ITRD

SHORTLINE PROJECT

Bringing back regional rail to

Alberta, Canada

THIS REPORT WAS DEVELOPED FOR

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MISSION STATEMENT

At Integrated Travel Research and Development (ITRD), our goal is to encourage transportation equity for all individuals.
Our studies research accessible and affordable transportation options, to service residents and visitors irrespective of income or background.

By fostering connections between communities and promoting sustainability, we aim to create a future where transportation is fair and inclusive in North America.

ITRD has a special focus to study how underserved indigenous and rural communities be connected and benefit from economic development opportunities. Our "Rail for All" approach's dedication to transportation equity extends to these communities as well.

ITRD studies practical and equitable approaches to addressing transportation and environmental challenges in North America through the implementation of "Responsible Rail" integrated with local transit. Our focus is study and recommend new technologies to improve existing rail infrastructure, with the goal of promoting sustainability and responsible transportation.

Rail for All refers to the use of sustainable and cost-effective transportation methods that benefit the communities they serve. In the context of regional rail, this means retrofitting rolling stock and locomotives on existing infrastructure to increase efficiency and reduce environmental impact.

While high-speed rail may be exciting and receive media attention, it is not always the most responsible mode of transportation or investment. The construction and maintenance of high-speed rail lines can be extremely expensive, and the economic impacts may not always align with the needs of the communities they serve. On the other hand, implementing Rail for All through the retrofitting of existing infrastructure is a more cost-effective and responsible option. It still provides a fast mode of transportation that can bring significant benefits to communities and the environment.

Integrated Travel is a not-for-profit organization that advocates for the needs of rail and transit passengers, prioritizing regional concerns over provincial and international boundaries.

To drive change, ITRD collaborates with infrastructure and transportation as well as community stakeholders and supporters. stakeholders to strengthen relationships and bring economic, environmental, and equity benefits to citizens in North America.

ITRD researches the benefits of regional inter-municipality transportation networks that provide seamless, door-to-door connectivity to local residents and visitors.

ITRD is a collection of professionals who believe in building prosperity with equality. Integrated Travel is looking to reestablish safe, reliable, and sustainable inter-city passenger rail and transit service in North America.

The goal is to increase opportunities and contribute to the health and well-being of North Americans via a comprehensive passenger rail network, seamlessly connected to other modes of transportation. Our research will identify where significant benefits to a region's economy, environment, and more importantly, transportation equity, can be realized

Vern Raincock, Director of Integrated Travel

EXECUTIVE SUMMARY

GOAL

This study will report whether or not existing short lines in Alberta are in a position to offer passenger rail service. The study will recommend how to accelerate a passenger rail pilot project in Alberta, Canada.

For nearly forty years, a high-speed rail corridor between Edmonton and Calgary has been debated, with no action being taken. Rather than instituting high speed rail in the Calgary-Edmonton corridor, this report will research whether it is possible to utilize and build upon pre-existing infrastructure in the region, specifically utilizing shortline railways to service smaller communities.

The research will determine whether use of the existing Right of Way to be a more cost effective, inclusive, and sustainable alternative to high-speed rail. In order for the re-introduction of passenger rail service to be achieved, many gaps need to be filled, literally and figuratively. The physical gaps between independent shortlines, Canadian National (CN) rail lines, and Canadian Pacific-Kansas City (CPKC) rail lines must be filled to develop a functioning route throughout Alberta. Granting shortlines improved access to the CN and CPKC rail lines would allow for mixed rail (passenger and freight) to have an efficient route for their respective purposes. Additionally, there are gaps that must be filled to transition from a freight rail line to a passenger rail line, including safety protocols, upgrades to infrastructure, and the creation of new infrastructure, such as stations and their respective requirements.

KEY FINDINGS

- Sustainable Passenger rail development in rural communities, via shortlines, would beneficially impact community residents when they travel to the urban hubs of Edmonton and Calgary.
- Developments on and around the shortline infrastructure would be more cost-effective than greenfield developments, but will still incur significant costs.
- The study identified stakeholder disagreement regarding same-track usage by freight and passenger rail services, as there is an ongoing debate regarding this topic.
- Independent shortline owners who were interviewed for this project were skeptical of the proposal to use shortlines to offer passenger rail service.
- Shortline passenger rail service may be possible with support and financial aid from the Federal and Provincial Government.

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INTRODUCTION

HIGH SPEED RAIL DEBATE

In March 1985, a Federal-Provincial report was released entitled *High Speed Rail Prospects In The Calgary-Edmonton Corridor* (Alberta Department of Economic Development, 1985), determining that the Calgary-Edmonton high speed rail project would be "technically feasible, financially viable and attractive to corridor travelers" (p. 14).

Since the release of this report, the idea of a high speed rail line connecting Alberta's two major cities has been debated time and time again, with more studies released every few years (1995, 2004, 2008, 2010, 2014). The cost and benefit of high speed rail in the region has been discussed at length in the literature. Most studies conclude that high speed rail is an environmentally friendlier mode of transportation than flights, and a time effective alternative to automobile travel, but is ultimately too expensive to institute (Standing Committee on Alberta's Economic Future, 2014).

THE ARGUMENT FOR REGIONAL RAIL

The Calgary-Edmonton corridor is home to 70 percent of the province's 4.7 million people, a population that is expected to continue growing in the coming years (Canadian Geographic, 2024). Alberta's Highway 2, which parallels the CPKC freight rail line connecting the two cities, sees approximately 100,000 vehicles per day, a number that, like the population, is expected to grow. While the discussion of regional rail to service the area is often overlooked, a high speed rail line continues to be debated.

Two projects are currently under consideration: Prairie Link and TransPod (Canadian Geographic, 2024). An issue that tends to be overlooked when proposing a high speed rail corridor, is that a high speed train would blow by the smaller communities scattered throughout the corridor. The only function of the train is to service inner-city to inner-city, failing to connect smaller communities in the Calgary-Edmonton region. On the contrary, a regional rail system that services smaller communities would be inclusive of rural and indigenous areas along the way, giving their inhabitants more potential for travel.

UTILIZING PRE-EXISTING INFRASTRUCTURE

Researchers in Canada have argued that working with the pre-existing rail infrastructure in the country is a sustainable and cost-effective solution to the lack of public transportation options for Canadians (Canadian Geographic, 2024).

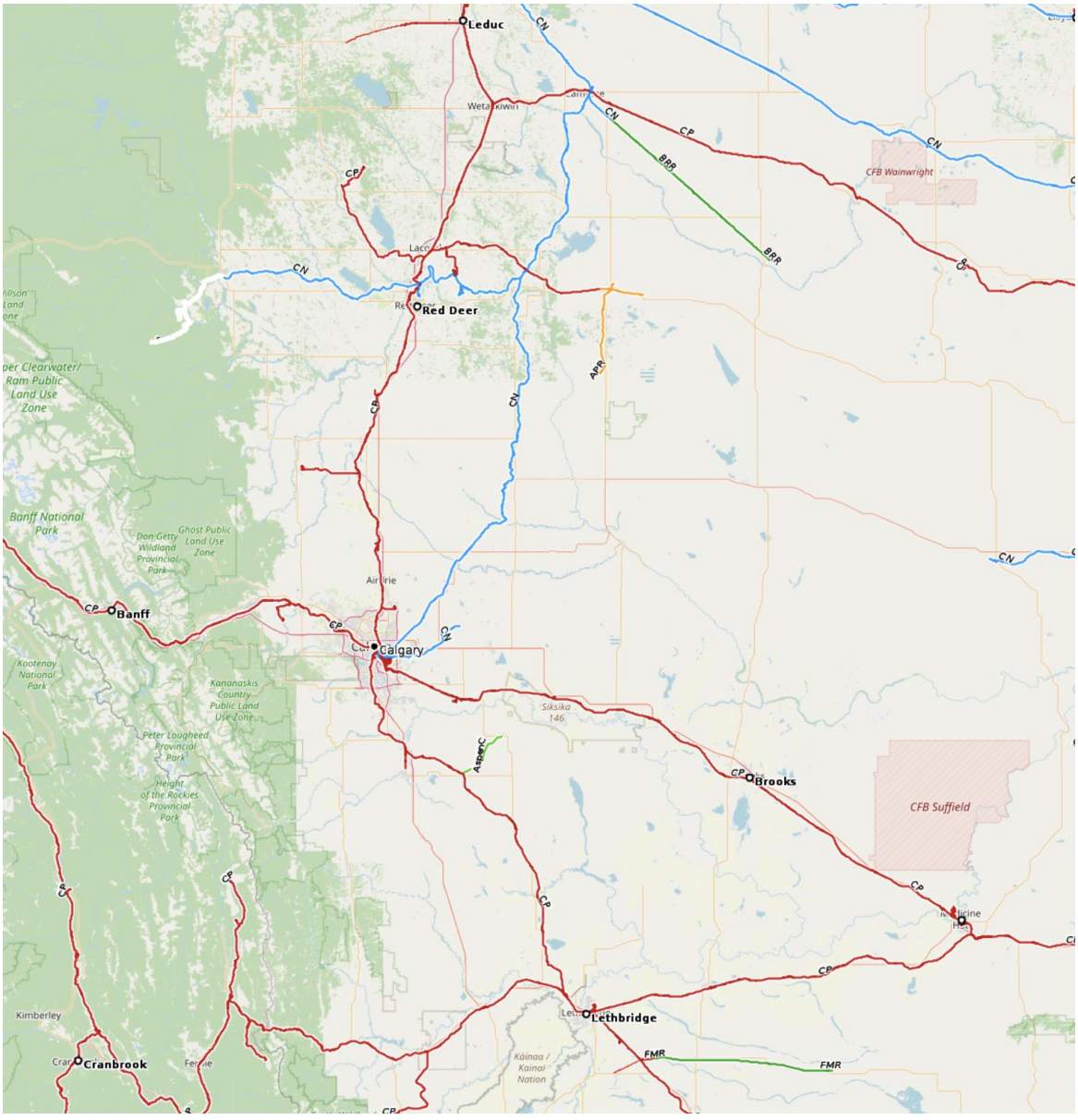
Canada should build upon underused or abandoned railroads which were decommissioned as recently as the 2010s rather than continuing to fund highway projects that contribute to congestion and climate change (Canadian Geographic, 2024).

The Calgary and Edmonton Railway Company was formed in 1891, when the federal government gave the company 6,400 acres of land for every mile of rail it built. These tracks and the respective right of way were eventually bought by Canadian Pacific Railway (CP).

This corridor, which runs along Alberta's Highway 2, now only operates Canadian Pacific-Kansas City (CPKC) freight trains. The last Dayliner Via Rail train took the three-and-a-half-hour trip along this corridor (Canadian Geographic, 2024).

CPKC and CN connects to smaller communities via four shortlines, Battle River Railway, Alberta Prairie Railway, Aspen C, and Forty Mile Rail.

Figure 1. Railway Network in Alberta, Canada



Source: Railway Association of Canada, Canadian Rail Atlas

LEGEND

Colour	Railway
Red	Canadian Pacific Kansas City (CPKC)
Blue	Canadian National (CN)
Orange	Alberta Prairie Rail (APR)
Dark Green	Battle River Railway (BRR)
Light Green	Aspen C
Dark Green (south-most, connecting to CP)	Forty Mile Rail

SHARING TRACKS - FREIGHT & PASSENGER TRAINS

The large freight operators, Canadian National (CN) and Canadian Pacific-Kansas City (CPKC), own and operate the majority of tracks in Canada. Freight trains in North America travel at slow speeds for long distances and often come across a passenger train in their path, as freight and passenger trains operate on the same tracks (Canadian Geographic, 2024).

Since CN and CPKC own and operate on these tracks, their freight is given priority over passenger rail, forcing passenger trains to move over and allow freight trains to go by during their trip. This practice has resulted in a plethora of horror stories from frustrated Canadians including a reported service disruption while taking a VIA Rail train (CBC, 2023). This practice of freight prioritization has further deterred the public from taking passenger rail, resulting in the continued closure of passenger routes across the continent (Canadian Geographic, 2024).

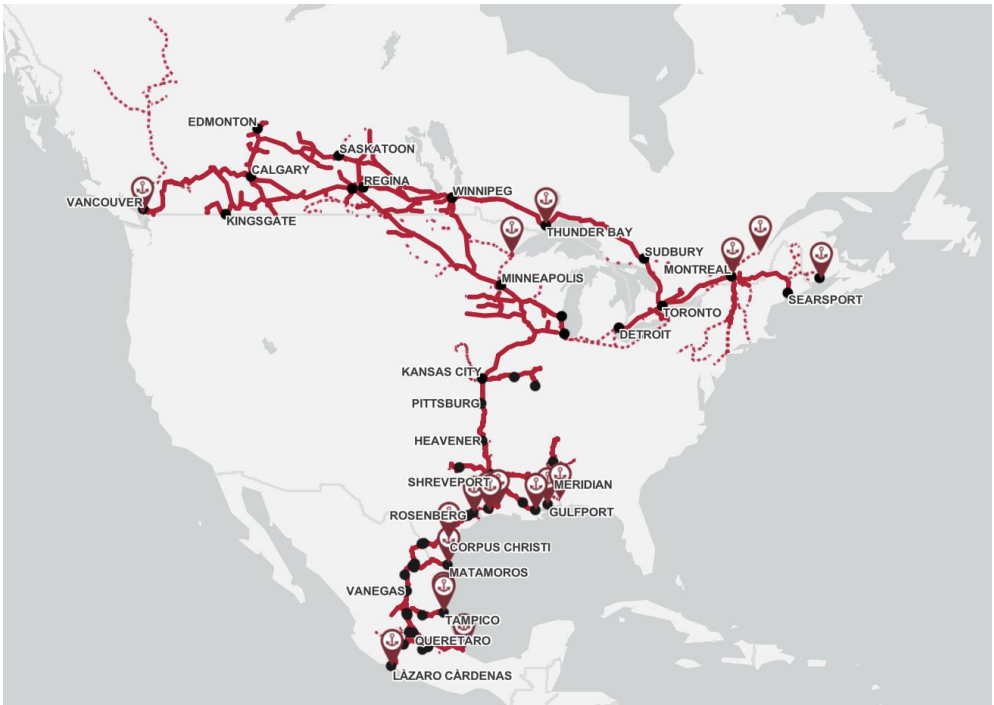
Given these unfavourable circumstances, there has been a recent move to amend the current Canada Transportation Act (1996). This change would require railway companies to give priority to passenger rail service over freight service (Rail Passenger Priority Act, December, 2023). However, the freight industry has pushed back on this idea, as it would impede upon the efficiency of their services (Railway Association of Canada, 2024). Another stance being taken to enhance the freight and passenger rail network is to require freight and passenger rail to operate on separate tracks (Railway Association of Canada, 2024). This approach would ensure that neither rail industry would be impeded by the other.

This is a much more costly approach for the passenger rail industry, as CPKC and CN already own the tracks that operate freight and passenger rail. Thus, passenger railway companies would be required to construct new tracks along CPKC and CN right of way.

Figure 3. Canadian National (CN) Rail Network

Source: Canadian National (CN)

Figure 4. Canadian Pacific-Kansas City (CPKC) Railway Network - North American Continent



Source: Canadian Pacific-Kansas City (CPKC)

SHORTLINES

Shortline railways play a critical role in Canada's supply chain, often providing the first/last leg of transporting goods (Railway Association of Canada, 2022, p. 4). These lines predominantly operate freight trains, but some, like Alberta Prairie Railway, also operate tourism excursions (Alberta Prairie Railway, 2024). Shortlines (Class II carriers) are defined as "railways that earn less than $250 million in annual revenues for two consecutive years, whereas Class I railways earn revenues greater than $250 million" (Railway Association of Canada, 2022, p. 4). Nine Canadian provinces host the operation of shortline railways, playing a significant role in international, as well as domestic, supply chains (Railway Association of Canada, 2022, p. 4). Shortlines were created after amendments to the Canadian Transportation Act (1996). These changes allowed Class I freight operations to control their own networks, cutting ties with less profitable rail lines. To continue the operation of the less profitable lines, they were purchased by independent entrepreneurs (Railway Association of Canada, 2022, p. 5). The freight rail industry is booming in North America, with shortlines as a critical player in its success.

Passenger rail service continues to diminish while billions of dollars are invested every year into the maintenance and building of highways across the continent, as well suburban developments that are solely accessible by car. Investing in infrastructure that will allow Canadians to be more mobile, decrease congestion, and decrease fuel emissions is a long-term investment in North America and for the planet.

This study researches the utilization of pre-existing shortline infrastructure to connect smaller communities to the proposed Alberta Regional Rail project, which would connect Calgary, Edmonton, and smaller communities scattered between.

Figure 2. Railway Association of Canada Shortline Members Network

Source: Railway Association of Canada, Canadian Rail Atlas

BATTLE RIVER RAILWAY

History:

- Battle River Railway was established in 2009 when it acquired approximately 140 miles of former Canadian National (CN) branch lines.
- The railway operates on two main lines: the Camrose Subdivision between Camrose and Alliance, and the Coronado Subdivision between Camrose and Galahad.

Customers Served:

- Battle River Railway primarily serves agricultural and industrial customers along its route.
- Its customers include grain elevators, oilseed processing facilities, lumber yards, and other businesses reliant on rail transportation for shipping and receiving goods.

Population Centers Along the Right-of-Way:

- Camrose: Camrose is a major city along the Battle River Railway's route, serving as a hub for agricultural, educational, and cultural activities.
- Galahad: Galahad is a small community located along the Coronado Subdivision, primarily serving agricultural interests.
- Alliance: Alliance is another small community along the Camrose Subdivision, with a focus on agriculture and rural living.

Population Growth Along the Shortlines:

- Population growth along Battle River Railway's right-of-way has likely been modest, as the region is primarily rural with limited urban development.
- Population growth may be influenced by factors such as agricultural activity, economic conditions, and government policies affecting rural communities.

Average Income of Residents:

- The average income of residents along the Battle River Railway's right-of-way may vary depending on factors such as employment opportunities, industry sectors, and economic conditions.
- Agricultural activities are a significant source of income for many residents, with income levels influenced by crop yields, commodity prices, and government support programs.

Overall, Battle River Railway plays a crucial role in facilitating transportation and economic development in east-central Alberta, particularly for agricultural and industrial sectors. While population centers along its route may be relatively small, the railway serves as a vital lifeline for communities and businesses reliant on rail transportation for their livelihoods.

ALBERTA PRAIRIE RAILWAY

History:

- Alberta Prairie Railway was established in 1989 as a tourist attraction offering scenic train rides through the prairies of central Alberta.
- The railway operates on a section of the former CNR Coronation Subdivision between Stettler and Big Valley.

Customers Served:

- The primary customers of Alberta Prairie Railway are tourists and visitors seeking scenic train experiences and historic railway excursions.
- The railway offers various themed excursions, including steam train rides, murder mystery dinners, and special events throughout the year.

Population Centers Along the Right-of-Way:

- Stettler: Stettler is a town located at the southern terminus of Alberta Prairie Railway's route. It serves as a hub for tourism, agriculture, and retail services in the region.
- Big Valley: Big Valley is a small village located along the route, known for its railway heritage and historic sites such as the Big Valley Train Station Museum.

Population Growth Along the Shortlines:

- Population growth along Alberta Prairie Railway's right-of-way may have been limited, as the primary focus of the railway is tourism rather than serving residential or industrial communities.
- The railway may contribute to local economic development through tourism-related activities and events, potentially influencing population trends in the region.

Average Income of Residents:

- The average income of residents along Alberta Prairie Railway's right-of-way may vary depending on factors such as employment opportunities, industry sectors, and economic conditions.
- Tourism-related businesses and services may contribute to local income levels, particularly in communities like Stettler that serve as tourist destinations.

Overall, Alberta Prairie Railway plays a significant role in promoting tourism and preserving railway heritage in central Alberta. While it may not serve traditional industrial or agricultural customers like other shortlines, it contributes to the local economy and cultural heritage of the region through its unique tourist experiences and attractions.

FORTY MILE RAILWAY

History:

- Forty Mile Railway was originally established as a Canadian Pacific Railway (CPR) branch line in the late 19th century.
- In the late 1990s, the line was acquired by Forty Mile Rail company and operated as a shortline railway.

Customers Served:

- Forty Mile Railway primarily serves agricultural customers along its route.
- Its customers include grain elevators, agricultural cooperatives, and other businesses involved in the production and transportation of agricultural commodities.

Population Centers Along the Right-of-Way:

- Foremost: Foremost is a small village located along the route of the Forty Mile Railway. It serves as a local service center for the surrounding agricultural community.
- Manyberries: Manyberries is another small community served by the Forty Mile Railway. It has historical significance and serves as a gateway to nearby outdoor recreational areas.

Population Growth Along the Shortline:

- Population growth along the Forty Mile Railway's right-of-way has likely been limited, as the region is primarily rural with sparse population density.
- Population trends may be influenced by factors such as agricultural activity, economic conditions, and migration patterns.

Average Income of Residents:

- The average income of residents along Forty Mile Railway's right-of-way may vary, with many individuals involved in agriculture-related occupations.
- Income levels may be influenced by factors such as crop yields, commodity prices, government support programs, and off-farm employment opportunities.

Overall, Forty Mile Railway plays a vital role in supporting agricultural transportation and economic activity in southeastern Alberta. While the population centers along its route may be small, the railway serves as a critical link for local farmers and businesses, contributing to the region's economic viability and rural livelihoods.

ASPEN CROSSING RAILWAY

Aspen Crossing is a tourist destination short line located in Mossleigh, Alberta, Canada. It features a historic railway station, dining experiences, camping facilities, and events such as train rides and festivals.

CORRESPONDING WITH SHORTLINES

As part of the report on utilizing shortline infrastructure, Battle River Railway, Alberta Prairie Railway, and Forty Mile Rail were interviewed regarding the proposed project. In these meetings, the railway companies emphasized that a viable and economic passenger service is not possible along their shortline. The details of the interview are displayed below.

Shortline	Subject	Responses
Battle River Railway Interviewee: Matthew Enright (Owner)	1. History/Background of Passenger Rail on Battle River	1. - Created in 1917 predominantly for passenger transportation - Post World War Two, the need for passenger rail decreased - Today, Battle River is predominantly involved in the freight industry, with some services in tourism
	2. Estimate Budget to Reinstate Passenger Rail along the shortline	2. Costs would include: - Infrastructure for passenger stations - Equipment and amenities, currently the coach is outdated and supports only 80 people. - Noise & sound level control - Speed - currently runs at class II standards, with a maximum of thirty miles per hour. Effective passenger transportation requires a higher class track of sixty miles per hour. - More intense track monitoring and more inspections
	3. Benefits of Passenger Rail along the shortline	3. Connecting smaller communities to the larger cities could be beneficial, but overall it is worth it to serve the smaller communities along the shortline where everyone has personal vehicles for daily use. The communities Battle River runs through would not benefit from this form of transit, as they are small, sparsely populated rural areas. Overall, it would not pass a cost/benefit analysis. 4. Brief conversation with Mayor Doug Jones on connecting Oyen, AB to Alliance, AB, but cost benefit analysis

	4. Any other conversations regarding passenger rail on Battle River Railway 5. Consensus	would not pass. The pilot project should start with connecting Edmonton and Calgary. 5. Short lines are very sparse, veering off into the rural areas, when connecting Calgary and Edmonton, using Battle River's tracks would result in an indirect and inefficient route Suggested Route: Edmonton -> Camrose -> Stettler -> Red Deer -> Calgary - Crossing the Battle River would be an expensive undertaking that would not be worthwhile. - The tracks end abruptly in Alliance, AB, thus, there is a high cost to connect it to an existing track - Topography to West difficult to navigate - Battle River & Red Deer Valley - Battle River's rail line could connect to the existing CPKC and CN railway in Red Deer, but a double track would have to be added, as well as the various legal, safety, and infrastructural upgrades that would be too costly.
Alberta Prairie Railway Interviewee: Don Gillespie (Owner)	1. History/Background of Alberta Prairie Railway	1. - CN integrated the old Alberta Prairie line, as well as taking over the Stettler station. CPKC took over the tracks in Lockhom. Permission was granted by CPKC for Alberta Prairie Railway to go south of Red Deer. - Today, Alberta Prairie operates a variety of tourist exhibitions throughout the seasons. Facilities: - Fertilizer plant - Electric elevator - 4 miles west of Stettler to Waka - 214 miles of main line - 2 yards of storage Connections:

	2. Estimate Budget to Reinstate Passenger Rail along the shortline 3. Benefits of Passenger Rail along the shortline 4. Consensus	- Part of CN line can be leased to run to valley - Does Not connect to CN. 2. Cost to upgrade to regulations of the federal government would be millions of dollars. 3. Rural communities would be connected to urban hubs 4. Rail connecting Edmonton and Calgary is first priority, using shortlines does not have enough passengers to support the dollar value. Rural communities near Alberta Prairie lack even a bus system, therefore, rail would not be funded or utilized

FILLING THE GAPS

The transition from freight-only to mixed track use will require several changes to be made to ensure the safe operation of passenger rail on shortline infrastructure.

The study will determine if introduction of passenger rail on existing shortlines in Alberta would be a beneficial addition to the Albert Regional Rail Project that would operate on existing CN or CPKC lines.

SAFETY PROTOCOLS

Transitioning from running only freight trains to running both freight and passenger rail services requires changes to infrastructure and safety protocols. The *Railway Passenger Handling Safety Rules* (2000), outlines the following requirements for operating passenger rail:

1. PASSENGER HANDLING SAFETY PLANS

1) Written safety plans must be available aboard passenger trains, encompassing, at a minimum, the following applicable measures: “a) medical; b) on-board fire; c) derailment or collision; d) passenger evacuation procedures; e) incident recording and reporting; f) passenger safety awareness procedures; g) training; h) communications; i) safety checks; j) bomb threat, terrorist threat and other related security measures” (Railway Passenger Handling Safety Rules, 2000, p. 2).

2) These safety standards must be enforced, should incorporate best practices and procedures specified by the Railway Association of Canada (RAC), shall incorporate the railway’s emergency response procedures and partake in periodic exercises, and safety plans must be filed with the Department prior to the first service operation (Railway Passenger Handling Safety Rules, 2000, p. 2-3).

2. TRAINING

Railway companies that operate or host passenger rail services must have a sufficient number of on-board personnel who are trained in the following: “a) with the passenger handling safety plan; b) with the company’s emergency response procedures; c) with the safety features of passenger equipment; d)

with normal and emergency communication procedures; e) with the use of on-board emergency tools; f) to administer first-aid and CPR; g) to provide service to passengers with disabilities under normal and emergency situations; h) to supervise or assist in emergency evacuation procedures" (Railway Passenger Handling Safety Rules, 2000, p. 3).

3) Other appropriate railway personnel and on-board personnel must be: "a) familiar with the passenger handling safety plan; b) familiar with the company's emergency response procedures" (Railway Passenger Handling Safety Rules, 2000, p. 3).

3. PASSENGER SAFETY INSPECTIONS

Qualified personnel must ensure that a safety check has been made prior to departure, as well as ensuring the following:

"a) passenger awareness information is available; b) on-board emergency tools are intact and accessible; c) first aid and trauma kits are intact and sealed; d) emergency signage is visible and legible; e) emergency lighting functions as intended; f) emergency communications equipment functions as intended; g) carts, parcels, luggage and oversize articles are properly stowed and secured; h) any known or recorded defects are reviewed by on-train personnel" (Railway Passenger Handling Safety Rules, 2000, p. 4).

4) In an instance of a defect according to these regulations, a qualified person must:

"a) have the defect immediately corrected; or b) permit the train to move to a location where the defect can be corrected, and (i) identify any restrictions to the train movement; or (ii) identify any restrictions to the occupancy of a passenger car; and c) log or notify the rail traffic controller and/or operations control center of any such defect being moved and of any restrictions" (Railway Passenger Handling Safety Rules, 2000, p. 4).

The requirements listed above would be legally required to operate passenger rail on the shortline tracks.

GRADE CROSSING STANDARDS

To convert existing shortline infrastructure to be suitable for passenger rail, all tracks must be upgraded to a Class III track, as these tracks allow for speeds of up to 97 km/hr (Grade Crossing Standards, 2014). All other grade crossing standards should be currently met by shortlines, but upgrading tracks to reach this speed would be a significant undertaking.

PHYSICAL GAPS

The main purpose of utilizing shortlines is to connect rural communities in Alberta to the proposed regional rail project. This would connect these communities to the urban hubs of the province, Edmonton and Calgary. However, there are sizable physical gaps without proper trackwork, which is needed in order to connect the shortlines network to the regional rail.

Use of CPKC and CN networks and right of way will be required. By using the existing ROW, new land would not have to be purchased from separate owners, which would be cost effective and less likely to experience legal issues. It is important to identify the closest connection point for each of these

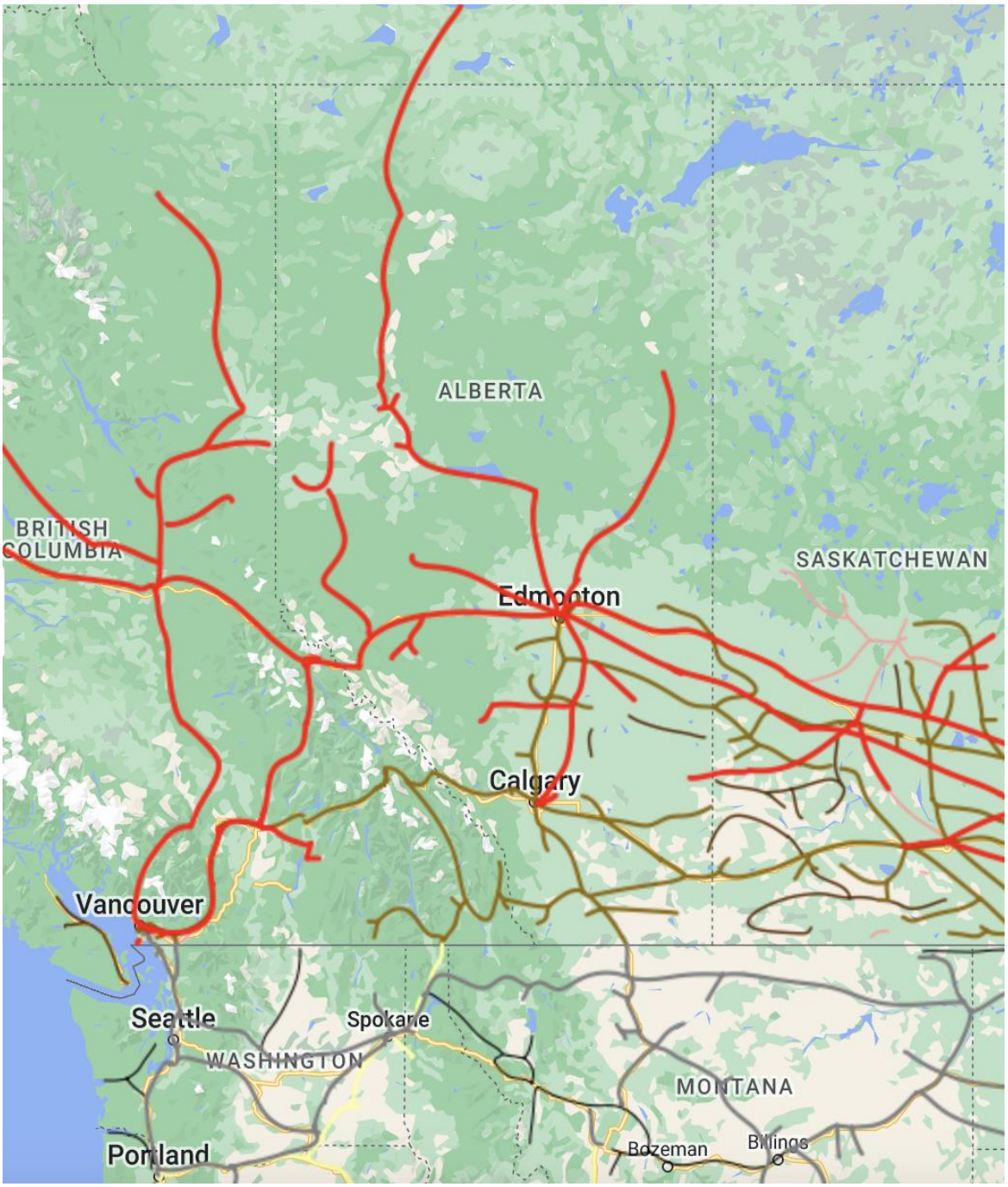
shortlines to the larger CPKC and CN network. This will allow for capital improvements to be made by building stations and updating the trackwork to that of Class I carrier. These stations can be equipped with wheelchair accessible platforms and should have parking lots for passenger vehicles, as the rural areas connecting the shortlines lack public transit networks, such as bus services.

There are four main shortlines in the province. The closest connection point to each short line can be described as follows. The Battle River Railway can connect to the CN network through Kelsey. The Alberta Prairie Railway connects to the CPKC network at Stettler. The Forty Mile network connects to the CPKC network at Stirling and the Aspen C shortlines can be connected at Eltham.

Figure 5. Canadian Pacific-Kansas City (CPKC) Railway Network - Alberta, Canada

Source: Canadian Pacific-Kansas City (CPKC)

Figure 6. Canadian National (CN) Railway Network - Alberta, Canada



Source: Canadian Pacific-Kansas City (2024)

CONNECTING SHORTLINES TO CPKC & CN RAILWAYS - SWOT ANALYSIS

STRENGTHS

- Access to Extensive Networks: Connecting shortlines to CN and CPKC networks provides access to extensive rail networks spanning across Canada, allowing for easier movement of goods and passengers between various regions.
- Efficiency and Cost Savings: Utilizing CN and CPKC networks can offer economies of scale and operational efficiencies, potentially reducing transportation costs for shortline operators and their customers.
- Economic Development: Integration of shortlines can stimulate economic development in rural areas by providing better access to markets and facilitating trade.
- Expertise and Resources: CN and CPKC bring extensive experience, expertise, and resources to the table, including advanced technology, maintenance capabilities, and logistical support.

WEAKNESSES

- Dependency on Mainline Railways: Shortlines may become overly dependent on CN and CPKC networks, potentially facing challenges if there are disruptions or changes in service provided by the mainline railways.
- Infrastructure Constraints: Upgrading or expanding infrastructure to connect shortlines to CN and CPKC networks may require significant investment and time, presenting challenges in terms of funding and regulatory approvals.
- Operational Integration: Coordinating operations, schedules, and logistics between shortlines and the mainline railways could pose challenges, requiring effective communication and collaboration.
- Regulatory Compliance: Compliance with regulatory requirements and standards set by CN and CPKC may impose additional costs and administrative burdens on shortline operators.

OPPORTUNITIES

- Market Expansion: Access to CN and CPKC networks opens up new markets and business opportunities for shortline operators, allowing them to serve a wider range of customers and industries.
- Partnerships and Alliances: Collaborating with CN and CPKC can lead to strategic partnerships and alliances, fostering innovation, and resource-sharing to enhance operational efficiency and competitiveness.
- Customer Satisfaction: Providing integrated transportation solutions through CN and CPKC networks can enhance customer satisfaction by offering seamless and reliable service options.

THREATS

- Technological Disruption: Rapid advancements in transportation technology, such as autonomous vehicles and hyperloop systems, may disrupt traditional rail operations, requiring adaptation and investment in new technologies.

- Regulatory and Political Risks: Changes in government policies, regulations, or trade agreements could affect the regulatory environment and market conditions, posing risks to the stability and profitability of shortline operations within the CN and CP networks.

COST ANALYSIS

The cost analysis for integrating the shortlines to the CN and CPKC networks deals with three primary cost factors which are infrastructure costs, equipment costs and operational costs. These costs are further subdivided into the following cost factors.

INFRASTRUCTURE COSTS

- Track Upgrades: Assessing the condition of existing tracks of both shortlines and CPKC and CP networks and determining the necessary upgrades or repairs to ensure speed, safety and compatibility for passenger railway.
- New Infrastructure: For the new track and platform construction in the physical gap described above, the associated construction cost and land acquisition or the ROW costs should be considered.

EQUIPMENT COSTS

- Rolling Stock: For the safe operation of passenger rail, locomotives which run at the accepted speed, and other necessary equipment to operate these locomotive cars should be purchased. Some examples for accepted passenger rail cars include the Siemens Charger locomotive and Alstom/Bombardier bi-level passenger cars.
- Maintenance Equipment: Investing in maintenance equipment and facilities to support ongoing upkeep of tracks and rolling stock.

OPERATIONAL COSTS

- Labor: Estimating labor costs for operating and maintaining the integrated rail network, including train crews, maintenance personnel, and administrative staff.
- Fuel and Energy: Fuel costs for locomotives and energy costs for facilities.
- Insurance and Liability: Assessing insurance and liability costs associated with a rail network.

FEASIBILITY

The feasibility of incorporating the shortline network to the existing CN and CPKC networks depends on several factors such as the infrastructure compatibility, operational and regulatory considerations, the financial viability and the market demand. In order to safely operate the passenger rail on both trackwork, the current network must be passenger friendly.

Construction of passenger platforms, implementation of safety protocols and investment to improve the at grade rail crossings is required. Assessments of track condition, facilities, necessary upgrades or modifications, will help determine the feasibility of the integration of shortline passenger service into the CPKC and CN Networks.

When creating the schedule for the operation of the locomotive in both the mainline and shortline network, a schedule should be efficient so that the passengers can be transported in a timely manner while also not interfering with the freight operations of the existing network. It is also important to look at the market demand and the financial viability in the feasibility study.

The feasibility of incorporating shortlines into CPKC and CN networks depends on the existence of sufficient market demand for rail transportation services in the regions served by the shortlines. Assessment of the financial viability requires a thorough understanding of all costs, revenue potential, and the return on investment for each project.

CONCLUSION

The key benefit of using shortline networks in the regional rail project is to connect rural communities to Edmonton and Calgary, the urban hubs. To connect the short lines to these hubs, the possibility of integration to the extensive rail network owned by CPKC and CN was explored.

The trackwork which is mainly used for freight operations would need to be upgraded to suit the safety, speed, and the compatibility for passenger railway. New tracks would be necessary along CPKC and CN Right of Way. The construction and maintenance of the new infrastructure, as well as the price of the land that would be built upon, is a significant investment.

As the population in Alberta grows, it is vital to invest in and expand the current public transportation network. Before the automobile, cities were connected by trains, not roads, where the railways went, cities were built. Given the persistent climate crisis, finding sustainable alternatives, such as rail travel, is crucial. Connecting rural communities via short lines into the CPKC and CN network and having an efficient and timely transportation system will encourage more people to migrate towards communities served by regional rail.

Alternative travel options, such as rail, towards urban centers, will decrease traffic and crowding. The environmental benefits through use of public transportation include reduction of greenhouse gas emissions, and reduction of fuel consumption.

We are excited to see that the Province of Alberta announced in 2023 that capital improvements to short lines, introduction of commuter rail services, and funding to study the reintroduction of passenger rail are budgeted and being considered. When this regional rail project has been developed, utilizing shortline infrastructure to connect smaller communities could be a pivotal next step in the rail lines development.

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