the highway
- Topography of following CPR line may improve the situation by locating Highway out of immediate sight lines

PART 4

ALIGNMENT ANALYSIS: ROUTE OPTIONS

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- No direct impact to existing uses

Non-urban area

- Affects several undeveloped parcels
- Proposed east interchange affects Golf Course.
- Possible interchange at Allison Creek is in close proximity to Level 3 Sour Gas line (E1/2 11-8-5-W5)

Commercial

- Route has little direct impact on existing commercial uses in Coleman and limited impact in Blairmore
- Provides some opportunity to expand existing commercial areas to benefit from the route location
- East access interchanges are located at points where commercial nodes may be able to be developed
- Potential exists to increase economic activity

Industrial

- Route does not directly affect any current industrial development
- By creating a bypass, heavy truck traffic will benefit by missing congestion in Coleman
- Access to the Sentinel industrial park remains unchanged if Allison Creek interchange is developed

Residential

- Direct impacts to existing residential properties located in South Coleman (up to 60 homes)
- South Coleman and Willow Drive residents are close to the proposed route and right-of-way

Natural and conservation areas

- Does not cross Blairmore Wetlands
- Does not cross through forest reserve lands
- Proposed route does not cross land owned by either the Nature Conservancy of Canada or the Rocky Mountain Elk Foundation.

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

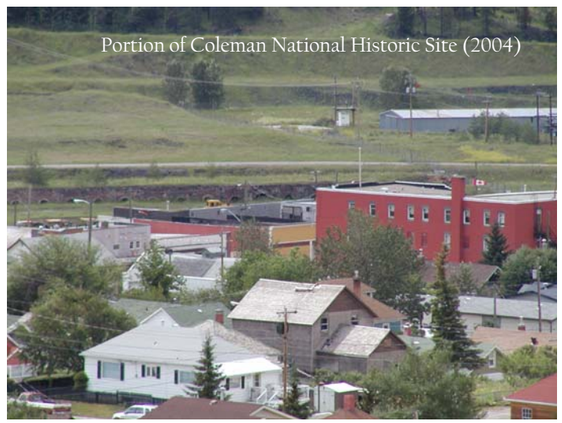
- Statutory planning documents never contemplated the removal of existing residential housing and as such are not the subject of policies
- Reasonably compatible with land use policies directing growth found in the Municipal Development Plan and Land Use Bylaw.
- Land use decisions have been made with the current highway alignment in position.
- Not compatible with Municipal Development Plan policies regarding Environmental, Historical, and Cultural Issues

OBSERVATIONS

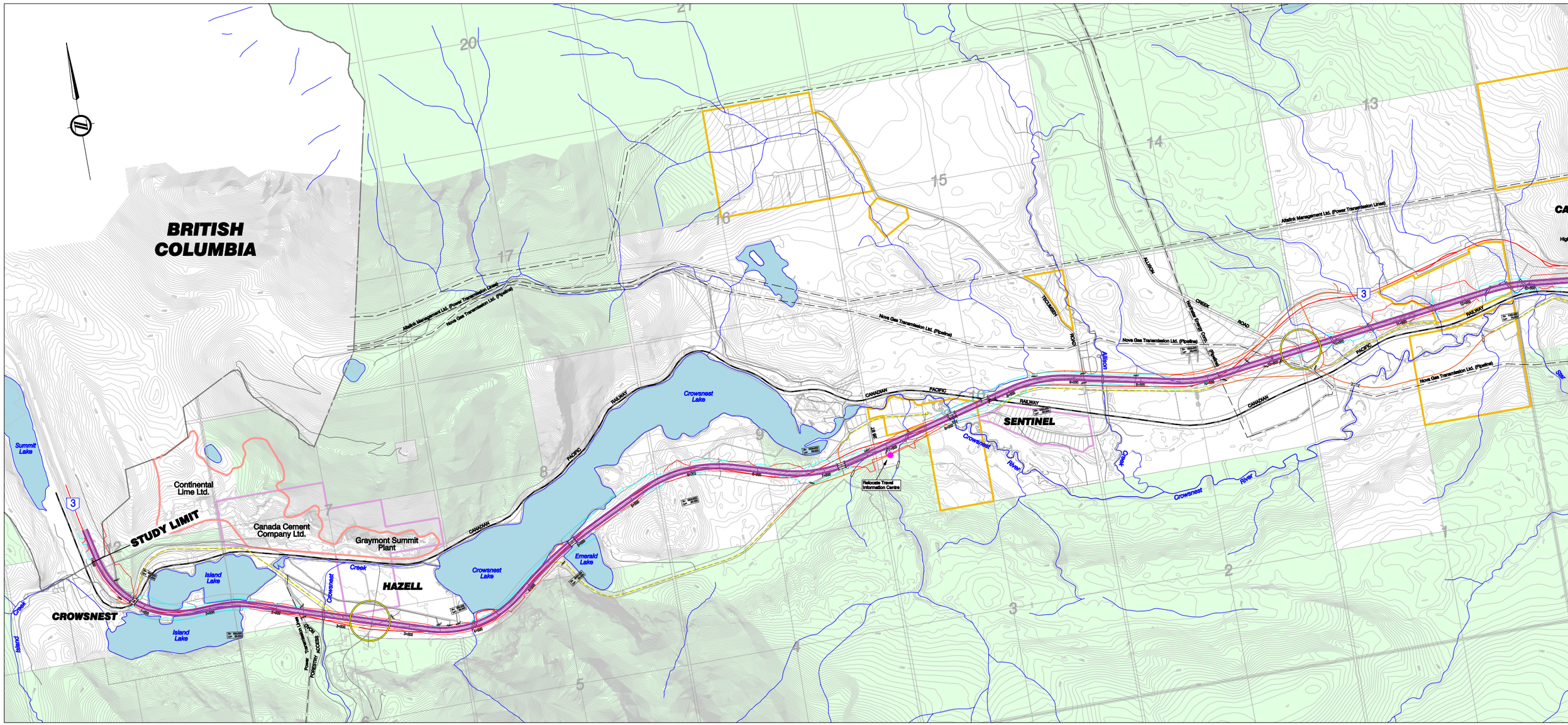
- Route divides the community of Coleman from Bush Town.
- The Blairmore Wetlands are avoided.
- Local road access in West Coleman would require upgrades.
- Potential risk in mixing local and through traffic is reduced.
- Area adjacent to West Coleman could be serviced if access issues were resolved.
- The location of proposed interchanges away from existing service lines would be costly for the municipality to service.
- The proposed interchange option at Allison Creek Road is located near the Level 3 Sour Gas Line. This line requires a 500 m setback which would effectively eliminate any potential commercial node developing at this location.
- The removal of a large portion of the existing development along the route is a significant impact that would be difficult to overcome.
- The alignment requires that a portion the Coleman National Historic Site be utilized.
- By following a similar route to the existing Highway 3 alignment, wildlife will only be required to cross one barrier.

EVALUATION

Criteria	Score
Local Transportation and Community Access	4
Municipal Growth Areas and Servicing	3
Community Land Use Goals Related to the Natural Environment	4
Impacts on Existing Land Use and Development	2
Compatibility with Statutory Planning Documents	3
TOTAL SCORE:	16



Portion of Coleman National Historic Site (2004)


BRITISH COLUMBIA
STUDY LIMIT
CROWSNEST
HAZELL
SENTINEL
Crowsnest Lake
Summit Lake
Island Lake
Emerald Lake
Continental Lime Ltd.
Canada Cement Company Ltd.
Graymont Summit Plant
Fernie Travel Information Centre
Atlalink Management Ltd. (Power Transmission Lines)
Nova Gas Transmission Ltd. (Pipeline)
CANADIAN PACIFIC RAILWAY
ALLISON CREEK ROAD
Allison Creek
Crowsnest River
Island Creek
Power Transmission Line ACCESS ROAD
Forestry ACCESS
3
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21
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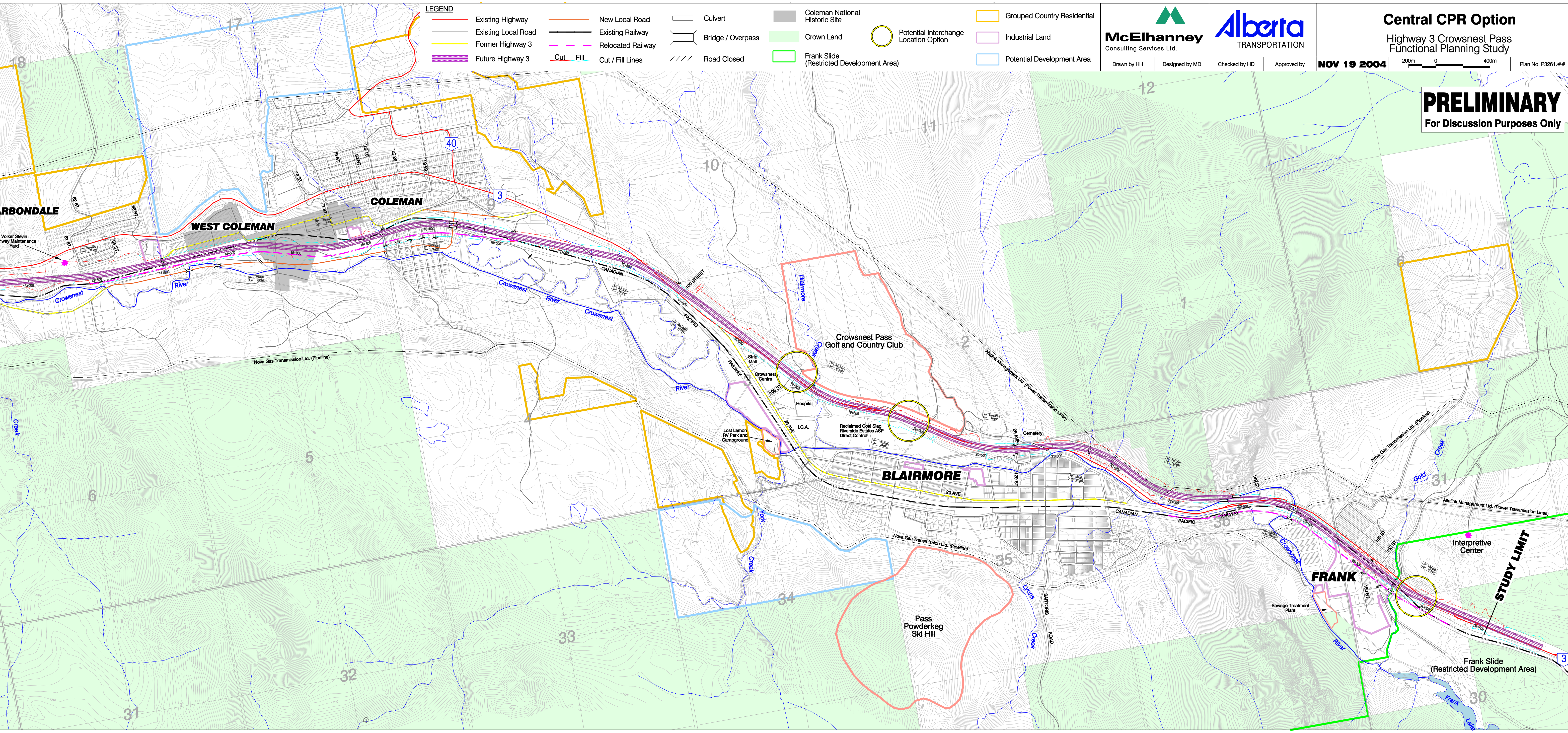
LEGEND
Existing Highway
Existing Local Road
Former Highway 3
Future Highway 3
New Local Road
Existing Railway
Relocated Railway
Cut Fill
Cut / Fill Lines
Culvert
Bridge / Overpass
Road Closed
Coleman National Historic Site
Crown Land
Frank Slide (Restricted Development Area)
Potential Interchange Location Option
Grouped Country Residential
Industrial Land
Potential Development Area
McElhanney
Consulting Services Ltd.
Alberta
TRANSPORTATION
Central CPR Option
Highway 3 Crowsnest Pass
Functional Planning Study
Drawn by HH
Designed by MD
Checked by HD
Approved by
NOV 19 2004
200m 0 400m
Plan No. P3261.##
PRELIMINARY
For Discussion Purposes Only
CARBONDALE
WEST COLEMAN
COLEMAN
BLAIRMORE
FRANK
Crowsnest Pass
Golf and Country Club
Pass
Powderkeg
Ski Hill
Frank Slide
(Restricted Development Area)
Interpretive
Center
STUDY LIMIT
Crowsnest
River
York
Creek
Lyons
Creek
Gold
Creek
Blairmore
Creek
Nova Gas Transmission Ltd. (Pipeline)
Altalink Management Ltd. (Power Transmission Lines)
CANADIAN
PACIFIC
RAILWAY
Hospital
I.G.A.
Strip Mall
Crowsnest Centre
Cemetery
Lost Lemon RV Park and Campground
Reclaimed Coal Slag Riverside Estates ASP Direct Control
Sewage Treatment Plant
Volker Stevin Highway Maintenance Yard
100 STREET
20 AVE
SARTORIS ROAD
3
40
17
18
12
11
10
9
6
5
4
2
1
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PART 4

ALIGNMENT ANALYSIS: SUMMARY

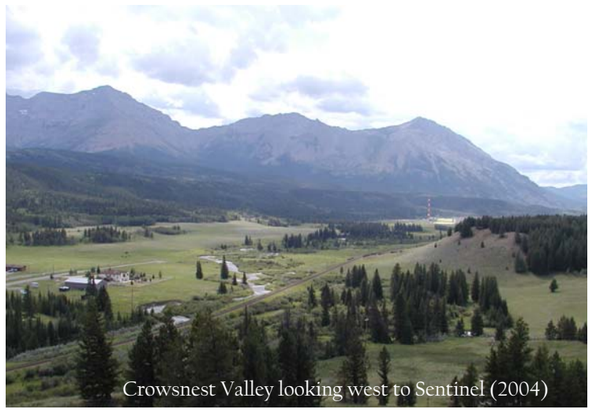
Summary of Options

The Central/South Option

The Central/South Option combines portions of the Central Base Alternative in the western portion of the route and swings to follow the South Base Alternative for the eastern portion of the alignment.

The limited access and available land base makes it very difficult to find commercial space to replace that which would be consumed by the highway and its right-of-way. Commercial relocation can be successful but the need exists to offset or balance the shift in commercial activity to ensure that the net economic gain remains constant.

The natural environment and wildlife gain with this proposed route due to the fact that historic migration patterns have not been altered and disturbances to the Crowsnest River and its tributaries are minimized to areas that have been previously disturbed.



Crowsnest Valley looking west to Sentinel (2004)

South/South-East Option

The South/South-East Option is an attempt to follow the South Base Alternative while attempting to avoid crossing the Blairmore wetlands. While it succeeds in routing the highway away from the wetland area, the new alignment not only impacts Coleman, it now significantly impacts Blairmore.

The South/South-East Option represents a trade-off between the wetlands and prime land within the community. The route would travel west across the reclaimed Blairmore slag pile property instead of through the wetlands, which has been identified for future commercial and residential development. The prime 50-acre parcel has been zoned direct control and the council for the community has given approval to a concept that includes specific uses and densities. The potential uses envisioned for that location cannot migrate to a similar location within the Pass as one does not exist.

Advantages of the route include removing unwanted truck traffic while achieving the speed and safety required by the national highway standards. Disadvantages of going south include severely impacting commercial uses that rely on highway traffic, limiting the ability of the community to open land for future development, no direct access provided into Coleman, intrusion into land owned by conservation organizations, and the disruption of additional wildlife habitat.

Central-South/South-East Option

The Central-South/South-East Option is an attempt to avoid negatively impacting factors along the valley floor. The eastern portion, to a point west of Carbondale, follows the existing highway alignment and poses less of an impact as the area is already developed and disturbed.

The South/South-East portion of the proposed route has all the same negative and positive impacts that were identified earlier: avoids the wetlands, affects two communities directly, directly affects residential subdivisions and limited potential for commercial expansion along the route.

In addition, this route directly violates the Riverside Estates Area Structure Plan which has consequences for long-term growth for the entire municipality.

Blairmore Wetlands (2004)

Central CPR Option

The Central CPR Option is a derivative of the Central Base Alternative and attempts to provide an alternative route to the proposed South Based Options.

The eastern portion of the proposed alignment follows the existing highway, adjacent to the reclaimed Blairmore slag piles and the wetlands where it shifts south to follow the CPR line through Coleman. This alignment poses less of an impact to the natural area as is it already developed and disturbed.

As the alignment shifts south, existing development in south Coleman (Bush Town) is impacted and current housing and development and the existing CPR line would be required to be removed or relocated. Further west, the alignment travels through a portion of the Coleman National Historic Site, following a path between West Coleman and Carbondale to the north and Willow Drive to the south. At a point west of Carbondale, the alignment continues adjacent to the CPR line until Allison Creek Road were it rejoins the existing alignment of Highway 3.

Again, the CPR Option represents a trade-off: existing residential and historic development versus prime land and the environment. This alignment is the only one that does not eliminate future opportunities but provides alternatives to shift opportunities within the community.

PART 4

ALIGNMENT ANALYSIS: ADDENDUM

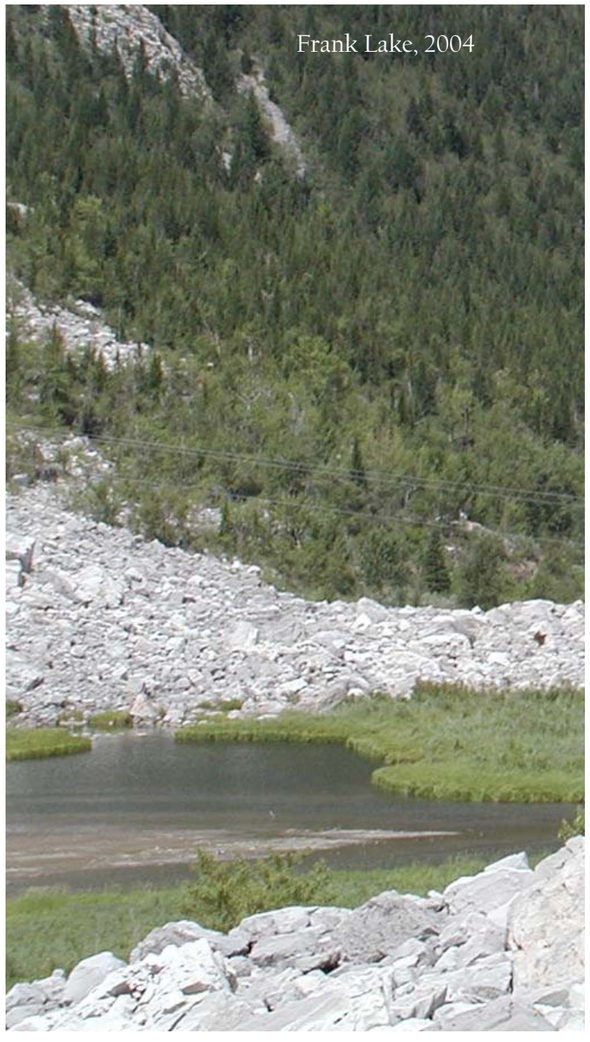
Addendum to Route Evaluation

The consultants, McElhanney Consulting Services Ltd, for Highway 3 Functional Planning Study for the Municipality Crowsnest Pass have developed two new route options as a result of public input from the Open House held in March 2005. The following is an evaluation of the newly proposed route options, the South / Southwest and the Central-South / Southwest, using the same assessment and scoring scheme as was applied to early routes in the socio-community planning study completed by the Oldman River Regional Services Commission.

It should be noted that both the South / Southwest and the Central-South / Southwest options have benefited from earlier comments and have evolved to a higher degree of detail than that the previous alignment options. Therefore, any comparison of the final evaluation scores will need to be cognisant of the changes, in particular the number and location of proposed interchanges and the higher level of detail to service roads in the newly proposed alignments.

Evaluation Summary

The completed evaluation revealed that both the routes scored at the top of all route alignment options considered for evaluation. A summary of each route is found below and a more detailed accounting follows.



Frank Lake, 2004

South / Southwest Option

The South / Southwest alignment option scored a 15 out of 25 possible points from a community perspective. The route was strong in terms of location transportation and access options as it provides a secondary local route the parallels much of the proposed upgrade. The route evaluation reflected the fact that the western portion of the route crosses wildlife habitat, undisturbed and undeveloped land, limited access to Sentinel and the proposed Blairmore/ Coleman interchange. The route option has benefits that include utilizing less potentially developable land, convenient access to Sentinel, avoids current commercial and residential development and places an interchange, although not directly into Coleman, in a location that has the potential to benefit both Coleman and Blairmore.

Central-South / Southwest Option

The Central - South / Southwest alignment option scored a 17 out of 25 possible points from a community perspective. The route was strong in terms of municipal growth areas and community land use goals related to the physical environment. The route avoids potential development areas and does not interfere with current development that would be required to be relocated and redeveloped at other locations. The route evaluation score also reflects the fact that the western portion of the route does not cross wildlife habitat, undisturbed and undeveloped land, and limited access to Sentinel. This route option has benefits that include utilizing less potentially developable land, avoids current commercial and residential development and places an interchange, although not directly into Coleman, in a location that has the potential to beneficial to both communities and limits the footprint of transportation routes through the municipality.

PART 4

ALIGNMENT ANALYSIS: ADDENDUM

South / Southwest Option

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Proposed interchanges at Hazell, west of Sentinel, 107 Street in Blairmore, Bellevue, and Highway 507
- Access east of Sentinel Industrial area
- Access is shared between Coleman and Blairmore
- Access is shared between Frank, Bellevue and Hillcrest

Interaction with other Highways

- No direct access from Highway 40 to new alignment
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Utilizes less of the old highway alignment as a commuter road between Sentinel and Coleman.
- Local travellers benefit from an additional service connector road for the entire community.
- Improvement to local grid network and connects remainder of South Coleman, Willow Drive and Carbondale to a greater degree.

Community safety issues

- Hazardous material remains near to communities.
- Marginal improvement for local community pedestrians and cyclists by removing through traffic from Carbondale and Coleman

Highway 3 near Crowsnest Lake (2004)

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas.
- By following current alignment, potential exists to utilize existing infrastructure capacities
- Corridor for potential highway commercial development between Coleman and Blairmore is compromised.

Ability to service

- Some available land adjacent to the proposed interchange exist in Blairmore to promote commercial nodes
- Potential exists to service Sentinel

Capacity

- No capacity available currently in Sentinel for new development (UMA)
- Water capacity exists in Blairmore but not Coleman
- Both Blairmore and Coleman would need to upgrade sewer systems to handle additional development

Cost of providing infrastructure to alternative areas

- Ability to utilize infrastructure already in place in Blairmore and Coleman.
- Current lack of servicing in Sentinel

Relocation/removal of structures or improvements

- Direct property impacts in South Coleman and country residential properties to the west.
- Alignment would require removal of structure in the Coleman National Historic Site
- Alignment would not require the removal of structures in the Coleman National Historic Site.

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- No increases the number of watersheds currently exposed to highway development

Wetlands and floodplains

- Does cross the Blairmore wetlands at the far west end near development in South Coleman.

Groundwater and drinking water supply

- Current domestic water wells and supply system are not affected by route as route passes west of the wells.

Impacts to wildlife

- Mostly pass through undisturbed land.
- Is in close proximity to the Crowsnest River ESA. (Appendix A: Exhibit 4)
- Route travels through areas identified as critical wildlife areas for elk, moose, deer and cougars (Appendix A: Exhibit 5)
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk (Appendix A: Exhibit 5)
- Route affects area of the wetland identified as Rainbow Trout spawning habitat

Historic resources

- Route avoids impacting the Coleman National Historic Site.
- Removal of houses and businesses in South Coleman of historic or community significance may impact community identity
- Mapping indicates route passes through areas rated HRV1, HRV2, HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)

Air quality, noise and visual and aesthetic resources

- Leaves traffic and truck noise levels in Coleman.
- Air quality will be affected by truck traffic– possibility of increases due to the increased capacity of the highway.

PART 4

ALIGNMENT ANALYSIS: ADDENDUM

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- No direct impact to existing uses
- Indirect impact to hospital—located near Blairmore—Coleman interchange.

Non-urban area

- Affects several undeveloped parcels
- Possible interchange at Allison Creek is outside the Level 3 Sour Gas line setback (E1/2 11-8-5-W5).

Commercial

- Route has little direct impact on existing commercial uses in Coleman and limited impact in Blairmore.
- Provides some opportunity to expand existing commercial areas to benefit from the route location.
- Access interchanges are located at points in Blairmore, Bellevue and Passburg where commercial nodes may be able to be developed.
- Potential exists to increase economic activity.

Industrial

- Route does not directly affect any current industrial development.
- By creating a bypass, heavy truck traffic will benefit by missing congestion in Coleman.
- Access to the Sentinel industrial park is available from proposed interchange.

Residential

- Direct impacts to existing residential properties located in South Coleman, south of the Crowsnest River (up to 50 homes)
- South Coleman and Willow Drive residents are close to the proposed route and right-of-way

Natural and conservation areas

- Does cross a portion of the Blairmore Wetlands.
- Does cross through forest reserve lands
- Proposed route does cross land owned by the Nature Conservancy of Canada.

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

- Statutory planning documents never contemplated the removal of existing residential housing and as such are not the subject of policies
- Reasonably compatible with land use policies directing growth found in the Municipal Development Plan and Land Use Bylaw.
- Land use decisions have been made with the current highway alignment in position.
- Not compatible with Municipal Development Plan policies regarding Environmental, Historical, and Cultural Issues.

OBSERVATIONS

- Route attempts to keep Coleman and South Coleman (Bush Town) connected.
- The Blairmore Wetlands are affected but perhaps at a lesser degree to the proximity of the proposed crossing to the developed areas adjacent to Coleman.
- Local road access in Coleman, West Coleman and Carbondale would require upgrades.
- Potential risk in mixing local and through traffic is reduced.
- Area adjacent to West Coleman could be serviced if access issues were resolved.
- No direct access to Coleman but location is closer to Coleman than other interchange options.
- The location of proposed interchange for Blairmore/Coleman does not affect the Riverside Estates ASP land and it would be available for development.
- The removal of a large portion of the existing development along the route is a significant impact that would be difficult to overcome.
- Route avoids commercial development in Blairmore, county residential development between Coleman and Blairmore, the NOVA pipeline, the Coleman National Historic Site, and the Golf Course.

EVALUATION

Criteria	Score
Local Transportation and Community Access	4
Municipal Growth Areas and Servicing	3
Community Land Use Goals Related to the Natural Environment	2
Impacts on Existing Land Use and Development	3
Compatibility with Statutory Planning Documents	3
TOTAL SCORE:	15


Crowsnest River (2004)

South-South/West Option

BRITISH COLUMBIA

CURRENT STUDY LIMIT

MUNICIPAL DISTRICT OF RANCHLAND NO 66

MUNICIPALITY OF CROWSNEST PASS

ATLAS FORESTRY ROAD

TRUNK ROAD 40

FORESTRY

COLEMAN

CARBONDALE

Altalink Management Ltd. (Power Transmission Lines)

Northstar Energy Corp. (Pipeline)

ALLISON CREEK ROAD

TECUMSEH ROAD

Nova Gas Transmission Ltd.

Nova Gas Transmission Ltd. (Pipeline)

Existing Highway Alignment

Crowsnest River

VOLKER STEVIN HIGHWAY MAINTENANCE YARD

SENTINEL

TRAVEL INFORMATION SITE

Crowsnest Lake

Phillipps Lake

Summit Lake

Emerald Lake

Island Lake

CONTINENTAL LIME LTD.

CANADA CEMENT COMPANY LTD.

GRAYMONT SUMMIT PLANT

HAZELL

CROWSNEST

Power Transmission Lines

ACCESS ROAD

FORESTRY

Twp. 8 Rge. 6 W.5 M.
Twp. 7 Rge. 6 W.5 M.

Twp. 8 Rge. 5 W.5 M.
Twp. 7 Rge. 5 W.5 M.

Twp. 8 Rge. 4
Twp. 7 Rge. 4

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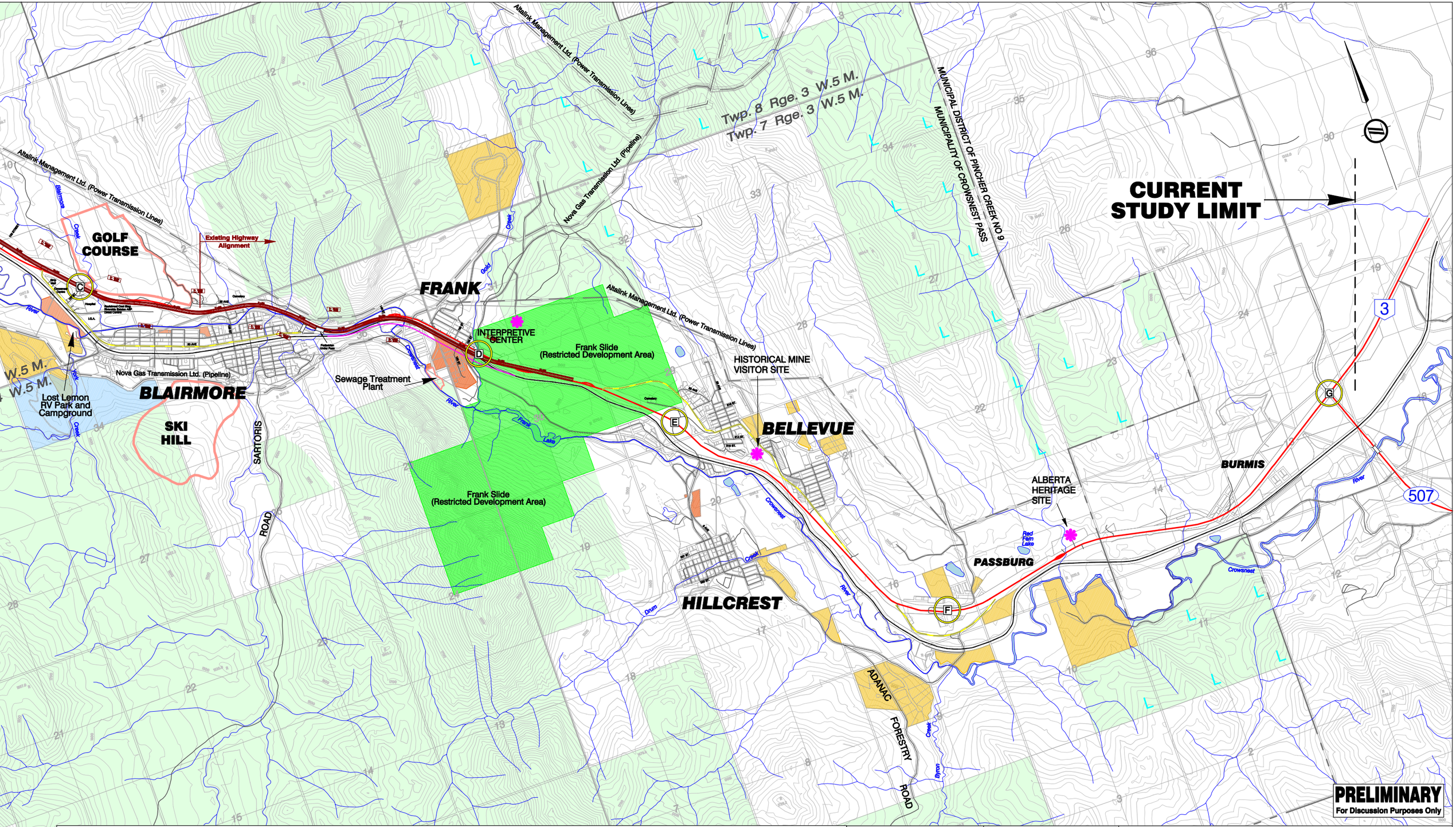
6/14/2005



LEGEND

- Existing Highway
- Existng Local Road
- Former Highway 3
- Existing Railway
- Relocated Railway
- Crown Land
- L — Leased Land
- A — Potential Interchange Location Option

Bridge:

- Existing
- Required
- Coleman National Historic Site

Land Use:

- Grouped Country Residential
- Potential Development Area
- Industrial

McElhanney Consulting Services Ltd.

Alberta Infrastructure and Transportation

South-South/West Option

Highway 3 Crowsnest Pass
Functional Planning Study

Drawn by HH	Designed by RP	Checked by HD	Approved by	JUN 14 2005	400m 0 800m	Plan No. P3261.0#

PART 4

ALIGNMENT ANALYSIS: ADDENDUM

Central-South /Southwest Option

LOCAL TRANSPORTATION AND COMMUNITY ACCESS

Access and egress to communities

- Proposed interchanges at Hazell, east of Allison Creek Road, 107 Street in Blairmore, Bellevue, and Highway 507.
- Limited access to Sentinel Industrial area – only at either Hazell or Allison Creek.
- Access is shared between Coleman and Blairmore.
- Access is shared between Frank, Bellevue and Hillcrest.

Interaction with other Highways

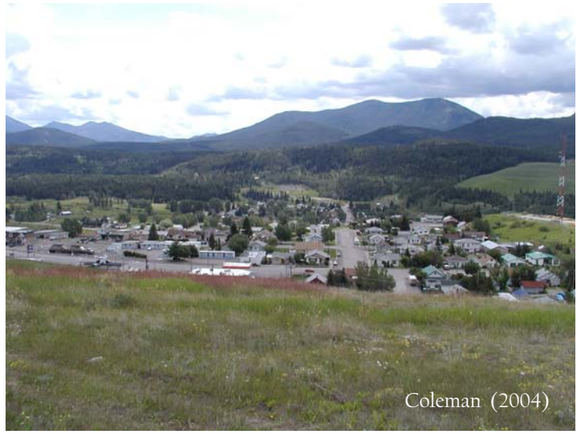
- No direct access from Highway 40 to new alignment
- Truck traffic from Highway 40 will continue to use current alignment to travel east or west to reach an interchange

Local road network

- Utilizes the current highway alignment as a commuter road between Allison Creek Road and Coleman
- Local travellers benefit from an additional service connector road for the entire community.
- Improvement to local grid network and connects remainder of South Coleman, Willow Drive and Carbondale to a greater degree.

Community safety issues

- Hazardous material remains in the communities.
- Marginal improvement for local community pedestrians and cyclists.



Coleman (2004)

MUNICIPAL GROWTH AREAS AND SERVICING

Impact on available growth areas

- Alignment is proposed outside of any identified urban growth areas.
- By following current alignment, potential exists to utilize existing infrastructure capacities.
- Corridor for potential highway commercial development between Coleman and Blairmore is compromised.

Ability to service

- Some available land adjacent to the proposed interchanges exist in Blairmore to promote commercial nodes
- Potential exists to service Sentinel Industrial Park

Capacity

- No capacity available currently in Sentinel for new development (UMA).
- Water capacity exists in Blairmore but not Coleman.
- Both Blairmore and Coleman would need to upgrade sewer systems to handle additional development.

Cost of providing infrastructure to alternative areas

- Ability to utilize infrastructure already in place in Blairmore and Coleman.
- Current lack of servicing in Sentinel.

Relocation/removal of structures or improvements

- Direct property impacts in South Coleman and country residential properties to the west
- Direct property impacts to country residential uses in the E ½ 12-8-5- W 5.
- Indirect property impacts to residents in Willow Drive.
- Alignment would not require the removal of structure in the Coleman National Historic Site.

COMMUNITY LAND USE GOALS RELATED TO THE PHYSICAL ENVIRONMENT

Lakes, rivers and streams

- No increases the number of watersheds currently exposed to highway development.

Wetlands and floodplains

- Does cross the Blairmore wetlands at the far west end near development in South Coleman

Groundwater and drinking water supply

- Current domestic water wells and supply system are not affected by route as the route passes west of the wells.
- The wells located in the area of the Riverside Estates Area Structure plan are not affected.

Impacts to wildlife

- Route passes through less undisturbed land as it follows more of the current highway alignment .
- Is in close proximity to the Crowsnest River ESA. (Appendix A: Exhibit 4).
- Route travels through areas identified as critical wildlife areas for elk, moose, deer and cougars (Appendix A: Exhibit 5).
- Crowsnest River valley between Sentinel and Coleman has been identified as a critical wildlife area for elk (Appendix A: Exhibit 5).
- Route affects area of the wetland identified as Rainbow Trout spawning habitat.

Historic resources

- Route avoids impacting the Coleman National Historic Site
- Removal of houses and businesses of historic or community significance may impact community identity.
- Mapping indicates route passes through areas rated HRV1, HRV2, HRV3, HRV4 and HRV5 (Appendix A: Exhibit 7)

Air quality, noise and visual and aesthetic resources

- Leaves traffic and truck noise levels in Coleman
- Air quality will be affected by truck traffic– possibility of increases due to the increased capacity of the highway

PART 4

ALIGNMENT ANALYSIS: ADDENDUM

IMPACTS ON EXISTING LAND USE AND DEVELOPMENT

Institutional

- No direct impact to existing uses
- Indirect impacts to hospital—located near proposed Blairmore/Coleman interchange

Non-urban area

- Affects several undeveloped parcels although fewer than other routes.
- Possible interchange at Allison Creek is outside the Level 3 Sour Gas line setback (E1/2 11-8-5-W5).

Commercial

- Route has little direct impact on existing commercial uses in Coleman and limited impact in Blairmore.
- Provides some opportunity to expand existing commercial areas to benefit from the route location.
- Access interchanges are located at points in Blairmore, Bellevue and Passburg where commercial nodes may be able to be developed
- Potential exists to increase economic activity.

Industrial

- Route does not directly affect any current industrial development.
- By creating a bypass, heavy truck traffic will benefit by missing congestion in Coleman.
- Access to the Sentinel industrial park is less convenient from either from proposed interchange

Residential

- Direct impacts to existing residential properties located in South Coleman, south of the Crowsnest Pass (up to 50 homes).
- South Coleman and Willow Drive residents are close to the proposed route and right-of-way.

Natural and conservation areas

- Does cross a portion Blairmore Wetlands.
- Crosses a very small portion of forest reserve lands (SW ¼ 7-8-5 W5).
- Proposed route does cross land owned by the Nature Conservancy of Canada

COMPATIBILITY WITH STATUTORY PLANNING DOCUMENTS

- Statutory planning documents never contemplated the removal of existing residential housing and as such are not the subject of policies.
- Reasonably compatible with land use policies directing growth found in the Municipal Development Plan and Land Use Bylaw.
- Land use decisions have been made with the current highway alignment in position.
- Not compatible with Municipal Development Plan policies regarding Environmental, Historical, and Cultural Issues

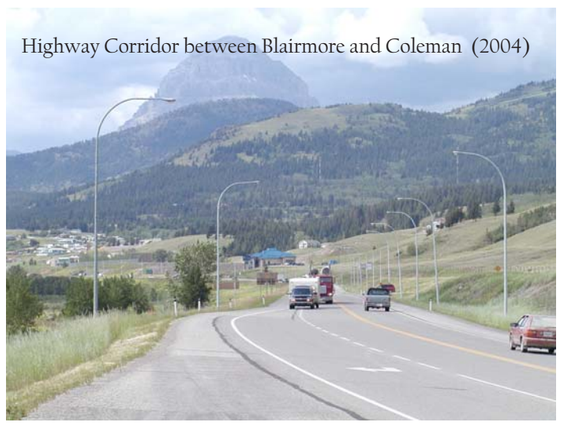
OBSERVATIONS

- Route attempts to keep Coleman and South Coleman (Bush Town) connected.
- The Blairmore Wetlands are affected but perhaps at a lesser degree to the proximity of the proposed crossing to the developed areas adjacent to Coleman.
- Local road access in Coleman, West Coleman and Carbondale would require upgrades.
- Potential risk in mixing local and through traffic is reduced.
- Area adjacent to West Coleman could be serviced if access issues were resolved.
- The location of proposed interchange for Blairmore/Coleman does not affect the Riverside Estates ASP land and it would be available for development.
- The proposed interchange option at east of the Allison Creek Road is has been located near the Level 3 Sour Gas Line but outside the 500 m setback which would allow for the potential for commercial nodes to develop at this location.
- The removal of a large portion of the existing development along the route is a significant impact that would be difficult to overcome.
- Route avoids commercial development in Blairmore, country residential development between Coleman and Blairmore, the Coleman National Historic Site, and the Golf Course.

EVALUATION

Criteria	Score
Local Transportation and Community Access	3
Municipal Growth Areas and Servicing	4
Community Land Use Goals Related to the Natural Environment	4
Impacts on Existing Land Use and Development	3
Compatibility with Statutory Planning Documents	3
TOTAL SCORE:	17

Highway Corridor between Blairmore and Coleman (2004)



Central-South/West Option

MUNICIPAL DISTRICT OF RANCHLAND NO 66

MUNICIPALITY OF CROWSNEST PASS

ATLAS FORESTRY ROAD

TRUNK ROAD 40

COLEMAN

Altalink Management Ltd. (Power Transmission Lines)

Northstar Energy Corp. (Pipeline)

ALLISON CREEK ROAD

TECUMSEH ROAD

CARBONDALE

3

Crowsnest River

Nova Gas Transmission Ltd. (Pipeline)

B3

VOLKER STEVIN HIGHWAY MAINTENANCE YARD

Nova Gas Transmission Ltd.

Existing Highway Alignment

BRITISH COLUMBIA

CURRENT STUDY LIMIT

Phillippe Lake

Crowsnest Lake

SENTINEL

TRAVEL INFORMATION SITE

Summit Lake

CONTINENTAL LIME LTD.

CANADA CEMENT COMPANY LTD.

GRAYMONT SUMMIT PLANT

Emerald Lake

Island Lake

HAZELL

A

CROWSNEST

Power Transmission Lines

ACCESS ROAD

FORESTRY

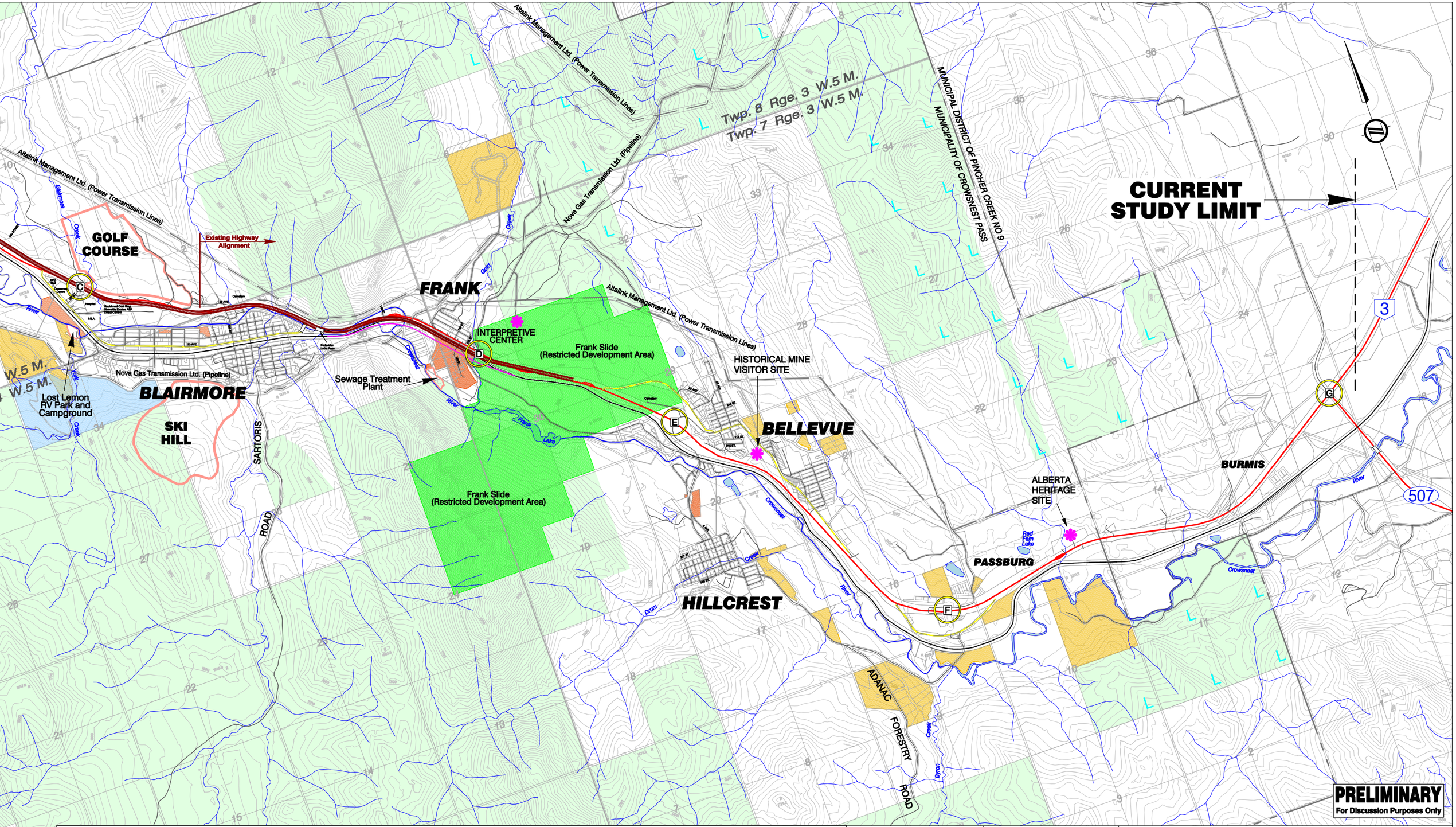
Twp. 8 Rge. 6 W.5 M.
Twp. 7 Rge. 6 W.5 M.

Twp. 8 Rge. 5 W.5 M.
Twp. 7 Rge. 5 W.5 M.

Twp. 8 Rge. 4
Twp. 7 Rge. 4

Q:\Jobs\43_Hwy3\dgn V8\Align_CentralSouthwest-extend.dgn

6/14/2005



LEGEND

- Existing Highway
- Existng Local Road
- Former Highway 3
- Existing Railway
- Relocated Railway
- Crown Land
- L — Leased Land
- A — Potential Interchange Location Option

Bridge:

- Existing
- Required
- Coleman National Historic Site

Land Use:

- Grouped Country Residential
- Potential Development Area
- Industrial

McElhanney Consulting Services Ltd.

Alberta INFRASTRUCTURE AND TRANSPORTATION

Central-South/West Option

Highway 3 Crowsnest Pass
Functional Planning Study

Drawn by HH	Designed by RP	Checked by HD	Approved by	JUN 14 2005	400m 0 800m	Plan No. P3261.0#

Highway 3 Improvements and the Municipality of Crowsnest Pass

A Land Use Analysis
2004

PART 5

SUMMARY

PART 5

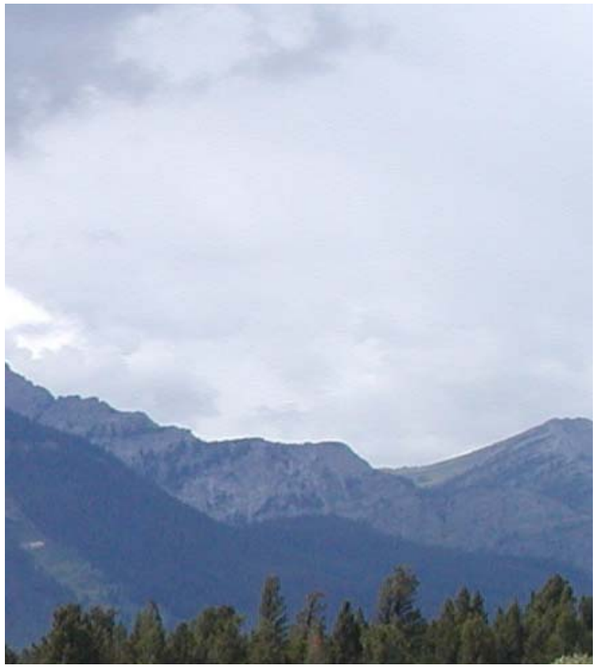
SUMMARY

A preferred bypass route, from a community perspective, requires that positive impacts of a highway bypass would be taken advantage of while avoiding the worst of the negative impacts. Earlier in the analysis, a set of characteristics was outlined that described what an ideal highway alignment would need to do to receive the support of the community of the Crowsnest Pass. To review, the route should:

- provide the most access possible,
- Provide access to other highways in the region,
- be considered safe from a community perspective,
- use the least amount of developable land,
- provide the opportunity to utilize existing infrastructure,
- not interfere with wildlife movement corridors,
- not deter from the aesthetic resources of the Crowsnest Corridor,
- not compromise the municipal water supply,
- minimize impacts to existing land uses, and
- be compatible with existing statutory planning documents developed by the municipality.

After the initial analysis of the three Base Alternatives it was concluded that both the North and the Central Alternatives were devastating from a community perspective. Both alternatives required the removal of significant existing urban development, including homes and businesses, which are not outweighed by potential economic benefits that would be realized by either alignment. Therefore, the options to the South Based Alternative and the CPR Option were developed and to provide options that would attempt to lessen the social and economic impact while providing the greatest potential to capitalize on economic benefits.

Given the summary of each of the three options to the South Base Alternative and the CPR Option, it appears that none of the four options is entirely able to meet the criteria established for the community evaluation. For example, the protection of the environment is often at odds with existing and potential development. By attempting to avoid the Blairmore Wetlands, a significant parcel of land in terms of potential development is sacrificed to the highway right-of-way. If the highway is shifted to avoid the potential development area, the wetlands are sacrificed.



Near Allison Creek Road (2004)

FUTURE RECOMMENDATIONS AND MITIGATION STRATEGY FOR THE PREFERRED ALIGNMENT

A Preferred Alignment will be chosen from the options provided as a result of:

- input from community meetings,
- municipal council input, and
- input from the Technical Review Committee for the Highway 3 Functional Planning Study.

Once a Preferred Alignment is chosen, Phase II of this project will include examining the route in greater detail and providing recommendations and mitigating policies that will aid the Municipality of Crowsnest Pass in preparing plans with an understanding of the impact of the Highway upgrade.

Earlier in the Introduction section, a discussion regarding how the proposed highway upgrade would fit into a broad community framework revealed that residents of the Crowsnest Pass do not isolate the Sentinel to Frank portion of the Municipality from the entire Municipality. Therefore, future mitigating strategies may need to look beyond the study area to find suitable replacement land in lieu of land utilized for the alignment.

Highway 3 Improvements and the Municipality of Crowsnest Pass

A Land Use Analysis 2004

APPENDIX A

MUNICIPAL DISTRICT OF RANCHLAND NO 66
MUNICIPALITY OF CROWSNEST PASS

BRITISH COLUMBIA

MOUNT TECUMSEH

DRY CANYON

CROWSNEST WETLANDS

STUDY LIMIT

PHILLIPPS LAKE

CROWSNEST SPRING

CROWSNEST LAKE

EMERALD LAKE

SENTRY MOUNTAIN

HAZELL

ISLAND LAKE

CROWSNEST

ISLAND CREEK

ALLISON CREEK

CROWSNEST VOLCANIC

CARBONDALE

SENTINEL

CROWSNEST RIVER

COLEMAN

McGILLIVRAY CREEK

PEIGNER

PIERCE CREEK

STAR CREEK

YORK CREEK

ALLISON CREEK

ISLAND CREEK

CROWSNEST

3

40

Twp. 8 Rge. 5 W.5 M.
Twp. 7 Rge. 5 W.5 M.

Twp. 8 Rge. 6 W.5 M.
Twp. 7 Rge. 6 W.5 M.

Twp. 8 Rge. 4
Twp. 7 Rge.

Information Sources:

For Environmentally Significant Areas:
-Alberta Forestry, Lands and Wildlife, Sweetgrass Consultants, March 1988.

For Rare Plants and Rare Plant Communities:
-Alberta Natural Heritage Information Centre.

LEGEND:

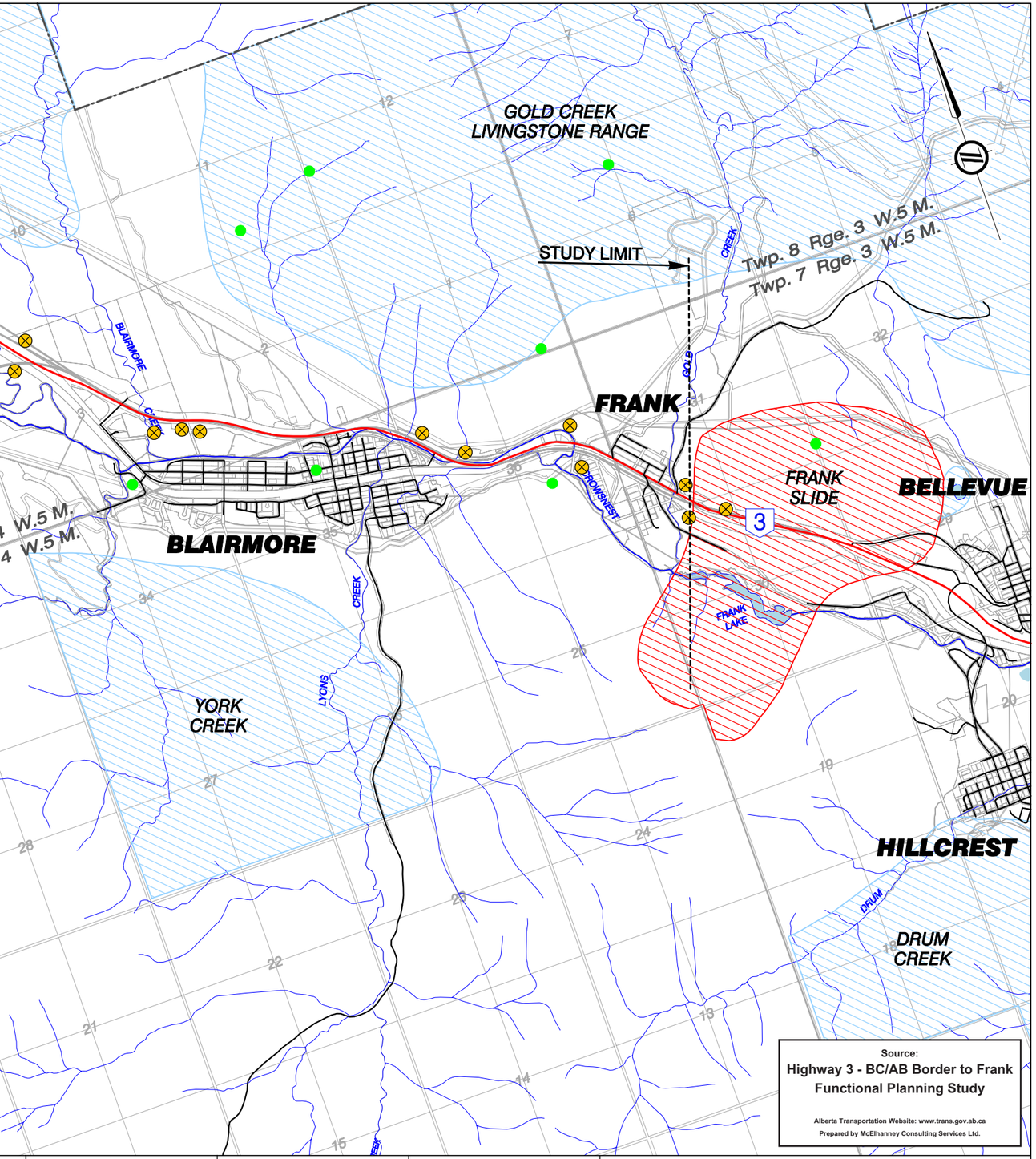
- Highway
- Local Roads
- Municipal Boundary

Environmentally Significant Areas:

- National Importance
- Provincial Importance
- Regional Importance

- Rare Plants and Rare Plant Communities
- Field Sample Location

01/26/2004 Q:\Jobs\43_Hwy3\dgn\TerrestrialRes.dgn



Source:
Highway 3 - BC/AB Border to Frank Functional Planning Study

Alberta Transportation Website: www.trans.gov.ab.ca
Prepared by McElhanney Consulting Services Ltd.

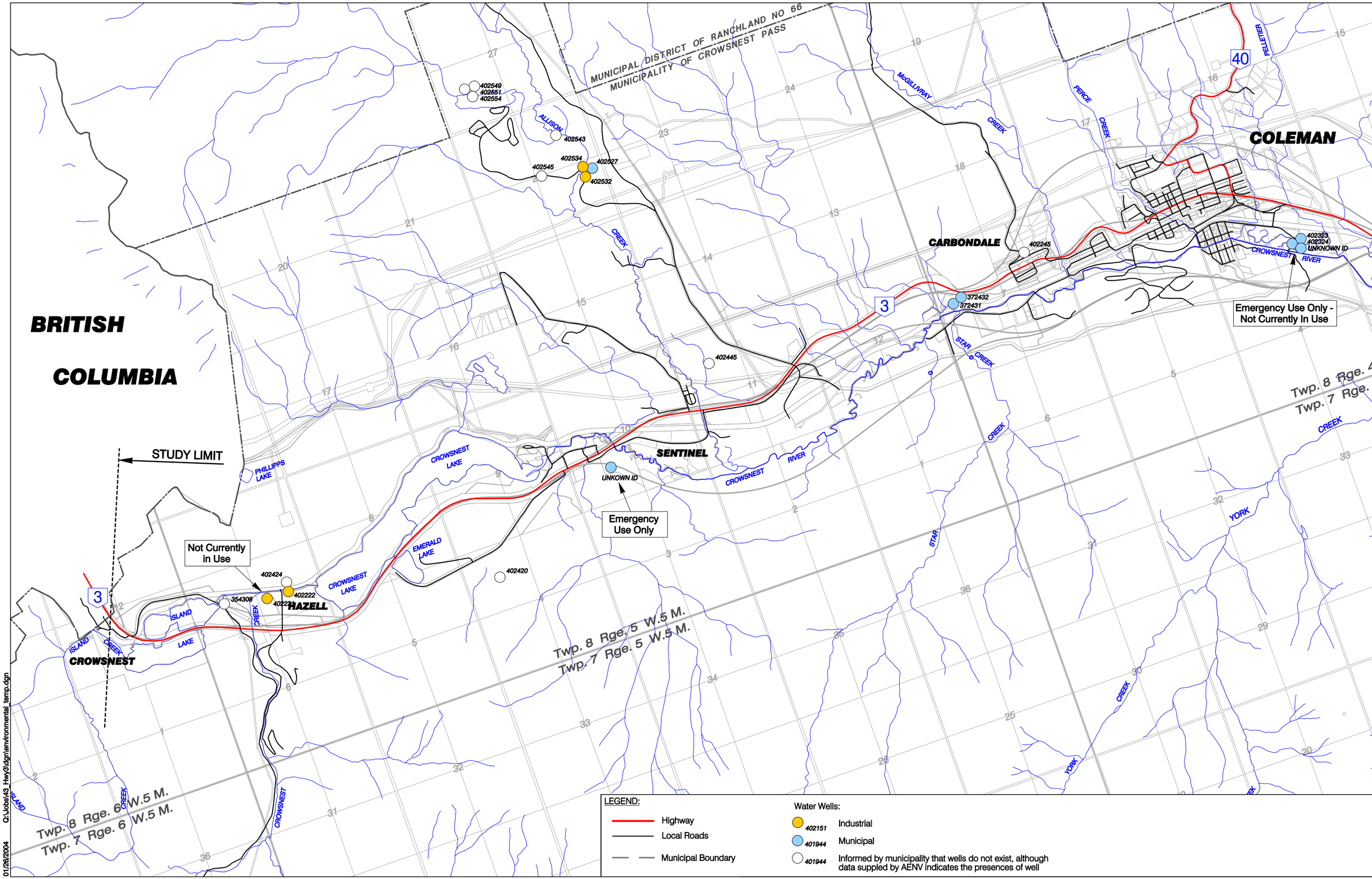
eba

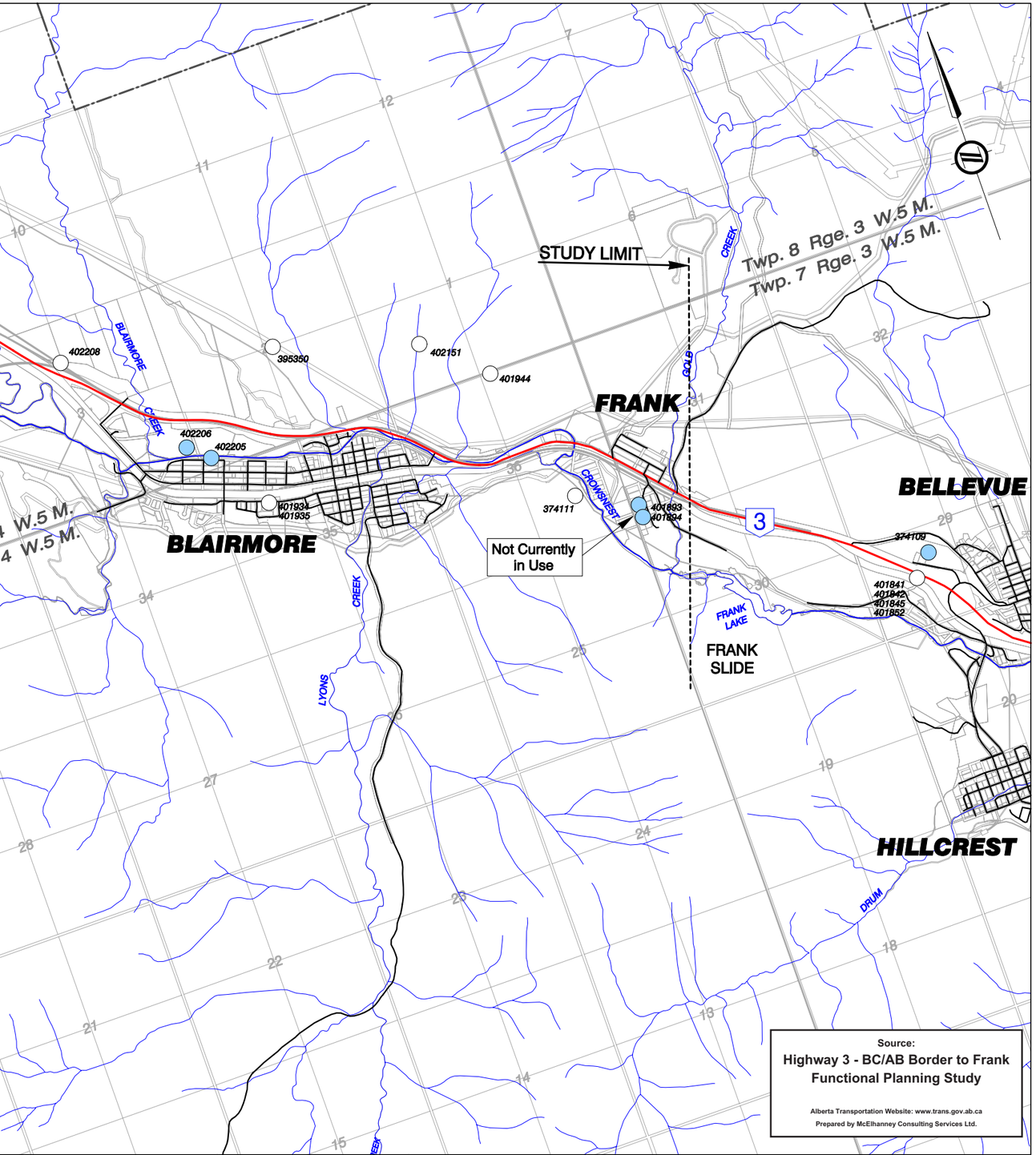
McElhanney Consulting Services Ltd.

Alberta TRANSPORTATION

Exhibit 4
Terrestrial Resources (Soils and Vegetation)
Highway 3 Crowsnest Pass
Functional Planning Study

Drawn by DF	Designed by KO	Checked by HD	Approved by	JAN 19 2004	400m 0 800m	Plan No. P3261.04


MUNICIPAL DISTRICT OF RANCHLAND NO 66
MUNICIPALITY OF CROWSNEST PASS
BRITISH
COLUMBIA
STUDY LIMIT
COLEMAN
CARBONDALE
SENTINEL
HAZELL
CROWSNEST
402549
402551
402554
402543
402545
402534
402527
402532
402445
402245
372432
372431
402323
402324
UNKNOWN ID
UNKOWN ID
402424
402222
354308
402420
Emergency Use Only - Not Currently In Use
Emergency Use Only
Not Currently in Use
ALLISON CREEK
McGILLIVRAY CREEK
PERCE CREEK
PELLETIER CREEK
CROWSNEST RIVER
STAR CREEK
PHILLIPPS LAKE
CROWSNEST LAKE
EMERALD LAKE
ISLAND LAKE
ISLAND CREEK
CROWSNEST CREEK
YORK CREEK
Twp. 8 Rge. 5 W.5 M.
Twp. 7 Rge. 5 W.5 M.
Twp. 8 Rge. 6 W.5 M.
Twp. 7 Rge. 6 W.5 M.
Twp. 8 Rge. 4
Twp. 7 Rge.
3
40
LEGEND:
Highway
Local Roads
Municipal Boundary
Water Wells:
402151 Industrial
401944 Municipal
401944 Informed by municipality that wells do not exist, although data suppled by AENV indicates the presences of well
Q:\Jobs\43_Hwy3\dgn\environmental_temp.dgn
01/26/2004



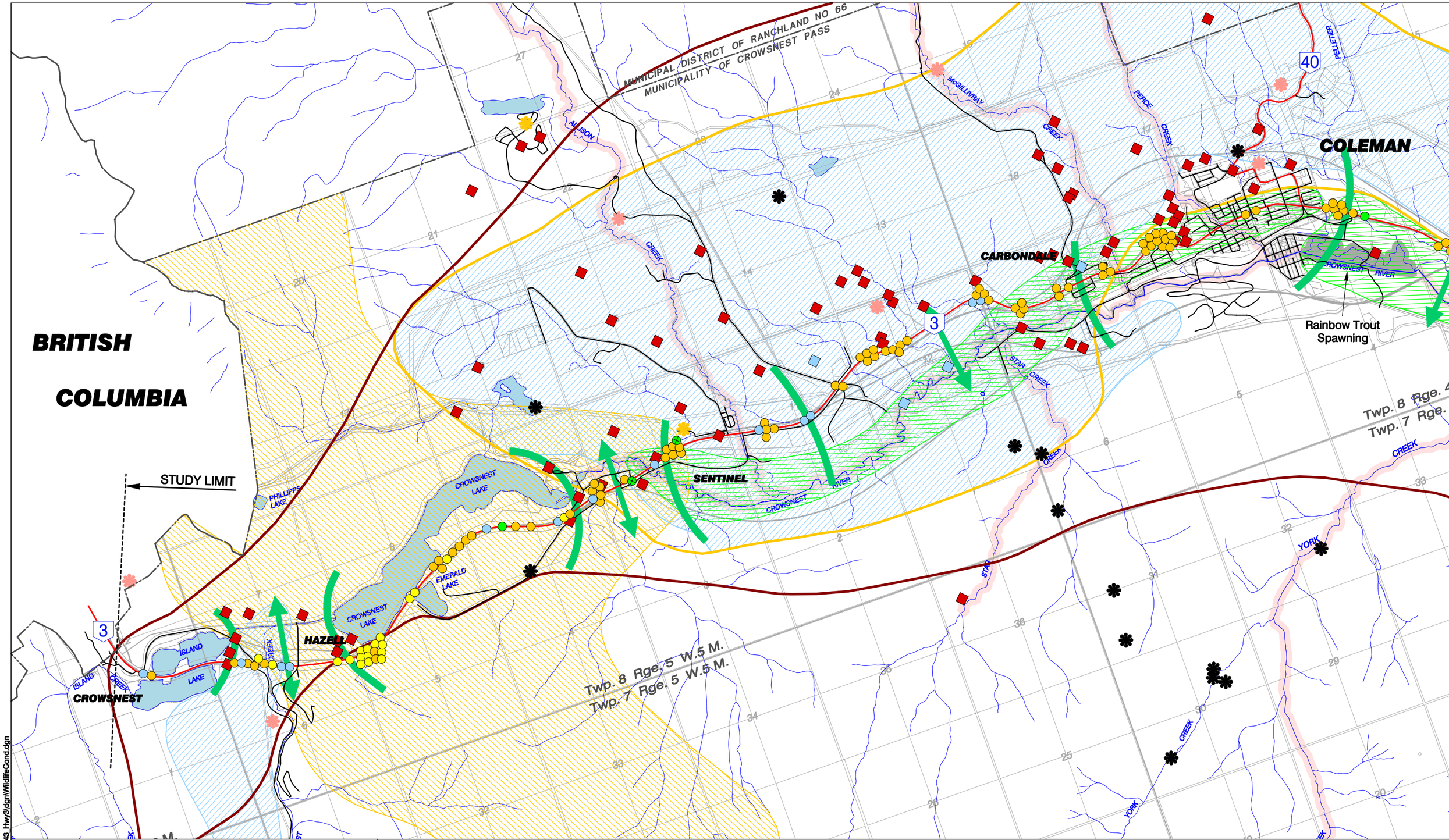
Source:
Highway 3 - BC/AB Border to Frank Functional Planning Study

Alberta Transportation Website: www.trans.gov.ab.ca
Prepared by McElhanney Consulting Services Ltd.

eba | McElhanney Consulting Services Ltd. | Alberta TRANSPORTATION

Exhibit 6
Water Resources - Water Wells
Highway 3 Crowsnest Pass Functional Planning Study

Drawn by DF	Designed by KO	Checked by HD	Approved by	JAN 19 2004	400m 0 800m	Plan No. P3261.06



Q:\Jobs\43_Hwy3\dgn\WildlifeCond.dgn
01/26/2004

Information Sources:

For Wildlife and Fisheries:
-Alberta Environment,
-Alberta Fish and Wildlife,
-Alberta Fish and Game Association,
-Nature Conervancy.

For Some of the Wildlife Kill data:
-Volker Stevin
(Highway Maintenance contractor)

LEGEND:

- Highway
- Local Roads
- Municipal Boundary

Critical Wildlife Areas:

- Elk
- Sheep
- Moose
- Deer
- Cougar

Road Kills (1996-2001):

- White Tail/Mule Deer
- Elk
- Sheep
- Moose
- Black Bear
- Cougar
- Coyote

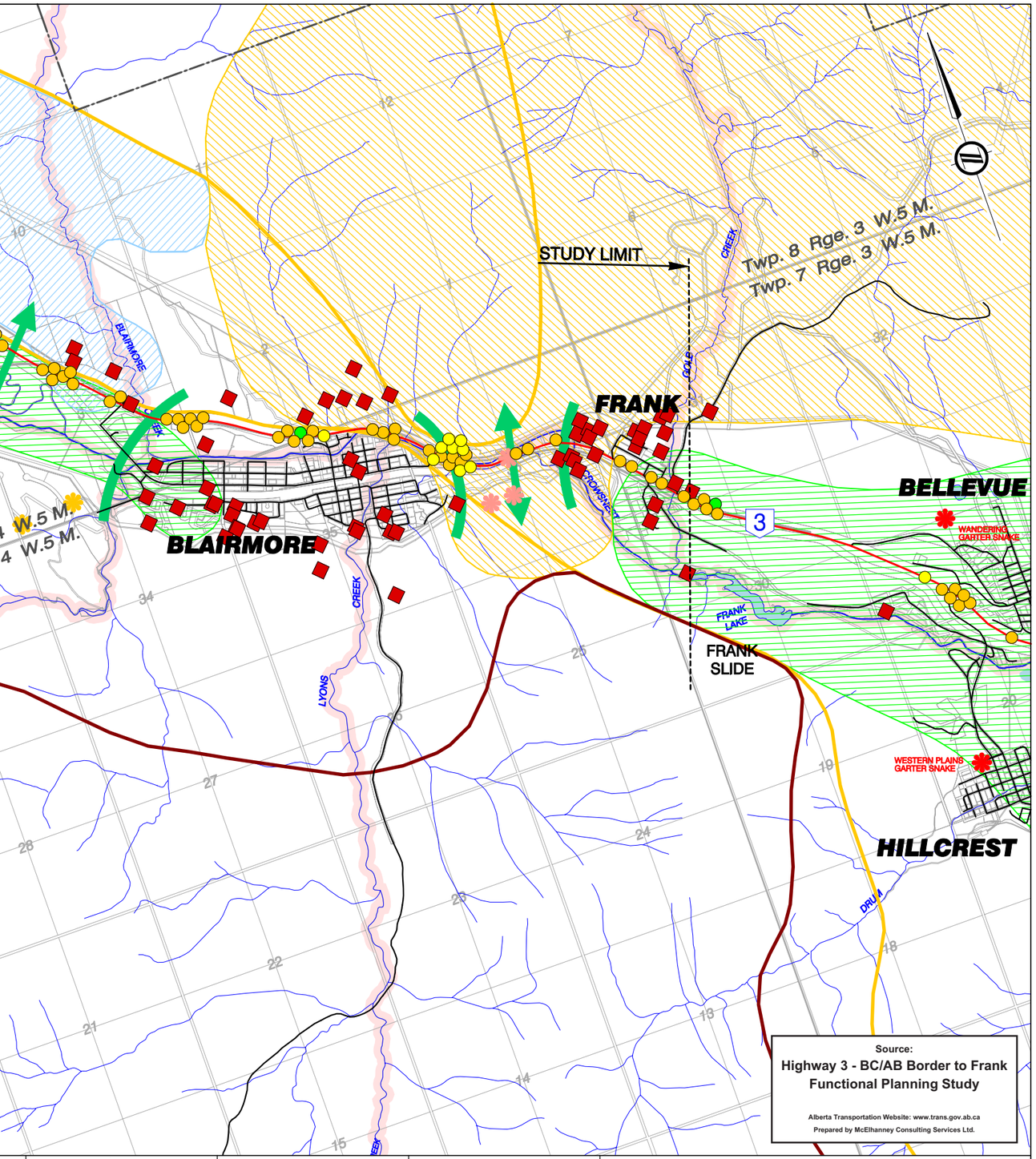
- Wildlife Movement
- Primary Wildlife Movement Zone
- Restricted Streams

BSOD Sensitive Species:

- Spotted Frog
- Long-toed Salamander
- Boreal Toad
- Other (NAME)

Sightings (Carnivores):

- Bears (Grizzly, Black)
- Wolf



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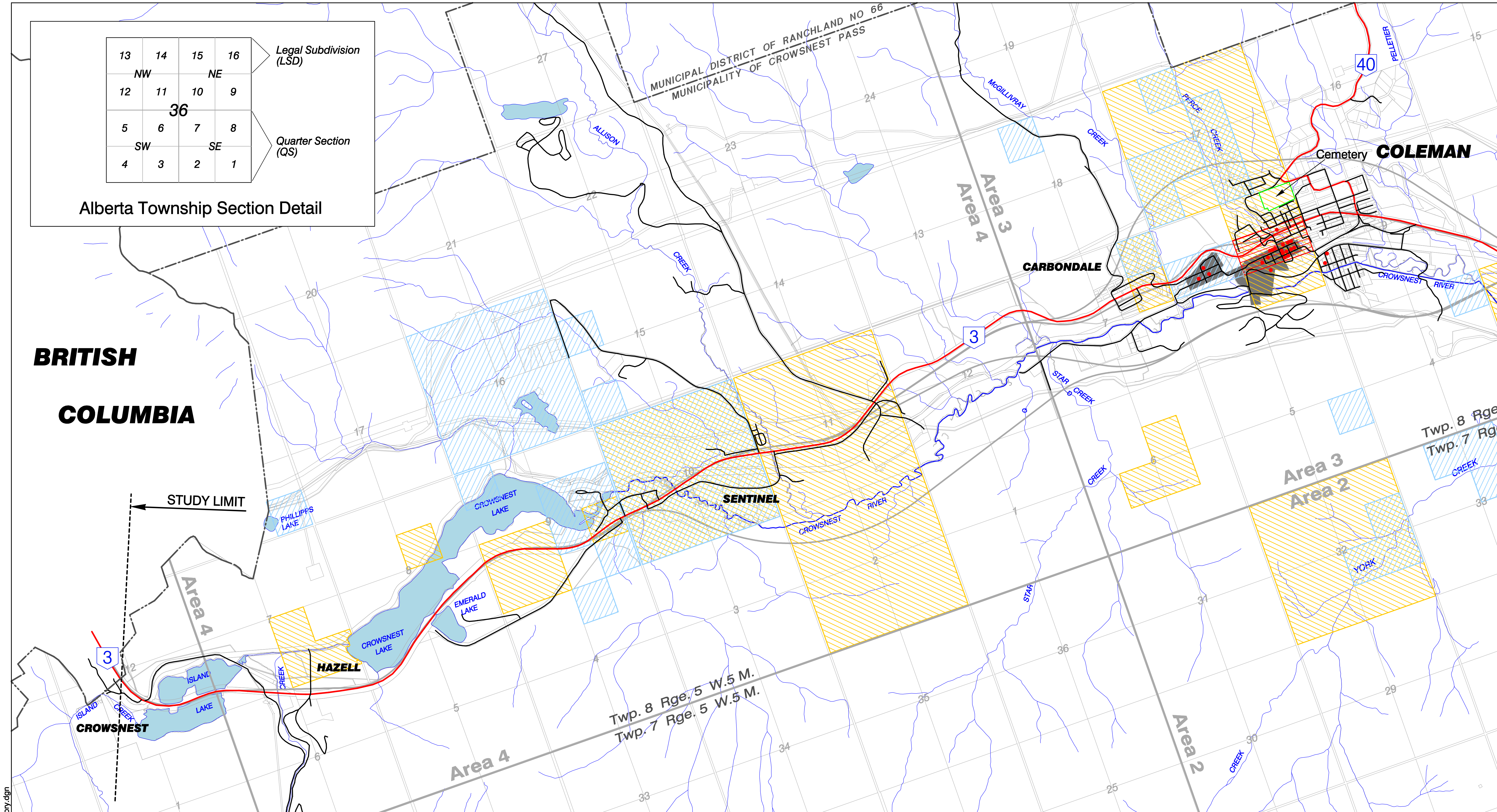
Alberta TRANSPORTATION

Exhibit 5
Fish and Wildlife Areas
Highway 3 Crowsnest Pass
Functional Planning Study

Drawn by DF	Designed by KO	Checked by HD	Approved by	JAN 19 2004	400m 0 800m	Plan No. P3261.05



HRV1 (Historical Resource Value) and HRV2. In practice, no development or disturbance would be allowed on lands or resources with an HRV1 or HRV2 rating unless public safety was at stake.

HRV3. Depending upon the nature of the relationship between the historic resource and the proposed development, the development proponent may be required to undertake special preservation or protection measures to keep the site, building, etc. from being impacted.

HV4 and HRV5. Development on HRV4 and HRV5 lands will generally be permitted; however, completion of an HRIA or HRO may be required and surface access may be restricted.

IMPORTANT NOTE:

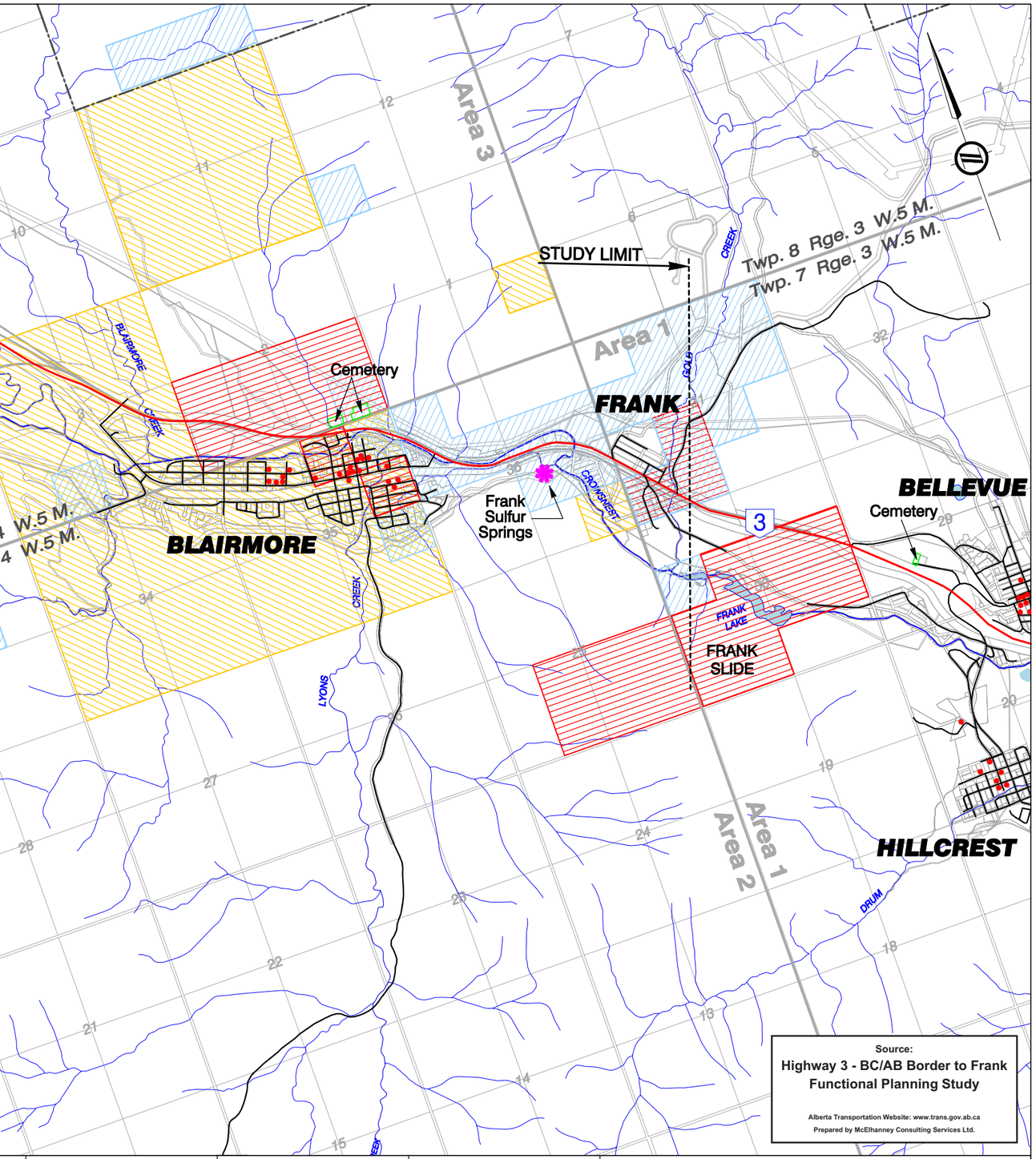
Information presented on this map is confidential and is solely presented for the purposes of this project. This is preliminary mapping only. The historical resources sites shown on this map have only been provided at the LSD level.
In most cases this done in order to protect the resource from vandalism or theft. In other cases where a building has been identified as an historical resource, the entire LSD has still been highlighted, even though it may contain only one building.
In both cases, it is possible that the historical resource only is present on a small portion of the LSD. Once potential routes have been established, we will determine the exact locations and areas of all historical resources that may be impacted.

LEGEND:

- Highway
- Local Roads
- Municipal Boundary
- HRV1 and HRV2
- HRV3
- HRV4 and HRV5
- Coleman National Historical Site
- Historic Building

Information Sources:
For Historical Resourses:
-Alberta Community Development
-Crowsnest Pass Historical Driving Tour: Coleman, Blairmore and Bellevue/Hillcres
Alberta Culture and Multiculturalism, 1990

01/26/2004 Q:\Jobs\43_Hwy3\dgn\History.dgn



Source:
Highway 3 - BC/AB Border to Frank
Functional Planning Study

Alberta Transportation Website: www.trans.gov.ab.ca
Prepared by McElhanney Consulting Services Ltd.

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McElhanney
Consulting Services Ltd.

Alberta
TRANSPORTATION

Exhibit 7
Historical Constraints
Highway 3 Crowsnest Pass
Functional Planning Study

Drawn by DF	Designed by KO	Checked by HD	Approved by	JAN 19 2004	400m 0 800m	Plan No. P3261.07

MUNICIPAL DISTRICT OF RANCHLAND NO 66

MUNICIPALITY OF CROWSNEST PASS

BRITISH COLUMBIA

STUDY LIMIT

COLEMAN

CARBONDALE

SENTINEL

HAZELL

CROWSNEST

3

40

ALLISON CREEK

McGILLIVRAY CREEK

PIERCE CREEK

PELLETIER CREEK

CROWSNEST RIVER

STAR CREEK

YORK CREEK

PHILLIPPS LAKE

CROWSNEST LAKE

EMERALD LAKE

ISLAND LAKE

ISLAND CREEK

Twp. 8 Rge. 5 W.5 M.
Twp. 7 Rge. 5 W.5 M.

Twp. 8 Rge. 6 W.5 M.
Twp. 7 Rge. 6 W.5 M.

Twp. 8 Rge. 4
Twp. 7 Rge.

LEGEND:

- Highway
- Local Roads
- Municipal Boundary
- X — Coal Mine Locations
- Historical Mining

Information Sources:

For Historical Coal Mine locations:
-Energy Resources Conservation Board.
-Alberta Community Development

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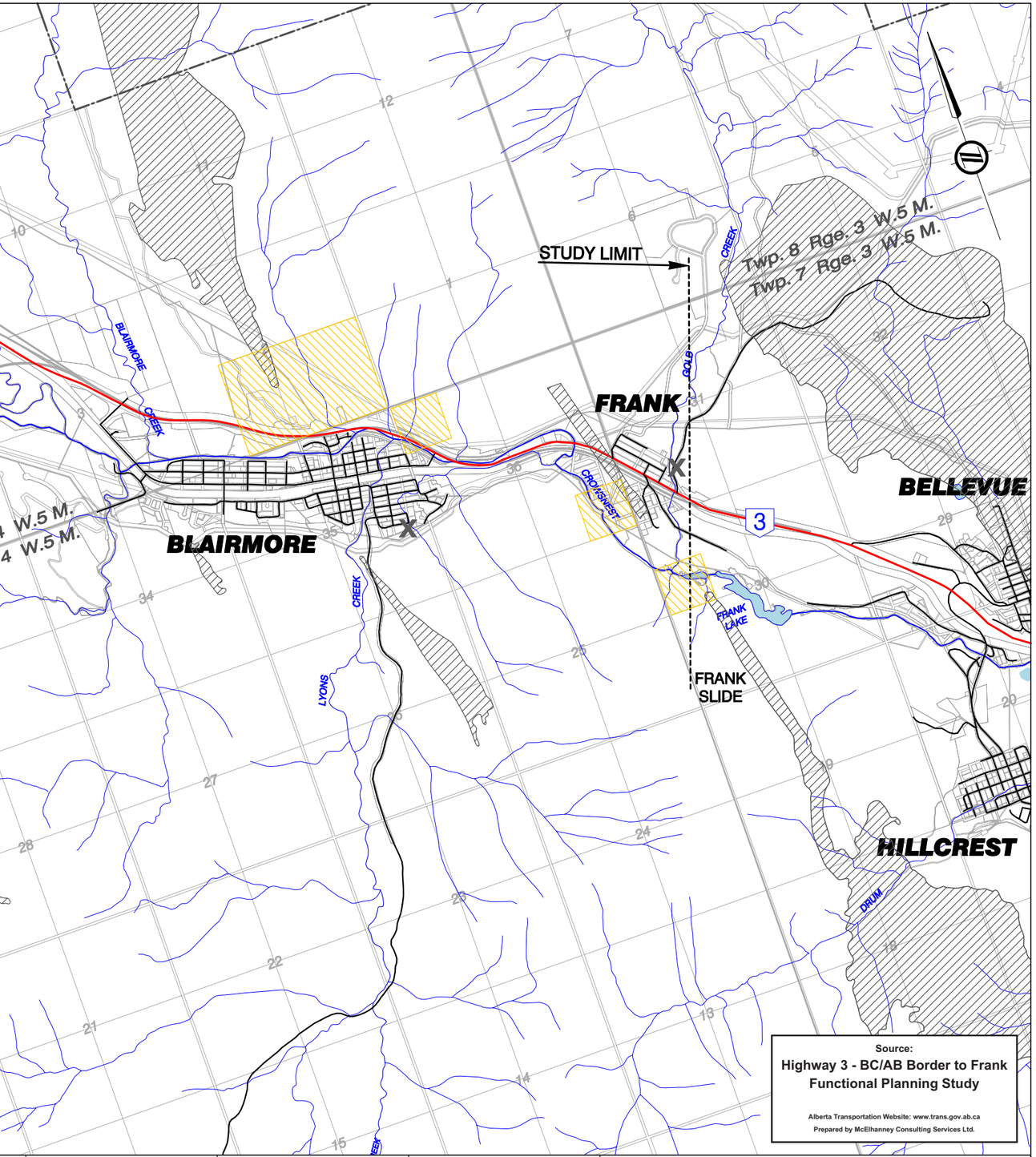
01/26/2004



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McElhanney Consulting Services Ltd.

Alberta TRANSPORTATION

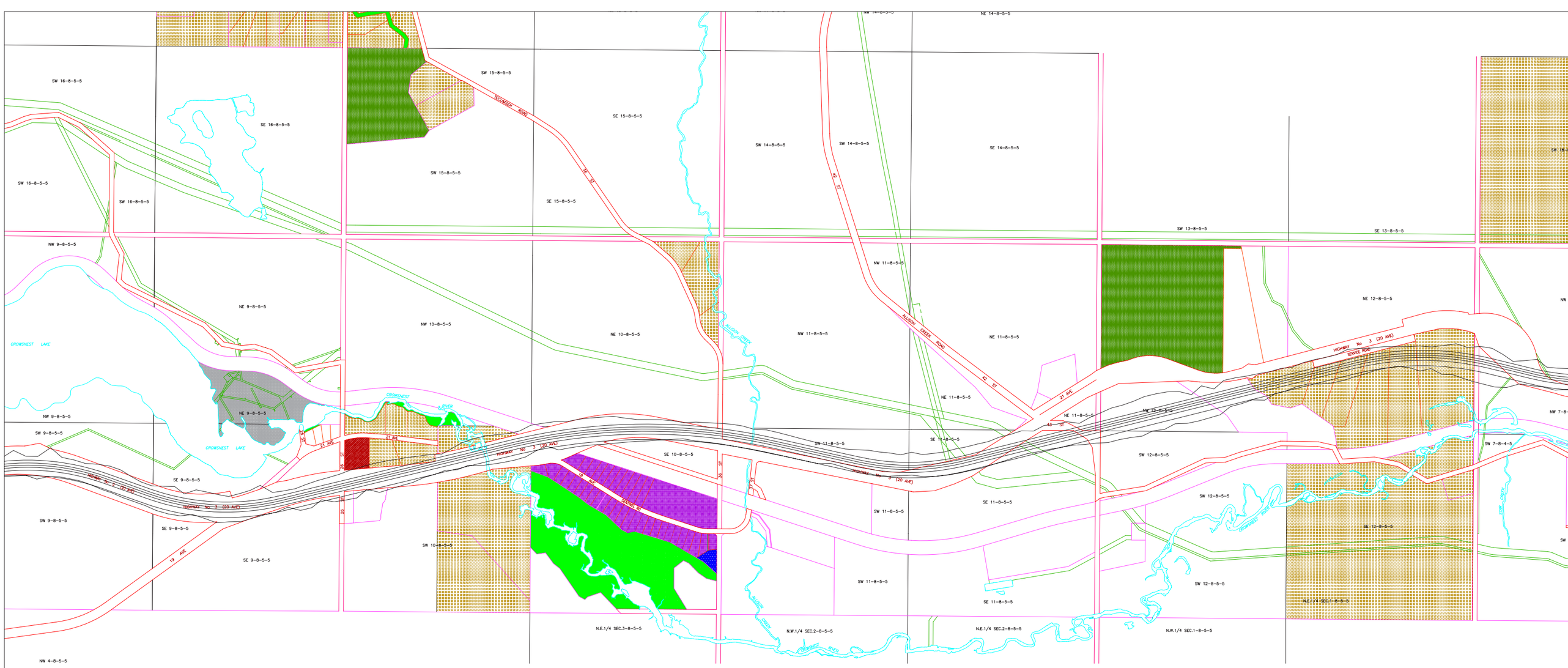
Exhibit 9
Geotechnical Conditions
Highway 3 Coleman Functional Planning Study

	Drawn by DF	Designed by KO	Checked by HD	Approved by	JAN 19 2004	400m 0 800m	Plan No. P3261.09

Highway 3 Improvements and the Municipality of Crowsnest Pass

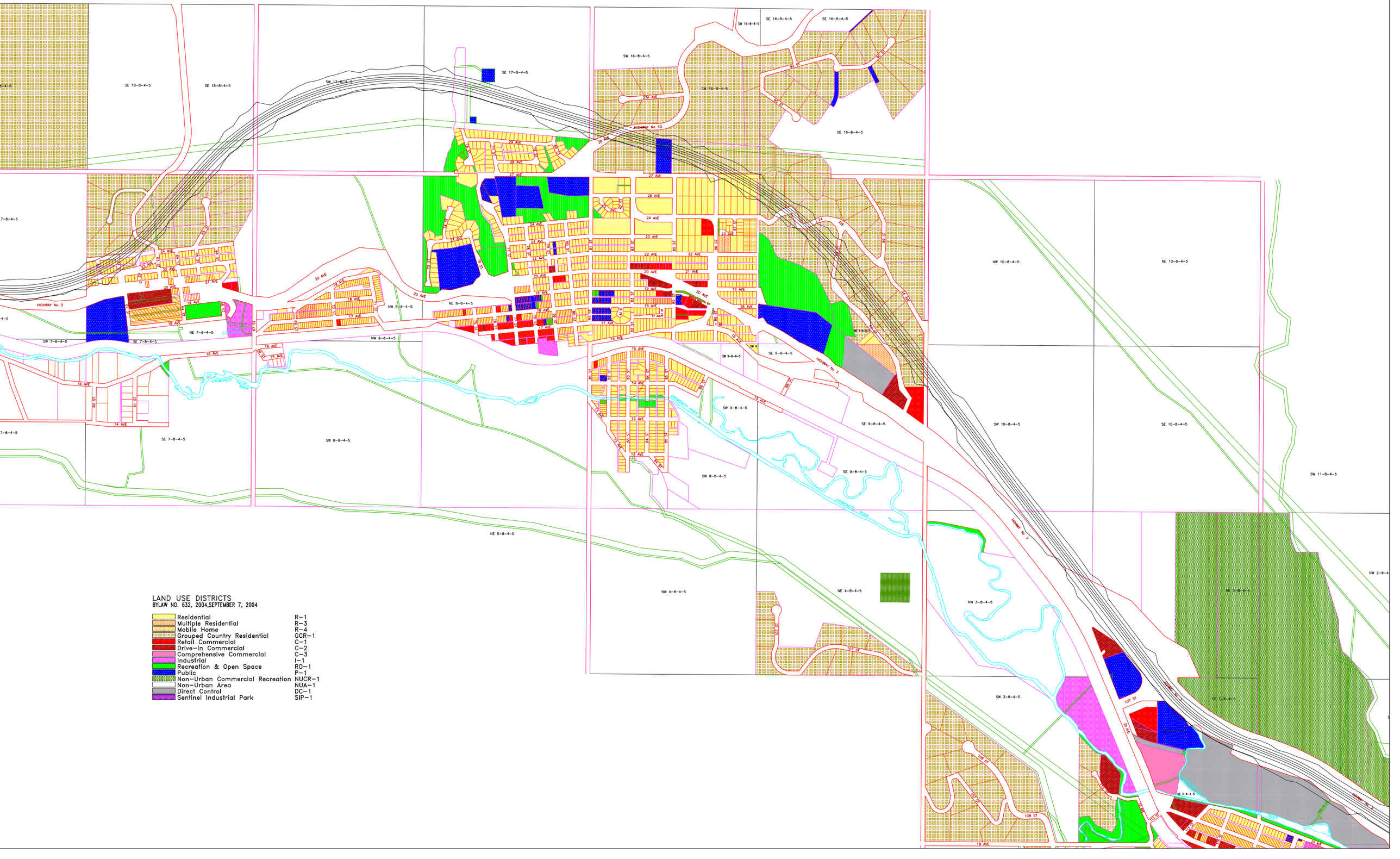
A Land Use Analysis
2004

APPENDIX B



North Base Alternative with Land Use Zoning

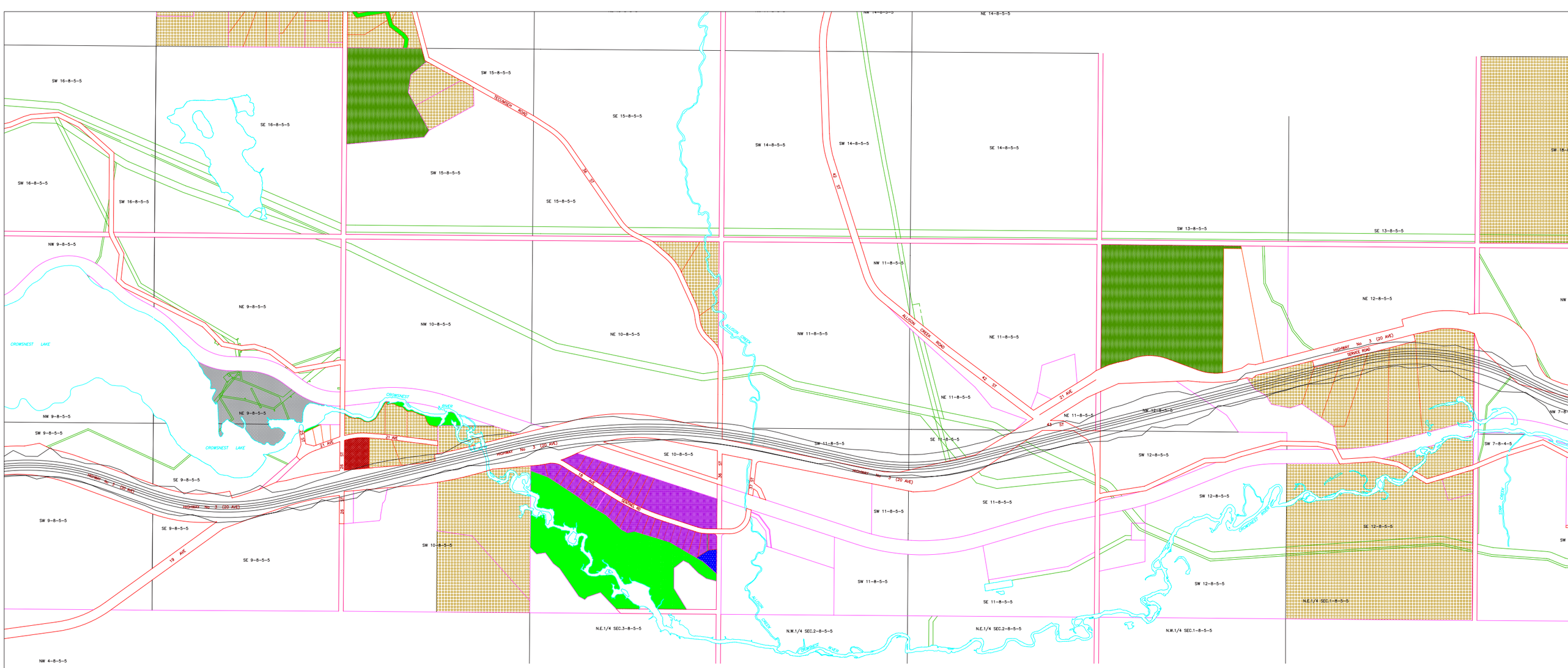
Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



LAND USE DISTRICTS

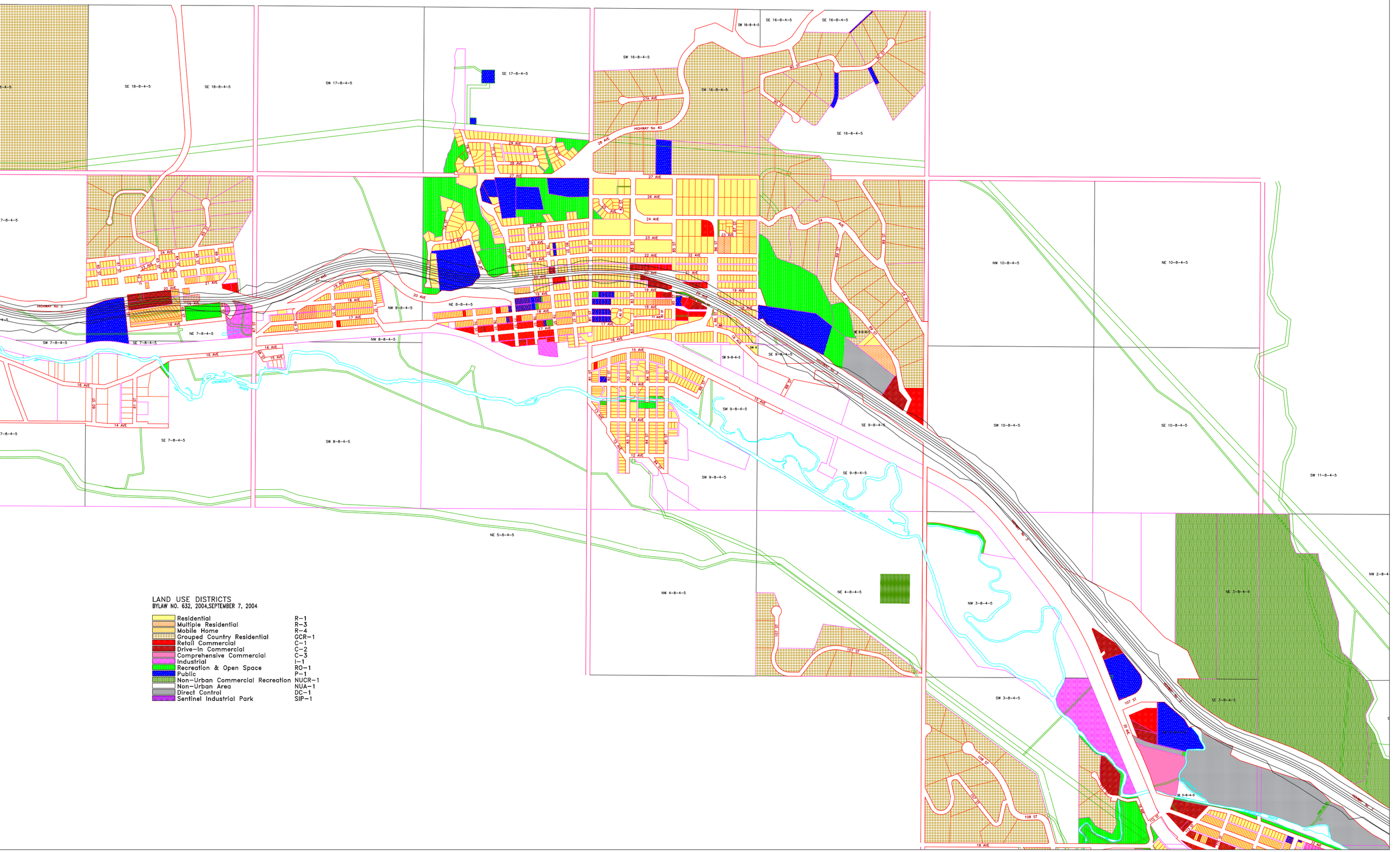
BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1



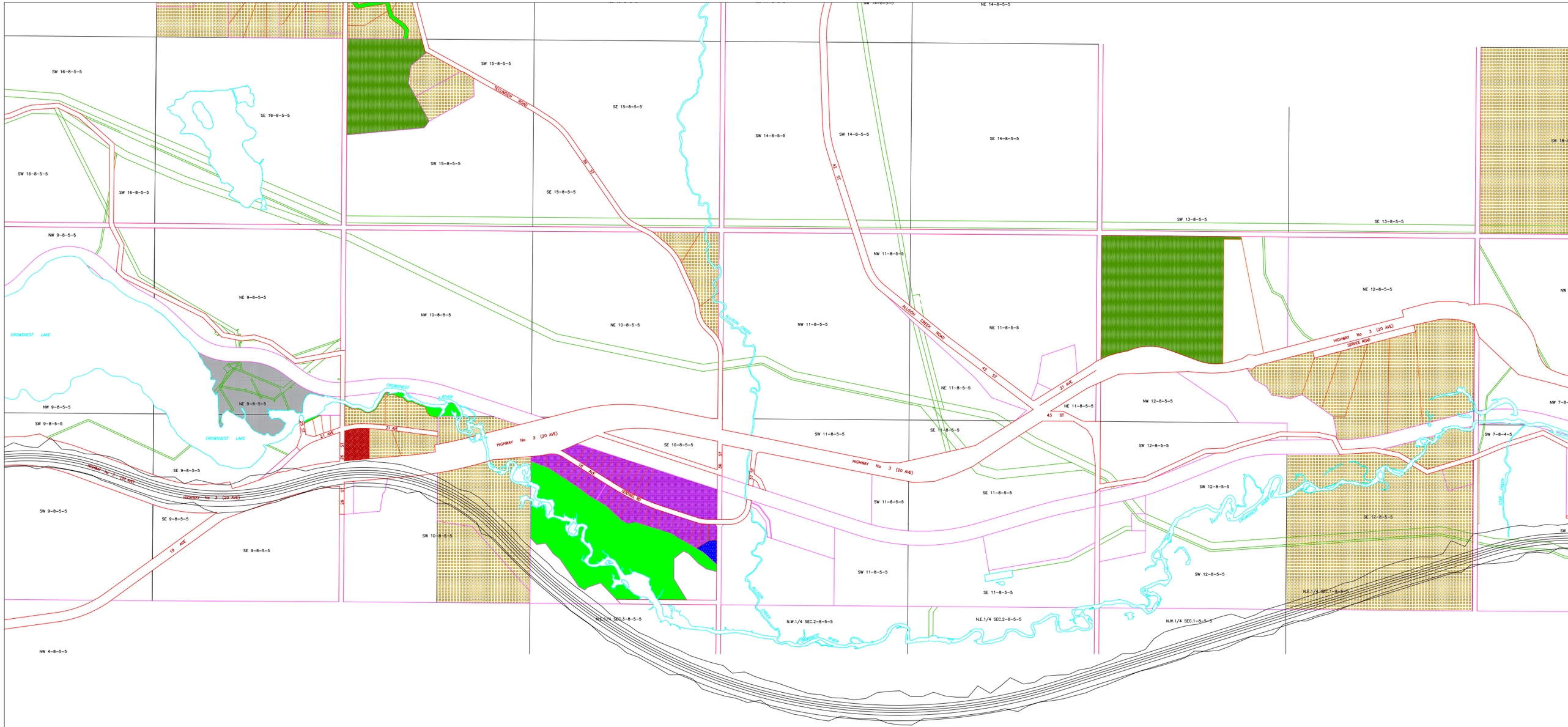
Central Base Alternative with Land Use Zoning

Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



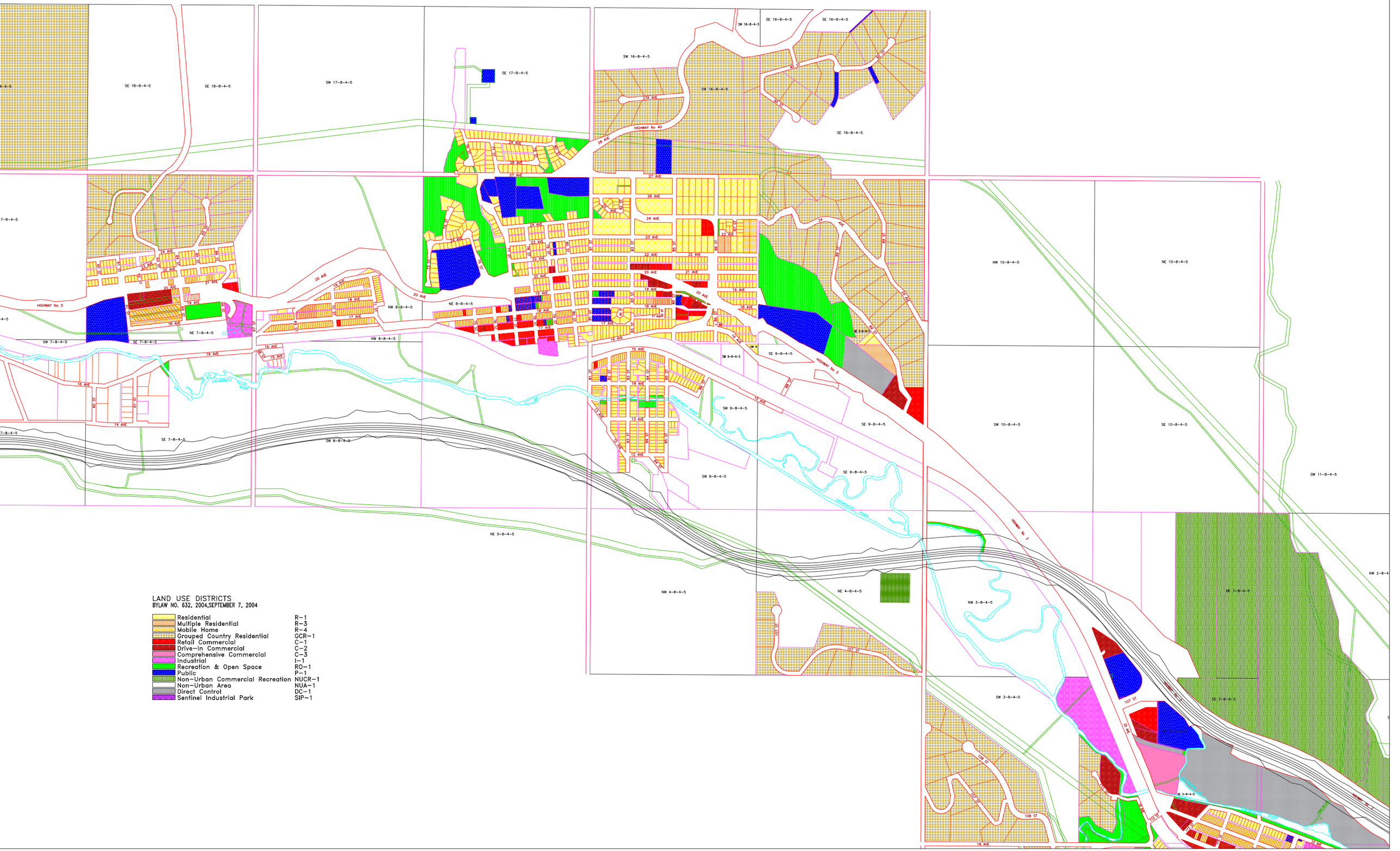
LAND USE DISTRICTS
BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1



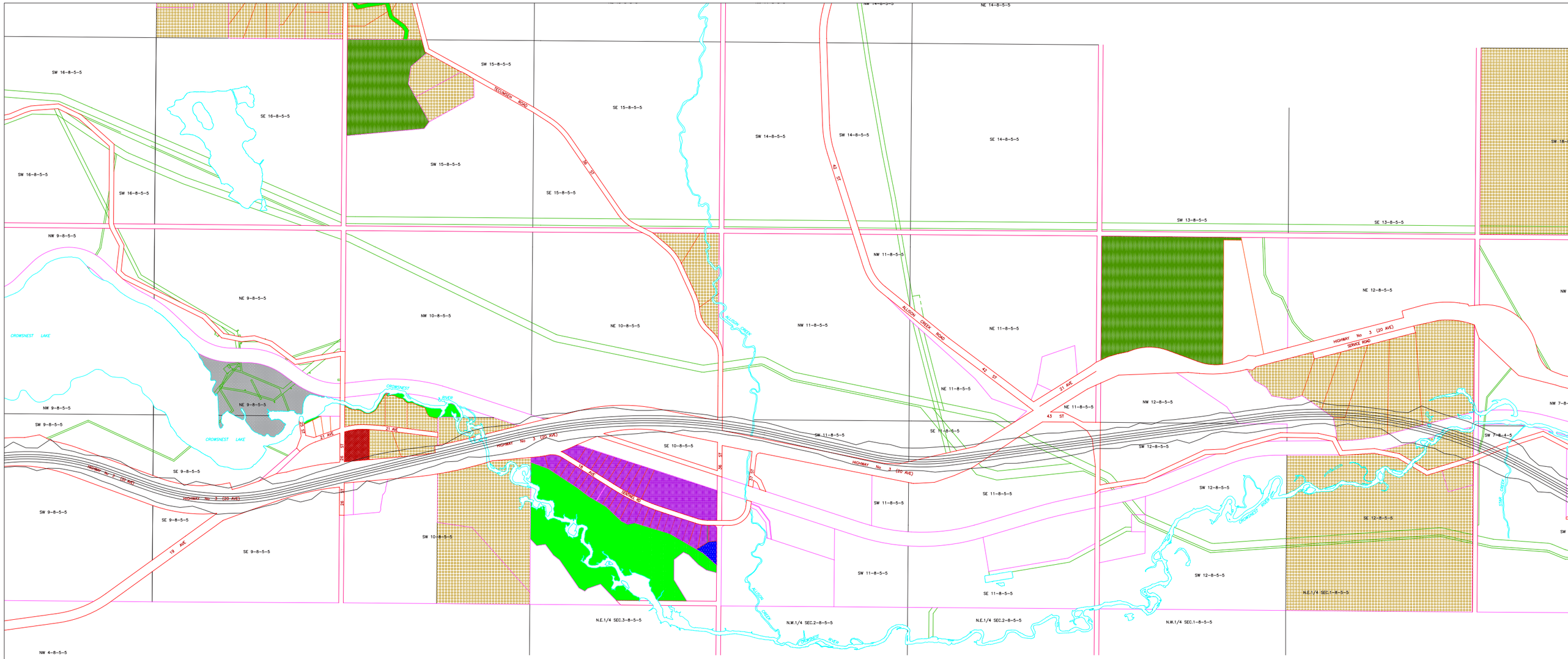
South Base Alternative
with Land Use Zoning

Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



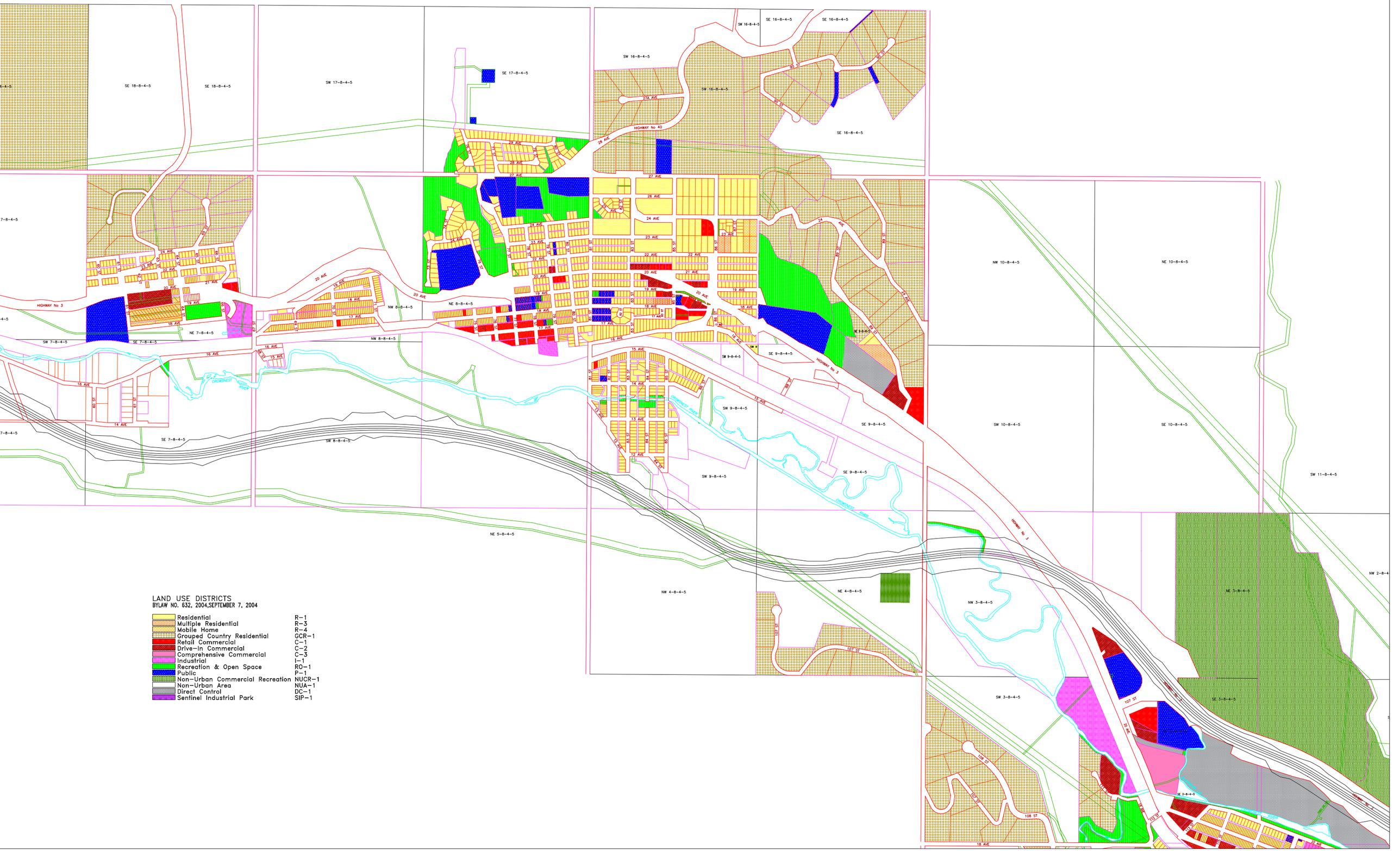
LAND USE DISTRICTS
BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1



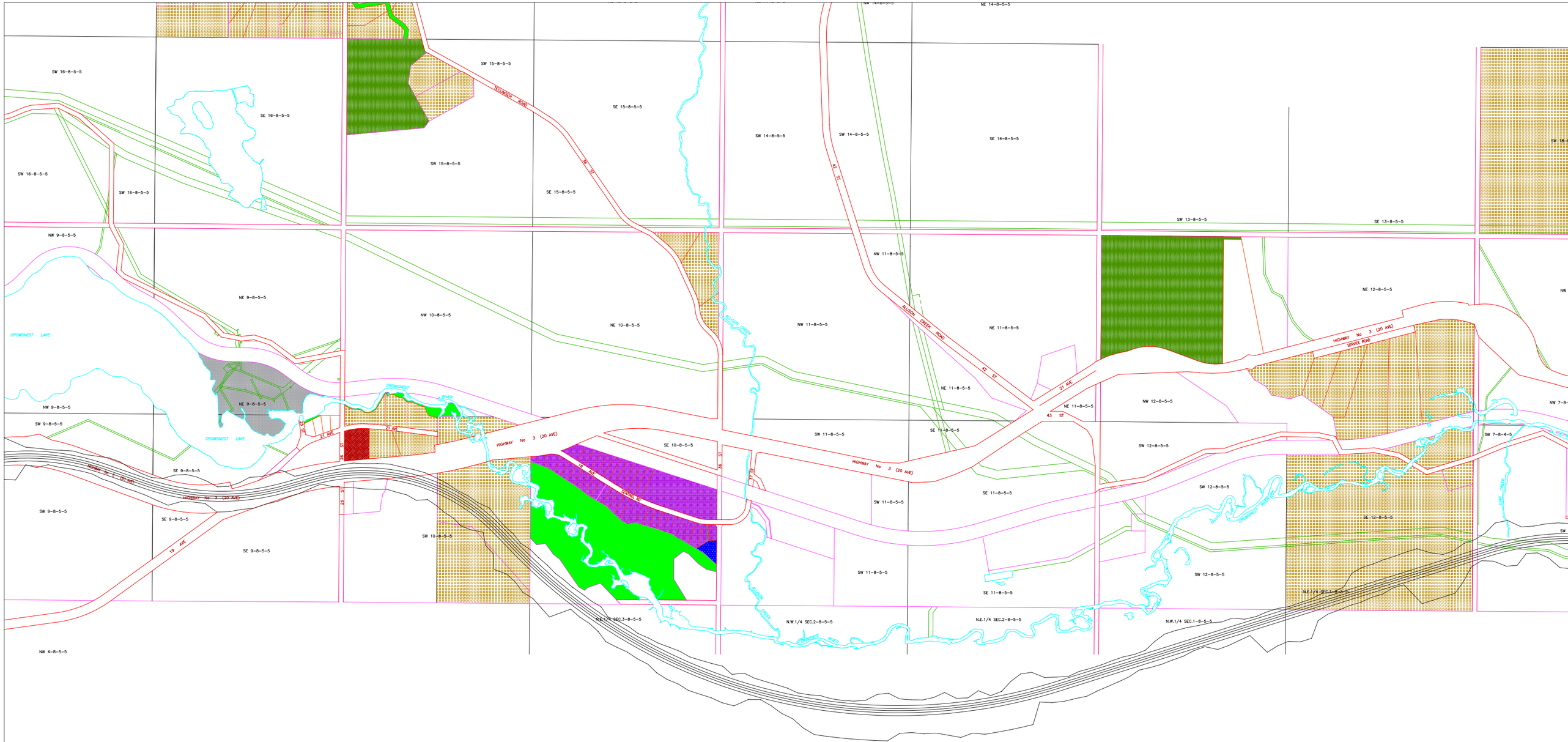
Central / South Option
with Land Use Zoning

Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



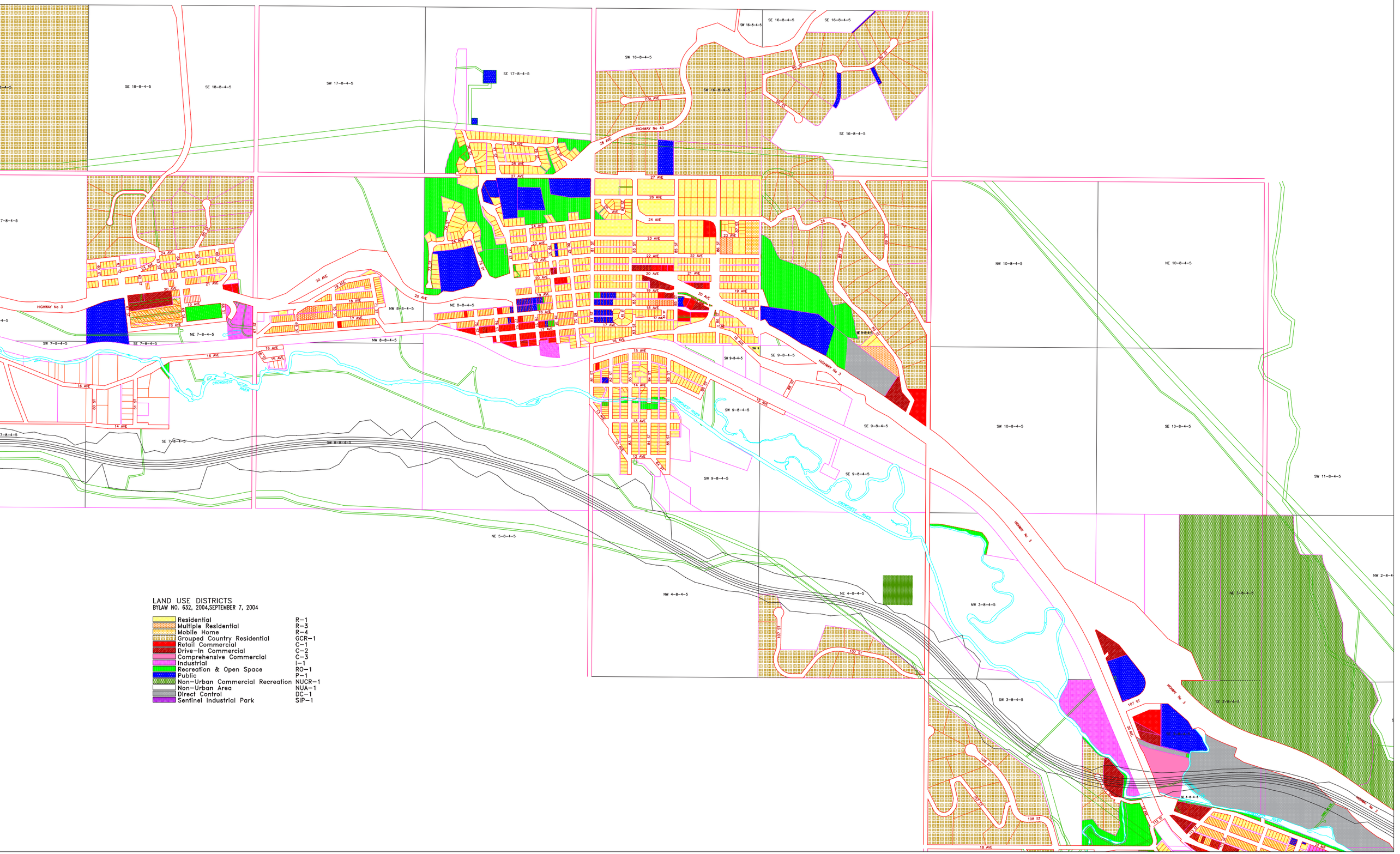
LAND USE DISTRICTS
BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1



South / South - East Option with Land Use Zoning

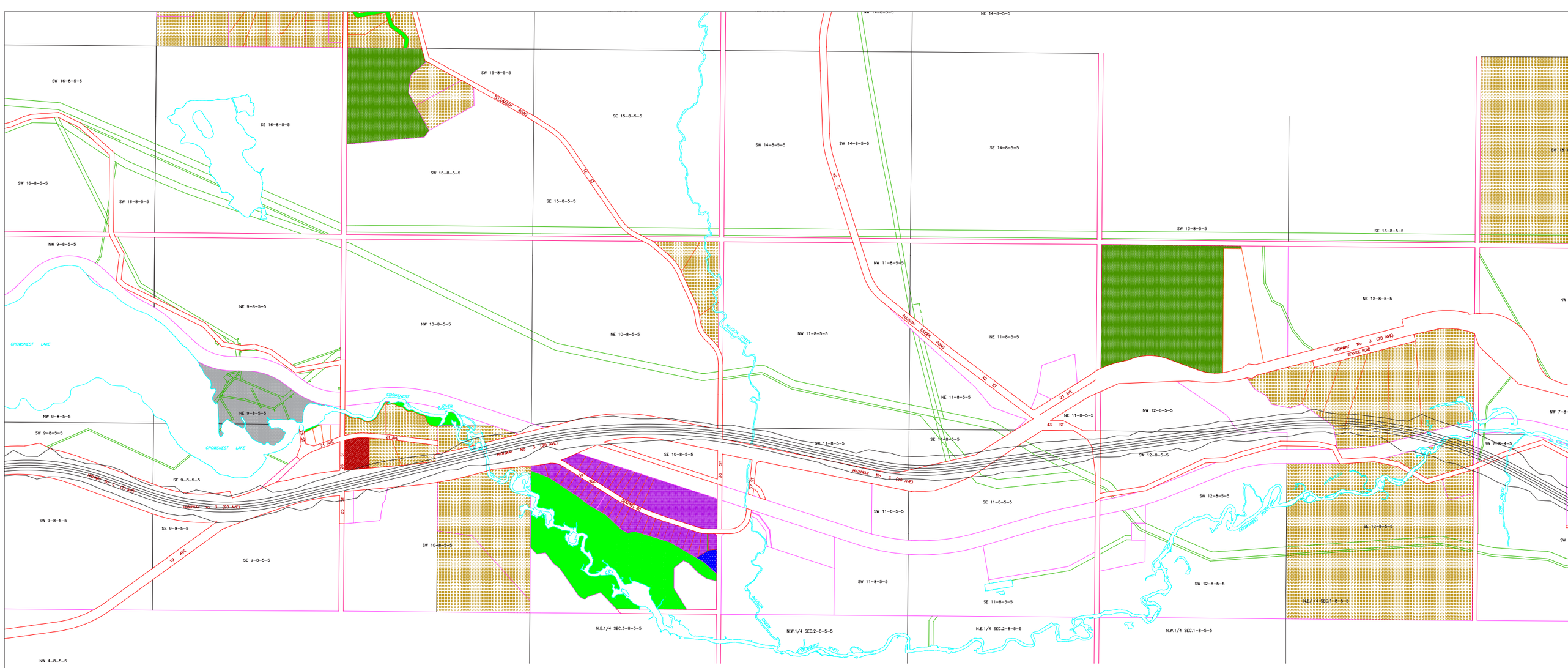
Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



LAND USE DISTRICTS

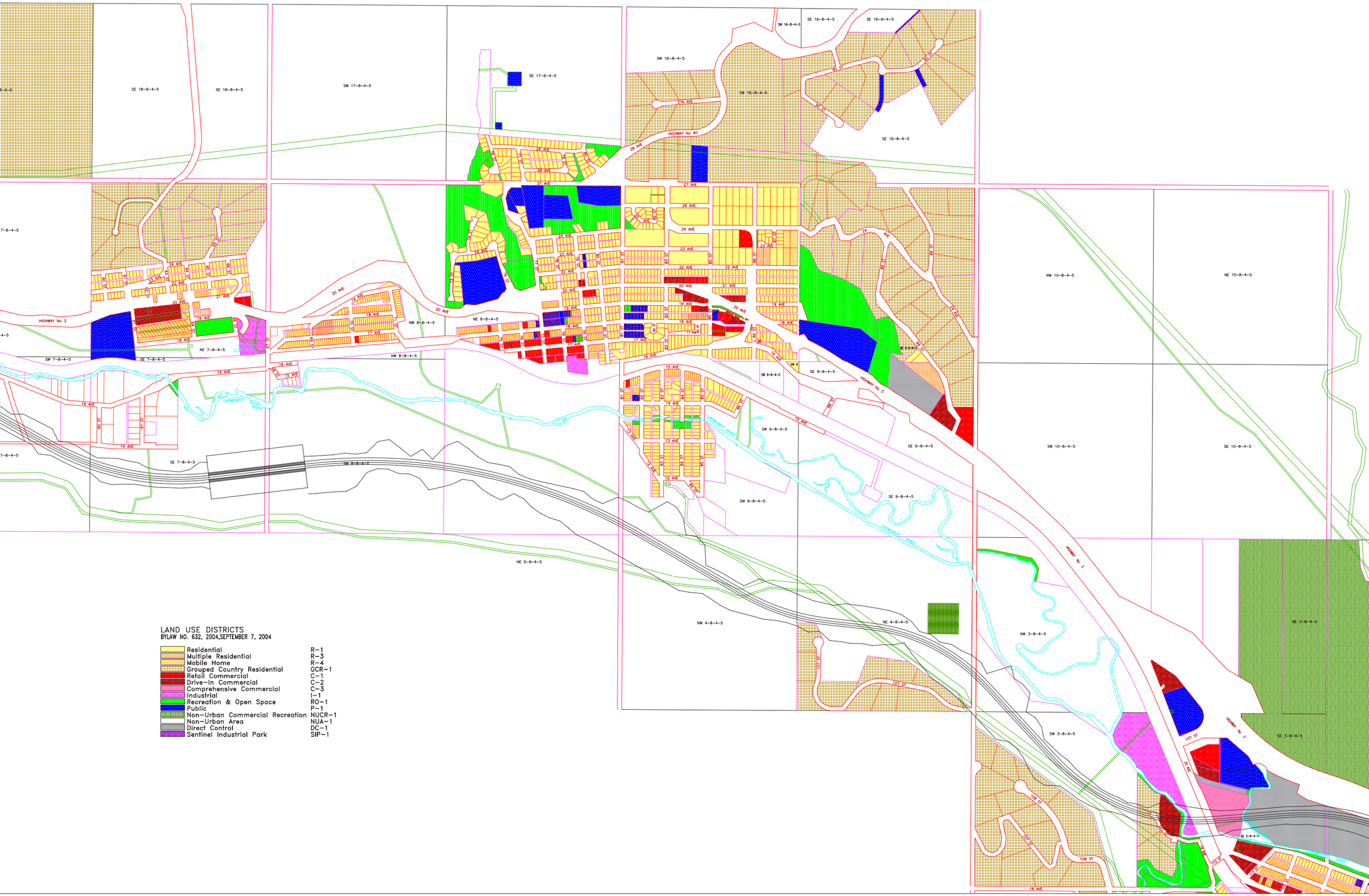
BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1



Central - South / South - East Option with Land Use Zoning

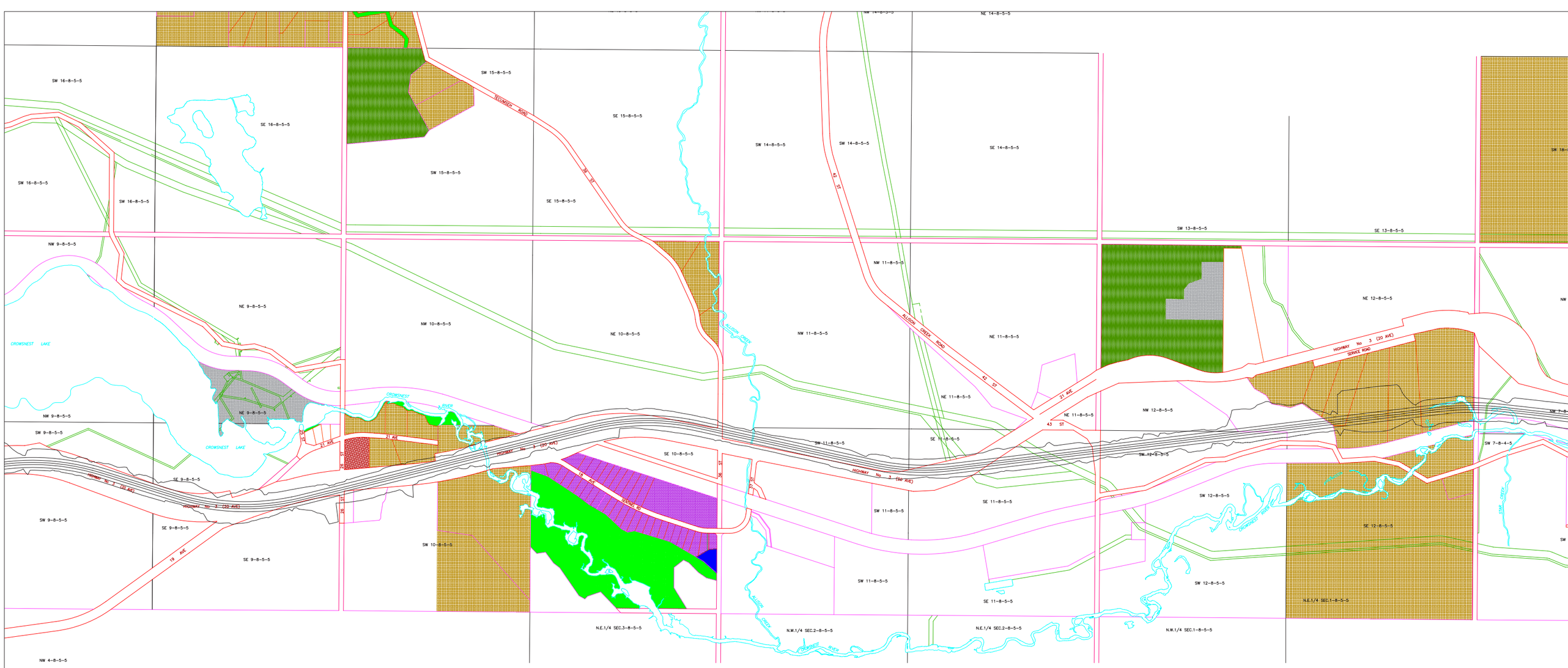
Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



LAND USE DISTRICTS

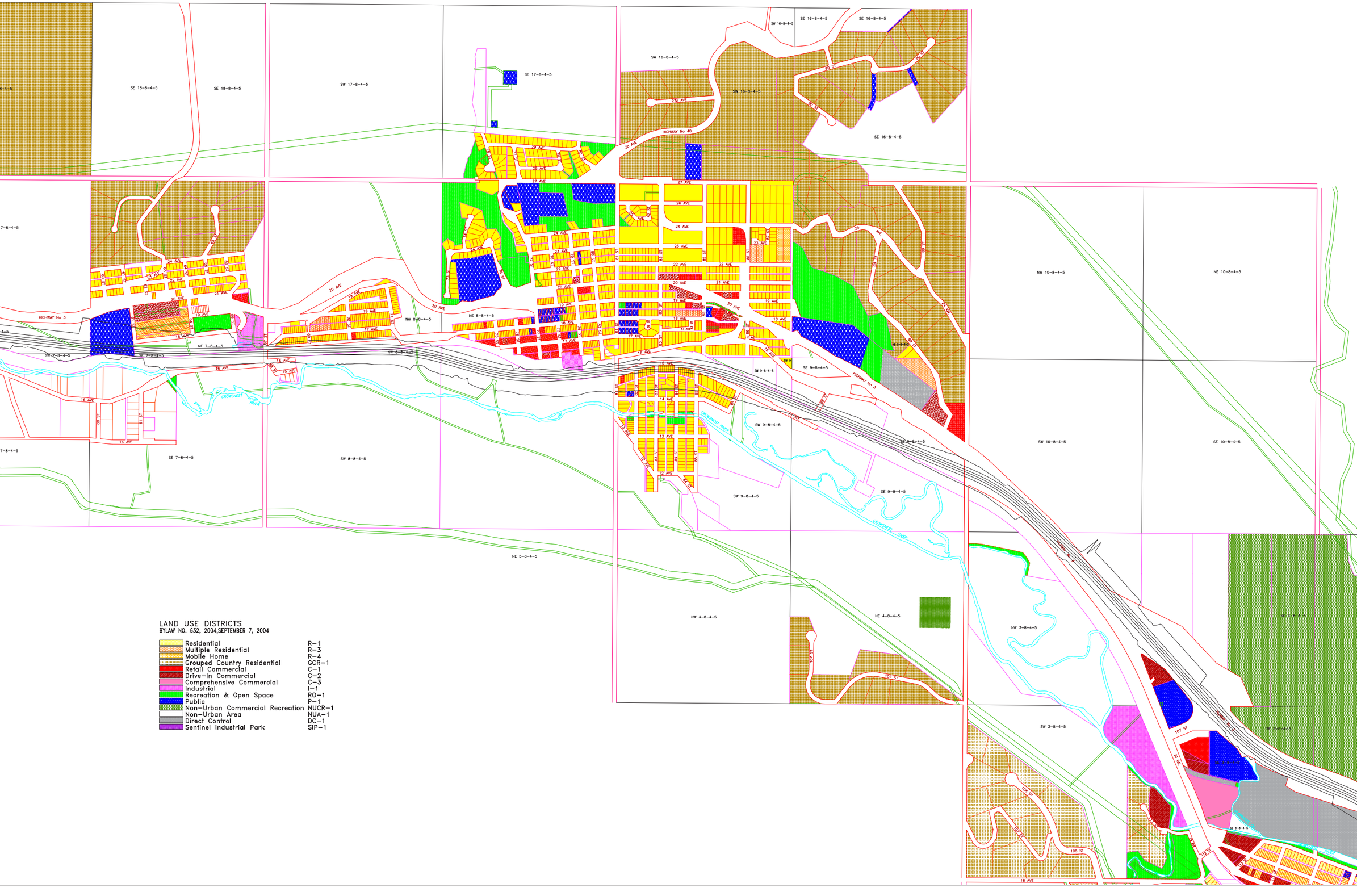
BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1



CPR Option
with Land Use Zoning

Route Mapping supplied by McElhanney Consulting Services Ltd
Land Use District Mapping supplied by the Oldman River Regional Services Commission



LAND USE DISTRICTS

BYLAW NO. 632, 2004,SEPTEMBER 7, 2004

Residential	R–1
Multiple Residential	R–3
Mobile Home	R–4
Grouped Country Residential	GCR–1
Retail Commercial	C–1
Drive–In Commercial	C–2
Comprehensive Commercial	C–3
Industrial	I–1
Recreation & Open Space	RO–1
Public	P–1
Non–Urban Commercial Recreation	NUCR–1
Non–Urban Area	NUA–1
Direct Control	DC–1
Sentinel Industrial Park	SIP–1

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APPENDIX D

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TABLES

Table 1

TOTAL NUMBER OF PRIVATE HOUSEHOLDS
BY HOUSEHOLD SIZE (20% SAMPLE) 2001

Household Size	Number
1 person	765
2 person	1055
3 person	380
4 - 5 person	440
6 or more	35
TOTAL	2675

Table 2

TOTAL NUMBER OF OCCUPIED PRIVATE DWELLINGS
BY STRUCTURAL TYPE OF DWELLING (20% SAMPLE) 2001

Structural Type	1996 Number	2001 Number	Percent Change
Single detached house	2350	2330	
Semi-detached house	10	20	
Row house	0	30	
Apartment, detached duplex	15	5	
Apartment building, five or more storeys	0	0	
Apartment building, less than five storeys	120	140	
Other single attached house	0	25	
Movable dwelling (4)	85	140	
Total number of occupied dwellings	2595	2675	

Table 3

OCCUPIED DWELLINGS BY OWNERSHIP STATUS 2001

Dwellings	1996	2001
Owned	2090	2170
Rented	505	505

Table 4

PRIVATE DWELLINGS – PERIOD OF CONSTRUCTION 2001

Period of Construction	Number
Before 1946	1120
1946 – 1960	315
1961 – 1970	90
1971 – 1980	635
1981 – 1990	250
1991 – 1995	85
1996 – 2001	170

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TABLES

Table 5

EDUCATION STATISTICS 2001

Characteristics	Crowsnest Pass	Alberta
Highest level of schooling for the population age 20 years and over		
Total - All persons age 20 and over	4690	
People without a high school certificate	1755	
People with a high school certificate	500	
People with trades or non-university certificate or diploma	1635	
People with post-secondary education (not completed)	425	
People with university diploma/certificate	45	
People with university degree	300	

Table 6

PROFILE OF POST SECONDARY EDUCATION 1996 & 2001

Population with post secondary qualifications	1996	%	2001	%
Agricultural and biological sciences/technologies	70	4.17	110	5.43
Commerce, management and business administration	325	19.35	370	18.27
Educational, recreational and counselling services	175	10.42	195	9.63
Engineering and applied science technologies and trades	625	37.20	740	36.54
Engineering and applied sciences	30	1.79	20	0.99
Fine and applied arts	120	7.14	130	6.42
Health professionals, sciences and technologies	170	10.12	260	12.84
Humanities and related fields	50	2.98	65	3.21
Mathematics and physical sciences	20	1.19	25	1.23
Social sciences and related fields	75	4.46	115	5.68
Other and/or no specialization	10	0.60	0	0
Total	1680	100.00	2025	100.00

Table 7

LABOUR FORCE BY ACTIVITY

Comparison of 1996 to 2001

Labour Force by Activity	1996	2001
In the labour force, both sexes	2925	3105
Not in the labour force, both sexes	2115	1990
Total population 15 and over	5040	5095
Employment, both sexes	2590	2885
Unemployment, both sexes	335	220
Participation rate, both sexes	58.00%	74.00%
Unemployment, both sexes	11.00%	18.00%