Final Paper – Consulting Report

Strategy Stations Placement in Alberta Railway Passenger Project

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Executive Summary

Alberta Regional Railway (ARR) is looking at a new regional passenger rail service between Calgary, Red Deer and Edmonton which uses an existing corridor that is heavily used by freight trains. The central question of the client is how to phase in this service in a realistic way: where to put first the stations, what kind of service pattern is feasible, what standards to apply at each kind of station, how to connect the railway to the wider regional mobility system. The responses to those questions are presented in this Final Report through a unification of six pieces of work that were agreed in the Statement of Work: a Stations and Service Plan, an Accessibility and Data Book, a Demand and Prioritization model, a Schedule and Feasibility check, a Station Standards Guide and a Mobility Integration view, and integrated roadmap of implementation.

This project was built upon a staged, but simple approach. It started by clarifying the problem by using simple consulting tools such as an issue tree and "five why's", which was used to tease out four interlinked questions: Demand & Market Potential, Operational Feasibility, Station Role & Access and Phasing. Next it prepared a first Scope Pack for the corridor, including a draft list of stations by phase and three service patterns (Express Limited-Stop and All-Stop) but on the basis of which it analysed: 10, 20 and 30 minutes catchment and local context around each station; developed a demand score and tier system for ranking the stations; tested a draft timetable for feasibility; outlined a typology and minimum standards for the stations; and finally, prepared a high level Mobility Integration Map, positioning the corridor in the wider regional network.

The key findings can be summarised to be:

- Out of this model, there emerges an evident pattern of station demand, with large metropolitan cores (Calgary Terminus, Edmonton Legislature, Strathcona) at the core of the network, airport and adjacent hubs (Country Hills / YYC and Nisku / YEG), and major regional centers (Red Deer, Airdrie, Olds) dominating the top of the network. The rest of the mid-sized towns and smaller communities constitute lower levels which are significant in both terms of coverage and equity but not the early mass demand. A simple +/-20 percent sensitivity check on population makes sure that the highest priority group of stations is stable under reasonable changes in assumptions.

- A simple, all stop service pattern on the corridor is operationally plausible as far as indicative assumptions are concerned. Draft schedules indicate that competitive travel times can be achieved between Calgary and Edmonton and still be able to serve intermediate stations. The analysis also identifies a number of "trouble spots" where very detailed capacity studies will likely be needed if coexistence with freight trains is to be possible, particularly around Calgary, Edmonton, Red Deer and Nisku.
- There are three organizational types of station roles and design, which are Type A Core Hubs, Type B Regional Stations and Type C Local Stops. There are obvious minimum access conditions, safety, information, passenger comfort and multimodal interfaces at each type, with more stringent at Core Hubs, and less stringent yet upgradeable at Local Stops. This typology matches with the international best practice and the Passenger Rail Master Plan in Alberta.
- The corridor is presented as a part of a broader multi-modal system as depicted in the Mobility Integration Map. It highlights nine priority stations (Tier 1 Core and Tier 2 High), the Highway 2 / QEII spine and the two international airports, which are served via nearby stations at Country Hills / YYC and Nisku. Such a rudimentary image will assist the stakeholders to understand where the railway already fits in the existing networks, and where specific investments in the bus, shuttle, walking and cycling access will be necessary.

  Based on these findings, the Report makes the following recommendations for ARR:

- Operate Phase 1 on the Calgary–Airdrie–Red Deer–Leduc–Nisku (YEG)–South Edmonton spine. Capital investment should prioritize Tier 1–2 stations, while Tier 3 locations included in Phase 1 (e.g., Leduc) are delivered initially as a scalable Type C stops;
- Develop these stations to the Type A and Type B standards and begin smaller Tier 3 and Tier 4 locations to a scalable Type C stop;
- Optimize the timetable and capacity analysis at the level of the identified "trouble spots", in close coordination with infrastructure owners; and

- Use Mobility Integration Map and Station Standards Guide as a living tool to match the planning of the bus, shuttle, active mode and park-and-ride regions to the rail line.

This piece of work does not have a final design or a business case but it is clear that it provides ARR with a transparent decision-making framework. It links the prioritisation of stations, service concepts, station standards and mobility integration into one story which can be used to structure the next 3-5 years of planning, engagement and investment for passenger rail in Alberta.

1. Project Context, Objectives, and Scope

1.1 Project background and client context

The Alberta Regional Railway (ARR) project is located in a broader provincial concern in enhancing the intercity and regional connectivity between Calgary, Red Deer and Edmonton. The majority of the transport today by this route is by highway 2 / QEII by either personal automobile, bus or truck. The current railroad is primarily a freight system, and there is no regular passenger transport between the three large cities.

Alberta Regional Railway is considering utilizing this existing line to execute a new passenger rail service which would utilize the line to offer:

- quicker and more certain communication between the two biggest cities of the province;
- greater access to mid-corridor locations like Red Deer and other regional centres; and
- better accessibility to Calgary International Airport (YYC) and Edmonton International Airport (YEG), specially for travelers who do not drive or do not want to use cars, through reliable rail-to-shuttle connections.

Under this more general framework, this capstone project concentrates on a single important aspect of the entire problem, namely, how to locate and prioritise stations along the corridor, what service pattern those stations are to support, and how the stations will be linked to the local transport and communities.

1.2 Scope and Assumptions

The project is officially called *Strategy Stations Placement in Alberta Railway Passenger Project*. It is established as an assignment in the form of consultancy to the client, Alberta Regional Rail, and represented by Thomas Fryer, which the student is an independent consultant.

From the client's point of view, the project will deliver:

- an intelligible gradual perspective of what stations are to be first thought of investing in;
- a service vision basic but plausible and an outline plan that illustrates what type of activities the corridor can facilitate;
- real-world, deployable standards of station design and access; and
- a blue-print of how the stations are to be linked to buses, shuttles, cycling, walking and park-and-ride.

The needs are stated and formalized within the Statement of Work (SoW), which predetermines objectives, deliverables, and basic completion criteria.

1.3 Statement of Work: Objectives

The Statement of Work has the project being grouped into four broad areas of objectives:

1. *Stations & Service Plan*
   Provide a Regional Stations and Service Plan that establishes the stop patterns, service frequency and scope of operations in the Calgary - Red Deer - Edmonton route. The plan ought to be easy to communicate, elaborate enough to undergo a feasibility test and to be reviewed by the stakeholders.
2. *Demand & Siting Prioritization*
   Measure the demand of the passengers and require station location based on a structured process, such as accessibility analysis and uniform scoring technique. The SoW anticipates a well-defined ranking of the stations (e.g. through scores and tiers) supported by a calculation file which can be updated as new data is available and at least one simple sensitivity test.

3. *Station Design Standards*

   Establish accessibility, safety, wayfinding and multimodal interface standards of the station design. The SoW provides minimum requirements of various kinds of stations such as access points, ramps, signage, lighting, cameras, and zones to buses, bicycles, passenger drop-off and parking as well as checklists, which would be applicable on the field.

4. *Passenger Mobility Integration Blueprint*

   Present a blueprint of passenger mobility integration, matching stations to local transit, and active modes and park-and-ride and providing a roadmap of implementation. The SoW states that a connection proposal must exist on at least 80 percent of the prioritised stations, and where possible the target transfer time should be ten minutes or less, and that the phase (1-3) of each station should be made clear.

1.4 Statement of Work: Deliverables and Completion Criteria

In order to render these goals tangible, deliverables in a chronological order with timelines and minimum completion requirements are enumerated in the SoW. In summary:

- A *Stations and Service plan - Scope Pack* comprising of a corridor map and a starting stop list, suggested patterns of stops, frequency range (peak and off-peak), planned operating windows, and assumptions and limits.
- The *Accessibility and Data Book*, including 10/20/30 minutes access maps, a list of important nearby locations (airports, universities, hospitals and shopping centres), and the summary of data sources and assumptions, with a support of a folder with maps and tables.
- A *Demand and Prioritization Report* with demand scores and tiers at each station, a preliminary list with prioritised stations, basic station result maps and a calculation file and a +-20 percent sensitivity check, which demonstrates that the top-ranked stations are not overly sensitive to changes in the assumptions.
- A *Draft Schedule and Feasibility* package, containing a timetable chart, operating windows, and a description of locations where changes might be required including

commentary on how it can coexist with freight and what trouble spots will probably occur along the route.

- A *Station Standards Guide*, containing the minimum requirements on each type of a station and checklists to verify it.
- The *Mobility Integration Report and Map*, where at least 80 percent of the prioritized stations are highlighted, with proposed connections, proposed bus routes, bicycle areas, drop-off and parking zones, target transfer times, and a proposed implementation plan.

These deliverables are not substituted by the current Final Report. Rather, it synthesises and interprets them: it clarifies how each piece of work takes care of its portion of the SoW, how the pieces connect up into one strategic narrative on the ARR, and how they may inform the following stages of planning, design and engagement.

2. Methodology and Work Approach

This project was constructed as a single interrelated decision framework of Alberta Regional Railway (ARR) rather than a collection of independent technical reports. The purpose behind this was to facilitate early, practical decisions on, first, the first stations to invest in, secondly, the operating service pattern to initially be operated and third, the minimum expectations to place in each station once the program is already underway.

2.1 Overall Project Approach

The process was incremental, with one step being based upon the others and all being evaluated against the same core decision questions.

1. Clarifying the core problem

The process began with an issue tree and the five whys. The issue tree separated the central question in 4 interconnected areas: demand/market potential, operational feasibility, station role and access, and phasing. The five whys helped understand the importance of prioritization: ARR requires initial steps, and the initial investments determine further costs and performance. This step generated an analytical map instead of just figures.

2. The definition of stations and first service concept.

A Stations and Service Plan was prepared and an initial station list during the initial stages and an initial service idea (express, limited-stop, and all-stop routes) and a representative operating window. This was just a starting point to experiment with and not an end schedule.

3. Dissecting the accessibility and the local context

At each station, it was determined what services they could reasonably offer, and an Accessibility and Data Manual was developed. It mapped 10, 20, and 30 minutes catchments at each station, taking into consideration various modes of access where appropriate (car, bus, cycling, walking). It was also generalized in the local context: population, employment, key major services, areas of activity and key transport nodes including airports.

4. Developing demand and prioritization model

Based on the input of accessibility and context, a station demand score was generated. The indicators chosen were summed into one normalized value between 0 and 100. Findings were then applied to rank stations into tiers and construct a priority list to phase.

5. Service and operational feasibility testing

A schedule and feasibility screen were made using a starting service concept and the priorities of the station. With distances, and supposed speeds, and the typical dwell times, depending on the type of station, the level of travel times was estimated, and service patterns were drafted. This indicated where freight interaction, running time or limited passing opportunities would limit reliability or frequency and where further investigation is required.

6. Converting research to station standards

The demand and service findings were converted into station standards. The stations were grouped into a few types (e.g. core hubs, regional stations, local stops), and minimum requirements were set against each type. The priorities were on necessities to safe and appealing operation: safe platforms, simple passenger fixtures, accessibility and multimodal clarity.

7. Planning a broader mobility association

In the case of top-priority stations, a Mobility Integration perspective was optimized, which is concerned with pragmatic links to local transit, on-demand services, cycling, park-and-ride, passenger drop-off/pick-up, and airports. The intent was to position rail as part of a broader regional mobility network.

Throughout all phases, deliverables were consistent with the Statement of Work and were aimed at integrating into a single decision-making process.

2.2 Data and Sources

The model was based on standard government information, client feedback and reference instructions. The sources of information were crucial in nature, that is, population and employment based on the recent national census releases and other governmental statistics, as well as, the station spacing, distances, major roads, and the position of airports and major areas of activities, and instructions on how to reach the station, the orientations of welfare, and integration of multimodes.

Since the information is not perfect at this point, the project does not pretend to achieve accurate ridership forecasting. It instead provides the most available information to compare and rank the stations in a consistent and transparent manner.

2.3 Methods of Quantitative Analysis

Regarding the demand model, due to the limited number of indicators (e.g., catchment population and employment, key destinations, and access quality) that have been chosen. These indicators were normalized and added on a common scale, and generated a 0-100 score. There was also a basic sensitivity check run whereby selected inputs were altered up and down and ranking changes were observed. There was no major change in the highest level indicating that the findings are fairly solid to make an early estimate of a course of action.

To compute the running times based on the distance as well as the feasibility, we computed the running times based on the distance and assumed speed, used the common dwell times based on the type of the station and re-assembled draft service patterns. We also compared

the end-to-end travel times with service concept and marked areas of corridors that could need additional operational work.

2.4 Qualitative and Design Methods

Quantitative results have been integrated with qualitative opinion and design practice. This involved establishing the types of stations according to their network role and context, establishing minimum functional requirements by type (information, shelter, accessibility, and basic access), and evaluating how priority stations are to facilitate useful intermodal transfers.

2.5 Validation and Alignment with the Statement of Work

During the project, we ensured that we were in line with the Statement of Work and decision requirements of ARR. All deliverables not only answered a question particular to a client but also contributed to the overall structure. It was also considered client feedback in improvement and mentioned the constraints. Engineering design, environment evaluation, and full schedule simulation are not part of this work but will be required in later stages.

The approach is a combination of structured framing of the problem, clear quantitative screening, and effective station planning advice, which is suitable for decision-making in the early stages.

3. Results and Key Findings

This part outlines the key outputs of the project and their implications to Alberta Regional Railway (ARR): where should the corridor be strongest, what stations should be the first to be invested in, what patterns of services may work, and how standards and mobility integration should be implemented in station.

3.1 Stations and Service Concept

It presents a single, coherent vision for the Calgary–Red Deer–Edmonton corridor, utilizing the existing freight rail system. The Stations and Service Plan determines: first, a ranked list of stations, second, three levels of service patterns (Express, Limited-Stop and All-Stop), and third, indicative peak and off-peak operational windows. This work establishes a clear decision

baseline; it is not a final timetable. All the community requests of the clients are included on the new station map (Map v2.0). Each station is assigned a typology (terminus, interchange, unmanned, or request stop), and each station is assigned to a specific implementation phase. In Table 1, the stations are grouped phase by phase. In that way, Phase 1 establishes the initial operating spine linking Calgary, Airdrie, Red Deer, Leduc, Nisku (YEG) and South Edmonton. The base Phase 1 service is an all-stops regional pattern; Express and Limited-Stop patterns are future options as capacity and demand evolve. Access through the airports is provided with timed buses and shuttles from nearby stations, in the zones Country Hills/YYC for Calgary Airport and Nisku for Edmonton International Airport. The rail spine remains on the freight corridor, while airports are served with connecting services.

The idea behind it will be extended to connectors and then later stages as the idea keeps increasing in demand and funding.

Table 1. Phase 1–3 Main Stop List

MAIN STOP LIST				
Location	**Type of Station**	**Icons**	**Phase**	**Why here?**
Edmonton Legislature	Interchange (Manned)		2	Government and business core; high trip density with strong pedestrian and bus connections
Strathcona	Interchange (Manned)		2	Whyte Avenue cultural corridor near UofA; vibrant activity, walkability, and frequent bus links
South Edmonton	Terminus (Manned)		1	Operationally simple city access; strong urban bus hub and strategic Park-and-Ride potential
Nisku (YEG)	Interchange (Airport Shuttle Hub)		1	Industrial cluster adjacent to airport; timed shuttle hub to YEG without any rail deviation
Leduc	Interchange (Manned)		1	Regional residential–industrial mix; strong trip capture, local bus links, and Park-and-Ride opportunity
Millet	Request Stop		3	Small community with local demand; cost-effective coverage stop primarily during off-peak and weekends
Wetaskiwin	Manned		2	Regional services and medical center; community destination with local buses and good pedestrian access
Maskwacis	Manned (co-designed)		2	First Nations community; location to be co-designed, ensuring accessibility, safety, and culturally appropriate signage
Ponoka	Unmanned		2	Moderate regional demand; simple urban access via local buses and acceptable central walkability
Morningside	Request Stop		3	Very small population; request stop for basic coverage when demand justifies, mainly off-peak
Lacombe	Manned		2	Urban node with education and services; good central walkability and local bus feeders
Blackfalds	Unmanned		2	Growing suburban area; lightweight stop to cover local trips without penalizing express travel times
Red Deer	Interchange (Manned—Major)		1	Mid-corridor metropolitan anchor; combines education, healthcare, and retail with strong regional interchange role
Penhold	Request Stop		3	Small community; selective coverage focused on off-peak periods and local events, with walk access priority
Innisfail	Unmanned		2	Bridges the gap between Red Deer and Olds; simple access and potential local feeder services
Bowden	Request Stop		3	Low demand; request-type opportunity activated based on performance and operational spacing constraints
Olds	Manned		2	Regional center with college and healthcare; balanced destination, local buses, and Park-and-Ride potential
Didsbury	Unmanned		3	Complementary coverage to Olds; consider gradual activation based on spacing and express travel times
Carstairs	Request Stop		3	Near Crossfield and Airdrie; lightweight coverage solution that avoids compromising express travel times
Crossfield	Request Stop		3	Industrial and light residential activity; economical local stop supporting short trips and transfers
Airdrie	Interchange (Manned)		1	Major commuter hub toward Calgary; regional Park-and-Ride and coordinated shuttle connection to YYC
Country Hills Blvd (YYC)	Airport Shuttle Hub		2	Airport shuttle hub; timed transfers integrate YYC access without diverting the rail operation
Calgary	Terminus (Manned)		1	Direct CBD access via Sunalta LRT; highest destination concentration and strong urban multimodal connectivity

Airport Shuttle Hub	
Interchange (Airport Shuttle Hub)	
Interchange (Manned—Major)	
Interchange (Manned)	
Manned	
Manned (co-designed)	
Request Stop	
Terminus (Manned)	
Unmanned	

3.2 Accessibility and Catchment Patterns

Accessibility and Data analysis corresponded the distance that an individual can walk, cycle, or use the buses, cars to reach each of the candidate stations within 10, 20 and 30 minutes and registered major nearby destinations (airports, hospitals, universities, major retail, industrial areas).

Key findings:

- The main urban stations (Calgary Terminus, Edmonton Legislature, Strathcona) are high employment, high population, high transit and generate huge catchments of the extent of 10-20 minutes.
- Nodes of airports (Country Hills / YYC and Nisku) have high potential when they have access by buses and cars due to employment concentration, visitor travel and high highway connections.
- The regional and suburban centers (Red Deer, Airdrie, Leduc) have extensive reach of 20-30 minutes with good access by road, which favour park-and-ride and bus hub functions.
- Smaller towns and rural/ Indigenous communities are more prone to smaller demand catchments, yet they would be needed by coverage, equity and regional accessibility.

These trends facilitate a network with high-demand hubs in which the ridership is anchored, and smaller stops enhance geographic coverage and reach.

3.3 Demand and Prioritization Results

Each station was developed into the creation of a demand score (0 to 100) based on four normalised elements, namely population, employment, points of interest (airports, universities, hospitals, major retail), and access (public transport and road connectivity). The scoring offers an open foundation on station levels and incremental investment.

Station tiers are:

- *Tier 1 – Core:* Calgary Terminus, Edmonton Legislature, Strathcona, Country Hills / YYC, South Edmonton.

- *Tier 2 – High:* Red Deer, Airdrie, Nisku (YEG), Olds.
- *Tier 3 – Medium:* Wetaskiwin, Lacombe, Leduc, Innisfail, Maskwacis.
- *Tier 4 – Coverage:* Smaller towns and request stops.

A sensitivity test that varied the population input by 20 percent brought about small variations in ordering and did not significantly occupy the first rank. This implies that the prioritization is not a single variable-driven model and is applicable at an early stage of phasing, station typology and refinement.

Table 2, as follows, shows the result for Demand Score, its ranking, and the Tier assigned for each station.

Table 2. Classification Tiers (Core to Coverage)

Station_Name	Phase	Typology	Demand_ Score_100	Rank_ Base	Tier
Calgary Terminus	1	Terminus (Manned)	100.00	1	Tier1 - Core
Edmonton Legislature	2	Interchange (Manned)	87.78	2	Tier1 - Core
Strathcona	2	Interchange (Manned)	81.44	3	Tier1 - Core
Country Hills Blvd (YYC)	2	Airport Shuttle Hub	76.20	4	Tier1 - Core
South Edmonton	1	Terminus (Manned)	70.18	5	Tier1 - Core
Red Deer	1	Interchange (Manned—Major)	42.87	6	Tier 2 - High
Airdrie	1	Interchange (Manned)	26.42	7	Tier 2 - High
Nisku (YEG)	1	Interchange (Airport Shuttle Hub)	23.67	8	Tier 2 - High
Olds	2	Manned	22.78	9	Tier 2 - High
Wetaskiwin	2	Manned	21.37	10	Tier 3 - Medium
Leduc	1	Interchange (Manned)	19.68	11	Tier 3 - Medium
Lacombe	2	Manned	19.05	12	Tier 3 - Medium
Maskwacis	2	Manned (co-designed)	14.06	13	Tier 3 - Medium
Ponoka	2	Unmanned	12.93	14	Tier 3 - Medium
Innisfail	2	Unmanned	12.75	15	Tier 3 - Medium
Didsbury	3	Unmanned	10.38	16	Tier 4 _ Coverage
Blackfalds	2	Unmanned	8.75	17	Tier 4 _ Coverage
Carstairs	3	Request Stop	4.25	18	Tier 4 _ Coverage
Crossfield	3	Request Stop	4.14	19	Tier 4 _ Coverage
Penhold	3	Request Stop	0.34	20	Tier 4 _ Coverage
Millet	3	Request Stop	0.18	21	Tier 4 _ Coverage
Bowden	3	Request Stop	0.12	22	Tier 4 _ Coverage
Morningside	3	Request Stop	0.00	23	Tier 4 _ Coverage

3.4 Schedule and Feasibility

Schedule and Feasibility testing was done to determine whether the corridor is viable to support a clear and competitive regional service with simplified assumptions. The station spacing, assumed average speeds and standard dwell time by station type were used to compute draft running times. The consistency was checked with the help of a simple all-stop pattern to find constraints.

Indicative assumptions are used to determine that Edmonton-Calgary end-to-end travel times are competitive in the region and at the same time, it serves midway stations. The organization of service is into four operating windows (morning peak, inter-peak, evening peak, late evening) and planning headways of about 30 minutes in the morning and evening peaks and 60 minutes off-peak. Probably the closest constraints are associated with freight sharing: (1) Edmonton approaches, (2) Calgary approaches, (3) the Red Deer area and (4) the Nisku / Edmonton International Airport area.

Such locations demand a careful capacity analysis and simulation, as well as cooperation with infrastructure owners during further stages. The main finding is that the concept of the service is widely feasible, and the particular areas are indicated to be given more technical research.

3.5 Station Standards and Typology

The Station Standards Guide transforms the results of the demand and service to a realistic station model. Three of them are identified to suit role and investment level Type A Core Hubs, Type B Regional Stations and Type C Local Stops.

All the types share the minimum expectations: safe and accessible design, wayfinding, multimodal reliability and layout prepared to upgrade. These standards are stipulated on forecourts, shelters/buildings, platforms, information/ticket, and routes which are accessible.

- Core Hubs: better passenger facilities, a pedestrian-friendly access, powerful transit interfaces.
- Regional Stations: integrated bus, more robust bus system, park-and-ride where necessary.

- Local Stops: low-budget, secure platforms and minimal access which can be increased in case of increased demand.

This has a constant foundation to evaluate alternatives, establish achievable community goals, and facilitate gradual implementation.

3.6 Mobility Integration and Role of Priority Stations

ARR is a part of the bigger mobility system of Calgary-Red Deer-Edmonton according to the Mobility Integration Map. The map shows the demand model of nine priority stations with the two international airports (YYC and YEG) linked up with the Country Hills / YYC and Nisku.

Tier 1, stations serve as anchors in the corridors since they are located in places that have good walk access, sight and have or might have links to regular and frequent bus and light rail. These are the best areas to consider in terms of good station environment and future transit development.

Tier 2 stations have specific functions (access to airports, capture the commuter, exchange on the region) and frequently require access to cars nowadays. Priority integration activities will consist of regional bus nodes at Red Deer and Airdrie, good airport shuttle at Nisku and Country Hills / YYC, walk / bike / park and ride improvements at Olds.

Originally the level of integration output is deliberately high-level and defines the way further station access plans will develop, local transit network design and land-use planning around the most powerful hubs will be developed.

4. Integrated Recommendations and Implementation Roadmap

Here, the findings of the project are integrated into a roadmap. It demonstrates how Alberta Regional Railway (ARR) can transition out of the concept stage up to a preliminary operational stage utilizing demand tiers, station standards, and mobility integration as a single integrated package.

4.1 Integrate Strategy

A focused Phase 1 spine to be followed by expansion as the demand and funding increase is the recommended strategy. Phase 1 must focus on Tier 1 Core stations and Tier 2 High hubs most strategic locations as they represent the biggest catchments, major employment centres, and major airport connections.

Phase 1 therefore focuses on:

- Tier 1 - Core: Calgary Terminus, Edmonton Legislature, Strathcona, South Edmonton, Country Hills / YYC.
- Tier 2 - High: Red Deer, Airdrie, Nisku (YEG), Olds.

Tier 3 and Tier 4 facilities are not one of the long-term networks but are identified in the later stages after the spine has been put into service and real ridership numbers are known.

4.2 Station Programme: where to invest first

The Station Standards Guide has typology of stations that should be matched with demand levels in their station investment.

Tier 1 Core → Type A: Core Hubs: increased standards of access, passenger, weather protection and intermodal facilities, as they are considered the main gateways and links with the local transit systems.

Tier 2 High → Type B: Regional Stations: Solid, cost restrained, facilities, such as secure platforms, suitable waiting area where warranted, secure bicycle space, and bus and park-and-ride bus access is well organised.

Tier 3 / Tier 4 → Type C: Local Stops: one with safe platforms, lighting, limited road access and room to add more space in case of increased demand. This will regulate early capital expenditures without experiencing rigidity to growth and enhancements.

4.3 Service Development and Timetable Refinement

The three patterns and operating windows of previous work including Express, Limited-Stop, and All-Stops should be followed in service planning, offered during morning peak, inter-peak, evening peak, and reduced late-evening.

The simple all-stops service, with proven, conservative-speed, and conservative dwell time assumptions, is a higher priority in the short term and will prove the reliability of the corridor operations.

Simultaneously, capacity and timetable work ought to be detailed in terms of the key trouble spots in which freight interaction is most likely to limit service:

- approaches to Calgary
- approaches to Edmonton
- the Red Deer area
- the Nisku / YEG area

With improved infrastructure and freight schedule data services can be developed to faster Express and Limited-Stop patterns, reduced headways in the peeks, and potentially to short-turn services in intermediate hubs like Red Deer and Airdrie.

4.4 Access and Mobility Integration Priorities

ARR needs to be seen as a regional mobility spine, not Calgary-Edmonton connection. Tier 1 Core stations are already located in areas with good access on foot, with or possibly with LRT and frequent bus service, and obvious future opportunities of transit-oriented development.

The first rail service should be provided with priority integration actions:

- Enhance LRT/bus swapping and better walk/bike access at Edmonton Legislature, Strathcona, South Edmonton, Country Hills / YYC and Calgary Terminus.
- Establish bus centres and park-and-ride at Airdrie and Red Deer.
- Install quality airport shuttle services at Nisku (YEG) and Country Hills / YYC.

- Provide basic walk/bike and park-and-ride improvements at Olds.

These measures contribute to the Statement of Work intent which sets that most of the prioritised stations have defined connection proposals and that the typical transfers should be fast and dependable.

4.5 Next Steps and Implementation Roadmap

Suggested further course of action is sequenced to keep pace with the maturity of plans:

Short term (0 1 year): finalize Phase 1 stations and typologies, update demand and accessibility inputs with new data, initiate effective outreach to infrastructure owners about capacity and freight coexistence, and possible upgrades.

Medium term (1–3 years): Type A and Type B station concept design: concept designs, including, with detailed access plans, complete formal capacity and timetable studies. Revise business case and funding strategy, based on integrated station, demand, and mobility results.

Long term (3-5 years and beyond): Phase 1 spine and priority access investments: This is aimed at delivering the Phase 1 spine and the priority access and will be delivered in the future once the network has matured, and the Station Standards Guide and demand model are updated.

This roadmap is realistic in the present scope of the scope but provides ARR a clear direction as to how its concept decisions should be carried out to a gradual materialization and expansion.

5. Impact, Risks, Trade-offs and Mitigations

This section elaborates on what this project can practically achieve to Alberta Regional Railway (ARR), its primary constraints, and the trade-offs that ARR will have to deal with in the following stages. This initial phase is aimed at making both value and boundaries efficient at this initial stage, in line with the Statement of Work.

5.1 Expected Impact and Value for the Client

In case ARR develops on this work the principal advantages are:

- **A clearer view of "where first"**
  Demand and prioritization model places candidate stations in an open manner and categorizes them into four levels. The top tier changes very little due to reasonable input shifts as can be seen in a simple stability check. This facilitates a well-targeted Phase 1 and eliminates the chance of spreading the effort on too many locations simultaneously.

- **A uniform access and station desktop**
  The Station Standards Guide transforms general objectives, safety, accessibility and good connections, into a narrow range of station types and minimal requirements. This provides ARR, municipalities, designers and operators with a common point of reference. It favors the comparison of options, noticeable pre-testing on a concept against a baseline, and optimal interaction with the communities on what each type of station ought to consist of.

- **Affirmation in time that a viable service concept exists**
  According to the Schedule and Feasibility work, it can be enough to assume competitive Edmonton-Calgary travel times using a simple service pattern and still serve major intermediate communities due to indicative assumptions. It also identifies areas of the corridor where freight interaction can cause operational problems, and assists in later technical work by deliberating on what areas need the most attention.

- **An illustrative high-end mobility integration image**
  According to the Mobility Integration Map and Report, ARR is capable of supporting a broader multimodal system, not just a point-to-point rail connection. They have indicated the areas in which the priority stations are already well positioned in relation to good walking access and transit connectivity, and where enhancements in access by bus, shuttle, walking, cycling and parking can be utilized to increase the catchment area.

All these outputs create a network of decision. Partners, funders, and the public have one coherent story of choice of stations, patterns of service, standards of a station and access priorities.

5.2 Key Risks and Limitations

There are obvious boundaries to this work, which are characteristic of early-stage planning with imperfect information, and which do not have sufficient time:

- **Limitations in the demand and prioritization model**
  The model is a comparison of stations. It does not make precise predictions of the ridership. It employs population, employment and key destinations as convenient measures of the possible demand. It uses simplified 10, 20 and 30 minutes catchment and weights. Such factors are income, car ownership, and transit dependency. It also does not have any method of calibration using past passenger data, as the passenger rail does not currently operate on the corridor.

- **Schedule and operational feasibility**
  The draft schedule as follows is based on the assumption of mean speed and common dwell periods, and not on individual speed limits, grades, signals, and station layout constraints. Freight movements are directly not modelled and there is no complete capacity analysis of the junctions, passing location, yards and single-track sections. The areas about Calgary, Edmonton, Red Deer and Nisku, which are known as trouble spots should be seen as warnings to planning and not a final judgment.

- **Station standards and engineering description**
  The Station Standards Guide describes the variety of stations to which each type of station is expected to be able to offer, although it does not specify many technical specifications (structural, electrical, geometric, or code-level). These should be created at subsequent stages with the help of the standards that should be applied and operator requirements, as well as site design.

- **Mobility integration detail**
  Not shown on the map are detailed local bus networks, future transit projects or even priority stations and the main line, although airport connections are highlighted. These layers would be included as the municipal plans improve and more aggregated data is offered.

These limits imply that the work must not substitute a complete business case or construction-ready design. The importance of clarity today and refinement with the increase of evidence is its value.

5.3 Strategic Trade-Offs for ARR

The project has trade-offs that will influence the results:

- **Speed, frequency and local coverage**

  Less stops enhances the time of long distance travel, but reaches fewer communities directly. A higher number of stops enhances coverage, but raises the level of travel time. The way forward could be to begin with a plain and basic base service and then insert Express or Limited-Stop patterns as the demands and constraints become more evident. This balance is supported by phasing Tier 3 and Tier 4 stations.

- **Initial price and quality of the station**

  High standards of construction on the first day increase the cost and may cause delays in opening. This minimizes the initial capital requirements, allowing them to be upgraded later, yet maintaining the ability to do so in the future. The compromise is that upgrades have to be designed early (space, access, utilities, and layout) so that retrofitting will not be expensive.

- **On-site rail access to airports than excellent shuttle connections**
  Timed shuttle connections of Country Hills / YYC and Nisku maintain rail service on the main line, safeguard the travel time, and eliminate large new infrastructure. Trade-off will be quality of the shuttle: frequency, reliability, easy wayfinding and short transfers should be high in order to ensure that the value of access to the airport is not lessened.

- **Detailed and simple in the early modelling**
  Simple models are more simplified to explain, challenge as well as update. More complicated models might seem more accurate but might be more difficult to maintain and can trigger spurious confidence in cases of uncertainty in inputs. This work is more concerned with transparency at this stage and the likelihood of providing detail in a step-by-step fashion is expected as key decisions become narrow.

Being aware of these trade-offs would allow ARR to progress with a clear understanding of what is solid at the current point and what will need more technical effort, funding decisions and policy decisions at the subsequent stages.

6. Conclusion and Overall Value

The present project was initiated with a simple yet tough question, how should Alberta Regional Railway (ARR) plan and prioritize a new passenger service using an existing freight route between Calgary, Red Deer and Edmonton? It was not just a question of attracting a route, but to make four related decisions that are usually considered separately, namely which stations to evolve initially, what service pattern to operate, what basic standards each station must achieve, and how the rail line should interface with the overall mobility system.

This Final Report offers a rational and well-organized preliminary response.

First, it puts forward a coherent corridor and service concept. The proposed Phase 1 spine will connect Calgary, major intermediary centers and Edmonton via a basic all-stops service region. It also leaves open the possibility of future addition of faster Express and Limited-Stop services. Strong shuttle links with neighbouring stations serve as an alternative to diverting the rail line and help to maintain the travel time as competitive, and service to be easier to run.

Second, it has a clear set of demand and prioritization. The model integrates population, employment, major destinations and accessibility in one score and clusters stations in four levels. This provides ARR with a rational manner of making a decision where first. Simple sensitivity tests indicate that the leading set of stations reacts little to sensible changes in the inputs, which justifies prioritizing Phase 1 on a marginal group of high-impact hubs.

Third, it demonstrates that realistic timetable can be achieved when indicative assumptions are made. The draft schedules indicate that it is possible to have competitive end-to-end travel time and at the same time accommodate the intermediate communities. They also indicate the areas of freight interaction that would be likely to create constraints and this allows them to focus on future capacity and operations work.

Fourth, it transfers the analysis into an operational Station Standards Guide. A basic typology consisting of Core Hubs, Regional Stations, and Local Stops combined with minimum functional standards provides ARR and its partners a common vocabulary of planning. This facilitates better comparisons, simplified interaction with municipalities and communities and goal correlation in terms of safety, accessibility and multimodal access.

Lastly, the mobility integration map puts the rail line in perspective. It demonstrates the role which the corridor can play as a backbone in connecting centres of cities, airports, highways, and local transport. It also points out areas where bus hubs, shuttles, walking, cycling, and parking access should be enhanced to add more value to Tier 1 and Tier 2 stations.

As a whole, this is not individual studies, but a single decision framework. It is not in place of detailed engineering, environmental work, a comprehensive business case or elaborate timetable simulation. Rather, it provides ARR with a good foundation on which to develop those subsequent steps. Practically, it assists ARR to concentrate its initial resources, justify choices with partners and financiers, find out the top critical technical questions, and shift a broad vision into a defined, step-by-step action plan.

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Appendix

- Appendix A – Stations & Service Plan (supporting workbook)
- Appendix B – Accessibility & Data Book (data sources and catchments)
- Appendix C – Demand & Prioritization Report (scores, weights, sensitivity)
- Appendix D – Schedule & Feasibility (timetable assumptions and run-time table)
- Appendix E – Station Standards Guide (typologies and minimum requirements)
- Appendix F – Mobility Integration Report (integration plan and priority actions)
- Appendix G – Statement of Work

Appendix A – Stations & Service Plan Initial Stop List

In the table below, we see the breakdown of the stops divided into two phases. Phase 1 shows the stops that will be necessary in the corridor due to different variables, such as traffic flow, ease of P&R, connection to local public transportation, among others.

The stops within Phase 2 are intermediate stops that can also feed the system, but do not have high passenger flow.

Stop (map label)	Phase	Role	Local connectors / notes
South Calgary / Sunalta Station (Downtown LRT connection)	**Phase 1**	South Terminal	Direct link to Calgary's urban rail (LRT) and Downtown access.
North Calgary Airport YYC Connection (shuttle)	**Phase 1**	Airport Connection	Timed shuttle/bus connection to YYC (e.g., via Airdrie/CrossIron).
Airdrie / CrossIron Mills	**Phase 1**	Intermediate Major	Strong commuter catchment; regional mall; suitable Park & Ride.
Red Deer	**Phase 1**	Intermediate Major	Mid-corridor anchor serving city and surrounding area.
Leduc	**Phase 1**	Intermediate Major	Major employment hub; gateway to airport area.
Nisku Airport YEG Connection (shuttle)	**Phase 1**	Airport Link	Timed shuttle/bus connection to YEG; no rail deviation required.
South Edmonton	**Phase 1**	North Terminal	Terminal with good links to Edmonton's local transit network.
North Edmonton / Belvedere Station (LRT connection)	**Phase 1**	Urban Connector	Alternative northern access with LRT link.
Olds	**Phase 2**	Intermediate	Regional center between Airdrie and Red Deer.

Innisfail	**Phase 2**	Intermediate	Additional coverage between Olds and Red Deer.
Lacombe	**Phase 2**	Intermediate	Urban center north of Red Deer (alternative to Blackfalds).
Ponoka	**Phase 2**	Intermediate	Community-scale demand (consider with simple access)
Wetaskiwin	**Phase 2**	Intermediate	Added coverage south of Edmonton.

Proposed Stop Patterns

For the second part, we propose dividing the Stop Patterns in order to maximize the system's operational efficiency, as follow:

Express (Main Pattern)

It is the quickest one: the train will only pass the key Phase 1 stations: South Calgary/Sunalta, North Calgary/Airport Connection (shuttle), Airdrie/Cross Iron, Red Deer, Leduc, Nisku Airport YEG Connection (shuttle), South Edmonton, and North Edmonton/Belvedere Station (LRT connection). It is aimed at commuters and longer routes, namely, in the morning and evening hours. A regular Edmonton connecting shuttle serves the airport (no train diversion). The aim is high-speed and fast, dependable journey and predictable frequency (around every 30-60 minutes during the peak hours).

Limited Stops (Balanced Pattern)

This pattern retains the major Phase 1 stops and also incorporates a few Phase 2 stations (e.g. Olds or Lacombe) depending on the demand at various times of the day. It manages to allow a combination of speed and coverage without slowing down each trip. It is also effective in peak shifts and at specific periods of the day at an average of about every 60-120 minutes. It is a concept of serving more communities and still ensure a simple schedule.

All Stops (Coverage Pattern)

The most blanketing alternative: the train serves Phase 1 and the majority of Phase 2 destinations, which provides a sufficient access to local transportation, weekends, and special events. It mostly works at off-peak times hence a longer commuting time is suitable. Shuttle buses offer connections to the airport, which are synchronized with the time of arrival and departure. The broader intervals (about every 60-120 minutes) are scheduled, and the emphasis is made on the simple transfers, easy signaling, and stable connections.

Preliminary Operating Windows (subject to freight coexistence)

Weekdays

- AM Peak: 06:00–09:00
- Midday (Off-peak): 09:00–16:00
- PM Peak: 16:00–19:00
- Evening: 19:00–22:00 *(reduced service)*

Weekends / Holidays

- Daytime: 08:00–20:00 *(wider headways; stronger All-Stops coverage)*

Notes. Windows will be refined with the Draft Timetable & Feasibility Note (Week 7). Airport links (YEG/YYC) remain via timed shuttles coordinated with train arrivals/departures.

Assumptions & Limitations

Below are the assumptions and limitations that must be taken into account for the development of the project:

Assumptions

- The existing freight corridor will be used as a passenger service.
- Three of the stop patterns that will start the operations will be the Express, Limited-Stop, and All-Stop.

- The frequency will be provided as ranges of the first initial frequencies (peak: 30-60 min; off-peak: 60-120 min) and will be changed following the operational validation.
- Windows are worked in morning and evening peak time, and also off-peak time; no prolonged evening service is provided.
- Original terminals Calgary South (Sunalta Station) and North Edmonton (Belvedere Station), as to superior local transit services.
- Buses/shuttles (no rail detours along the main line) are planned in the airports (YEG/YYC).
- Phase 2 stops (Olds, Innisfail, Lacombe, Wetaskiwin, Ponoka, Belvedere, etc.) will be implemented through a phasing in process, depending on the availability of accessibility and demand (Accessibility of 10/20/30 minutes).
- Simple first and last-mile integration is presupposed (local buses, park-and-ride where applicable, no-fuss signalling; transfers ≤10 minutes).

Limitations

- This phase does not entail any cost estimations (CAPEX/OPEX) or rolling stock choice.
- No elaborate engineering and construction design is done (standards are conceptual).
- No coordinations are done (only one route) with regard to permitting, land acquisition, and environmental approvals.
- The capacity of track and schedules are based on freight sharing (meetings, sidings, operating windows).
- The preliminary demand is pegged on indirect/public data; further studies will be done subsequently.
- The major changes (adding stops in Phase 1 or Phase 2, or changing the peak frequencies) must be approved and versioned by the customer.

Appendix B – Accessibility & Data Book (data sources and catchments)

Assumptions

- The passenger corridor will operate on the existing track currently used by freight trains.
- The airports (YYC/YEG) will be connected by coordinated shuttles, without diverting trains to the terminals.
- Phase 1 prioritizes express service with few stops to maintain competitive travel times.
- Phases 2 and 3 will gradually add coverage (Limited-Stop and Request) based on demand and operational availability.
- The mode of arrival at each station depends on the context: walking/biking in urban areas; feeder bus or Park & Ride in suburban/exurban areas.
- The published frequencies and service windows are preliminary and will be adjusted in coordination with the railway and municipalities.
- Initial demand volumes are estimated using population/employment indicators and points of interest, subject to refinement.
- The typology language (terminus/interchange/manned/unmanned/request) and phasing convention will be consistent across maps, tables, and data sheets.

Limitations

- This document does not include detailed rail capacity calculations or load conflict simulations.
- Costs, financial estimates, and economic benefit analyses are not presented.
- It does not cover permits, licenses, or detailed engineering environmental or social impact assessments.
- The exact location of some stations may require site studies and agreements with the right-of-way owner.
- Local transport information (routes/schedules) may change and must be validated with each municipality/operator.

- Safety, accessibility, and signage measures are listed as minimums; the final design will be developed in later phases.
- Request-type stops and certain Park & Ride features are subject to observed demand and land availability.
- Any major changes to patterns, phases, or location will require customer validation and an update to this package.

Operating Windows & Frequency Ranges (Preliminary) *

Day	**Window**	**Purpose**	**Initial headway range**
Weekdays	**06:00–09:00 (AM peak)**	Work/school inbound	**30–60 min**
Weekdays	**09:00–16:00 (Midday/valley)**	Off-peak coverage	**60–120 min**
Weekdays	**16:00–19:00 (PM peak)**	Work/school outbound	**30–60 min**
Weekdays	**19:00–22:00 (Evening)**	Reduced demand	**60–120 min**
Weekends/Holidays	**08:00–20:00**	Leisure/family trips	**60–120 min**

* Note: Subject to coordination with freight traffic and capacity validation.

Station Name	**South Edmonton**
Type & Phase	Terminus (Manned)
Role in Network	Northern anchor with fast access to Edmonton Transit Services (ETS) network; distribute riders into Edmonton.
Why here?	Operationally simple city access; strong urban bus hub and strategic Park-and-Ride potential.
First/Last mile	ETS On-Demand and local routes feeding Heritage Valley Transit Centre and Century Park Transit Centre (C-Line LRT transfers at Century Park). Source: Edmonton.ca
Spacing to Neighbors (km)	~ 12.5 km (Nisku - YEG)
Sensitivities / Engagement	Work with City/ETS on Heritage Valley/Century Park interfaces and On-Demand integration; verify turnback/layover needs. Address neighborhood impacts (noise, lighting, traffic calming) and finalize universal access to transit centres.

Station Name	**Nisku (YEG)**
Type & Phase	Interchange (Airport Shuttle Hub)
Role in Network	Dedicated airport access without rail detour; consolidates air-related trips via timed shuttles.
Why here?	Industrial cluster adjacent to airport; timed shuttle hub to YEG without any rail deviation.
First/Last mile	ETS Route 747 (Century Park TC ↔ EIA) with intermediate stops (Premium Outlet, Costco); interline with Leduc Route 10 at EIA. Airport site also points riders to Route 747. Source: Edmonton.ca - Flyeia.com
Spacing to Neighbors (km)	~ 12.5 km (South Edmonton) / ~ 8.7 km (Leduc)
Sensitivities / Engagement	Align with Edmonton Airports, ETS 747, and Leduc 10 for timed transfers and bay rights; confirm late-night headways. Provide baggage-friendly wayfinding and sheltered waiting; set fare handoffs and curbside PUDO/winter ops.

Station Name	**Leduc**
Type & Phase	Interchange (Manned)
Role in Network	Industrial/residential capture for greater-Edmonton; transfer point toward airport/Nisku area.
Why here?	Regional residential–industrial mix; strong trip capture, local bus links, and Park-and-Ride opportunity.
First/Last mile	Leduc Transit Route 10 linking Leduc–Nisku–Premium Outlet–EIA (hourly, 7 days; reduced Sun/hol). Sources: Leduc.ca
Spacing to Neighbors (km)	~ 8.7 km (Nisku YEG) / ~ 110.9 km (Red Deer)
Sensitivities / Engagement	Coordinate with City/Leduc Transit on feeder routes, P&R scale, signage; smooth airport/Nisku shift peaks. Confirm noise/lighting buffers near residential edges; assign winter maintenance and utilities/stormwater tie-ins.

Station Name	**Red Deer**
Type & Phase	Interchange (Manned—Major)
Role in Network	Mid-corridor anchor and balancing node; main interchange for regional trips (education/medical/retail).
Why here?	Mid-corridor metropolitan anchor; combines education, healthcare, and retail with strong regional interchange role.
First/Last mile	Red Deer Transit regular routes, incl. Route 1 Gaetz Avenue Rapid Bus (city north-south spine). Sources: Reddeer.ca
Spacing to Neighbors (km)	~ 110.9 km (Leduc) / ~ 125.8 km (Airdrie)
Sensitivities / Engagement	Co-design interchange with Red Deer Transit (stands, crossings, sheltered paths); validate security/lighting for late use. Check nearby grade crossings and freight windows that could constrain arrival/departure reliability.

Station Name	**Airdrie**
Type & Phase	Interchange (Manned)
Role in Network	Northern Calgary commuter catchment and Park-and-Ride hub; gateway to YYC shuttle linkage.
Why here?	Major commuter hub toward Calgary; regional Park-and-Ride and coordinated shuttle connection to YYC.
First/Last mile	Airdrie Transit locals (1, 3), regional routes to Calgary (901/902) and 900 to CrossIron Mills; Park & Ride at South Transit Terminal. Sources: Airdrie.ca
Spacing to Neighbors (km)	~ 125.8 km (Red Deer) / ~ 28.1 km (Calgary Terminus)
Sensitivities / Engagement	Align with City/Airdrie Transit on P&R sizing, bus bays, wayfinding, and local traffic impacts (access/egress). Time YYC shuttle (and CrossIron linkage) to express arrivals; plan winter ops (snow, de-icing).

Station Name	**Calgary**
Type & Phase	Terminus (Manned)
Role in Network	Southern anchor and primary demand generator; distributes riders into the city via LRT and buses.
Why here?	Direct CBD access via Sunalta LRT; highest destination concentration and strong urban multimodal connectivity.
First/Last mile	CTrain (Blue Line to Sunalta) + city bus network. Station and terminal maps available from Calgary Transit. Sources: Calgarytransit.com
Spacing to Neighbors (km)	~ 28.1 km (Airdrie)
Sensitivities / Engagement	Coordinate with City/Calgary Transit on LRT–bus interface, pedestrian flows, emergency access, and layover/turnback capacity. Set curb management (PUDO/taxi/rideshare), construction staging, noise/lighting, and universal accessibility standards.

Appendix C – Demand & Prioritization Report (scores, weights, sensitivity)

This report is designed to help decision-makers quickly understand which stations along the Calgary–Red Deer–Edmonton corridor show the strongest relative demand. It first explains the data and the simple demand model used to create a 0–100 Demand Score for each station, and then presents the results in the form of priority tiers (Tier 1–4) and a preliminary Top 10 list. The scores and tiers should be read as a comparative guide to where demand is likely to be higher or lower, not as precise forecasts of passenger numbers. The final sections provide a sensitivity check and key limitations, so the results can be used confidently as a starting point for planning, phasing and further technical work.

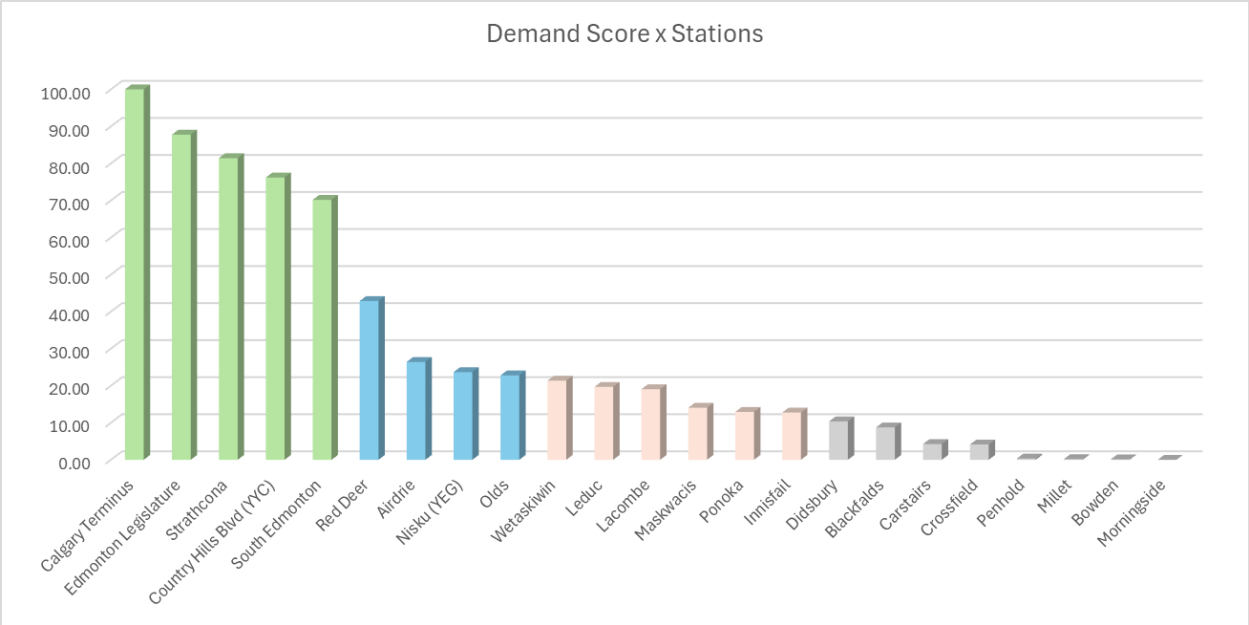
This first section explains the results of the station demand model and how we grouped stations into tiers of priority. The goal is not to predict exact passenger numbers, but to compare stations fairly using the same rules and data for the whole corridor.

Demand scores (overview)

The model produces a Demand Score for each station on a 0–100 scale, where:

- 100 = highest relative demand in the corridor
- 0 = lowest relative demand in the corridor

The chart below summarizes the Demand Score for each station:



Each station's score is based on four components:

- Population Index: how many people live within 10, 20 and 30 minutes of the station.
- Employment Index: how many jobs are within those same 10, 20 and 30 minute catchments.
- POI Index: presence of important Points of Interest, such as airports, universities, hospitals, regional retail and key government or tourism sites.
- Access Index: how easy it is to reach the station, combining public transport (buses, shuttles, LRT) and road access (highways, arterials, and park & ride potential).

All four indices are normalized between 0 and 1 and then combined in a single formula. This keeps the model transparent and easy to recalculate if assumptions change.

Station_Name	Phase	Typology	Demand_ Score_100	Rank_ Base	Tier
Calgary Terminus	1	Terminus (Manned)	100.00	1	Tier1 - Core
Edmonton Legislature	2	Interchange (Manned)	87.78	2	Tier1 - Core
Strathcona	2	Interchange (Manned)	81.44	3	Tier1 - Core
Country Hills Blvd (YYC)	2	Airport Shuttle Hub	76.20	4	Tier1 - Core
South Edmonton	1	Terminus (Manned)	70.18	5	Tier1 - Core
Red Deer	1	Interchange (Manned—Major)	42.87	6	Tier 2 - High
Airdrie	1	Interchange (Manned)	26.42	7	Tier 2 - High
Nisku (YEG)	1	Interchange (Airport Shuttle Hub)	23.67	8	Tier 2 - High
Olds	2	Manned	22.78	9	Tier 2 - High
Wetaskiwin	2	Manned	21.37	10	Tier 3 - Medium
Leduc	1	Interchange (Manned)	19.68	11	Tier 3 - Medium
Lacombe	2	Manned	19.05	12	Tier 3 - Medium
Maskwacis	2	Manned (co-designed)	14.06	13	Tier 3 - Medium
Ponoka	2	Unmanned	12.93	14	Tier 3 - Medium
Innisfail	2	Unmanned	12.75	15	Tier 3 - Medium
Didsbury	3	Unmanned	10.38	16	Tier 4 _ Coverage
Blackfalds	2	Unmanned	8.75	17	Tier 4 _ Coverage
Carstairs	3	Request Stop	4.25	18	Tier 4 _ Coverage
Crossfield	3	Request Stop	4.14	19	Tier 4 _ Coverage
Penhold	3	Request Stop	0.34	20	Tier 4 _ Coverage
Millet	3	Request Stop	0.18	21	Tier 4 _ Coverage
Bowden	3	Request Stop	0.12	22	Tier 4 _ Coverage
Morningside	3	Request Stop	0.00	23	Tier 4 _ Coverage

Station ranking and tiers

Using the Demand Score, all 23 stations were then grouped into four tiers:

- **Tier 1 – Core** (ranks 1–5): highest demand and strongest strategic role.
- **Tier 2 – High** (ranks 6–9): high regional demand and suburban nodes.
- **Tier 3 – Medium** (ranks 10–14): medium regional demand with important coverage roles.
- **Tier 4 – Coverage** (ranks 15–23): low-demand stations that support geographic coverage and equity.

The resulting ranking is:

- **Tier 1 – Core**

Station_ID	Station_Name	Phase	Typology	Tier
Calgary	Calgary Terminus	1	Terminus (Manned)	Tier1 - Core
Edm_Legis	Edmonton Legislature	2	Interchange (Manned)	Tier1 - Core
Strathcona	Strathcona	2	Interchange (Manned)	Tier1 - Core
YYC	Country Hills Blvd (YYC)	2	Airport Shuttle Hub	Tier1 - Core
South_Edm	South Edmonton	1	Terminus (Manned)	Tier1 - Core

- **Tier 2 – High**

Station_ID	Station_Name	Phase	Typology	Tier
Red Deer	Red Deer	1	Interchange (Manned—Major)	Tier 2 - High
Airdrie	Airdrie	1	Interchange (Manned)	Tier 2 - High
Nisku	Nisku (YEG)	1	Interchange (Airport Shuttle Hub)	Tier 2 - High
Olds	Olds	2	Manned	Tier 2 - High

- **Tier 3 – Medium**

Station_ID	Station_Name	Phase	Typology	Tier
Wetaskiwin	Wetaskiwin	2	Manned	Tier 3 - Medium
Lacombe	Lacombe	2	Manned	Tier 3 - Medium
Leduc	Leduc	1	Interchange (Manned)	Tier 3 - Medium
Maskwacis	Maskwacis	2	Manned (co-designed)	Tier 3 - Medium
Ponoka	Ponoka	2	Unmanned	Tier 3 - Medium
Innisfail	Innisfail	2	Unmanned	Tier 3 - Medium

- **Tier 4 – Coverage**

Station_ID	Station_Name	Phase	Typology	Tier
Didsbury	Didsbury	3	Unmanned	Tier 4 _ Coverage
Blackfalds	Blackfalds	2	Unmanned	Tier 4 _ Coverage
Carstairs	Carstairs	3	Request Stop	Tier 4 _ Coverage
Crossfield	Crossfield	3	Request Stop	Tier 4 _ Coverage
Penhold	Penhold	3	Request Stop	Tier 4 _ Coverage
Millet	Millet	3	Request Stop	Tier 4 _ Coverage
Bowden	Bowden	3	Request Stop	Tier 4 _ Coverage
Morningside	Morningside	3	Request Stop	Tier 4 _ Coverage

Interpretation of the results

From a planning perspective, the results align with our expectations.

- **Tier 1 – Core:** is formed by the two big city centres (Calgary and Edmonton), the Strathcona/Whyte Avenue district, the Calgary airport area (YYC) and South Edmonton as a growing southern terminus. These locations combine large catchments, strong employment, multiple POIs and very good transit and road access.
- **Tier 2 – High:** contains the main regional communities:
    - Red Deer as the central city between Calgary and Edmonton.
    - Airdrie as a strong suburban node with park & ride mode and regional bus links.
    - Nisku (YEG) as the main airport gateway and employment cluster.
    - Olds as an education-focused town with a regional college and good highway access.
- **Tier 3 – Medium**: these groups are mid-sized towns and Indigenous communities with important roles in coverage and access, but smaller demand compared to the high-tier nodes. Contains Wetaskiwin, Lacombe, Leduc, Innisfail and Maskwacis.
- **Tier 4 – Coverage:** concentrates small towns and hamlets where the model shows low relative demand, but where stations may still be justified for reasons of geographic coverage, social equity or local access.

Overall, the ranking shows a logical pattern: large metropolitan cores at the top, then regional cities and airport/suburban hubs, followed by smaller centres and rural stops.

Specific note on Nisku (YEG)

An important case in this ranking is Nisku (YEG). In terms of local population and jobs inside a small catchment, Nisku scores relatively low. However, the following was taken into account:

- the international airport,
- the concentration of airport-related employment,
- strong highway access, and
- the presence of shuttle and bus services,

its POI and Access scores increase significantly.

For this reason, Nisku (YEG) appears in Tier 2 – High, alongside Airdrie, Red Deer and Olds. This reflects its role as a regional and international gateway, rather than a conventional town-based station.

Sensitivity check (±20%)

To test the sensitivity of the results to the assumptions, a simple what-if analysis of the demand model was performed. The population component of the index was increased by 20% and then decreased by 20%, while the other components (employment, points of interest, and accessibility) remained unchanged. For each scenario, the demand score and ranking of each station were recalculated.

The number of places each station moved up or down was then compared between the baseline and the two scenarios. Even with ±20% adjustments to the population assumptions, the stations with the greatest demand potential remained in the top group, and the ranking variations were small. This indicates that the prioritization is reasonably stable and does not change drastically in response to realistic variations in the input assumptions.

Overall, the sensitivity results provide confidence that station priorities are not based on a single assumption. While exact demand indices may change as better data becomes available, the relative position of the highest-priority stations remains constant. This means that the current prioritization can be used as a starting point for planning, designing, and structuring the phases.

How this report aligns with the Statement of Work

This Demand and Prioritization Report has been prepared to respond to the scope agreed in the Statement of Work and to provide additional support for future planning decisions. It covers the core elements requested by the client and also goes beyond the original scope in several practical ways.

Delivers the agreed scope

- Provides a comparative Demand Score (0–100) for each station along the Calgary–Red Deer–Edmonton corridor, based on population, employment, points of interest and access.
- Groups stations into clear priority tiers (Tier 1–4) and highlights a preliminary Top 10 set of high-priority stations.
- Includes a simple ±20% sensitivity check to show that the highest-priority stations remain stable under reasonable changes in assumptions.
- Is supported by a structured Excel calculation file (inputs, parameters, demand model, sensitivity test and outputs) that can be updated as new data becomes available.

Adds value beyond the original scope

- Uses plain language and a short “how to read this report” guide to help non-technical stakeholders understand the results.
- Links the quantitative rankings with a clear narrative on what each tier means in practice for planning, phasing and further design work.
- Can be accompanied by a corridor map showing the location and priority tier of each station, to support communication with municipalities and the public.
- Outlines key limitations and next steps so this work can be connected directly to station siting, station design standards and first-/last-mile planning in later phases.

Assumptions & Limitations

The demand and prioritization results are based on a simplified, comparative model rather than a full ridership forecast. The aim is to rank stations consistently across the corridor, not to predict exact passenger numbers.

Assumptions

- Current population, employment and points of interest around each station are treated as reasonable proxies for future demand when the service starts.
- Each station has a defined catchment area (10, 20 and 30 minutes), and people and jobs within these bands are assumed to have a similar potential to use the rail service.
- The four indices (Population, Employment, POI and Access) can be combined into a single Demand Score using fixed weights that are applied consistently to all stations.
- Better road and transit access to a station is assumed to translate into higher rail usage.
- The Demand Score (0–100) is interpreted as a relative measure of demand potential between stations, not as an absolute forecast of daily or peak-hour passengers.

Limitations

- The model works at corridor and station level and does not capture detailed local factors such as walkability, micro-scale land-use mix, or exact station footprints.
- There are no historical ridership data for these stations, so the model cannot be calibrated against observed passenger counts; validation is mainly qualitative, based on planning judgment and how well the pattern matches expectations (big cities and airports at the top, small towns at the bottom).
- Socio-economic variables (for example income levels, car ownership or transit dependency) are not explicitly included, which may lead to over- or under-estimation of demand in specific locations.
- The results represent a snapshot based on current data and do not yet include detailed growth scenarios or planned land-use changes around each station.
- The sensitivity check focuses on changes to the population component only; other sources of uncertainty will need to be tested in later stages as better data becomes available.

Appendix D – Schedule & Feasibility (timetable assumptions and run-time table)

1. Purpose and Context

This report provides a schedule and feasibility analysis for the proposed Edmonton-Calgary regional passenger rail service. It is based directly on the previously submitted Stations and Services Plan and Demand and Prioritization Report, utilizing the same station and distance data provided by the client.

It is not aimed at defining a definitive schedule but rather at demonstrating that one coherent service concept can be structured for the entire corridor with reasonable travel times and operating windows. This document is, therefore, indicative since it uses transparent assumptions on speeds and dwell times and aims at highlighting where more detailed analysis with infrastructure owners would be required.

2. Service Concept

The preliminary schedule is based on a simple and easily explained service concept along the entire Edmonton-Calgary corridor.

In the Edmonton area, the corridor has three main stations: Edmonton Legislature, Strathcona, and South Edmonton, providing access to the central government district and the wider ETS network. At the southern end, the corridor includes Country Hills Blvd (YYC), which serves Calgary International Airport north of Calgary and Calgary Terminus in the city center.

Between these main stations, service stops at all intermediate stations defined in the Demand and Prioritization Report, including regional hubs such as Red Deer, Leduc, and Wetaskiwin, the Nisku Airport and Employment Center, and key Indigenous and rural communities such as Maskwacis and Morningside.

For this draft, a baseline pattern is used: a regional, all-stop service that stops at every station in both directions. This is sufficient to illustrate journey times, station schedules, and operating intervals. In later phases, additional patterns (e.g., semi-fast services skipping some Level 3 and 4 stops) could be tested using the same modeling framework.

3. Inputs and assumptions

The location of all stations, the distances between stations, and the cumulative distances along the corridor are obtained from the customer's distance table and the 2016/2021 Government of Canada Census geography. This data is stored on the "Stations_Inputs" sheet of the "Scheduling and Feasibility" workbook.

Preliminary travel times are derived from three transparent assumptions, stored on the "Parameters" sheet:

- an average speed across the entire corridor for full-stop services (including typical acceleration, braking, and speed restrictions);
- a standard dwell time at major stations (Edmonton Legislature, South Edmonton, Nisku, Red Deer, Country Hills/YYC, and Calgary Terminus); and
- a shorter dwell time at intermediate stations.

For each service, the time between stations is calculated as follows:

travel time (hours) = segment distance (km) / assumed average speed (km/h)

And then, it is converted to minutes and added to the time at the previous station, including dwell time. The complete timetable sequence for each station is automatically generated in the Draft_Schedule sheet from this data. Timetables are not manually edited, allowing for auditing the model and facilitating adjustments if assumptions change.

4. Schedule Chart

Table 1 shows a simple draft schedule for a small set of example services in each direction. It focuses on three key timing points – Edmonton Legislature, Red Deer and Calgary Terminus – plus the airport-oriented station at Country Hills Blvd (YYC).

The table demonstrates that, under the indicative assumptions, end-to-end journey times between Edmonton and Calgary remain within a competitive range for regional rail, while still serving all intermediate communities on the corridor.

Service ID	Direction	Window	Pattern	Edmonton Legislature (dep)	Red Deer (arr)	Country Hills / YYC (arr)	Calgary Terminus (arr)	Total Travel Time (min)
SB1_AM	SB (to Calgary)	Morning_Peak	P1_AllStops	6:00	7:33	8:53	9:03	183
SB2_Inter	SB (to Calgary)	Inter_Peak	P1_AllStops	9:00	10:33	11:53	12:03	183

Service ID	Direction	Window	Pattern	Calgary Terminus (dep)	Red Deer (arr)	Nisku (arr)	Edmonton Legislature (arr)	Total Travel Time (min)
NB1_AM	NB (to Edmonton)	Morning_Peak	P1_AllStops	6:00	7:30	8:49	9:03	183
NB2_Inter	NB (to Edmonton)	Inter_Peak	P1_AllStops	9:00	10:30	11:49	12:03	183

Table 1 – Example draft schedule (indicative times)

Note: All values are indicative, generated from the Schedule and Feasibility v1.0 workbook, and will need refinement with detailed infrastructure and timetable data.

5. Operating Windows

The services in Table 1 sit within a simple set of operating windows that reflect typical commuter and intercity travel patterns:

• Morning peak - roughly 06:00–09:00, based on trips into Edmonton and Calgary;
• Inter-peak - around 09:00 – 16:00, with lower but consistent demand for intercity and regional trips;
• Peak evening, around 16:00–19:00, with the predominant flows of homebound commuters; and
• Stopping at the late evening - very few trips after 19:00, mostly coverage trips.

Example services in the current draft show how the trains might be spaced through the Morning Peak and Inter-Peak windows in each direction, based on assumed headways of around 30 minutes in the peak and 60 minutes in the inter-peak. These headways are design assumptions, rather than confirmed capacity limits, and can be tightened or relaxed as more detailed demand and infrastructure data becomes available.

6. Coexistence with Freight and Potential Trouble Spots

The draft schedule has been built with conservative average speeds and regular intervals, such that in principle freight trains can still be fitted between passenger paths. However, without access to detailed freight timetables, track diagrams and capacity data, coexistence with freight can at this stage be assessed only qualitatively.

In light of the corridor structure and known freight patterns, the following locations can be expected to need special attention in the coming phase:

- Approaches to Edmonton and Calgary where junctions, yard access and higher freight volumes can create pathing constraints;
- the Red Deer area, that puts together a major intermediate passenger stop with potential freight crossings and local industrial movements; and
- The Nisku/Edmonton International Airport zone, where high employment and airport-related activity may overlap with existing freight traffic.

It is recommended that these locations be treated as preliminary "trouble spots": places where more detailed capacity analysis, simulation and dialogue with the infrastructure owners will be needed to confirm feasible passenger paths, buffer times and potential infrastructure enhancements - e.g. passing loops or signalling upgrades.

7. Limitations

This Draft Schedule and Feasibility note is intentionally high-level. It demonstrates that a coherent all-stops regional service can be structured along the corridor, with competitive end-to-end journey times and a simple operating pattern. At the same time, it has several important limitations:

- running times are based on assumed corridor-average speeds, not on detailed speed profiles, gradients or signal sections;
- dwell times are generic, not tailored to specific platform layouts, crowding levels or turnback constraints;
- freight paths are not explicitly modelled; and
- no formal capacity assessment has yet been carried out for critical junctions or single-track sections.

The natural next step would be to replace these assumptions with infrastructure-based inputs (permitted speeds, actual track layouts and signal spacing), and to integrate sample freight timetables supplied by the infrastructure owners. This would allow the draft schedule to be stress-tested for robustness, refined to reflect realistic buffers and recovery margins, and extended to consider options such as semi-fast patterns, short-turn services at intermediate hubs, and different service levels by time of day.

Appendix E – Station Standards Guide (typologies and minimum requirements)

1. Purpose and Scope

The purpose of this Station Standards Guide is to define clear, practical and scalable design standards for passenger stations in the Alberta Regional Railway (ARR) corridor between Calgary, Red Deer and Edmonton.

This Guide translates international best practice on station access and design – such as the *TCRP 153 Guidelines for Providing Access to Public Transportation Stations* – into a framework tailored to Alberta's emerging *Passenger Rail Master Plan* and the expectations expressed by Albertans during recent public engagement.

The scope of this document is to:

- Describe a station typology for the ARR network (core hubs, regional stations and local stops).
- Set minimum requirements for access, safety, passenger information, comfort, and integration with other modes for each station type.
- Provide design principles that help align station investments with Alberta's strategic, economic, environmental and traveller-focused objectives.
- Offer a consistent reference for future phases of work (detailed design, business case development, and stakeholder engagement), without pre-empting decisions that belong to later stages of the Master Plan.

This Guide is not a full engineering manual. Detailed geometric, structural, electrical or signalling standards will be defined at later design stages or by reference to applicable codes and operator standards. Here we focus on the "what" and the "why" of stations (functions, performance and minimum features), rather than the "exact dimensions" of every element.

2. How to Use this Guide

This document is intended to be used as a common reference by:

- Government and agencies, when comparing options and prioritizing station investments.
- Designers and consultants, when preparing concept layouts and feasibility studies.
- Municipalities and Indigenous communities, when evaluating land-use changes and development proposals around stations.

Each chapter can be read on its own:

- Chapter 3 explains the station typology and roles in the network.
- Chapter 4 sets out the design principles that should guide all stations.
- Chapters 5–7 define access and functional standards by mode and by station area.
- Chapter 8 explains how to phase stations over time as demand and funding grow.

3. Station Typology & Roles in the ARR Network

International practice shows that station access and design work best when they start from a clear station typology: different types of stations play different roles in the network, serve different markets, and therefore justify different levels of investment and facilities.

For the ARR corridor, three main station types were defined:

Type A – Core Hubs (Tier 1 – Core)

- Primary gateways to the provincial rail network and the wider transit system.
- Usually located in major urban centres or at main interchanges (e.g., downtowns, major LRT nodes, airports).
- High passenger volumes, all-day use, and strong intermodal role (rail–LRT–bus–active modes–pick-up/drop-off).
- Highest standards for accessibility, weather protection, information systems and passenger amenities.

Type B – Regional Stations (Tier 2 – High/Medium)

- These stations would be meant for growing mid-sized cities or suburbs lying along the route.
- The passenger group consists of a combination of commuting passengers, inter-city passengers, and occasional passengers.

- It is well distributed between walking and cycling from indigenous neighborhoods, shuttles from roadside locations, and P&R from suitable sites.
- The facilities at the stations reach a moderate degree of permanence and amenities such as canopies, basic indoor space as may be required, secure bicycle parking, and readable signage.

Type C – Local Stops (Tier 3 – Local / Low)

- Design: This is centred on simple and economically optimized bus stop design solutions for small settlements, industrial areas, park-and-ride terminals, and resorts.
- It should include features such as safe and accessible platforms, sufficient lighting, and signs. It should also be connected to local roads and parking lots.
- Emphasis is on efficiency and the ability to be upgraded (such as platform extensions and canopies) if demand grows.

This typology is consistent with research such as *TCRP Report 153*, which shows that the distribution of access modes and design priorities vary substantially depending on land use density, distance between stations, and network function. It also aligns with the *Alberta Passenger Rail Master Plan's* vision of combining high-demand regional services with commuter and light rail (LRT) connections in major urban centers.

4. Core Design Principles

The ARR Station Standards are based on international best practice for station design and access, adapted to Alberta's context. They bring together ideas from guidance such as TCRP 153 on access to transit stations, Network Rail's station design principles, and accessible station standards, but keep the focus simple and practical.

All ARR stations should follow these five core principles:

4.1 Safe and Accessible for Everyone

Every station must allow all users – including people with reduced mobility, older adults, children and travellers with luggage – to move safely and independently from the street to the platform. This means step-free routes where possible, good lighting, clear edges, simple vertical circulation (ramps, lifts or stairs) and good visibility across key areas.

4.2 Door-to-Door Multimodal Access

Access for walking, cycling, bus, on-demand services and car (drop-off and park-and-ride where appropriate) should be planned together, not added one by one at the end. The balance between these modes depends on the station type and the surrounding land use: core urban hubs will focus more on walking, transit and cycling, while regional and local stations may rely more on feeder buses and park-and-ride.

4.3 Simple, Legible and Passenger-Focused

Layouts should be as simple as possible, with few decision points and clear lines of sight from entry to platforms. A consistent family of signs, maps and symbols should be used across the corridor so that passengers quickly recognise “how ARR stations work”, even when the architecture changes from place to place.

4.4 Integrated with Community and Land Use

The areas in front of stations should feel like safe, welcoming public spaces, not only car parks. Where demand and context allow it, stations should be planned together with surrounding land use to support transit-oriented development (more homes, jobs and services within walking distance), in partnership with municipalities and Indigenous communities.

4.5 Resilient, Efficient and Future-Ready

Designs should include robust weather protection, sensible drainage and easy snow and ice management. They should avoid unnecessary complexity and expensive bespoke elements, so that inspection and maintenance are straightforward. Layouts, structures and digital systems should allow for later expansion—such as longer platforms, more shelters, extra bus bays or upgraded ticketing—without needing to rebuild the entire station.

5. Access & Connectivity Standards

Good station access means thinking about the whole trip, not just the platform. Following the approach in *TCRP Report 153* and related guidance, station access for ARR is planned across all relevant modes – walking, cycling, bus and on-demand services, and car access (drop-off and park-and-ride) – with the balance changing by station type and land use.

5.1 Access by Station Type

For each station type, the intended "mix" of access is:

- *Core Hubs (Type A)*
    - Primary focus on walking, cycling and transit (LRT where available, urban buses, airport shuttles).
    - Limited park-and-ride, mainly for specific markets (e.g., airport, regional visitors), to avoid filling valuable urban land with surface parking.
- *Regional Stations (Type B)*
    - Balanced mix: walking and cycling from nearby areas, feeder buses and a meaningful park-and-ride offer where land use is more suburban.
- *Local Stops (Type C)*
    - Simple but safe access from local roads and paths, with smaller parking areas or shared lots where necessary.
    - Emphasize simple, safe interchanges rather than full connections.

This typology is consistent with international findings that urban stations rely more on walk and transit access, while lower-density stations depend more on park-and-ride and feeder services.

5.2 Walking Access

Walking is the default access mode for all station types.

Key expectations:

- Continuous, well-maintained sidewalks or pathways on at least one side of all streets leading to the station.
- Safe, direct crossings near station entrances (marked crossings, refuge islands or signals as appropriate).
- Step-free routes from street to platform wherever reasonably practicable, aligned with accessible station standards.
- Forecourts and station plazas are designed as pedestrian-priority spaces, with vehicle movements controlled and speeds kept low.

5.3 Cycling Access

Cycling provides an efficient first/last-mile option, especially for Regional and Local stations. Guidance from FTA and APTA highlights the value of secure, visible bike parking and safe approaches.

Key expectations:

- Clearly signed, comfortable routes from local bike networks or key streets to the station entrance.
- Bike parking that is:
    - Close to main entrances,
    - Visible and naturally supervised,
    - Located so that it does not obstruct pedestrian flows or accessible routes.
- At Core Hubs and major Regional Stations, consider higher-capacity or covered parking and future-ready space for possible bike-share or secure bike rooms.

5.4 Bus, LRT and On-Demand Services

In cities with either bus or LRT services, the stations serve interchange points, rather than a simple stop for the train.

Key expectations:

- Bus stops and lay-bys are sited as close as practicable to station entrances with step-free routes, weather protection and clear signage linking modes.
- Interchange configurations that are simple and easily readable, without long detours, unneeded level changes, or complicated crossing patterns.
- For on-demand shuttles, taxis and TNCs (ride hailing), clearly signed pick-up/drop-off zones that do not conflict with buses, pedestrians or cyclists.
- It should be laid out to accommodate high-quality multi-modal hubs at Core Hubs, according to Network Rail and interchange best-practice guidance.

5.5 Car Access: Drop-off and Park-and-Ride

Car access is part of the ARR access mix at Regional and, in particular, Local stations, but it needs to be managed carefully in support of wider climate and land-use goals.

Key expectations:

- Drop-off areas are located near the entrance, on low-speed approaches with clear separation from pedestrian routes and bike paths.
- Park-and-ride sized according to demand, land-use context and corridor strategy, recognizing that large surface lots can discourage walking and compact development if overused.
- Shared parking with adjacent land uses where possible is preferred over very large lots being built on day one; similarly, staged expansion is preferred.
- Layouts should allow for safe pedestrian routes from parking to the station, with clear wayfinding and lighting.

5.6 Access Design Process

TCRP 153 identified that station access for ARR should be based on a structured process and not ad-hoc decisions by mode:

1. Define station type and role in the network.
2. Estimate expected access mode shares (walk, bike, bus, car, drop-off) based on land use, service pattern and local input.
3. Test options for access (such as alternatives in park-and-ride size or bus loop configuration) against safety, cost and land-use objectives.
4. Record the selected access concept and how it fulfills the minimum requirements in this Guide.

This keeps Access & Connectivity aligned with the core design principles of safe and inclusive, door-to-door, community-integrated, and future-ready.

6. Functional Areas and Minimum Requirements by Station Type

This page gives a direct translation of key design concepts to key elements of stations and identifies minimum requirements for each station type. All ARR stations have a common set of functional elements such as forecourt areas, passenger buildings/shelters, platforms, and information/safety provisions, with varying levels of provision for Core Hubs, Regional Stations, and Local Stops. The succeeding subsections identify the function of each functional element with minimum requirements for each station type.

6.1 Approach

The ARR Station Standards use a function-area approach: Every station has the same elements in its function areas. These minimum requirements vary depending on station type. Per function area, this guide details:

- Function: The function of this zone.
- The minimum requirements for each station type:
    - Type A – Core Hubs
    - Type B: Regional Stations
    - Type C – Local Stops

This structure would be modelled using a matrix with 'Required/Optional' entries in later design phases. This would be done using Excel-based design models.

6.2 Station Forecourt and External Public Space

The station forecourt is the main external space in front of the station entrance. It is where walking routes, drop-off, bike access and often bus stops come together.

- *Purpose*
    - Provide a safe, legible and welcoming arrival space.
    - Organize movements between modes at low speeds.
    - Create a clear identity for the station within its community.
- *Minimum requirements by station type*
    - *Type A – Core Hubs*
        - Pedestrian-priority forecourt with high-quality paving, clear wayfinding and traffic calming.
        - Step-free routes from footpaths, bus stops and drop-off zones to the main entrance.
        - Space protected from through-traffic, with clear separation between walking areas and vehicle movements.
    - *Type B – Regional Stations*
        - Clear, direct walking routes from parking, bus stops and local streets to the entrance.
        - Controlled vehicle speeds in front of the station and safe crossing points.

        - Basic but coherent public-space treatment (lighting, paving, benches where justified).
    - *Type C – Local Stops*
        - Simple, safe approach from local road or shared parking area.
        - At least one accessible, step-free route from drop-off/parking to the platform access point.
        - Sufficient lighting and simple directional signage.

6.3 Station Building and Passenger Shelters

The station building (if available) and waited shelters shield users from environmental conditions. They contain essential facilities such as waiting space, ticketing booths, and toilet facilities.

- *Purpose*
    - Offer protection from the elements and a waiting area with comfortable conditions.
    - Support safe, visible access to platforms and information.
- *Minimum requirements by station type*
    - *Type A – Core Hubs*
        - Station building with indoor waiting areas, toilets and staff or staff-like presence (e.g., attended periods or customer support).
        - Weather-protected entrance points aligned with major pedestrian and transit movements.

          • Enough space inside to handle maximum numbers of passengers without congestion.
    - *Type B – Regional Stations*
        - At least one enclosed or semi-enclosed waiting area, which may be part of a small building or high-quality shelter.
        - Toilets are provided where justified by demand and operating hours, or space is safeguarded for future provision.
        - Additional shelters on platforms to protect waiting passengers.
    - *Type C – Local Stops*
        - A strong platform with shelters scaled for peak usage.

        - Station building is not required but space should be allocated for potential small buildings depending on future demand.

6.4 Platforms and Track Interface

The platforms are the core functional element of every station. They must be safe, accessible and compatible with ARR rolling stock.

- *Purpose*
    - Allow safe boarding and alighting for all users.
    - Interface correctly with train doors and heights.
- Minimum requirements by station type
  (could be refined at future design stages with detailed rolling stock data)
    - All station types (A, B, C)
        - Platform length and height designed to serve the planned train formations.
        - Tactile warning strips at platform edges and clear markings along the full usable length.
        - Adequate lighting along platforms for safe night-time use.
        - At least one step-free route between street-level access and each platform (e.g., ramps, lifts or level crossings where allowed by safety standards).
    - Type A – Core Hubs
        - Having broader platforms to handle larger numbers of passengers.
        - Waiting areas are clearly separated from paths of circulation.
    - Type B – Regional Stations
        - Standard platforms with local widening when peak demand warrants this.
    - Type C - Local Stops
        - Standard-width platforms appropriate for smaller numbers of passengers with straightforward access routes.

6.5 Passenger Information and Ticketing

Passenger information and ticketing systems help passengers with route planning and completing their trip when changing modes.

- *Purpose*
    - Information about services, platforms, and connecting flights should be accurate and dependable.

- Facilitate easy purchases and validation for tickets or reservations.
- *Minimum requirements by station type*
    - *Type A – Core Hubs*
        - Real-time information displays for all ARR services and key connections (e.g., LRT, major bus routes).
        - Clear static maps: ARR network, local area, and multimodal connections.
        - Ticket vending machines and/or counters, with provisions for contactless and mobile ticketing.
    - *Type B – Regional Stations*
        - Real-time information for ARR services (where technically feasible) or regular static timetable updates as a minimum.
        - At least one ticket vending machine or equivalent ticketing solution.
        - Clear signage to park-and-ride, bus stops and bike facilities.
    - *Type C – Local Stops*
        - Basic but clear static information: station name, timetable, simple local map.
        - A defined mechanism for ticket purchase (e.g., mobile, on-train, or shared vending facilities), depending on future operating model.

6.6 Safety, Security and Lighting

Safety and personal security are critical to public confidence in ARR stations.

- *Purpose*
    - Reduce risk of accidents and incidents.
    - Make passengers feel safe at all times of day.
- *Minimum requirements by station type*
    - *All station types (A, B, C)*
        - Continuous lighting along main access routes, forecourts and platforms.
        - Clear sightlines in key areas; avoid hidden corners and unnecessary visual barriers.
        - Handrails, edge markings and other basic safety features where needed.
    - *Type A – Core Hubs*

        - CCTV coverage of platforms, main entrances, forecourts and key interchange areas (subject to operator policy).
        - Emergency help points in visible, well-lit locations.
    - *Type B – Regional Stations*
        - Targeted CCTV and/or passive surveillance measures where justified by risk assessment.
        - Emergency contact facilities at or near platform level.
    - *Type C – Local Stops*
        - Robust lighting and passive surveillance (visibility from nearby streets or uses) as a baseline.
        - CCTV or help points considered where local context or risk levels warrant it.

6.7 Operations, Servicing and Maintenance Access

Stations must be practical to operate and maintain throughout their life.

- *Purpose*
    - Enable efficient day-to-day operation (cleaning, waste, minor repairs, snow and ice management).
    - Support safe access for maintenance staff and emergency services.
- *Minimum requirements by station type*
    - *All station types (A, B, C)*
        - Safe routes for staff and service vehicles that avoid conflicts with main passenger flows where possible.
        - Defined areas for waste collection, storage and servicing that do not obstruct public space.
        - Layouts designed to accommodate snow clearance and de-icing without damaging key surfaces or equipment.
    - *Type A – Core Hubs*
    - More formalised back-of-house areas for staff, storage and plant rooms.
    - *Type B and C – Regional and Local*
        - Simpler arrangements, but still with clear operational access and storage zones.

The table below shows, for each functional area, the expected level of provision at Core Hubs, Regional Stations and Local Stops.

Table 1 – Compact Summary of Station Standards by Type

Functional Area	Type A – Core Hub	Type B – Regional Station	Type C – Local Stop
Forecourt & Pedestrian Access	Pedestrian-priority forecourt or plaza, step-free access, strong traffic calming	Clear, direct walking routes from streets, buses and parking, safe crossings	Simple but safe approach from local road/parking, at least one accessible route
Station Building & Shelters	Enclosed station building with indoor waiting and toilets; multiple shelters	Smaller building or enclosed/semi-enclosed waiting; platform shelters	No building required; robust platform shelters sized for local demand
Platforms & Vertical Circulation	Wider platforms for higher volumes; step-free access to all platforms	Standard platforms with local widening where needed; step-free access	Standard platforms for lower volumes; simple, safe access routes
Information & Ticketing	Real-time information, network and local maps, ticket vending and digital options	Real-time or regularly updated timetables; at least one ticket solution	Clear static information (name, timetable, simple map); defined way to buy/validate tickets
Walking, Cycling & Local Access	Continuous sidewalks, signed cycle routes, visible and secure bike parking	Sidewalks to nearby streets, basic bike parking; potential covered or expanded parking over time	Basic sidewalks or paths and bike parking where justified
Bus, LRT, On-Demand & Car Access	High-quality interchange with LRT/bus/airport services; organised drop-	Feeder buses close to entrance; kiss-and-ride;	Simple bus stop or on-demand pick-up where present; small parking or

Functional Area	Type A – Core Hub	Type B – Regional Station	Type C – Local Stop
	off; targeted park-and-ride only	meaningful park-and-ride where suburban	shared lots; basic drop-off
Safety, Security & Operations	Strong lighting, clear sightlines, CCTV and help points; defined service and maintenance access	Good lighting, clear sightlines; targeted CCTV/help points; practical service access	Robust lighting and visibility; basic emergency contact where justified; simple but workable service access

**A more detailed, element-by-element checklist (for example using "Required / Optional" coding) can be developed at later stages or provided as an appendix.

7. Multimodal Hubs and Key Termini

Multimodal hubs and key termini play a special role in the ARR network. While they follow the same core principles and station typology as other stations, they are expected to handle higher passenger volumes, more complex interchange patterns and stronger land-use impacts than typical Regional or Local stops.

In the ARR context, these locations include:

- The main Calgary terminus and its immediate urban surroundings
- The primary Edmonton urban stations (such as the Legislature and Strathcona area)
- Red Deer as the central intermediate hub on the corridor
- Airport-related hubs (e.g., YYC and potential future connections at Edmonton International)

For these hubs, the standards in Sections 5 and 6 should be regarded as a **minimum baseline**. In practice, multimodal hubs will typically require:

- Higher levels of weather protection, indoor space and passenger amenities
- Stronger integration with LRT, bus, shuttle and active modes
- More robust wayfinding, information systems and redundancy in access routes

- Enhanced public realm and placemaking, given their importance as urban gateways

The following subsections highlight additional expectations for these locations, building on the general standards set out for Core Hubs (Type A) in the previous sections.

7.1 Urban Core Hubs (Calgary and Central Edmonton)

Urban core hubs – such as the Calgary terminus and the main Edmonton urban stations – are the primary gatewaysbetween ARR and city transit. In addition to the Type A Core Hub standards, they should:

- Provide strong, compact interchange with LRT, frequent buses and active modes, with short walking distances and simple routes.
- Offer high-quality indoor space and public realm, reflecting their role as visible city landmarks.
- Safeguard space and access capacity for future growth in services and surrounding development.

7.2 Red Deer as Central Corridor Hub

Red Deer is the central anchor of the Calgary–Edmonton corridor. Beyond general Core/Regional standards, it should:

- Offer a clear, legible interchange for northbound and southbound services.
- Provide a balanced access mix: walking and cycling locally, feeder buses and a meaningful park-and-ride offer.
- Reserve platform and land capacity so that future service patterns or development can be added without major redesign.

7.3 Airport Hubs (e.g., YYC and Future Edmonton Connections)

Airport hubs link ARR to major air gateways and must work well for time-sensitive, luggage-heavy and first-time users. In addition to Core Hub standards, they should:

- Provide generous, step-free circulation that is easy to use with luggage.
- Offer clear, multilingual wayfinding and information for air–rail transfers.
- Integrate closely with airport shuttles, local transit and pick-up/drop-off areas, avoiding conflicts between different traffic streams.

8. Phasing and Future-Proofing

The ARR stations will not be built all at once in their "final" configuration. Rather, they will evolve over time as the services grow, as land use changes and as funding becomes available. The Station Standards therefore need to support a clear first phase that is affordable and buildable, and, at the same time easy to upgrade later without major rework.

This section explains how the standards should be applied in phases and how to "future-proof" key decisions.

8.1 Initial Phase 1 Provision

For the purposes of this programme, Phase 1 stations should be designed to:

- Meet all core safety and accessibility standards from day one, regardless of station type.
- Provide the minimum functional elements set out for each station type in Sections 5 and 6 (forecourt, platforms, information, access by key modes).
- Avoid "over-building" expensive features that are not yet justified by demand where a simpler initial solution can sensibly be upgraded later.

In practice, it means that a Phase 1 station can start with a lean but complete set of facilities, for example, a smaller building or more basic public realm, provided that the layout and structures do not obstruct sensible future expansion.

8.2 Passive Provision for Future Upgrades

In fact, future-proofing often costs little if considered at an early stage. For ARR stations, designers should actively seek out opportunities for passive provision, for example:

- Reserving space on site for future building extensions, additional platforms, more shelters or enlarged bus and park-and-ride areas.
- Align structures, utilities, and access routes so that future works can connect easily without major demolition.
- Designing forecourts and public space so that new functions-e.g. bike-share, micromobility, small retail, TOD uses-can be added later with minimal disruption.
- Choosing digital systems (ticketing, information, and security) that can be upgraded or expanded without full replacement.

The goal is to have each station be able to transition from a Phase 1 configuration to subsequent phases via incremental projects, rather than full redesigns.

8.3 Triggers for Station Upgrades

While detailed thresholds will be determined in subsequent planning and business case work, it is helpful to establish a basic logic for when station upgrades should be considered.

Typical triggers include:

- Passenger demand: continuing growth in daily or peak hour demand leading to crowding in waiting areas, on platforms or at access points.
- Access and mode share - Changes in how people reach the station, such as a higher rate of cycling or new bus routes that can justify more bike parking, improved bus facilities, or expanded park-and-ride.
- Service changes: new service patterns, longer trains or higher frequencies that require longer platforms, more vertical circulation or additional operational space.
- Land-use change: significant development around the station that increases local activity and supports higher levels of amenities and public realm investment.

Future programme stages should turn these concepts into quantitative criteria for each station, or group of stations. At this stage, the main expectation is that station concepts are drawn and documented in a way to make those future upgrade paths visible and credible.

9. Governance, Use and Exceptions

This Station Standards Guide is intended to be a living reference, not a rigid rulebook. It provides a common framework for how ARR stations should function and what each station type is expected to deliver, while recognising that individual sites, communities and future decisions will introduce variation.

9.1 Use within the Current Statement of Work

Within this Statement of Work, the Guide should be used to:

- Check that conceptual station layouts and access concepts are consistent with the agreed principles and minimum requirements.

- Support comparisons between options, for example when deciding between different access strategies or levels of provision at a given site.
- Provide a clear narrative to stakeholders and the public about what passengers can expect from ARR stations at different locations and phases.

At this stage, the Guide does not replace detailed engineering standards, building codes or operator-specific requirements. Those will be developed or adopted in later phases and will sit "under" this framework.

9.2 Coordination with Partners

Successful station delivery will depend on coordination between:

- The provincial programme team, who own the overall vision and priorities.
- Consultants and designers, who apply these standards in technical work and propose refinements.
- Municipalities and Indigenous communities, who shape how stations connect into local streets, land use and public spaces.
- The eventual rail operator and transit agencies, who will be responsible for day-to-day operation, maintenance and customer experience.

This Guide should act as a shared reference point in these discussions, helping different parties understand the baseline expectations and where there is room for local adaptation or enhancement.

9.3 Managing Exceptions and Updating the Guide

There will be cases where a station cannot, or should not, fully match the standard described for its type, for example due to physical constraints, environmental considerations or specific community priorities.

In such cases, the expectation is that:

- Any deviation from the standard is explicitly recorded (what element is different and how).
- The reason for the deviation is clearly explained (e.g., site constraint, environmental impact, safety consideration, funding limitation, local preference).

- Where possible, a mitigation or alternative measure is identified (for example, strengthening access for another mode if a particular facility cannot be delivered).

As the ARR programme advances, this Guide should be reviewed and updated periodically to reflect:

- New information on demand and service patterns,
- Lessons learned from early phases,
- Evolving best practice in station design, accessibility and sustainability.

For now, this version provides a practical, shared baseline that allows the current phase of planning and feasibility work to move forward in a consistent and transparent way.

Conclusion

This Station Standards Guide gives the ARR programme a clear and shared view of what its stations should provide, and how that provision changes between core hubs, regional stations and local stops. It turns broad ideas about safety, access, community and future growth into practical expectations that can be used to shape concepts, compare options and talk clearly with partners and the public. As the project moves into later phases of design and business case development, these standards can be refined, expanded or made more precise where needed, without losing their simple core principles. In this way, the Guide acts as a practical starting point: strong enough to bring consistency to current decisions, but flexible enough to adapt as Alberta's passenger rail vision becomes more detailed and more real.

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Appendix F – Mobility Integration Report (integration plan and priority actions)

Purpose and Scope

The Mobility Integration Map illustrates how the Alberta Regional Railway (ARR) corridor connects into the wider mobility system in the Calgary–Red Deer–Edmonton region. It focuses on door-to-door travel rather than only on the rail alignment, highlighting how each station interfaces with LRT, commuter and regional buses, airports, the highway network, active modes, and potential transit-oriented development (TOD) areas. The objective is to identify where ARR stations function as strong multi-modal hubs and where additional integration measures will be required to unlock ridership, accessibility, and wider economic benefits.

Methodology

For this initial version of the Mobility Integration Map, a deliberately simple layer structure was used. The map combines:

– The ARR mainline alignment between Calgary and Edmonton.

– The nine priority stations from the station prioritization model (Tier 1 Core and Tier 2 High).

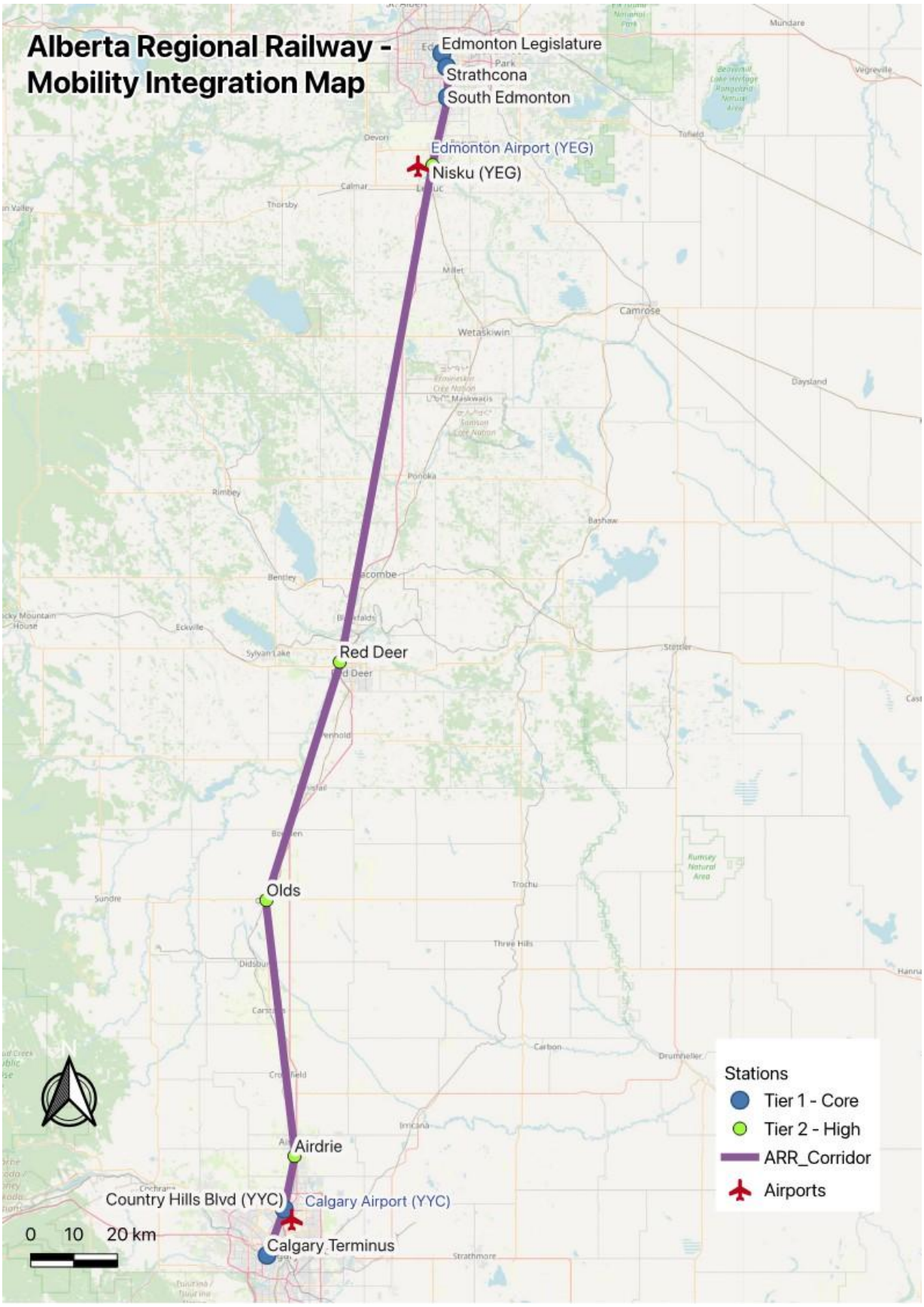
– A provincial context base map including the Highway 2 / QEII corridor and the main urban areas along the line.

– The two international airports in the corridor (YYC and YEG), shown in relation to their nearest ARR stations (Country Hills / YYC and Nisku).

This approach keeps the map readable at corridor scale while still highlighting where the railway, key stations and airports sit within the wider regional context.

Map Content

The Mobility Integration Map is intentionally kept at a high level so that stakeholders can quickly understand the overall structure of the corridor and the role of the priority stations, without being distracted by excessive detail. The map includes three main visual elements:


Alberta Regional Railway -
Mobility Integration Map
Edmonton Legislature
Strathcona
South Edmonton
Edmonton Airport (YEG)
Nisku (YEG)
Red Deer
Olds
Airdrie
Country Hills Blvd (YYC)
Calgary Airport (YYC)
Calgary Terminus
Stations
Tier 1 - Core
Tier 2 - High
ARR_Corridor
Airports
0 10 20 km

Base context

– A simplified provincial background showing the general road network and settlements along the Calgary–Red Deer–Edmonton corridor, including the Highway 2 / QEII spine that the ARR broadly follows.

ARR corridor and stations

– The ARR mainline is shown as the backbone of the system between Calgary and Edmonton.

– The nine priority stations are highlighted and symbolized by tier (Tier 1 Core vs. Tier 2 High), matching the results of the station prioritization work. This makes it easy to see where the main corridor "anchors" are located and how they are spaced along the line.

Airports and regional role

– Calgary International Airport (YYC) and Edmonton International Airport (YEG) are shown as separate points, with their nearest ARR stations (Country Hills / YYC and Nisku) emphasised as potential airport access hubs for the corridor. This reinforces the idea of ARR as not only a Calgary–Edmonton intercity link, but also a potential high-quality airport access spine for the region.

In later stages of design and planning, this first version of the Mobility Integration Map can be expanded with additional layers such as LRT and BRT routes, local bus networks, walk and bike access sheds and potential TOD areas around key hubs, once those elements are defined in more detail.

Integration Role per Station

This table should be read together with the Mobility Integration Map. The map shows where the stations are along the corridor; the table explains what role each station plays in the wider mobility system and what kind of integration investments would matter most at each location.

Station	Tier	Integration role	Current / obvious connections	Future / planning focus
Edmonton Legislature	Tier 1 – Core	Central urban multi-modal hub	Central Edmonton location, strong walk access, connection to LRT and local bus network	Strengthen LRT and bus interchange, improve walk and bike access to government and jobs
Strathcona	Tier 1 – Core	Urban TOD and transfer hub	Mixed-use neighbourhood, good walkability, local bus routes	Support higher-density TOD, improve bus and bike connections to surrounding districts
South Edmonton	Tier 1 – Core	Southern metro gateway	Good highway access, suburban bus services, potential for park-and-ride	Develop regional bus hub, expand P&R, improve safe walk and bike access
Nisku (YEG)	Tier 2 – High	Airport and employment hub	Close to Edmonton International Airport and large industrial area, strong road access	Provide shuttle or people-mover to terminal, integrate airport and regional bus services
Red Deer	Tier 2 – High	Mid-corridor regional interchange	Highway 2 access, local and regional buses, likely park-and-ride facilities	Build a strong north–south and east–west bus hub, enable TOD around the station
Olds	Tier 2 – High	Small-town regional connector	Highway access, limited local transit, mainly car-based access	Introduce or improve local/regional buses, basic P&R, safe walk and bike connections

Station	Tier	Integration role	Current / obvious connections	Future / planning focus
Airdrie	Tier 2 – High	Commuter and park-and-ride hub	Strong road link to Calgary, existing commuter buses to the metro area	Expand express bus services, large P&R, possible BRT-style corridors to/from Calgary
Country Hills Blvd (YYC)	Tier 1 – Core	Airport access and north Calgary hub	Road access towards YYC, urban road grid, potential links to city bus network	Create ARR–airport shuttle link, integrate with future BRT/LRT, hub for urban and regional buses
Calgary Terminus	Tier 1 – Core	Downtown mega-hub	Central Calgary location, LRT network, dense bus network, high walkability	Strengthen intercity–urban transfer, improve bike links, prepare for possible future HSR

The Mobility Integration Map focuses on nine priority stations along the Alberta Regional Railway (ARR) corridor between Calgary, Red Deer and Edmonton. These stations were selected because they either play a central role in the regional network (Tier 1 – Core) or are high-priority locations for access and development (Tier 2 – High). Together, they show how the ARR mainline connects into the wider mobility system of highways, airports, LRT, buses and local communities.

The Table below summarizes the integration role of each station. Tier 1 Core stations such as Edmonton Legislature, Strathcona, South Edmonton, Country Hills / YYC and Calgary Terminus act as the backbone of the corridor. They combine strong walk access, existing or potential LRT and bus services, and good visibility for future transit-oriented development (TOD). Tier 2 High stations at Nisku (YEG), Red Deer, Olds and Airdrie are not as large, but they have a strategic function as airport, regional, commuter or small-town connectors.

A difference is made for each station between existing or known links (such as road access, existing bus services or nearness to airports), and the focus on integration for the future. The focus on integration highlights an area that would gain benefits from additional investment in links and access, as well as active travel modes. It should be used in combination with the Mobility Integration Map, and will help identify where there are already strong multi-modal hubs, and where benefits will be greatest for ARR.

The Mobility Integration Map again identifies the two large international airports within the corridor (YYC and YEG), as well as which ARR station would be closest. Calgary International Airport is identified as being associated with the Country Hills/YYC station, and Edmonton International Airport with the Nisku station area. This again emphasizes that ARR Corridor plays an integral role as an intercity service within Calgary and Edmonton, but also as a high quality air access spine.

Key Observations & Conclusions

The station table and the Mobility Integration Map (provided as a separate PDF figure) show that the Alberta Regional Railway corridor is not just a point-to-point service between Calgary and Edmonton, but a spine that can organize a wider multi-modal network. Tier 1 Core stations such as Edmonton Legislature, Strathcona, South Edmonton, Country Hills / YYC and Calgary Terminus already sit in locations with strong walk access, good visibility and existing or potential connections to LRT and frequent bus services. These stations act as the main “anchors” of the corridor and are natural candidates for future transit-oriented development and high-quality station environments.

Tier 2 High stations at Nisku (YEG), Red Deer, Olds and Airdrie play more specialised roles as airport, regional, commuter and small-town connectors. Today, many of these locations rely heavily on car access and basic highway connectivity, with more limited walk, bike or local transit access. However, the map and the station summary suggest that relatively targeted investments – such as regional bus hubs at Red Deer and Airdrie, airport shuttle links at Nisku and Country Hills / YYC, and basic walk/bike and park-and-ride facilities at Olds – could significantly improve the effective catchment of the ARR corridor.

In this early phase of the project, the Mobility Integration Map is deliberately kept simple: it highlights the ARR mainline, the nine priority stations and their relationship to the wider corridor, rather than trying to map every possible route or land-use detail. The focus is to show where the railway naturally aligns with existing mobility strengths and where additional integration measures will be required. In later design and planning stages, this high-level picture can be refined with more detailed station access plans, local bus network design and land-use strategies around the most promising hubs.

STATEMENT OF WORK

PROJECT TITLE	STRATEGIC STATIONS PLACEMENT IN THE ALBERTA RAILWAY PASSENGER PROJECT		
COMPANY NAME	Alberta Regional Rail Inc	**CLIENT**	Thomas Fryer
PROJECT CONSULTANT	Andres Camilo Cortes Barrera	**DATE SUBMITTED**	October 20th, 2025
PROJECT BEGIN DATE	October 11th, 2025	**END DATE**	December 21st, 2025

OBJECTIVE	RATIONALE
Stations & Service Plan	Deliver a Regional Stations and Service Plan that defines stop patterns, service frequencies, and operating windows for the Calgary–Red Deer–Edmonton corridor, validated through stakeholder review and schedule feasibility analysis.
Demand & Siting Prioritization	Quantify passenger demand and prioritize station locations using origin–destination analysis and accessibility scoring, achieving ≥80% model fit against historical proxies and survey data.
Station Design Standards	Define station design standards on accessibility, safety, wayfinding, and multimodal interfaces.
Passenger Mobility Integration Blueprint	Deliver a passenger mobility integration blueprint aligning stations with local transit, active modes, and park-and-ride assets, and a phased implementation roadmap.

DUE DATE	COMPLETION CRITERIA	DELIVERABLE DESCRIPTION
October 26, 2025	Approved the Stations & Service Plan	Stations & Service Plan – Scope Pack: Calgary–Red Deer–Edmonton corridor map; initial stop list; proposed stop patterns, peak/valley frequencies, and preliminary operating windows; 1–2 pages of assumptions and limits. PDF (+ attached maps). Document file marked v1.0
November 2, 2025 / November 9, 2025	Accessibility and Data Book	Accessibility and Data Book: easy-to-read maps showing the distances people can travel within 10, 20, and 30 minutes from each candidate site by walking, bus, biking, or driving; a list of important nearby locations (airports, universities, hospitals, and shopping centers); and a summary of the data used, including their sources and key assumptions. Delivered in PDF format with a supporting folder containing the map and table files. Maps submitted, reviewed internally, and free of visible errors. At least 90% of the information sources are cited and organized. The client confirmed by email that the approach used was appropriate.
November 16, 2025	Demand and Prioritization Report	Demand and Prioritization Report: clear estimate of how many people would use each station at key times; simple table with scores and a preliminary list of prioritized stations; easy-to-read maps with the results; and a calculation file (Excel).

		If we change the assumptions by ±20%, the results barely change. The top 10 stations barely change (≤10%). (Available in PDF and Excel formats.)
November 23, 2025	Draft Schedule and Feasibility	Draft Schedule and Feasibility: A simple chart showing departure and arrival times, possible operating windows, and locations where adjustments might be needed. Includes a note explaining what would need to be improved to ensure the service operates well on the current route. There is a draft schedule that respects timing and coexistence with freight trains. Trouble spots, where delays or crossings could occur, are identified. (PDF + summary sheet).
November 30, 2025	Station Standards Guide	Station Standards Guide (v1.0): Minimum requirements for each station type, including access points, ramps, clear signage, lighting, cameras, bus/bike/passenger drop-off/pick-up/parking zones. Includes easy-to-use checklists for validation on a map or in the field. (PDF + Excel).
December 7, 2025	Mobility Integration Map	Mobility Integration Map (v1.0): At least 80% of prioritized stations have a specific proposed connection, as well as suggested bus routes, bicycle spaces, drop-off and pick-up zones, and parking where applicable. The target transfer time per station is 10 minutes or less. It includes simple signaling principles and a phased implementation plan (Phases 1-3). (PDF + diagrams).
December 15, 2025	Executive Package and Final Presentation	Executive package and final presentation: A 2-3 page summary containing the essentials: service plan, prioritized stations, standards, and key connections. Additionally, a clear and visual, 10-15 slide client-ready presentation (PDF + PPTX).

CONFIDENTIALITY	SIGNATURES
All work completed on this project will be owned by the client. The student consultant will keep some information for their portfolio only upon signed agreement by the client. A confidentiality agreement is attached to this document.	Client: Student Consultant:  DATE: October 19th, 2025