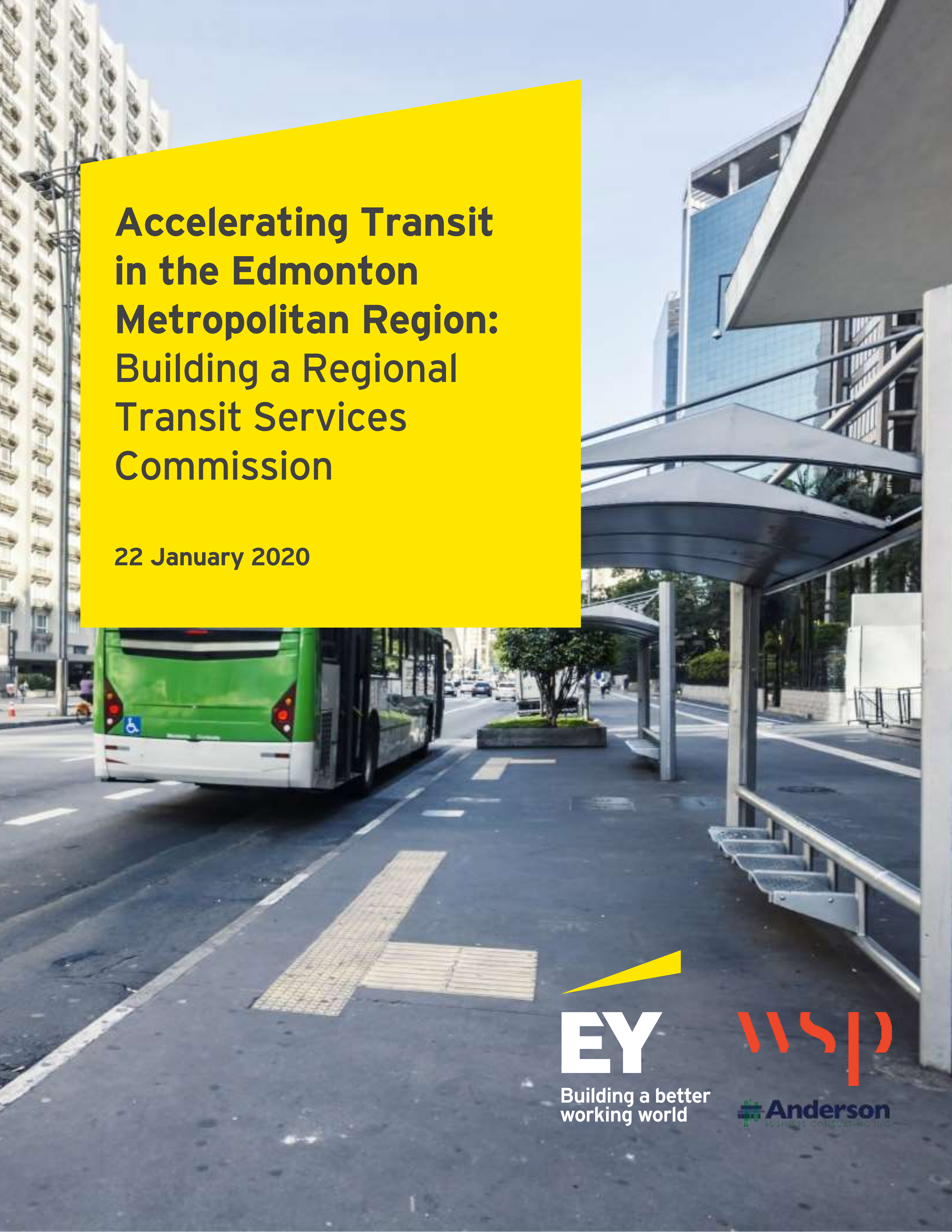

Accelerating Transit in the Edmonton Metropolitan Region: Building a Regional Transit Services Commission

22 January 2020

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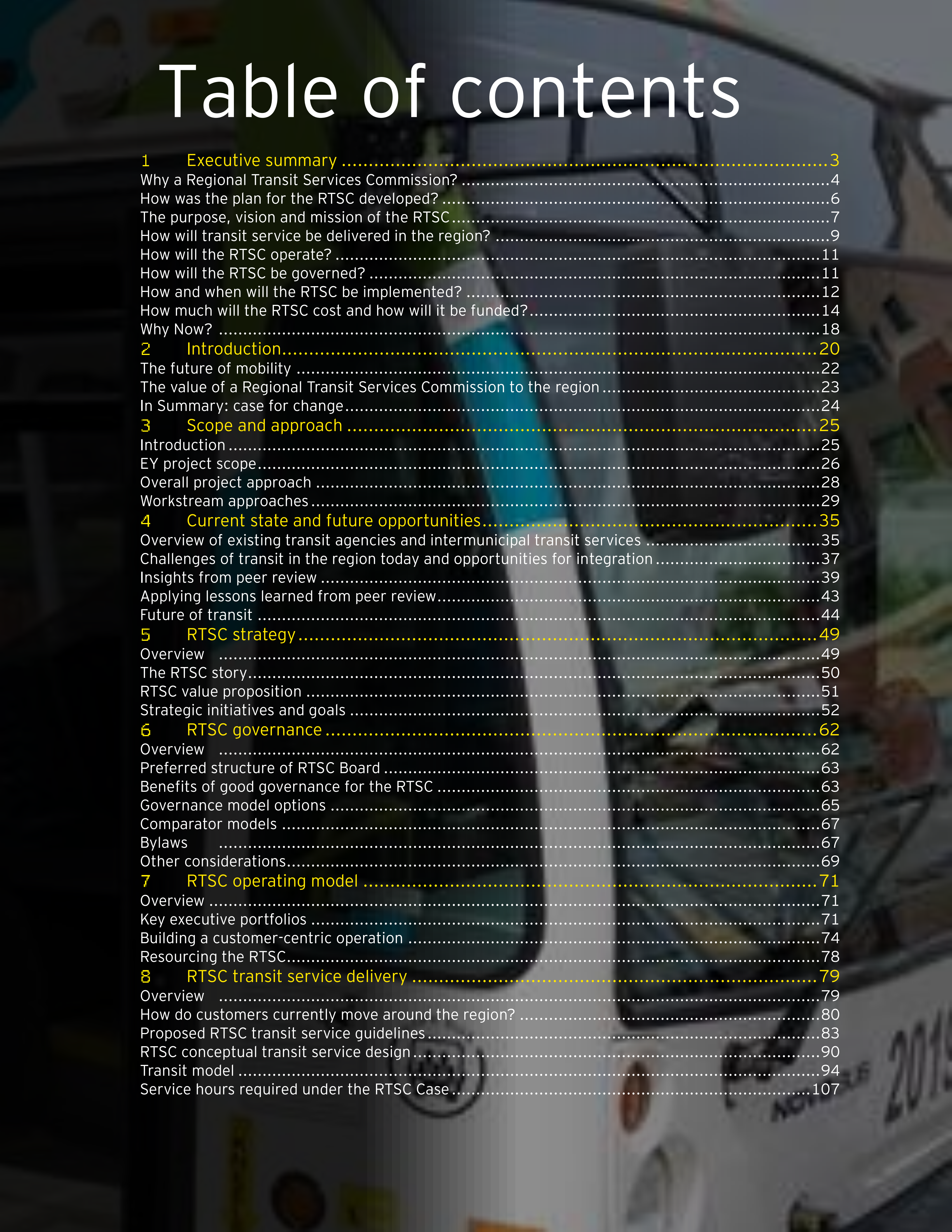

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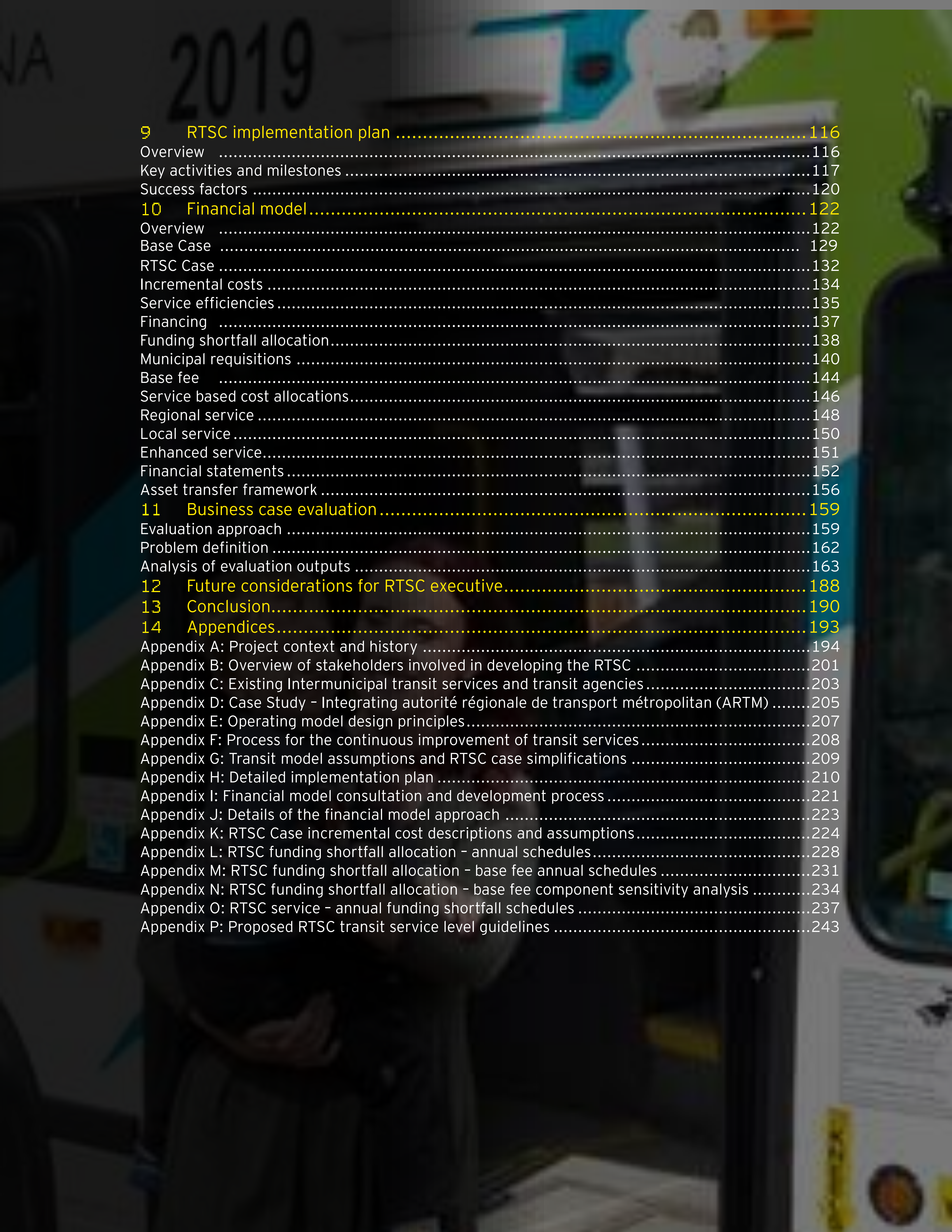

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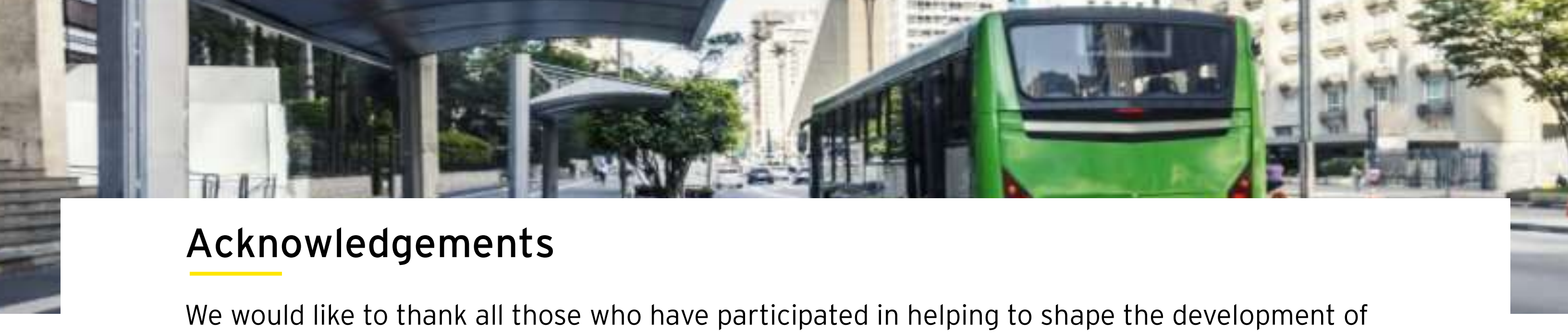

Acknowledgements

We would like to thank all those who have participated in helping to shape the development of the Regional Transit Services Commission (RTSC). This project could not have been completed without the input and support of all municipalities and their representatives who have dedicated significant time and knowledge to laying the foundation for the Regional Transit Services Commission.

A special thank you to Transition Team members comprised of Council representatives from each municipality.

Table 1- Transition Team members

Municipality	Primary Transition Team member	Alternate Transition Team member
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CITY OF EDMONTON	Michael Walters[1]	Andrew Knack
CITY OF FORT SASKATCHEWAN	Gordon Harris	Gale Katchur
CITY OF LEDUC	Glen Finstad	Beverly Beckett
CITY OF SPRUCE GROVE	Chantal McKenzie	Wayne Rothe
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LEDUC COUNTY	Rick Smith	Tanni Doblanko / Kelly Vandenberghe
PARKLAND COUNTY	Tracey Melnyk	Jackie McCuaig
STRATHCONA COUNTY	Brian Botterill	Dave Anderson
STURGEON COUNTY	Karen Shaw / Kristin Toms	Patrick Tighe
TOWN OF DEVON	Tanya Hugh	Ray Ralph
TOWN OF MORINVILLE	Sarah Hall	Rebecca Balanko
TOWN OF STONY PLAIN	Justin Laurie	Linda Matties

In addition to those noted above, we would also like to thank:

- Working Team members comprised of transit officials and other members of municipal operations; and,
- Member representation from government relations, communications and administration.

On behalf of EY and all municipalities involved in this project, we would like to acknowledge the traditional land on which the municipalities are located is Treaty 6 Territory. We acknowledge the diverse Indigenous peoples whose ancestors' footsteps have marked this territory for centuries such as the Cree, Dene, Saulteaux, Blackfoot, Nakota Sioux, as well as Métis and Inuit.

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[1] Vice Chair of Transition Team

[2] Chair of Transition Team

Purpose of report

Ernst & Young LLP (“EY”) was retained by the City of Edmonton in collaboration with 12 additional municipalities in the Edmonton Metropolitan Region through a request for proposal process to develop a Regional Transit Services Commission (“RTSC”). The 13 municipalities involved in the project include: The City of Beaumont, the Town of Devon, the City of Edmonton, the City of Fort Saskatchewan, the City of Leduc, Leduc County, the Town of Morinville, Parkland County, the City of Spruce Grove, the City of St. Albert, the Town of Stony Plain, Strathcona County, and Sturgeon County. The purpose of this report is to articulate how the RTSC would conceptually operate and deliver services in the region. This report (the “Report”) documents the development of the RTSC including its strategy, regional transit service design concept, transit service delivery model, regional service levels and guidelines, operating model, governance model, funding model, cost sharing approach, implementation plan, strategic plan, and business case.

Disclaimer

In preparing the report, EY relied upon statistical, operational, and financial data and information from a variety of sources including from the thirteen municipalities involved in the work, their representatives, and numerous other stakeholders through workshops, meetings, data requests, and conversations; collectively referred to as the “supporting information”. EY reserves the right to revise any analysis, observations or comments referred to in this Report, if additional supporting information becomes available to us after the release of this Report.

EY has assumed the supporting information to be accurate, complete and appropriate for the purposes of the Report. EY did not audit or independently verify the accuracy or completeness of the supporting information. Accordingly, EY expresses no opinion or other forms of assurance in respect to the supporting information and does not accept any responsibility for errors or omissions, or any loss or damage as a result of any persons relying on this Report for any purpose other than that for which it has been prepared.

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1 EXECUTIVE SUMMARY

A Regional Transit Services Commission (RTSC) that provides public transit across the region can harness population growth and investments in infrastructure to build better, more connected cities.

The Edmonton Metropolitan region is a collection of diverse and growing communities that will be home to 2.2 million people and 1.2 million jobs by 2044[3]. This doubling of the Region's population positions it as one of the fastest growing metropolitan areas in Canada. To accommodate this growth in the region it will be critical that the region's mobility systems are efficient, interconnected and support economic prosperity.

Urban mobility in the Edmonton Metropolitan Region is experiencing a process of transformation. In the region, mobility networks and infrastructure are struggling to keep up, leading to strong reliance on personal vehicles. The number of daily transit trips has increased by almost 9,000 since 2005, while the number of automobile trips has increased by about 236,000[4]. That is one transit trip for every 26 automobile trips. The disproportionate growth of automobile trips suggests the current public transit system is failing to meet the needs of those living in the region and as a result, people living within the region may not be able to experience all that the region has to offer.

Residents within the region currently find it difficult to make trips to a different municipality unless they are going into or out of Edmonton. And for residents who may wish to attempt a trip to another municipality during off-peak hours, it may be impractical or nearly impossible. This limits access to services, employment and education opportunities as well as influences residents' choices on where they can live.

When public transit is not positioned as a desirable or practical alternative, residents opt for using personal automobiles. The gap between transit trips and automobile trips will only continue to grow without a plan to address integrated regional transit. This will continue to cause disruption to quality of life with increased congestion and negative environmental repercussions.

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[3] Re-imagine. Plan. Build. Edmonton Metropolitan Region Growth Plan. (2016). [PDF file]. Retrieved from http://emrb.ca/Website/media/PDF/Publications/EMRGP-Interactive.pdf

[4] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

By combining the resources and capabilities of the 13 municipalities under the RTSC, a robust network can be built to provide an equivalent or better service. This approach allows for the better coordination of approximately 6,800 weekly hours of service that are currently being delivered across the region, while achieving an estimated total savings of 850 service hours per week. That translates into $5.5 million of savings when synergies are full realized.

Increased costs associated with operations of the RTSC are offset by these savings and **within the fifth year of delivering transit operations the one-time costs associated with starting the RTSC are fully recovered.** Commencing in that fifth year, **estimated annual net savings from operations of approximately 3.4 million are achievable.**

The region cannot plan for movement of the next million people in the same way it has in the past. Action needs to be taken to address the challenges and opportunities the region faces today and in the future. Delivering transit together under a Commission in a structured and cohesive manner versus through a dispersed delivery approach will allow the region to do just that.

Why a Regional Transit Services Commission?

Transit in the region must evolve to reduce congestion, provide better services for consumers and to save money through better utilization of scarce municipal resources. In addition, easing the burden on municipalities to deliver transit will allow them to focus on other priorities important to their residents.

Mobility is shaping the way that residents access every aspect of their lives. Mobility is becoming a service. It is influencing the decisions that major employers are making around where and how to expand their operations. It influences where people choose to live and where they seek education and employment opportunities. It influences how people interact with their community and how and where they spend their leisure time and money. **Citizens no longer view the region through traditional jurisdictional boundaries and do not confine their living, learning, working and playing to within a municipality. They want and need to move seamlessly across the region.**

While mobility patterns rapidly evolve, dependency on personal vehicle trips continue to rise. **Provision of more integrated and reliable public transit services is one of the clearest ways to addressing road congestion, reducing travel times and pollution, which benefit both transit and non-transit users.**

On the transit front, municipalities must catch up to the mindset of residents in the region and think beyond their local boundaries to drive economic competitiveness and prosperity. Public expectations for high quality public transportation and a growing demand for options make it difficult for individual municipalities to meet the needs and expectations of citizens today and into the future.

Integrated public transit operations and policy also align with regional efforts to coordinate broader economic and land use planning to attract business opportunities, reduce urban sprawl and create a sense of community through a focus on transit-oriented development. Areas with good public transit systems thrive economically and offer location advantages to those businesses and individuals choosing to work and live in them. Transit systems need to change to respond to shifts in trends and customer expectations, and adapt new technologies to improve the services available, increase efficiency and reduce environmental impacts.

The Regional Transit Services Commission builds on the existing approach to planning and collaborating in the Edmonton Metropolitan Region. **The RTSC better enables municipalities to work together to align transit services and advance an integrated regional transportation network while also synchronizing land use planning initiatives.**

Integrated transit services delivered by a regional commission will:

- Support residents across the region by providing a more seamless, customer-focused, and coordinated service;
- Reduce barriers for a municipality to establish new transit service in a community;
- Align transit planning with other efforts to regionally coordinate and plan infrastructure and services;
- Combat increasing congestion and travel times;
- Support local and regional environmental objectives; and,
- Make the Edmonton Metropolitan Region more economically competitive now and in the future.

The business case for the RTSC provided quantitative and qualitative analysis of the costs and benefits to implementing a commission that would provide transit in the Edmonton Metropolitan Region. The analysis is based on detailed cost and revenue numbers provided by each of the 13 municipalities, as well as insights from focus groups and a peer review.

Endeavors like this also include non-monetary benefits, which are inherently more difficult to quantify. Therefore, both the quantifiable items and the qualitative narrative should be understood in forming a conclusion around the implementation of the Commission. **Key takeaways of the RTSC evaluation across six accounts provides a compelling case to transition from separate transit agencies to integrated service delivery under the RTSC.**

Figure 1 - RTSC business case evaluation summary of accounts

Financial Account

The forecasted funding shortfall of operating transit services under the RTSC is lower than that of operating services separately, despite savings calculations only including service hour efficiencies and reduction in non-revenue hours.

Transit User Account

A regional transit services network provides more seamless and efficient movement of people across municipal boundaries resulting in a better customer experience as a result of factors such as increased directness, speed of travel and simplicity of trip planning.

Service Provider Account

A regional transit services provider is more equipped to action on regional objectives and engage with stakeholders to enlist support in transit for the purposes of improving service delivery and facilitating regional mobility on a larger scale.

Community Account

Through the delivery of regional transit services, people can become less reliant on personal vehicle use and have more choice when it comes to where they want to live, work and play, which equates to a higher quality of life and community prosperity.

Economic Account

Regional transit services improve the connectivity and economic growth of the region by increasing access to employment opportunities, attractiveness of the region for business investment, and reduced infrastructure costs to municipalities and the province.

Environmental Account

A regional transit service allows for the more efficient deployment and management of assets across the network to reduce waste and emissions across the system, and supports a mode shift away from personal vehicles reducing overall environmental impact to the region.

How was the plan for the RTSC developed?

The Regional Transit Services Commission (RTSC) was collaboratively developed with input and contribution from all 13 municipalities. This report is the culmination of the work of the Transition Team with representatives from every municipality and includes:

- An assessment of how municipal transit services are currently delivered;
- The Commission's strategy to transform transit and improve mobility in the region;
- A model describing how transit services will be delivered;
- A model describing the structure, capabilities and roles needed;
- A model describing how the RTSC will make decisions on behalf of the region;
- An implementation plan to outline how to transition services to the Commission;
- A model to describe the costs and savings associated with a Commission compared to what transit services are expected to cost without one;
- An approach to allocating the costs of operating the RTSC to municipalities; and,
- The business case for establishing the Commission to deliver transit services.

The purpose, vision and mission of the RTSC

Connecting communities through a fast, convenient, simple, reliable, efficient, and affordable transit service that seamlessly integrates with other modes of transportation.

Enabling appreciably faster commute times when compared to other modes of transportation and providing a better customer experience supported by new technologies.

These are the goals of the RTSC.

RTSC purpose

Bringing municipal transit services together for the benefit of one region

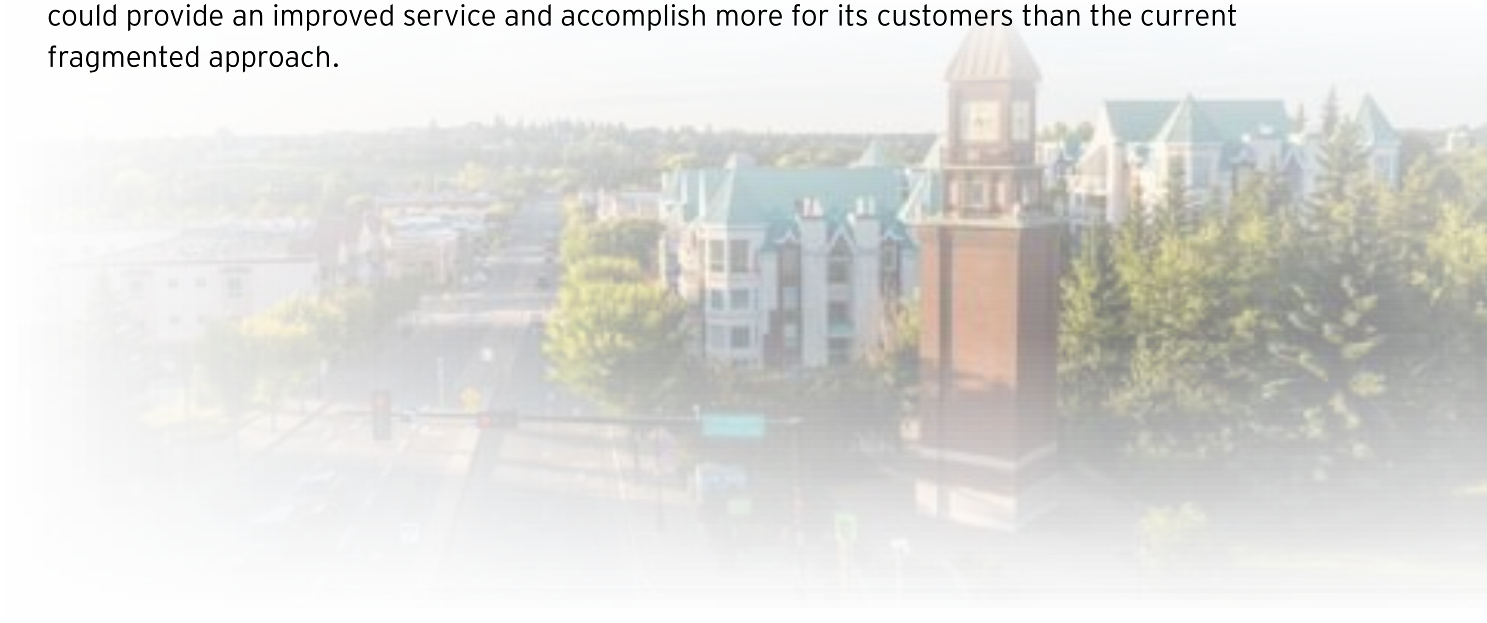
RTSC vision

Experience the future of mobility where you can go any place, at any time and in the way you choose

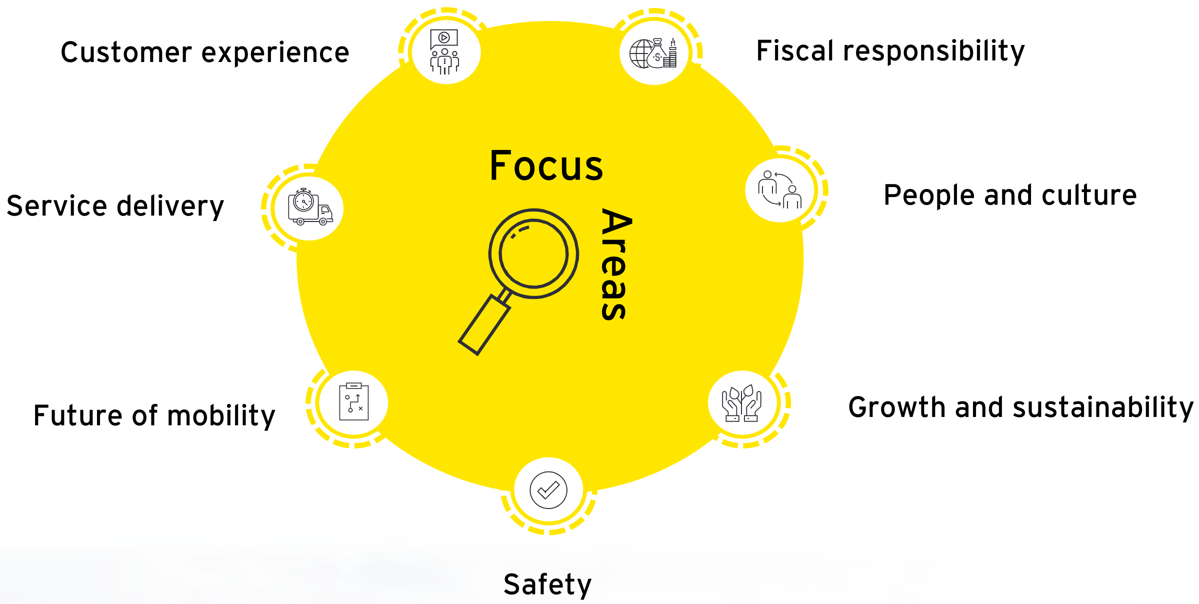
RTSC mission

To enable a variety of sustainable mobility options that best serve our region's people and communities

By combining the strengths of individual municipal transit agencies in the region, the RTSC could provide an improved service and accomplish more for its customers than the current fragmented approach.



The following strategic priorities will shape the future of transit in the region and serve as the initial focus areas for the RTSC:



These priorities guide the transition of separate municipal transit agencies into an integrated and more efficient, customer-centric service.

How will transit service be delivered in the region?

Delivering transit regionally through a commission can improve the coordination of services at both regional and local levels, allowing transit to be operated in an integrated way. **By unifying planning resources and pooling services and assets across regional boundaries, barriers to entry are lessened for communities who want to start a new transit service.** In addition, a range of different service types, including 'on-demand' services for low density areas could be supported. For existing transit systems in the region, **coming together can more efficiently address gaps in service for intermunicipal and long-distance intra-city travel demands and reduce overlap and duplication of existing services along key corridors.**

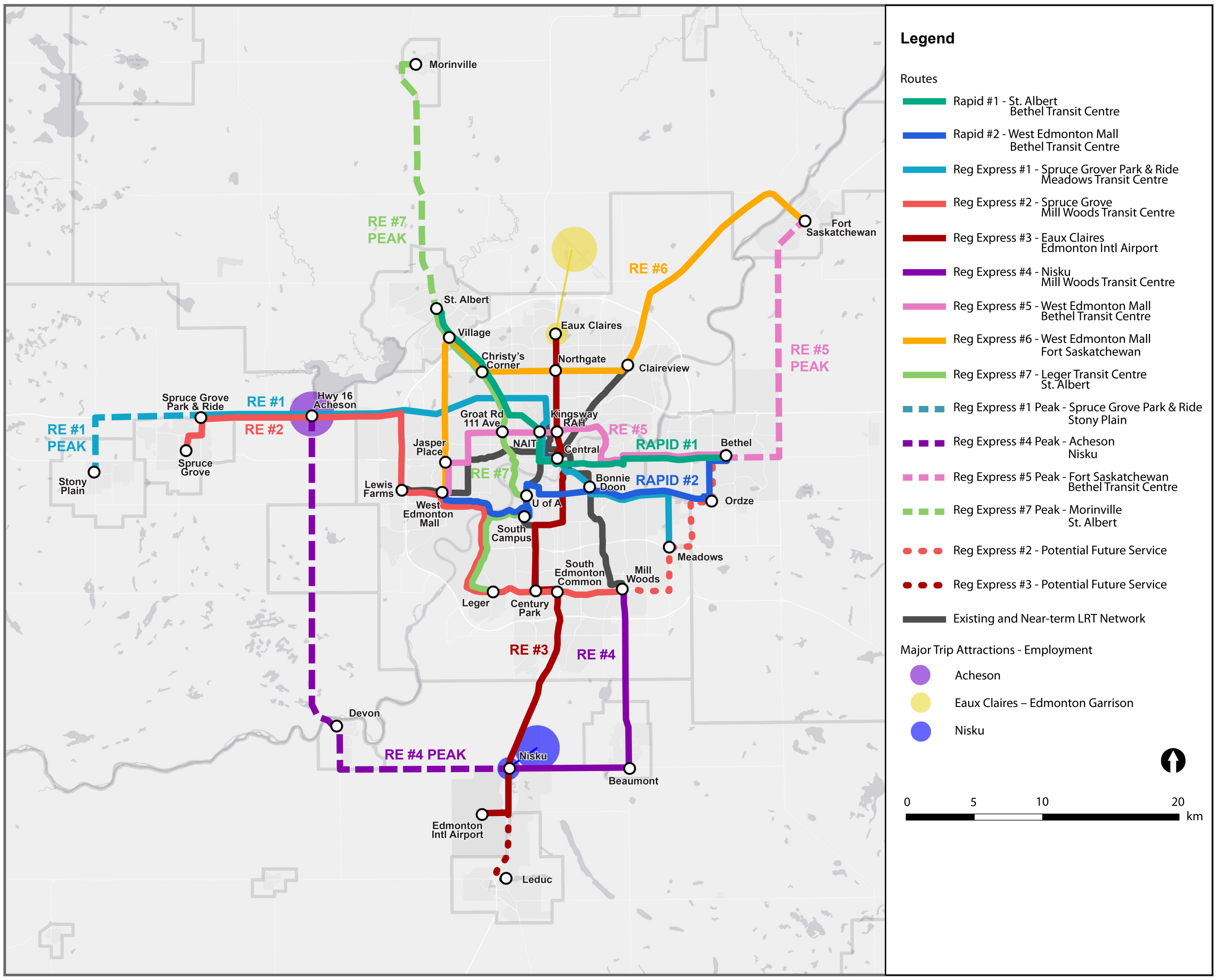
Transit Service Level Guidelines were developed to inform and conceptualize the transit service design and will continue to evolve under the guidance of the RTSC once established. These guidelines are the technical foundation of decision making and a tool to support decision-makers in creating, evaluating, and improving a regional transit network. Planning a new route or re-assessing an existing route requires an analysis of the travel demands. The guidelines provide tools to undertake this analysis.

The RTSC Conceptual Transit Services Design shown in Figure 2 and based on the draft service level guidelines, represents a conceptual consolidation of existing services for the region, incorporating Rapid Transit and Regional Express routes. The business case is based on the conceptual services design depicted in this map.

Rapid Transit routes integrate services across municipal boundaries and consolidate multiple overlapping routes into a single, more rapid service. They are designed to attract customers by being competitive with private vehicle travel times by connecting high ridership destinations. Potential capital improvements along these corridors could be planned in a collaborative manner to increase the speed and reliability of transit service.

Regional Express routes provide fast and convenient connections for longer distance trips throughout the region, both inside the City of Edmonton and between municipalities that surround it. A regional network is established with all-day express service to efficiently connect hubs across a large geographic area. They offer a base level of service all day to serve destinations like downtowns, post-secondary institutions and major hospitals.

Figure 2 - RTSC conceptual transit services design


Morinville
RE #7 PEAK
St. Albert
Village
Christy's Corner
Eaux Claires
Northgate
Claireview
RE #6
Fort Saskatchewan
RE #5 PEAK
Spruce Grove Park & Ride
RE #1
Hwy 16 Acheson
RE #1 PEAK
RE #2
Spruce Grove
Stony Plain
Groat Rd 111 Ave
Kingsway RAH
RE #5
Jasper Place
NAIT
Central
RAPID #1
Bethel
RE #7
Lewis Farms
West Edmonton Mall
Bonnie Doon
RAPID #2
U of A
Ordze
South Campus
Meadows
South Edmonton Common
Mill Woods
Leger
Century Park
RE #3
RE #4
Devon
RE #4 PEAK
Nisku
Beaumont
Edmonton Intl Airport
Leduc
Legend
Routes
Rapid #1 - St. Albert Bethel Transit Centre
Rapid #2 - West Edmonton Mall Bethel Transit Centre
Reg Express #1 - Spruce Grover Park & Ride Meadows Transit Centre
Reg Express #2 - Spruce Grove Mill Woods Transit Centre
Reg Express #3 - Eaux Claires Edmonton Intl Airport
Reg Express #4 - Nisku Mill Woods Transit Centre
Reg Express #5 - West Edmonton Mall Bethel Transit Centre
Reg Express #6 - West Edmonton Mall Fort Saskatchewan
Reg Express #7 - Leger Transit Centre St. Albert
Reg Express #1 Peak - Spruce Grove Park & Ride Stony Plain
Reg Express #4 Peak - Acheson Nisku
Reg Express #5 Peak - Fort Saskatchewan Bethel Transit Centre
Reg Express #7 Peak - Morinville St. Albert
Reg Express #2 - Potential Future Service
Reg Express #3 - Potential Future Service
Existing and Near-term LRT Network
Major Trip Attractions - Employment
Acheson
Eaux Claires – Edmonton Garrison
Nisku
0
5
10
20
km

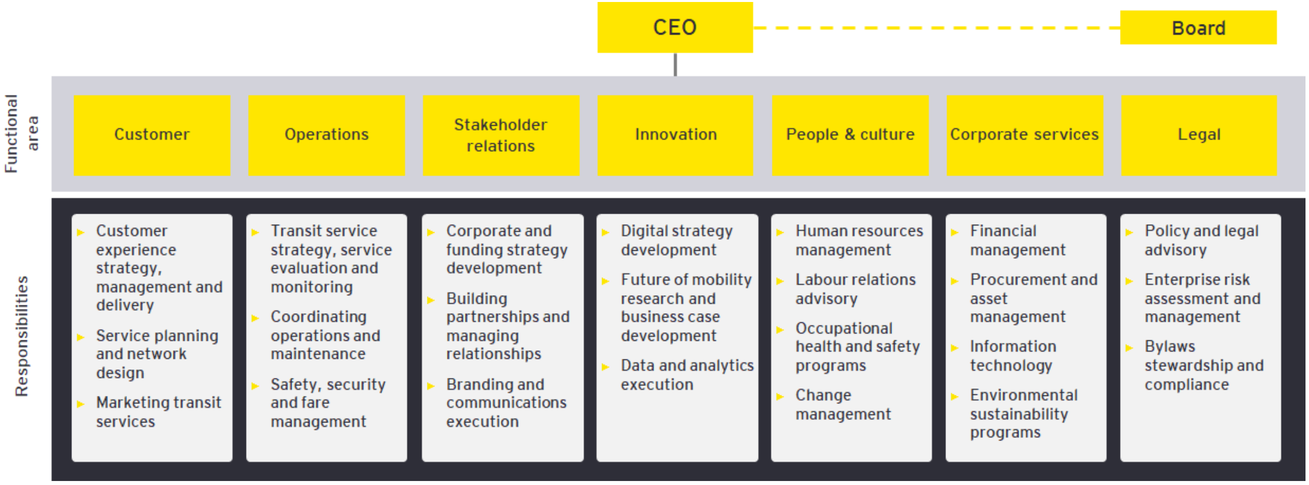
The transit service delivery model also includes Major Trip Attraction services, regional routes with a focus on access to industrial employment areas, Local services within municipal boundaries for shorter distance travel and as a feeder to regional services, and Enhanced services which accommodate additional levels of service for particular municipalities based on current transit service patterns.

This approach allows for the better coordination of approximately 6,800 weekly hours of service that are currently being delivered across the region. **By combining the resources and capabilities of the 13 municipalities under the RTSC, a robust network can be built to provide an equivalent or better service** while achieving an estimated total savings of 850 service hours per week. **That translates into approximately $5.5 million of savings per year when synergies are fully realized.**

How will the RTSC operate?

The RTSC's operating model is aligned to its strategic objectives and will ensure that the right resources are available to deliver on its mandate. It is expected that over a five-year period from initial stand up, the RTSC workforce will expand over time, from 30 to approximately 50 FTEs plus operators, maintenance teams and other operating personnel.

Figure 3 – Proposed RTSC functional areas



Customer	Operations	Stakeholder relations	Innovation	People & culture	Corporate services	Legal
Customer experience strategy, management and delivery Service planning and network design Marketing transit services	Transit service strategy, service evaluation and monitoring Coordinating operations and maintenance Safety, security and fare management	Corporate and funding strategy development Building partnerships and managing relationships Branding and communications execution	Digital strategy development Future of mobility research and business case development Data and analytics execution	Human resources management Labour relations advisory Occupational health and safety programs Change management	Financial management Procurement and asset management Information technology Environmental sustainability programs	Policy and legal advisory Enterprise risk assessment and management Bylaws stewardship and compliance

The RTSC will initially be organized to deliver an enhanced customer experience, more effective transit service planning, a culture of safety, and greater capacity to innovate in a world of shifting consumer preferences and mobility options. As the RTSC matures and additional services are added (e.g. paratransit, ETS local services, first kilometer/last kilometer services, etc.), the structure should be continually reassessed to ensure that it is fit for purpose.

This approach to assigning responsibilities will induce RTSC leadership and employees to work as a cohesive team without becoming siloed or disconnected from the overall strategy and direction for the organization

How will the RTSC be governed?

Under the Municipal Government Act (MGA), a Commission must be governed by elected officials from member municipalities. As such, **the board of directors of the RTSC will be comprised of a councilor from each of the participating municipalities.**

The commission model requires a board of directors that will:

- Enable the RTSC to meet its objectives;
- Address local municipal concerns; and
- Meet the *MGA* requirements.

The governance structure outlines how the RTSC makes decisions and delivers services on behalf of the region while also maintaining balance across the member municipalities, stakeholders and other decision-making bodies. A clearly defined governance framework will enable:

- Equitable representation
- Clear accountabilities, roles and responsibilities
- Achievement of organizational objectives
- Efficient processes and procedures
- A culture of excellence

Transition Team members developed the following governance model principles:

- A transition / start-up RTSC board be comprised of elected officials from the member municipalities;
- The RTSC governance model will include one or more mechanisms to inject non-elected, skills-based resources into the RTSC governance structure; and,
- An independent review of the RTSC governance model to be conducted 24 months from inception. The review will examine the appropriate board size, composition, effectiveness and efficiency and will bring forward recommendations to enhance RTSC governance.

How and when will the RTSC be implemented?

Pre-implementation activities will begin in early 2020 to seek approval of the Commission from the Government of Alberta, and to perform the detailed planning required to fully stand up the RTSC by the beginning of 2021.

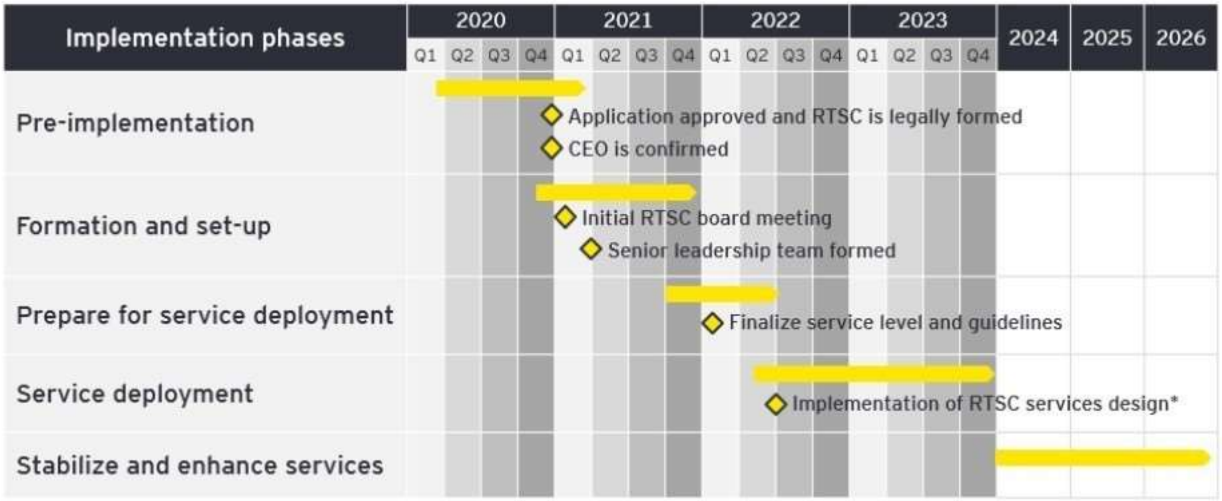
At the outset, while the RTSC is being set up in early 2021, member municipalities will continue to deliver transit services resulting in some overlap of activity across the region. While the RTSC will not be delivering services during this period, it will be involved in route planning, procurement and other transition activities required to begin delivering transit services in 2022.

The implementation plan contemplates five broad phases:

1. Pre-implementation work leading up to its legal formation;
2. Work involved in the formation and set-up of the Commission within the first year of it being established;
3. Work required to prepare for the deployment of regional services under the Commission;
4. Initial deployment of the regional transit services in alignment with finalized transit service guidelines; and,
5. Work involved in stabilizing and enhancing regional and local services.

It provides a roadmap of the key actions needed to deliver on RTSC strategic initiatives and make the operating model a reality.

Figure 4 - Implementation plan overview



**With the exception of ETS local services and municipal paratransit services.*

How much will the RTSC cost and how will it be funded?

Transitioning to delivering transit services under a commission does not come without a cost. The financial model includes estimated one-time implementation costs to stand up and operate the RTSC based on the implementation plan and includes recurring incremental costs that will remain with the commission into the future. However, these costs are offset by savings that were identified during the work of designing the transit service delivery. **The offsetting of the incremental costs to set-up and operate the commission by the efficiency savings provides a compelling financial incentive to establish the RTSC.**

Table 1 - RTSC Case annual summary

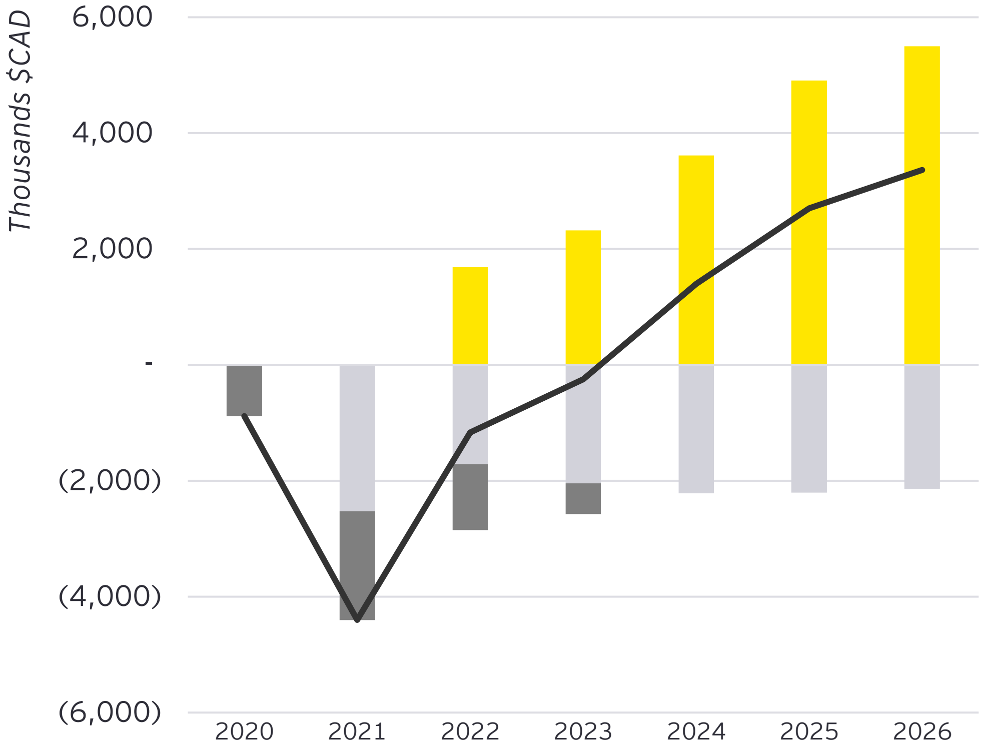
Thousands $CAD

Account	2020	2021	2022	2023	2024	2025	2026
Total Base Case Funding Shortfall	-	-	55,679	56,507	57,698	58,842	59,975
Add: One-time/Start-up Costs	864	1,877	1,141	531	-	-	-
Add: Recurring Incremental Costs	17	2,524	1,711	2,042	2,218	2,202	2,136
Less: Service Efficiency Savings	-	-	(1,685)	(2,322)	(3,615)	(4,907)	(5,500)
Total RTSC Funding Shortfall	$881	$4,401	$56,846	$56,757	$56,301	$56,138	$56,610
Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	4,401	1,166	250	(1,397)	(2,704)	(3,364)
Cumulative Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	5,282	6,448	6,699	5,302	2,597	(767)

As mentioned previously, by combining the resources and capabilities of the 13 municipalities under the RTSC, **a robust network can be built to provide an equivalent or better service while achieving an estimated total savings of 850 service hours per week,** plus efficiencies through the reduction of non-service hours. That translates into **approximately $5.5 million savings per year when synergies are fully realized.** Table 1 reflects those savings, recognizing them gradually over time, as savings opportunities are captured first in 2022 with about $1.7 million of annual efficiency savings, building up to $5.5 million annual savings in 2026.

These savings more than offset one-time and recurring costs associated with creating and operating the commission with these costs fully recovered by 2026. In addition, savings of approximately $3.4 million annually could be realized from 2026 onwards.

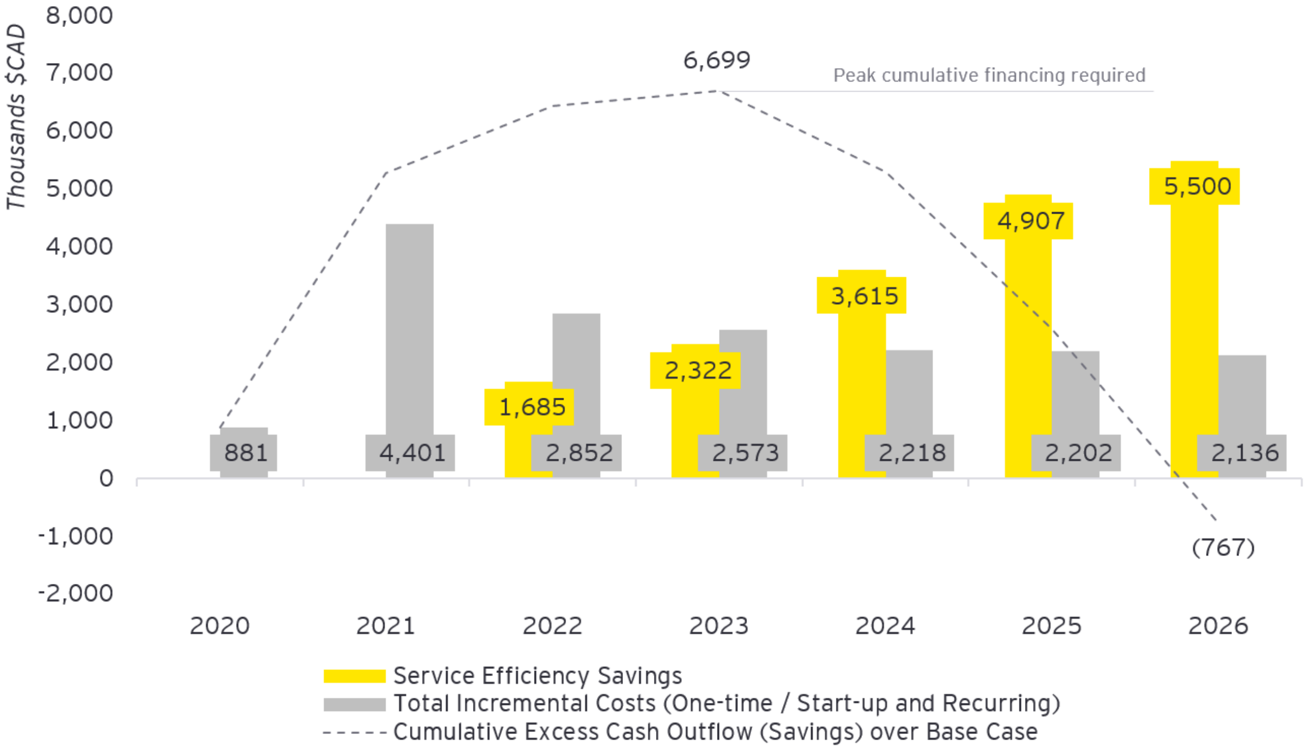
Figure 5 - RTSC Case funding shortfall - Annual incremental difference from Base Case



	2020	2021	2022	2023	2024	2025	2026
One-time/Start-up Costs	(864)	(1,877)	(1,141)	(531)	-	-	-
Recurring Incremental Costs	(17)	(2,524)	(1,711)	(2,042)	(2,218)	(2,202)	(2,136)
Service Efficiency Savings	-	-	1,685	2,322	3,615	4,907	5,500
Net Savings (Increase) in Annual Shortfall Compared to Base Case	(881)	(4,401)	(1,166)	(250)	1,397	2,704	3,364

While the annual funding shortfall commences in 2020 and continues through 2023, reaching a peak in 2021 at an estimated $4.4 million, an excess of efficiency savings over incremental costs begins to occur in 2024 and reach a net estimated savings of $3.4 million in 2026. This demonstrates that **the Commission can operate at a lower cost than the cumulative costs of the existing transit agencies continuing to deliver their own individual services.** These estimated savings would be projected to continue past the business case period and can be reinvested into enhancing transit services.

Figure 6 - Estimated RTSC incremental costs, service efficiencies and cash flow requirements



The comparison of estimated incremental costs is outlined in grey in Figure 6 above, with estimated efficiency savings in yellow. By 2024 the savings out-pace the costs. Of note is the line which represents the RTSC cumulative excess cash outflow and inflow when compared to the Base Case. It hits an estimated peak outflow in 2023, resulting from the stacking of one-time costs and recurring incremental costs through commission start up. As the one-time costs drop off, the incremental costs stabilize, and service efficiency savings are realized. **The net savings become positive, with an overall improvement in the cash shortfall, then breaking even and ultimately returning to a positive cumulative savings from Base Case in 2026.**

Table 2 - Municipal requisition per municipality for duration of business case operating period

Thousands $CAD

Municipality	2022	2023	2024	2025	2026	Total	Average	% of Total
City of Edmonton	23,356	23,692	24,195	24,675	25,147	121,065	24,213	41.93%
Strathcona County	14,464	14,686	15,001	15,305	15,605	75,061	15,012	26.00%
City of St. Albert	10,621	10,774	11,009	11,232	11,451	55,086	11,017	19.08%
City of Spruce Grove	1,954	1,984	2,025	2,065	2,104	10,132	2,026	3.51%
Parkland County	656	666	678	691	703	3,394	679	1.18%
City of Leduc	1,177	1,199	1,221	1,244	1,268	6,109	1,222	2.12%
City of Fort Saskatchewan	1,358	1,380	1,408	1,435	1,462	7,044	1,409	2.44%
Sturgeon County	191	194	196	199	202	981	196	0.34%
City of Beaumont	314	319	324	329	334	1,619	324	0.56%
Town of Stony Plain	595	604	615	626	637	3,076	615	1.07%
Leduc County	685	698	710	723	737	3,554	711	1.23%
Town of Morinville	180	182	184	187	190	923	185	0.32%
Town of Devon	129	130	132	133	135	658	132	0.23%
Total	$ 55,679	$ 56,507	$ 57,698	$ 58,842	$ 59,975	$ 288,701	$ 57,740	100.00%

The table above reflects the estimated annual contributions by municipalities to the RTSC. When compared to municipalities anticipated future net funding shortfall amounts to deliver transit, for those that have existing agencies or intend to commence transit services in the next two years, the annual contributions are comparable and thereby reflect that their costs under the RTSC do not need to increase considerably.

For those that are not able to receive transit services without the support of the RTSC, the costs associated with obtaining those services are reasonable and provide a lower cost of entry than if they were to provide the services on their own. Finally, for those that are increasing service levels because of the Commission, the incremental costs are outweighed by the benefits of the additional services offered.

Overall, the net funding shortfall allocations passed back to the municipalities from the commission are reasonable compared to their own costs, especially when assessed against the increased services and opportunities made available within the region.

Why now?

Transit is now critical to the region's economic future.

The current way of delivering transit will not be sufficient to meet the needs of the growing region. Over the next two decades, the population in the region is expected to almost double and add close to a million more people within the existing communities. As the region becomes more interconnected and complex, just doing "more of the same" to meet the mobility needs will not be sustainable.

The demands and expectations of how people live, learn, work, play and invest within the region is changing. People now evaluate how easy it is to move around an area without being committed to a personal vehicle more than they did two decades ago. People choose where they reside based on the mobility options available. The Edmonton Metropolitan Region needs to be ready to retain and attract people right here, so they don't look elsewhere. **Meeting the transit expectations of a community is likely to be a challenge or unachievable for an individual municipality on their own.** Therefore, people may choose to live elsewhere.

Building on the regional successes of collaboration in the Edmonton Metropolitan Region provides an opportunity to think, plan and operate differently to create a future-ready transit system. It is one that requires collaborative approaches to decision-making – one that requires a regional focus that enables people to seamlessly cross municipal boundaries.

A regional transit commission creates an integrated system that supports a high quality of life, creates a healthy environment and economic prosperity in the Edmonton Metropolitan Region both now and in the future.

The implementation of the Regional Transit Services Commission for the member municipalities will support expected growth over the next two decades and make better use of existing transit resources to provide residents in the region with a truly regional transit experience.

The RTSC can enable the delivery of fluid mobility options across the region. The RTSC will enable planning of a truly regional service that focuses on moving riders around the region based on where the riders would like to go without barriers created by municipal boundaries.

The RTSC can provide a consistent level of service across the region, streamline policies to support improved trip integration, allow for additional mobility options and provide unified service planning while recognizing the nuances of the regional municipalities. Riders would access one system, resulting in a more streamlined approach to moving around the region.

The RTSC can enable the more efficient use of transit assets and resources by removing duplicate routes and optimizing the number of service hours across the region. Maintenance buildings, transit centers and other fixed assets can be more effectively utilized across the entire region instead of within a single municipality. The RTSC has an increased ability to improve fleet management to maximize utilization, and appropriately plan and deploy the mix of the fleet across a larger service area.

The Edmonton Metropolitan region is facing unprecedented growth over the next two decades and its ability to effectively plan and prepare for the near doubling of the population will rely on the member municipalities' ability to work collectively to implement effective land use and transportation planning across the region. **The RTSC will bring a unified approach in delivering transit services that can meet the evolving needs of the region in the decades to come.**

The work of the RTSC Transition Team has created a path forward for municipalities in the region and presents a unique opportunity to advance their shared goals in a very tangible way that will benefit residents and businesses in every community.

Based on the business case and the comprehensive evidence collected through this process, it is recommended that the municipalities in the Edmonton Metropolitan Region take the next step in forming a Regional Transit Services Commission.

Imagine

A new major employer chooses to locate and invest in the Edmonton Metropolitan Region because its integrated regional transit system provides its employees with multiple mobility options with a lower corporate carbon footprint.

Students choose to remain at home, while still attending world-class post-secondary institutions with no need to relocate from the communities where they grew up.

Vehicle ownership is no longer a requirement to living and working wherever you want to in the region.

A safe, seamless and reliable public transit system is unimpeded by municipal boundaries, allowing people to move quickly and conveniently across the region.

These are aspirations of residents, employers, and municipalities within the Edmonton Metropolitan Region today. The Regional Transit Services Commission (RTSC) can make this aspirations part of everyday reality.

Developing an integrated regional transit system is critical to the region's future. The Edmonton Metropolitan Region is a collection of diverse and growing communities that will be home to 2.2 million people and 1.2 million jobs by 2044. [5]

This doubling of the Region's population positions it as one of the fastest growing metropolitan areas in Canada. To accommodate this growth in the region and support economic prosperity, the region's mobility systems will need to be efficient, interconnected, and flexible to accommodate future growth.

Mobility is shaping the way that communities grow and how people live their lives. It is influencing the decisions that major organizations are making around where and how to invest and where an increasingly mobile workforce decides to locate. In addition, the pace of change is accelerating so much that long-term transportation plans and strategies are becoming obsolete within a few short years of their creation. As technological innovations continue to advance, and consumers become more demanding, cities and regions must adapt to meet rapidly shifting expectations. **Transit systems need to quickly adapt to these shifting expectations, however that is difficult to do with so many separate transit agencies.**

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[5] Re-imagine. Plan. Build. Edmonton Metropolitan Region Growth Plan. (2016). [PDF file]. Retrieved from http://emrb.ca/Website/media/PDF/Publications/EMRGP-Interactive.pdf

The transportation practices and solutions that have served the region well in the past will be hard-pressed to serve the Edmonton Metropolitan Region of the future. Planning for citizens' mobility will need to be more holistic while delivering a first-rate transit service that offers a feasible option for residents of the region.

Currently, multiple public transportation systems are operated by separate transit providers across the region. Each system is focused on the needs of individual municipalities, with many routes focused solely on serving residents' commute to downtown Edmonton with local transit services providing feeder services into those routes. **Few, if any, intermunicipal routes exist to support citizens who may want or need to travel to a neighbouring municipality without requiring a transfer in Edmonton.** This structure results in overlapping services in some areas and public transit being viewed as an unrealistic mobility option in others. Many smaller municipalities in the region do not yet any public transportation options, resulting in growing numbers of private vehicles on an increasingly congested road network and greater incidence of people moving away from their home communities to live closer to school and work.

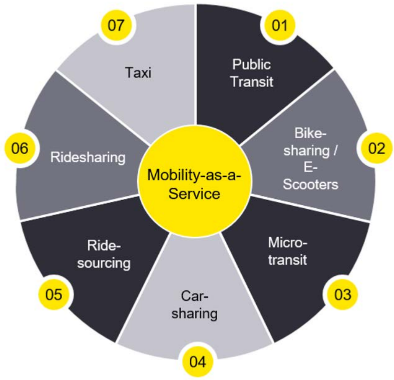
To address these challenges and help the region realize its aspirations, **municipalities must catch up to the mindset of residents in the region by thinking beyond local boundaries.** While the current collection of transit systems is not integrated, some municipalities have been making efforts to better coordinate transit services and work towards a more coordinated approach to transit in the region. There have also been numerous studies and reports done to advance regional transit to where it is today which are described in *Appendix A: Project Context and History*. The planning for a regional transit system through a Regional Transit Services Commission (RTSC) builds on an existing tradition of regional collaboration in the Edmonton Metropolitan Region. **The RTSC would better enable regional municipalities to align transit services and advance an integrated regional transportation network that addresses current and future mobility opportunities and challenges.**

> "For the Metro Region to be globally competitive, its municipalities need to act together to build regional systems in the areas that matter most."
>
> \- *Metro Mayor's Alliance Report, May 2016*

The future of mobility

Disruptive trends and technologies are everywhere. Consumers are shaping new expectations for their jobs, products, services and governments. These expectations are shifting in response to disruptive trends such as urbanization, shared economies, reduced emotional attachment to cars, environment concerns, and the consumers' desire to always be connected. In turn, disruptive technologies are being developed to meet these expectations with new innovations such as artificial intelligence, the internet-of-things, autonomous vehicles, virtual and augmented reality, sensors and digital technologies, and fuel cell advances. Disruption is the reality and is quickly shaping the future of mobility.

The growth of new mobility options has led to Mobility-as-a-Service which can be accessed through technology. Many of these new mobility services are privately-owned and operated and bring the convenience of private vehicle ownership without the associated costs. Some of these services augment public transit and fill gaps where transit service may not be a practical alternative while others are direct competitors of public transit and compromise the ability of transit agencies to maintain cost-effective services for those who rely on public transit. More detail on these mobility options is found in *Section 4: Current State and Future Opportunities.*



In addition to the industry disruption, urban mobility in the Edmonton Metropolitan Region is experiencing a profound transformation. As municipalities grow, so do the needs and expectations of the people who live there. Regional mobility networks and infrastructure are struggling to keep up, which is leading to a stronger reliance on personal vehicles. Some new mobility options add more vehicles to the road and increase congestion. Urban mobility networks are traditionally the economic and social lifeblood of a city, but the disproportionate growth of automobile trips suggests that current public transportation options are not meeting citizens' needs. As a result, people living at the extremities of a city without access to an automobile may not have access to the economic opportunities at its heart.

The number of daily transit trips in the region has increased by almost **9,000** since 2005, while the number of automobile trips has increased by about **236,000**; that represents one transit trip for every **26** automobile trips according to the 2015 Edmonton Regional Household Travel Survey.[6]

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[6] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx.

These trends indicate that consumers will increasingly seek a mobility experience that is seamless, individualized, and responsive. As part of their mobility strategies, cities will need to embrace disruptive technologies and trends. They will need to plan accordingly for regional growth to become an enabler of mobility and market stewardship.

The value of a Regional Transit Services Commission to the region

The RTSC proposes an integrated network for mobility that will enhance the way residents navigate and explore the Edmonton Metropolitan Region. Understanding the specific needs of the region requires collaboration to identify priorities for transit customers, the municipalities who serve them, as well as the organizations and businesses that benefit from effective transit services in the region.

To gain a better understanding of whom the RTSC may serve in the future, representatives from 15 organizations across the Edmonton Metropolitan Region and representing various sectors including health, education, recreation, commerce, non-profit, and municipal, provincial and indigenous governments came together for discussion. Participants shared their perspectives on how and why they would like to see regional transit services improved, which provided considerations for the Commission's future success, beyond simple consolidation of existing services. The groups highlighted several barriers to providing an attractive, integrated, safe and accessible transit service within the region, as highlighted below.

Figure 7 – Key themes highlighting what we heard through focus groups

What we heard

1 **Deliver integrated services**

Planning and decision making around transit in the region is fragmented with municipalities operating their services independently, thereby restricting mobility in the region.

2 **Enhance customer experience**

Customers expect transit services be tailored to their needs, so they can plan their route easily and travel to their destination with a greater degree of comfort.

3 **Extend service levels & coverage**

Service levels and coverage are insufficient during off-hours and there are limited routes between surrounding municipalities, making transit a less feasible mode of travel.

4 **Improve safety**

The perceived and experienced level of safety in using transit is reducing the appeal of transit services as a desirable mode of transportation in the region.

5 **Increase accessibility**

Increasing accessibility to services by minimizing physical, social and financial barriers to using transit services in the region is a necessity moving forward.

6 **Revitalize the image of transit**

The value proposition does not appear to be strong enough or communicated in a way that incentivizes people to transition from personal vehicle use to become customers of transit.

The results were unsurprising: **customers of transit in the region want more seamless, consistent, affordable and better planned services: ones that are designed around how they live. learn, work and play in the region.** They understand that a transit network that reduces duplication and achieves increased operational and cost efficiencies will be able to invest in additional services where they are needed. When transit is a practical and viable option in the region, people see it as a real alternative to personal vehicle use. Transit should evolve to become an enabler of mobility, reduce congestion from automobiles and promote a sustainable future for transportation in the Edmonton Metropolitan Region.

Finally, customers also understand that regional transit services will make the Edmonton Metropolitan Region more economically competitive now and in the future.

In summary: case for change

When public transit is not positioned as a desirable or practical alternative, residents opt to use personal automobiles. The gap between transit trips and automobile trips will only grow without a plan to address integrated regional transit. This will continue to disrupt regional quality of life, with increased congestion and negative environmental repercussions.

While a variety of transit operations exist within the region, public expectations for high quality public transportation and a growing demand for options will make it difficult for individual municipalities to meet the needs and expectations of current and future citizens.

With an additional one million people in the region over the next 20 years we must begin to change how transit is delivered now or the region will lose an opportunity to lay the foundations of planning today for the benefit of tomorrow. The increase in regional population and employment further reinforces the need for efficient and effective transportation to support sustainable development. Additionally, strong integration between transit planning and land use planning will promote movement around the region supporting the efficient and safe movement of people, goods and services for both urban and rural communities.

More integrated regional transit will enable inclusive growth while increasing the region's attractiveness to citizens, investors and businesses, which supports regional prosperity.

Introduction

Integrating transit in the region has been a prominent topic of study and planning for well over a decade in the region. These initiatives began to take shape in October 2018 when the mayors from 13 municipalities in the Edmonton Metropolitan Region signed on to a non-binding Memorandum of Understanding (MOU), effectively joining the Regional Transit Services Commission (RTSC) Transition Team. Per the MOU, the RTSC would support connected and active communities; provide inclusive and accessible transportation options for residents in the region; serve as a transit backbone to help connect communities and enable a stronger more prosperous region; and act as a coordinating body for regional transit-related projects.

As per the MOU, each municipality appointed two elected representatives to the project Transition Team. The Transition Team met at least monthly to provide direction on what aspects of the RTSC needs to look like for it to be more effective than how transit is operated in the region today. It was within their responsibilities to represent the needs and requirements of their municipality. To support the work of the Transition Team, a cross-municipality Working Team comprised of municipal transit and administration professionals provided their expertise through frequent workshops, interviews and other sessions.

The MOU provided direction that all municipal transit services would gradually transition to the RTSC and would start with transitioning regional bus commuter services. As the work progressed, it was assessed a Commission would need to assume both regional and local transit bus services at the onset to be cost effective. Consequently, the Transition Team motioned to expand the project scope to include local municipal services except for Edmonton Transit Service (ETS) local services, which would be staged to come into the Commission later given its size and complexity of operations. This decision to include municipal local services reduces complexity for municipalities, improves services for customers by reducing the number of municipal transit agencies, allows for the establishment of a regional brand, and increases the speed of integration possible.

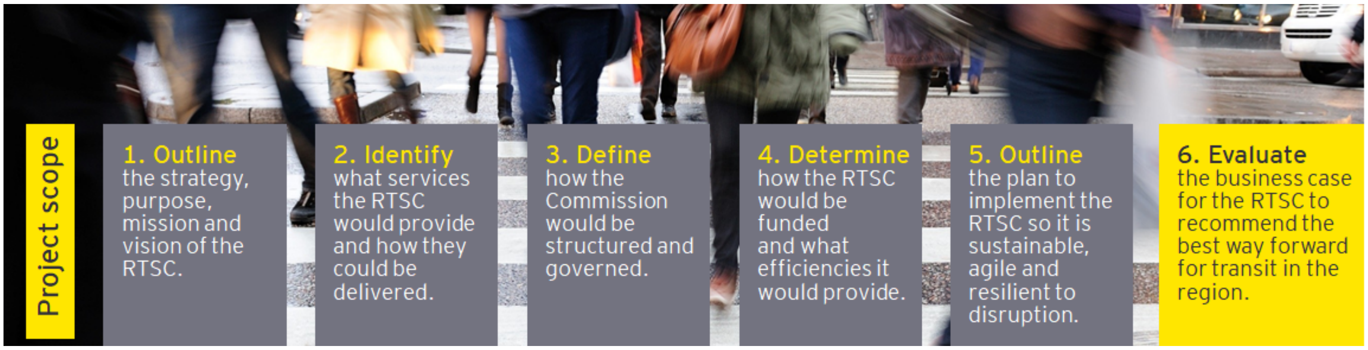
EY project scope

EY was engaged to work with all 13 municipalities to develop a Regional Transit Services Commission (RTSC) framework in anticipation of the endorsement and eventual sign on to join the Commission for the purposes of delivering better transit services to those who live, work and play in the region. The Commission will be legislated under the *Municipal Government Act* (MGA) of Alberta.

The 13 municipalities involved in the project include: City of Beaumont, Town of Devon, City of Edmonton, City of Fort Saskatchewan, City of Leduc, Leduc County, Town of Morinville, Parkland County, City of Spruce Grove, City of St. Albert, Town of Stony Plain, Strathcona County, and Sturgeon County.

The objective of this phase is to develop the approach, plan and structure of a commission that can be implemented to the benefit of the people and municipalities in the Edmonton Metropolitan Region.

Figure 8 - Overview of project scope



Project scope

1. Outline the strategy, purpose, mission and vision of the RTSC.

2. Identify what services the RTSC would provide and how they could be delivered.

3. Define how the Commission would be structured and governed.

4. Determine how the RTSC would be funded and what efficiencies it would provide.

5. Outline the plan to implement the RTSC so it is sustainable, agile and resilient to disruption.

6. Evaluate the business case for the RTSC to recommend the best way forward for transit in the region.

Key in-scope components to support the project objective and the project steps noted on the previous diagram included:

- Assessing of how municipal transit services are currently delivered
- Developing of the Commission's strategy to transform transit and improve mobility in the region
- Creating the RTSC's transit service delivery model describing how transit services will be delivered
- Developing an operating model which outlines the structure, capabilities and roles needed for transit service delivery in the region
- Developing a governance model to support RTSC in making decisions on behalf of the region
- Producing an implementation plan to outline how to transition services to the Commission
- Conducting a financial assessment describing the costs and savings associated with a Commission compared to what transit services are expected to cost without one
- Developing an approach to allocating the costs to municipalities of operating a RTSC
- Creating the business case for delivering transit services under a Commission

The original MOU signed by the municipalities called for regional services to be transferred to the Commission first, with local service to transfer in later. During this work, the municipalities identified that by reallocating their regional routes to the Commission, except for Edmonton, that the local services they would retain could not be delivered effectively due to lost economies of scale. A decision was made to accelerate their proposed upload of local services to coincide with the regional upload. Due to the size of ETS this was not an issue and the remainder of the service was decided to be uploaded at a later date once services have stabilized. The work reflected this additional scope with the exception of *RTSC Transit Service Level Guidelines* which would be further built out to include local service guidelines as part of the next phase of work.

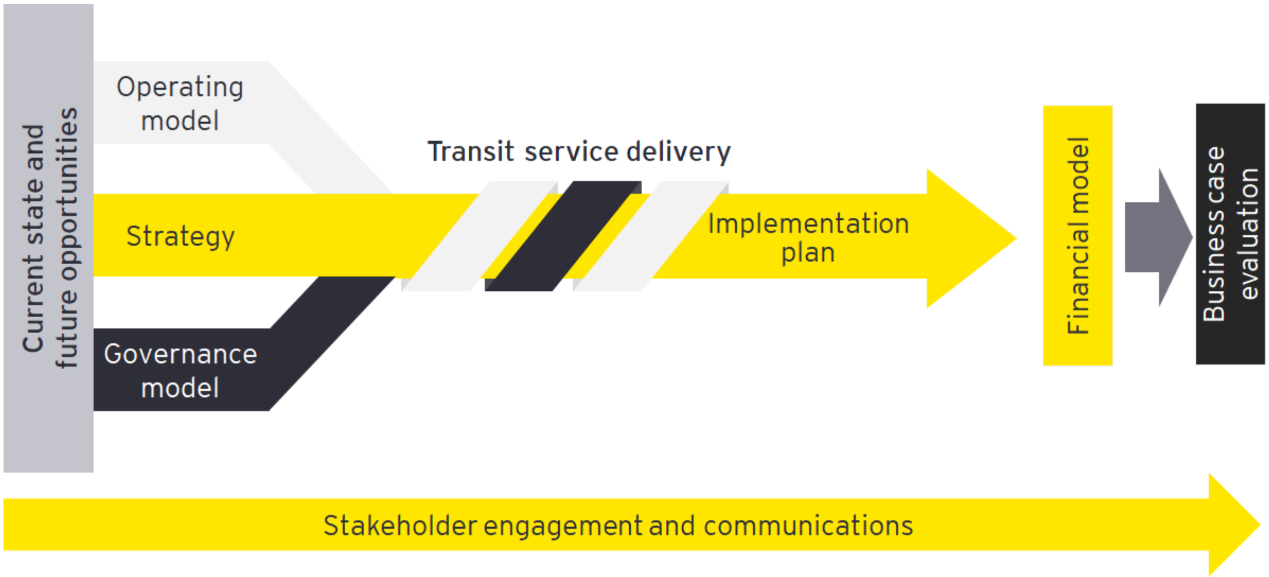
This final report delivers on the project scope and addresses relevant requirements for a future submission under the *MGA* regulation which is required to apply to form a regional services commission. It should be noted that this report does not constitute the submission to the Government of Alberta and each of the 13 municipalities will vote in early 2020 on whether they will seek membership in a RTSC, under the assumption the Commission is approved under the *MGA*.

Overall project approach

Components of the RTSC were collaboratively developed with municipalities in an iterative manner. A high degree of stakeholder engagement occurred, ranging from full-day workshops to council presentations to one-on-one discussions. Importantly, these activities provided numerous opportunities to solicit input throughout the process.

Project delivery was organized into workstreams, most of which represented fundamental components of the RTSC. Consideration for how transit services are delivered today within the region and the future of mobility, feedback from stakeholder engagement and leading practice research have supported the development of outputs from each workstream, which have been consolidated in the final report.

Figure 9 - Workstream approach overview



The **workstream specific approaches** for the development of the RTSC are described in further detail in the subsection that follows.

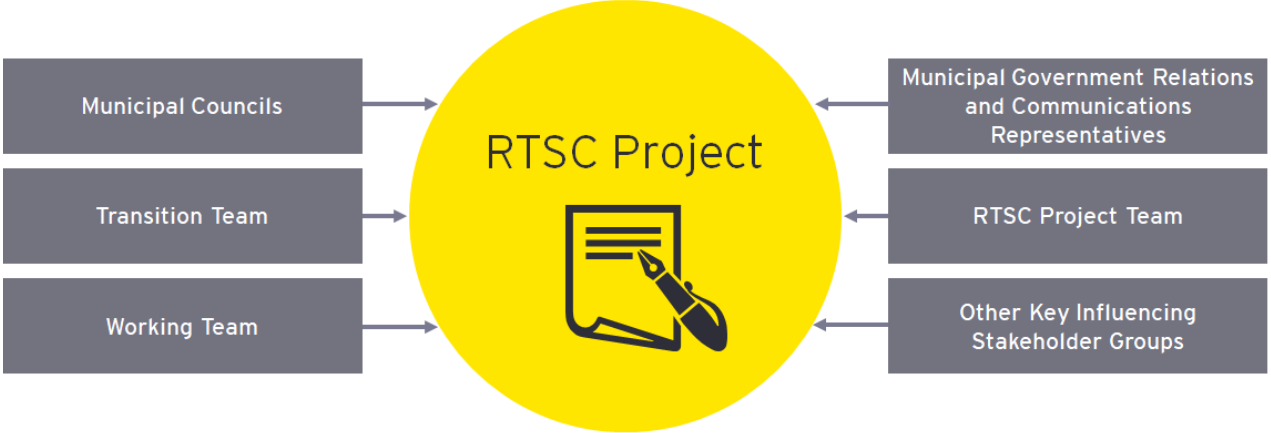
Workstream approaches

Stakeholder engagement and communications

This project involved significant stakeholder engagement and communications throughout, with one purpose in mind: **to develop an RTSC that would reflect the diverse ideas, contributions and expertise that exists across municipalities and the region.** A stakeholder engagement and communications plan guided these activities throughout the project and feedback was regularly solicited from stakeholders to measure its effectiveness. Several stakeholder groups were engaged, as shown by the below figure and whose roles are described in *Appendix B: Overview of Stakeholders Involved in Developing the RTSC*.

By the end of the project **16** program workshops, **7** virtual sessions, **3** focus groups and numerous interviews, meetings and discussions had taken place.

Figure 10 - Overview of stakeholders involved in the RTSC project


Municipal Councils
Transition Team
Working Team
RTSC Project
Municipal Government Relations and Communications Representatives
RTSC Project Team
Other Key Influencing Stakeholder Groups

The Transition Team, which included one elected official and one alternate, assembled for a full-day workshop once a month. In addition to the Transition Team, a Working Team was created. The Working Team consisted of transit leaders from each transit agency and members of administration from municipalities without transit. Working Team members met on a frequent basis for workshops. As well, other members of municipal administration, including those from communications and government relations were regularly engaged. Municipal Council presentations occurred periodically to provide project status updates on the progress of the work, and importantly, to gather input along the way to shape the development of the RTSC.

Meaningful and productive engagement with stakeholders both internal and external to the program was a demonstrated priority to the development of the RTSC. With 13 active municipalities, this required extensive facilitation and regular communications tailored for each audience. Each component of the RTSC was developed by incorporating several feedback cycles intended to capture input from the elected officials, members of municipal administration, and transit agency leaders and teams.

Current state and leading transit practice assessment

To understand the current state of regional transit in the Edmonton Metropolitan Region, a high-level assessment of transit operations, opportunities and challenges that exist within the region was conducted. The current state assessment was conducted at a regional level to inform the development of the RTSC and included an analysis of individual agencies as required to understand the implications of integrating transit. At the time the current state was conducted, local transit was not in scope for the RTSC business case and therefore much of the assessment is conducted in the context of regional commuter services.

The current state review included the following:

- Document review of Recent Studies on Regional Transit (Figure 11) completed for the Edmonton Metropolitan area;
- Stakeholder interviews; and
- Assessment of findings.

Figure 11 - Recent studies on regional transit

RECENT STUDIES
AECOM
KPMG
Capital Region Board
Intermunicipal Transit Governance Study
Moving Integrated Transit Forward
ETS
BE READY, OR BE LEFT BEHIND
Regional Commuter Service Assessment
Final Report
August 2016

April 2014
Intermunicipal Transit Governance Study, AECOM/KPMG Report

April 2015
Moving Integrated Transit Forward, Internal Report

March 2016
Albert Regional Transit – Progress Report, Internal Report

May 2016
Be Ready, or Be Left Behind Publication

August 2016
Regional Commuter Service Assessment, Stewart Group Report

In addition to a document review and interviews, current state information was also gathered from data requests and during initial workshops with municipalities to develop the RTSC. A current state assessment was developed to consolidate key findings and implications for the RTSC development which reviewed the existing seven municipal transit agencies and their respective intermunicipal transit services as described in *Appendix C: Existing Intermunicipal Transit Services and Transit Agencies.* The key findings and implications were validated and updated with feedback provided from Working Team members. The findings and key themes are summarized in *Section 4: Current State and Future Opportunities.* To support the development of a RTSC, several transit agencies from across North America who provide aspects of regionalized transit along a continuum from oversight and planning to delivery were reviewed to understand implications for implementation.

RTSC strategy, governance and operating model

While the components from each of these three workstreams were developed separately, they are intricately linked. The outputs of the Strategy form the basis for the development of Governance Model and Operating Model.

The strategy outlines the "**what** and the **why**" for the RTSC, while the Governance and Operating models outline the "**how**".

Following the current state review and feedback from focus groups and workshops, key elements of the RTSC strategy were developed, including the purpose, vision, mission and value proposition based on leading practice and a desired to drive customer intimacy. The strategy includes a series of priorities underpinned by strategic initiatives and target results. All elements were developed based on current state findings and iterated on in collaboration with program members, with key components tested with focus group and external stakeholders along the way. The RTSC strategy and these underlying components are described in *Section 5: RTSC Strategy.*

A **governance model** for the RTSC was then developed to deliver on the RTSC's customer centric strategy. In developing the governance model, a jurisdictional scan was conducted to identify potential models that would support a public transit commission in Alberta. This included a review of the Municipal Government Act (MGA), *RSA 2000 Section 15.1 Regional Services Commissions*, and several commission governance structures within the Province of Alberta and across North America. Possible models were tested with the Transition Team and the potential benefits and drawbacks of each were discussed in the context of regional service delivery. The RTSC governance model, including insights from other transit agencies and draft contents for bylaws are outlined in *Section 6: RTSC Governance.*

In parallel with the development of the governance model for the RTSC, the Transition Team worked to define the organizational capabilities needed by the RTSC. With consideration for what capabilities exist in leading transit organizations, the Transition Team prioritized capabilities based on how they would enable the RTSC to deliver on its strategy and design principles. The RTSC operating model was structured according to functional areas and capabilities were assigned to executive portfolios for delivery. Roles and resourcing levels were identified to provide a blueprint for future RTSC leadership to establish an organizational chart. They will also enable future leadership to assess budgetary requirements to stand up and operate the commission from 2021-2026, which have been included in the development of the financial model. The RTSC operating model, including underlying capabilities and suggested roles, are described in *Section 7: RTSC Operating Model*.

The RTSC strategy, governance model, and operating model along with aspects of the transit service delivery model guide the approach to the creation and implementation of the RTSC and outline ultimately how the Commission would be structured and resourced to deliver regional transit services across member municipalities.

RTSC transit service delivery

To develop the financial account of the business case, a transit service planning exercise was conducted to provide inputs and assess the impact on regional transit service offerings through a comparison of the ‘Base Case’ and the ‘RTSC Case’. A series of workshops were completed to inform the transit service delivery under both scenarios, with involvement of Working Group members and other staff responsible for transit from municipalities across the region.

The development of the RTSC Transit Service Delivery, described in *Section 8: RTSC Transit Service Delivery* began by researching comparable jurisdictions that have amalgamated transit services to identify lessons learned and implications for the delivery of regional transit here. Insights from comparable transit commissions also informed the creation of Transit Service Level Guidelines and the RTSC Conceptual Transit Services Design. Transit Service Level Guidelines are used to manage the development of services delivered by a transit agency. The creation of the guidelines was part of an iterative process that comprised of researching leading practices, undertaking peer reviews, and working with stakeholders from all partner municipalities. The result was a set of guidelines that follow the latest industry developments and are adjusted to the specific context of the Edmonton Metropolitan Region. During this phase, the scope included only regional services. As such, Transit Service Level Guidelines will need to be updated during implementation to include municipal local services and paratransit services.

Transit Service Level Guidelines were used to inform and visualize the Conceptual Transit Services Design, including the transit service map. They were based off of an analysis of travel demands that acted as the guide for planning new routes or evaluating existing routes. High-level transit service plans and schedules were developed to deliver on routes underlying the RTSC Conceptual Transit Services Design.

To validate the RTSC Conceptual Transit Service Design and help inform the financial model, the new service design was modelled and compared to the Base Case model of transit. The comparison of the two models was used to capture the net change in quantity of service and service offerings that would be created by the formation of the RTSC. To finalize the transit service design concept, validation sessions were held with each municipal transit organization.

RTSC implementation plan

The implementation planning workstream created a roadmap to transition, implement and operate the RTSC aligned to priorities based on the RTSC strategy, governance model and operating model. Prior to the development of the plan, the Transition Team provided direction on how services would be transitioned in phases to the RTSC. These phases informed key milestones required to capture target savings from efficiencies under the Commission and to improve how services are delivered. Underlying activities and resources required to achieve these milestones by phase were identified. Throughout the process key dependencies were analyzed and accounted for in the sequencing and timing of activities. Success factors and considerations were highlighted to guide the implementation plan success. Through workshops and virtual sessions, the implementation plan was iterated and refined by the Transition Team, Working Team, and other members of municipalities. The finalized plan is described in *Section 9: RTSC Implementation Plan* and supported the development of the financial model.

RTSC financial model

The financial model quantitatively assesses and compares the cost municipalities continuing to deliver transit services separately with delivering integrated services under a regional commission. Where costs of delivering transit exceed revenue generated through fares and other sources, the result is a funding shortfall which needs to be allocated across municipalities under a commission structure.

Two guiding principles informed the development of the financial model, as follows:

- **Accurate representation:** Budget estimates and forecasted revenues and costs should feasibly represent the future of operations for each municipal transit agency; and,
- **Conservative estimates:** Budget estimates and forecasted revenues and costs should not be overestimated, so projections and final business case figures are defensible.

Following these principles, the financial model assessed a period from 2020-2026 and was developed with significant and ongoing collaboration with municipalities and the Transition Team over seven months and included:

- Working collaboratively with all municipalities and their finance teams throughout the project to gather and validate information;
- Comparing the RTSC Case to a Base Case, using an incremental cost and revenue approach; and,
- Calculating any shortfall that was then allocated back to municipalities using a methodology that was vetted with the Transition Team.

In alignment with the implementation plan, the financial model assumes the RTSC will begin delivering regional services in 2022. Details of the financial model can be found *in Section 10: Financial Model*.

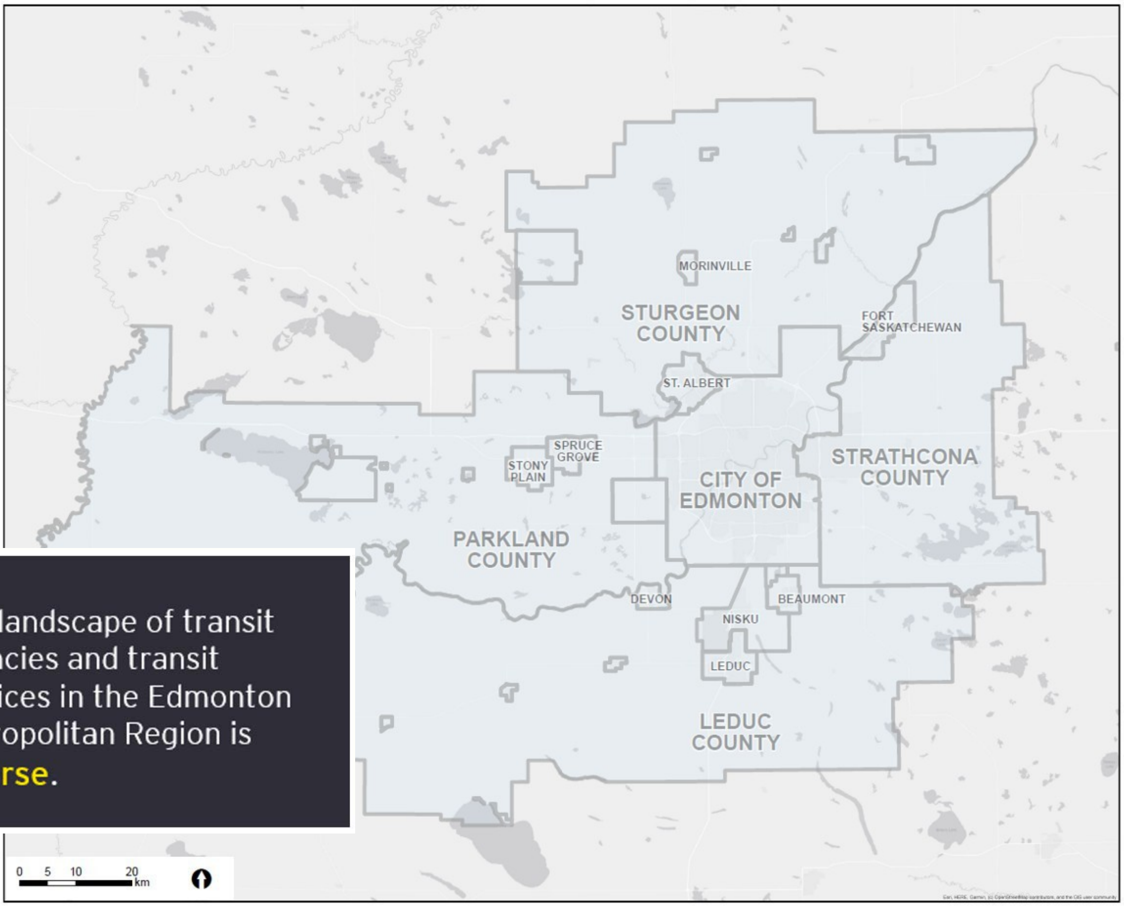
RTSC business case evaluation

The Multiple Account Evaluation (MAE) framework for cost-benefit analysis was determined to be the most appropriate framework for the evaluation of the development and implementation of the RTSC. The MAE framework is based on the Multiple Account Evaluation Guidelines in use with Alberta Transportation. Project decisions that have many non-monetary considerations, such as coming together to form a regional transit commission, lend themselves to this framework. The framework provides flexibility to evaluate the RTSC across several factors and follows precedent set by provincial governments for guiding the decision-making process for major investments. Further information on this approach and the outcomes of the evaluation of the business case for the RTSC can be found in *Section 11: Business Case Evaluation*.

Overview of existing transit agencies and intermunicipal transit services

The Edmonton Metropolitan Region is as diverse as it is large, spanning 9,439 square kilometers with 1.3 million people in 21 municipalities, 13 of which form the Edmonton Metropolitan Region Board and are participating in the development of a Regional Transit Services Commission.

Figure 12 - Regional transit study area



The landscape of transit agencies and transit services in the Edmonton Metropolitan Region is **diverse**.

Of the 13 municipalities, seven municipal agencies currently deliver intermunicipal services across the region, including Beaumont Transit, Edmonton Transit Service, Fort Saskatchewan Transit, Leduc Transit, Spruce Grove Transit, St. Albert Transit, and Strathcona County Transit.

Transit agencies vastly differ in scale, scope, and maturity of operations.

- Agencies that deliver transit in the region range anywhere from newly established organizations operating one fixed regional bus route to more mature agencies that offer more than fixed regional and local bus routes and have been in operation for decades. This is further accentuated by ETS which currently operates close to 200 fixed bus routes, Light Rail Transit (LRT) and has been in operation for over 100 years.
- Differences in maturity are illustrated by how agencies operate to deliver transit services. For example, some agencies are fully integrated, meaning that they both plan and operate services as well as own and maintain assets, while other agencies only conduct some of these activities and contract out other functions to private contractors or other municipal transit agencies through operating agreements.
- Many formal contractual agreements and informal partnerships exist with other municipal transit agencies or private operators. All agencies have some form of reliance on ETS to either deliver services or grant access to use transit infrastructure in Edmonton.
- Most agencies in the region do not have fare policies to guide the setting of fares or how best to recover costs of transit, nor do they have access to alternative sources of revenues to offset the cost of providing transit services.
- Formal ridership goals based on service standards exist for only two agencies, and many agencies are constrained in capacity to offer more service if ridership increases.

Transit services are characterized by point to point networks and a high potential for operational efficiencies.

- Smaller transit agencies operate peak period point to point service into Edmonton, whereas medium and larger transit agencies in the region provide frequent point to point service into Edmonton, while also offering comprehensive local systems that primarily act as feeders into regional routes.
- There is an emphasis by smaller municipalities to be connected to the region through Edmonton's network by leveraging LRT stations.
- While agencies are focused on their customer trip requirements, agencies are modally focused rather than journey focused, with no transit agencies serving in a mobility manager capacity to integrate public sector and private sector solutions to facilitate effective end-to-end journeys.
- While functioning within current municipality transit agencies, from a regional perspective the staging of service is inconsistent with opportunities to be more efficient in maintenance and storage operations, route and shift design.
- Many agencies do not utilize analytics, evidence-based decision making, or service standards to determine where services should be offered and how much service is to be offered, added, or reallocated. Historically, agencies have been reactionary in planning service, often relying on feedback and service/destination requests from the public. Larger agencies are becoming more proactive in planning and are starting to use service standards to evaluate service decisions.

Challenges of transit in the region today and opportunities for integration

In assessing the current state of transit across the Edmonton Metropolitan Region, it was clear that there were many challenges facing transit today, but also many opportunities to solve these challenges through integration of services. Key challenges and opportunities are outlined below.

Table 3 - Summary of challenges and opportunities of transit

Challenges of transit in the region today	Opportunities for integrated transit
A high dependency on automobiles as the primary mode of travel exists in the region, accounting for 87% of all travel[7]. Changing these travel behaviors and shifting travel modes from automobiles to mass transit poses a significant challenge for municipalities and transit agencies.	► Provide one voice for transit services and transit funding in the region to deliver services that are competitive to the automobile. ► Influence travel behaviors by marketing and promoting the use and benefits of transit and supporting those who use it by offering convenient and tailored solutions. ► Act in a mobility management or regulator role to facilitate end-to-end journeys that incorporate public sector and private sector travel options that make it possible to travel the region without the use of a personal automobile.
Service trade-offs exist throughout the region between the level of service offered and coverage to key areas and destinations. This has led to varying service frequencies across the region and a high amount of duplication of service to the Edmonton core and post-secondary institutions but few connections between municipalities.	► Tailored transit services with appropriate service types and right sized assets could be implemented to better align with frequency and coverage required across the region. ► Service standards for the entire region can be developed to outline where service should be offered and when service should be increased, aligning funding and investment in service to reduce or eliminate service trade-offs that currently exist.
There is a high cost to deliver regional transit today and no mechanism to split costs across municipalities for use of services by citizens from other municipalities.	► Increased efficiencies and cost savings from economies of scale, maximizing shared resources, joint procurement and maintenance, and investment in strategic transit infrastructure can alleviate cost pressures of transit service delivery.

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[7] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

Challenges of transit in the region today	Opportunities for integrated transit
	▶ The creation of a governance structure that provides: equitable representation for participants; reflects members' contributions and size; and is transparent and reactive, can allow for services and costs to be shared amongst municipalities, while supporting the uniqueness of municipality needs.
The customer experience is not seamless across the region as transit services are fragmented by municipality. It is difficult for transit agencies to plan and interface multiple systems between municipalities plus local and regional systems within municipalities, often leading to disjointed and time-consuming journeys for customers.	▶ Planning and scheduling done at a regional level can create more interlined services, greater direct connections, more efficient transfers, and an increase in priority transit infrastructure. ▶ Building of relationships with municipal planning departments across the region and the development of a formal framework to facilitate long-term transit planning that emphasizes density and transit-oriented developments can foster a more connected and efficient network. ▶ A common region-wide travel application for users could be developed to plan their journeys and keep them up to date on service options, changes, and delays.
Difficulties exist in integrating fare between different transit systems.	▶ Although work is currently being conducted to integrate fare amongst transit agencies under the Smart Fare project, there is greater opportunity to create a "one fare model and not just one card" under integrated transit. ▶ Ability to more easily and readily implement and leverage digital technology, such as Smart Fare, for transit service delivery through shared projects with clearer outcomes and applicability for all.

The formation of a RTSC will require a significant change from the current arrangement of services provided independently across the region. As the scope and complexity of services grow a regional approach could be beneficial to govern, plan, and operate transit services. There is a significant transformation required between the current way transit is provided to an integrated regional commission.

Table 4 - Summary of regional transit services transformation

Moving from separately provided services	To an integrated regional network
High variety in level of service. Some communities have excellent service, some have low or no service	Regional service levels that are more consistent across the region
Emphasis on direct trips to and from Edmonton with few transfers between systems	Emphasis on trips to Edmonton, with better connectivity across the region with transfers
Transfers are often planned reactively, and different agencies have different operating priorities	Main transfers can be better integrated and service operations harmonized
Service needs may be identified through a reactive, or politically driven process	Service needs are identified and evaluated in structured planning process. Politically driven process is minimized
Lack of consistency in route performance data collection, evaluation process, and ultimate use throughout the region	Route performance is centrally monitored, and service is reviewed regularly
Fragmented use of technology and new mobility options	Consolidated planning function that prioritizes and actions new services
Funding for service could be unpredictable and fluctuate annually	Funding for service could be more predictable and based on an agreed upon regional framework

If nothing is done today to address the above challenges and capitalize on the opportunities that integrated transit has to offer, there is a high potential cost to the region in the future. Ultimately, the greatest opportunity for integrated transit is the ability for municipalities to collaborate to respond to needs and challenges of the region both now and in the future, ensuring a transit system that will support long-term sustainability and growth for all municipalities.

Insights from peer review

Several transit agencies from across North America who provide aspects of regionalized transit along a continuum from oversight and planning to delivery were reviewed to understand their implications when developing the RTSC.

Regional planning and delivery of transit services is a leading practice across North America. Once a region experiences significant cross boundary travel, there is a need to consider a centralized regional agency to provide economies of scale in delivery and consistent levels of service. Many communities have adopted a regional commission approach from which the following key lessons can be applied to the RTSC:

- Being accountable for planning and operating with a balanced focus on regional transit and local routes will enable a consistent transit experience across the region
- Understanding transit rider history and preferences will enable optimized transit planning across the region
- Integration and a regional mindset take time establish and need to be continually enhanced to strengthen the Commission’s ability to meet its objectives

Autorité régional de transport métropolitain (ARTM)

Local agencies around Montreal were autonomous and mostly independent as of 2017, although some had formed partnerships with each other. As a result, there were different levels of service throughout the region. The Autorité régionale de transport métropolitain (ARTM) now coordinates across existing agencies.

Common branding, bus stop management, regional fare structures, and customer service now exist. However, former local agencies still operate and independently manage local services. There’s no official definition for local or any other types of service common to all agencies. Each transit operator maintains their own service categories. Former legacy agencies did manage local routes, express and regional routes as far as 125 km outside of Montreal. Similarly, monitoring and establishing of KPI’s is up to each individual operating service.

The ARTM is in the process of developing its first regional transportation plan to enable better coordination between modes. For details of ARTM’s transformation to regional transit, please see the Case Study in *Appendix D: Case Study - Integrating Autorité régional de transport métropolitain (ARTM).*

Lessons for RTSC:

- A single regional view removes the inconsistencies created for customers, when multiple local agencies were responsible for planning and operations and will result in optimized transit services supporting the region.

Metrolinx

Metrolinx, an agency of the Government of Ontario under the Metrolinx Act, 2006, was created to improve the coordination and integration of all modes of transportation in the Greater Toronto and Hamilton Area. Metrolinx is undertaking the largest transportation investment in Ontario's history to expand transit in the region and get transit users moving across the region better, faster, and easier, while also operating GO Transit, UP Express and PRESTO.

Metrolinx acts as regional transit planning agency and concerns itself with connections between regional hubs across the Greater Toronto Hamilton Area. Local service is still largely locally planned and delivered by more than fifteen transit agencies. Metrolinx does engage quite heavily with local agencies and has an extensive consultation program for the development and implementation of a regional transportation plan.

Metrolinx has a role in planning and designing higher-order transit projects in some municipalities in the region including both Bus Rapid Transit (BRT) and Light Rail Transit (LRT), such as the Durham BRT, Eglinton Crosstown LRT, Mississauga Transitway (MiWay) and Viva Rapidway (York Region Transit). These will enable mobility for more than 10 million people who are expected live in the region by 2041.

Lessons for RTSC:

- Challenges in partnering with more than fifteen (15) transit agencies who provide local services to support seamless integration, coordination of services and consistent customer experiences across the region exist
- Some projects may not be perceived as benefiting the entire region as they may be solely contained within a municipal boundary and may result in challenges aligning and allocating resources across local and regional projects

TransLink

TransLink coordinates local service as defined as a service type within their Service Guidelines. Rather than using the term "local" as defined by a geographic area, the term "basic" is used to define by 30 to 60-minute frequency and is usually confined to more localized routes across the service area. Most 'basic' service is planned for and intended to serve regional hubs and busier routes on larger arterials. In the urban area, these less populated routes provide parallel access to more frequent arterial service. In suburban areas these routes function more as traditional local service and connect to arterials, hubs, and skytrain stations.

Service is monitored and updated quarterly. TransLink currently has an integrated fare card which will enable them to mine ridership data to more effectively plan routes across the region. Minimal consultation exists with local municipalities over small local service updates, but outreach efforts would be coordinated if a route were to be eliminated or introduced.

Transit service capacity on major arterials is enhanced through TransLink's Major Road Network designations, which contributes to municipal and provincial maintenance costs on those roads if volume capacity is retained.

Lessons for RTSC:

- Focus is on regional planning and if significant changes occur to local service, municipalities have an opportunity to provide feedback and address concerns of residents
- Single fare card provides ability to optimize route planning based on transit rider history

Durham Regional Transit (DRT)

Durham Regional Transit (DRT) has been operating under a regional model since 2006 and has slowly been reworking old legacy routes. DRT provides regional and local transit service to eight different municipalities east of Toronto including Ajax, Brock, Clarington, Oshawa, Pickering, Scugog, Uxbridge, and Whitby. It was founded in 2006 when the local transit systems of Ajax/Pickering, Whitby, Oshawa and Clarington were transferred to the Region. DRT plans and operates all transit services regionally across three defined planning areas for West, Central and East. It also engages with each of the eight local area municipalities to discuss their future growth plans, including infill and greenfield, to inform planning efforts.

Two focus areas defined for DRT are: (1) serving internal (inside the region) and external trips with a larger focus on internal trips over time; and (2) balancing resources to plan and operate services in both urban and rural areas of the region.

Lessons for RTSC:

- Over time to focus has moved away from routes that focus on the individual municipalities to planning with a regional focus
- Access to transit services across the region including urban and rural areas is important to maintain a balance so all residents have equitable access to services

Applying lessons learned from peer review

The development of a regional commission has potential to improve coordination and scheduling of service between municipalities allowing the services to fit together as an integrated whole. By centralizing planning resources and allowing pooling of services across regional boundaries, there is a reduced cost of entry for communities that want to start offering a transit service. It provides municipalities with an ability to support a range of different service types, including 'on-demand' services for low density areas. For established existing transit systems in the region, a centralized planning function promotes greater efficiently when addressing gaps in service to meet intermunicipal and long-distance intracity travel demands. Centralized planning also reduces overlap and duplication of existing services along key corridors.

To leverage insights from the peer review, the RTSC needs to further develop the Transit Service Guidelines, harmonize local service levels, and minimize enhanced services under the Commission to be successful moving forward.

Figure 13 - Three key areas peer review insights can be applied

Transit service guidelines	With respect to service delivery, the development and endorsement of transit service guidelines will be a critical first step for the formation of a successful regional transit commission. By moving towards an approach based on technical parameters established in service guidelines, the service delivered by the commission can provide a more consistent and effective mobility network across the region in a sustainable manner. The transit service guidelines provide the technical foundation for a centralized planning function that aims to balance local needs and provide an effective service for the region
Municipality local services	Over time, the harmonizing of local service levels will support an improved regional service. Local services are key feeder routes to regional services and an effective network of local services avoids the need for potentially inefficient regional service that loops through communities. At the same time, the relatively low-density residential nature of regional communities will make local transit service costly to provide. In those cases, an RTSC may choose to leverage technology and explore on-demand for dynamic services to provide a cost-effective feeder service to higher capacity regional service. In many newer communities' roadways are not being designed in a transit-friendly manner resulting in limited locations for transit tops and difficulty serving areas. It is difficult and costly to retrofit existing neighbourboods, and therefore these challenges are better addressed in planning stages for new development. An important role of RTSC will be to positively influence transit-oriented development and land use planning, achieved through improved community planning and zoning that is more conducive to transit

Enhanced services	Different communities have different needs and communities that have established transit systems have a customer base that expects a certain type of service that may not meet the basic level of the rest of the communities. These serves would be provided by the RTSC in a similar model to local services where the allocated hourly shortfall for those services is passed based to the community that has requested these services. These services however do provide a loss of regional synergy in as much as they are services that could otherwise have benefited the broader region and are instead being allocated to a community. Over time it is expected that these types of enhanced services would be less common on a consistent level of services across the region would provide a reasonable mobility network

Future of transit

A key strategic reason for the development of a regional commission is to prepare the region to face the rapid changes and disruption that are occurring in the field of transportation. The growth of new mobility options, many of which are privately-owned and operated, creates a technology-based mobility solution that can bring the convenience of private vehicle ownership without the associated costs. While there are situations where these services can help to complement conventional transit by filling in geographical and temporal gaps where transit service may be lacking, there are also situations where these services compete directly with transit services. Aside from taking away ridership and reducing revenues, this competition also compromises the ability for operators to maintain cost-effective services for population segments that need public transit services the most. In some cases, these have been shown to exacerbate congestion in certain cities by adding more vehicles to the road. The following paragraph highlights several key themes that support the need for an organization with the resources and mandate to navigate this increasingly complex mobility landscape.

A common theme is that the context and scale at which these options operate can determine whether they are complementary, supplementary, or substitutive to transit. Transit gaps exist geographically and temporally on many scales (peak and off-peak, weekday and weekend, and seasonal), and new mobility options can help to fill those gaps by complementing and extending the reach of the mobility system, and by supplementing the system to create a more robust network. At the same time, during this period of recent technology change there has been wide spread decline in public transit usage in North America.

In 2018, bus ridership in the United States was at its lowest point since the American Public Transportation Association started keeping track in 1965 and there have been multiple research projects seeking to identify the underlying causes of this apparent cultural shift[8].

However, the potential for new mobility options to substitute or replace transit is not only a concern for the survival of transit services, but more importantly for the potential spatial inefficiencies and user inequities that could result in more congestion, and less access and choice in mobility options for parts of the population.

While there is a risk that some parts of the transit system could be made redundant by new mobility options, it is important to note that there are also parts of the transportation system that could fall to gridlock and disarray if core transit services are not maintained as the backbone of the transportation system.

Ride-hailing services

Since ride-hailing services became legal across Alberta in 2016, travellers in the region have had an opportunity to become more familiar and comfortable with the use of such services. While the data surrounding ride-hailing behaviour is limited, there is a consensus among policy makers that ridership for such services is on the rise and other players like Lyft are also looking to enter the Alberta market.

However, for all the convenience that ride-hailing services bring, a growing number of studies have expressed widely held concerns, including its impact on overall driving (in Vehicle Kilometres Travelled (VKT)) possibly from the amount of non-passenger dead-heading that is required for each trip. Studies also suggest that users of ride-hailing services tend to be younger and more affluent, and while TNCs often market ride-hail services to be complementary to transit services and supportive of multi-modality, it has been found that this varies depending on the type of transit service in question and that under some conditions it draws ridership away from transit.

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[8] Berrebi, S. & Diffee, C. & Watkins, K. (2019) TCRP report J-11 Task 28: Analysis of Recent Transit Ridership Trends. Transportation Research Board, Washington, DC.

Car share

Car share has seen marked growth in North America over the past decade, and is anticipated to continue growing, particularly as free-floating or point-to-point models of car share become more common. Unlike more traditional round-trip forms of car share, which require vehicles to be picked-up and dropped-off at the same point, free-floating models allow users to pick-up and drop-off vehicles at any point within a specific area at a different destination location from the origin.

While studies generally suggest that car share can help to enable reduced private vehicle ownership, its impact on transit use is mixed and varies depending on context. Like ride-hailing, car share has both the potential to complement and substitute transit usage. While more convenient, in some jurisdictions free-floating models of car share has been found to motivate a general in shift mode choice towards lower impact options when walking, cycling, and transit are considered together.

POGO car share is currently the only car share operator in the Edmonton Metropolitan Region and operates on a free-floating model. Towards the end of 2018, POGO car share announced a partnership with Communauto (Canada's oldest and largest car sharing organization) as a step in the direction of expanding the service across the region.

Micro-mobility

Shared active and micro-mobility options encompass a range of low impact modes from human-powered scooters and bikes to their electrified counterparts (e-scooters and e-bikes). While bike-share programs have long existed in many parts of the world, there has been a surge in interest around dockless or free-floating programs that allow for scooters and bikes to be picked-up and dropped-off from any location, like free-floating car share.

Shared active transportation options, such as more traditional models of bike-share, have had the effect of both substituting and supplementing transit in urban areas by reducing demand where there is crowding, and extending the network reach in less dense areas by filling in access gaps in the "first and last kilometer."

Electrified micro-mobility options build on this effect by allowing people to travel longer distances with greater speed and less time and exertion. While the research in this area is still developing, recent studies suggest that micro-mobility options have the potential to complement public transportation, particularly in areas with spatially dispersed transportation demand. The Edmonton Metropolitan Region has recently seen the introduction both Bird and Lime e-scooters which have seen rapid adoption in central areas. This was achieved by the City of Edmonton's successful passing of a bylaw and the Government of Alberta granting an exemption under the Traffic Safety Act.

Connected and autonomous vehicles

Connected and automatic vehicle technologies are being tested in many parts of the world, including in the Edmonton Metropolitan Region. While the full impacts of these emerging vehicle technologies will not be completely clear until the technology reaches maturity and adoption becomes more pervasive, there are several anticipated opportunities and challenges that could come about.

In terms of potential benefits, improved roadway safety and efficiency are among the most anticipated benefits of connected and automated vehicle technologies. There is also common thinking that the automation will help to enable the emergence of self-driving “robo-taxi” services. While this could bring about greater convenience to travelers, it may also draw ridership away transit in a similar way to ride-hailing, and possibly at a much greater magnitude if the service can be provided without the cost of labour. There is worry that this shift could create spatial inefficiencies within the transportation system, and lead to greater levels of congestion on the roadways.

Role of the RTSC in planning for the future of mobility

Demand for travel is not bound to municipal boundaries and neither are the mobility options emerging to meet these demands. There is a role for regional coordination in ensuring that there are common rules and practices in place to manage emerging mobility options consistently across the region.

While transit remains a critical part of the mobility system, there are certainly circumstances where other emerging mobility services may be better suited to meet traveler needs. By improving integration between transit services and emerging mobility options, the region can build opportunities that enable easier multi-modal trips that rely on a combination of transit and other mobility options, creating a shift away from reliance on the personal automobile.

A consistent framework for how various emerging mobility options should relate to regional transit services under different conditions can help to ensure that these services are complementary to the broader transit system. This framework will support the RTSC in identifying answers to the following questions:

- How should these services connect with transit in different environments?
- How does the pricing of these options compare to transit for different types of ride markets?
- Are there ways that the pricing of these mobility options could be integrated with the pricing of transit fares?

These are just some of the questions that will need to be tackled in coordination across the region to ensure a seamless and viable system of integrated transit and emerging mobility services.

Overview

As expressed in the MOU, municipalities envision a RTSC that will transform transit and improve mobility across the region. The RTSC will connect communities through a fast, convenient, simple, reliable, efficient, and affordable transit service that seamlessly integrates with other modes of transportation. It can enable appreciably faster commute times when compared to other modes of transportation and provide a better customer experience supported by new technologies. By combining the strengths of individual municipal transit agencies in the region, the Transition Team believes that the Commission can provide improved service and accomplish more for its citizens than the current fragmented approach. Among these aspirations, the RTSC will:

- Reduce the duplication inherent to operating separate agencies;
- Improve operating effectiveness and efficiencies;
- Increase citizens' access to employment opportunities;
- Alleviate traffic congestion;
- Reduce greenhouse gas emissions; and,
- Actively drive transit initiatives across the region.

The strategy to achieve this ambition was developed collaboratively by the Transition Team, articulating the purpose, vision, mission and priorities for the RTSC to deliver on these aspirations over the next five years.

The RTSC story

The RTSC Story, summarized in the figure below, describes the overarching intent and priorities of the RTSC.

Purpose

Bringing municipal transit services together for the benefit of one region

Vision

Experience the future of mobility where you can go any place, at any time and in the way you choose

Mission

To enable a variety of sustainable mobility options that best serve our region's people and communities

RTSC strategic priorities

1. **Customer Experience** – provide a customer-centric experience that is seamless across municipal boundaries
2. **Service Delivery** – deliver integrated and accessible services efficiently and effectively
3. **Future of Mobility** – be agile to respond to changes and deliver services customers demand
4. **Fiscal Responsibility** – demonstrate transparency and be accountable for making responsible investments
5. **People & Culture** – create a workplace that excites and empowers people to deliver exceptional service
6. **Growth & Sustainability** – use public transit to accelerate regional growth in a sustainable manner
7. **Safety** – maintain a safe and welcoming environment for employees and customers

This framework, developed early on in the project, provided the Transition Team with a foundation which guided discussions and design of the other aspects of the RTSC. It is expected that the future Commission's Board and senior leadership team will refine and activate the RTSC Story over time.

RTSC value proposition

The RTSC will provide the citizens of the Edmonton Metropolitan Region with a **seamless transit system** that provides **excellent customer experience** and **enhanced service efficiency.**

Transit rides are primarily interested in how they get to their destination without regard for municipal boundaries as are drivers of personal vehicles. Under a regional commission, routes will not be unnecessarily interrupted by transferring between vehicles operated by different municipal transit agencies. Currently municipalities are precluded in delivering service in neighbouring municipalities without written agreements. A regional commission can operate across municipal boundaries within the regional commission boundaries and fully integrate fare systems, allowing customers to take trips across the region without the burden of interacting with different fare schedules and media. This results in reduced time and municipal resource burden to negotiate fare and access agreements.

Transit customer experience is influenced by many factors, such as feasibility, directness, reliability, safety and cleanliness. A customer-obsessed focus is a cornerstone of the RTSC's strategy and should drive increased ridership by providing a practical and feasible solution that enables it to compete effectively for customers' mobility dollars. The RTSC's core processes would be designed with the expressed purpose of acquiring new customers, developing new services and responding to market demand in an agile and responsive manner. Increased revenue, both from fares and alternative funding sources, will enable the Commission to enhance the services provided to beyond the transit modes offered by individual transit agencies and available today. In addition, the mobility options available to RTSC customers would be consistently applied based on Transit Service Level Guidelines across the region, resulting in a more equitable service across the region.

The RTSC would eliminate redundancies in routes through integrated transit planning and a reduction in overlapping routes, resulting in a more efficient service that meets current and future regional demands. Where the commission achieves savings through efficiencies, service areas and coverage can be expanded as required or services can be delivered at a lower cost to member municipalities. Additionally, regional transit commissions are often more able to maximize capital investments because they can make decisions based on regional needs. Examples of this include asset rationalization or the optimization of facility size, utilization and location. Service efficiency also comes with making better decisions surrounding when and what rolling stock (e.g. buses) to purchase and how and where to best deploy them across the network.

Value does not just reside with the transit user. There is also value for the taxpayer through cost management and common investment opportunities that can help municipalities manage the overall short and long-term cost of transit and the resulting impact on a municipalities tax base.

Finally, municipalities acting collectively under a regional commission tend to garner increased political and public support for programs, services and future investment, due to the Commission's relative size and scope of impact compared to individual municipal transit agencies.

Strategic initiatives and goals

The strategic priorities are intended to shape the future of transit in the Edmonton Metropolitan Region and focus RTSC resources from 2021-2025. They will guide the transition toward an integrated and more efficient, customer-centric service, and position the RTSC to eventually deliver ETS local services beyond 2026.

These priorities, described in further detail below along with key initiatives, provide future RTSC leadership with a roadmap to prioritize investment, manage implementation risk, and articulate common goals for municipalities and RTSC employees.

This initial RTSC strategy will be further refined through a strategic planning process led by the future RTSC senior leadership team and guided by the Board early in 2021. A more detailed strategic plan and annual business plan, updated for current circumstances, should result from this process, including an affirmation of the core values that the senior leadership team intends to espouse. This plan will ultimately provide a roadmap for individual departments of the RTSC.

Priority #1 customer experience

The RTSC will deliver seamless transit and mobility services that address the unique needs and preferences of different customer segments. To be relevant to both current and future customers of transit, the RTSC will invest foundational data and analytics capabilities that will allow it to tailor services and experiences and develop digital offerings that meet the needs of a new generation of transit users. This includes removing barriers to mobility and transit services across municipal boundaries to drive better connectivity across the region.

Key customer **experience** initiatives:

Table 5 - Customer experience initiatives and target outcomes

Initiative	Description	Target outcomes
1.1 Provide a seamless customer experience regionally	Reduce the number of bus transfers required for transit customers travelling across municipal boundaries and increase the number of routes between municipalities that surround Edmonton. This will create a more efficient network with shorter commute times and increased directness of travel.	► Increased customer engagement ► Improved customer base (ridership) ► Increased customer satisfaction ► Increase in available transportation modes ► Reduction in service disruptions

Initiative	Description	Target outcomes
1.2 Use customer research and insights to improve customer satisfaction	Collect customer data and information to identify key customer segments or "personas," assess customer pain points across the customer journey, and implement recommendations to improve service delivery for current and target future customers of transit.	► Improved service accessibility
1.3 Deliver a smooth transition from current service to the RTSC	Transition and recruit the right resources into the RTSC, perform detailed transit planning, and carry out public engagement activities in the year leading up to the roll-out of regional services mid-2022 to minimize disruption to municipal transit services in the interim and implement a regional transit network that is intuitive to customers and supported by communities across the region.	
1.4 Standardize and increase mobility options available across the region	Evaluate municipal service levels and guidelines for local services where they exist and bylaws surrounding permitted modes (e.g. bike share, ride share, etc.) to address policy barriers and facilitate a more consistent, uninterrupted mobility experience across the region.	
1.5 Enhance ability to deliver safe and universally accessible transit services	Assess transit safety and security policies, practices and incidents across the region to inform actions to reduce safety incidents from occurring and improve the customer experience. Work to bring paratransit services under the RTSC to deliver these services in a more integrated way alongside conventional transit, while leveraging third-party transit providers to manage costs of delivering the service.	

Priority #2 service delivery

The RTSC will ensure the new regional transit network is effectively integrated with local routes and different modes to reduce the trip length for customers through more seamless connections. Regardless of the service, whether it be intermunicipal, local to a municipalities or on-demand, transit experiences will be consistently safe and accessible. Specifically, the RTSC will prioritize review of paratransit services, whose customers should be afforded the same levels of reliability and spontaneity of travel as those using the conventional transit system.

While draft regional Transit Service Level Guidelines have been developed to help the RTSC plan, implement and review intermunicipal transit services, further work is required to develop guidelines for service local routes within municipalities and paratransit.

Key service delivery initiatives

Table 6 - Service delivery initiatives and target outcomes

Initiative	Description	Target outcomes
2.1 Effectively integrate all aspects of regional and local routes	Perform detailed transit planning and analysis to integrate regional and local routes to reduce time between transfers across the region.	▶ Increase in customer satisfaction ▶ Increase in ridership (customer base) ▶ Brand recognition ▶ Reduced duplication of costs
2.2 Harmonize local Transit Service Level Guidelines (SLG) across municipalities	Align and standardize municipal Transit Service Level Guidelines specific to services that do not cross municipal boundaries to drive consistent customer experience across the region, while remaining flexible to address transit requirements unique to different locales.	
2.3 Right size and deploy the fleet across the transit network	As part of detailed transit planning activities, assess the number, size of fleet vehicles and where they are deployed across the transit network to match vehicle capacity with demand, resulting in more efficient utilization of assets.	
2.4 Use Service Level Guidelines to implement, review and enhance services	Finalize the RTSC Conceptual Transit Services Design and facilitated the adoption of the proposed RTSC Transit Service Level Guidelines through this work. Once guidelines for local services are developed under the Commission, make gradual adjustments over time to bring local service routes into compliance with the guidelines.	

Initiative	Description	Target outcomes
2.5 Partner with organizations and the community to enhance services	Pursue partnerships with post-secondary institutions, employers, community organizations to drive uptake in transit use and improve safety around transit. Foster relationships with all levels of government to increase access to funding and integrate municipal planning with transit planning to improve access to transit.	

Priority #3 future of mobility

The RTSC will strategically commit resources both to delivering current services and preparing to respond to future needs of the organization by researching emerging technologies and trends. This includes the proactive planning of how Edmonton Transit Service's local services will be effectively integrated with the RTSC.

During the RTSC's first few years of operation, the focus will be on establishing a strong information, data and technology discipline that encourages digital and automated processes over manual, ad hoc activities. Smart Fare will be a key initiative that will dramatically advance how data is collected and used to deliver more integrated services. This focus provides the RTSC with flexibility to evolve from its role of providing conventional transit to serving as the region's leader in embracing emerging trends for a wide range of mobility services.

Key initiatives to enable the future of mobility

Table 7 - Future of mobility

Initiative	Description	Target Outcomes
3.1 Use a data driven approach to daily operations and decision making	Implement a strong information management discipline within the RTSC, invest in data analytics and visualization tools, and negotiate agreements to gain access to data collected by third-party systems being used under contract by the RTSC to drive informed decision-making.	▶ Increased customer engagement ▶ Increased customer satisfaction ▶ Flexible mobility options ▶ Number of evidence-based decisions ▶ Reduced risk of human error in processing information and reporting
3.2 Equally invest in serving current and future customers of transit	Use data and insights to balance addressing current operational needs with future customer requirements, as articulated in the RTSC corporate strategy and to keep the Commission agile and relevant in the services it provides to address mobility needs in the region.	
3.3 Develop a flexible business architecture that allows the RTSC to deliver services demanded by customers (e.g. integrated ETS local services, paratransit services, Light Rail Transit (LRT) and others)	Refrain from implementing standards, policies and technologies that restrict the RTSC from efficiently responding to changes in the operating environment or collaborating with third-parties, such as for the integration of local ETS, increase in the service lines to be delivered within the Commission, and ability to pursue P3 partnerships.	
3.4 Prioritize tailored, digital experiences over static "one-size fits all" service	Invest in research and development of technologies that enhance the customer experience for target segments and leverage existing digital assets across municipalities and externally to reduce costs to the RTSC.	
3.5 Use technology to enable implementation of a regional fare strategy	Engage in ongoing Smart Fare contract negotiations to support the initial implementation of a regional fare strategy led by municipal transit agencies during the transition to a RTSC and accelerate this initiative to upgrade the regional fleet with this technology, so the return on investment of an integrated regional fare system can be captured more quickly.	
3.6 Be a partner to emerging trends in mobility rather than a competitor	Commit resources to actively research industry and mobility trends and pursue third party partnerships where there is an opportunity to improve customer service, reduce costs of delivery and increase economic development in the region.	

Priority #4 fiscal responsibility

The RTSC will prove its commitment to delivering quality, equitable services across the region by adhering to both the Transit Service Level Guidelines, and the decision-making structures agreed upon by member municipalities. The Board, comprised of municipal representation and supported as needed with industry expertise, will provide guidance to the organization's leadership team and be accountable for assessing the health of the organization and its people. The Board will act in the best interests of the organization and will only serve in the best interests of the region and the customers served by the RTSC.

Decision-making by the Board, executive leadership, management and employees will be grounded in data. Technology will be used to track assets, procurement, finances and human resources information that will drive core business processes and reporting.

Key Initiatives to promote fiscal responsibility

Table 8 - Fiscal responsibility initiatives and target outcomes

Initiative	Description	Target outcomes
4.1 Improve alignment of asset investment and business need	Regularly assess the asset portfolio, both for rolling stock and fixed assets such as fleet vehicles and bus barns for example and adjust to improve asset utilization over the short and long term.	▶ Increase in financial performance ▶ Increase customer trust in the RTSC brand ▶ Compliance with legislated reporting requirements
4.2 Enable core processes with technology from inception	Invest in technology and infrastructure that can scale up or down according to organizational needs and supports a smooth and cost-effective integration of local ETS with the RTSC.	
4.3 Transparency in how funds are managed and used to the benefit of the region	Adhere to governance processes set out within the bylaws and apply a high level of rigor to reporting functions within the RTSC, disclosing information where appropriate and permitted on where the Commission is committing funds as well as the impact of those investments to provide transparency to stakeholders.	
4.4 Balance municipal interests with industry expertise to guide operations	Implementation of a Board with representation from member municipalities and the establishment of mechanisms to inject industry expertise into the RTSC, such as sub-committee(s) or advisory boards to access specific skills and expertise required for decisions.	

Initiative	Description	Target outcomes
4.5 Investigate provincial and federal funding options	Work with government leaders to understand what funding options are available to a regional commission that otherwise could not be accessed by individual municipalities given their size, scale and relative economic impact.	

Priority #5 people and culture

Simply put, the RTSC is in the service industry – and delivering exceptional service is not easy to achieve without the right people. It is important that regardless of the role or position in the organization, that it be normal to think in terms of how actions will impact customers from both a service quality and safety perspective. Employees will be encouraged to connect with customers, by taking time to experience using transit services themselves to help foster a culture of customer centricity and continuous improvement.

In bringing together a diverse and talented team of transit expertise from across the region and broader, an environment that prioritizes regional collaboration over individual interests will take form. As the organization's most valuable asset, the RTSC will grow and develop a team that will be capable in transitioning current services to the RTSC and beyond.

Key people and culture initiatives

Table 9 - People and culture initiatives and target outcomes

Initiative	Description	Target outcomes
5.1 Invest in the development of internal and external ambassadors of transit	Invest in the design of a regional brand for the Commission that embodies the purpose, vision and mission of the organization, and markets the RTSC's services through campaigns to increase awareness, positive associations with transit, and ridership.	▶ Increase employee satisfaction ▶ Increase employee engagement ▶ Brand recognition ▶ Financial performance that comes with a productive workforce ▶ Decrease in employee turnover
5.2 Build a safety, service-based culture where people embody a regional mindset	Embed a culture of safety and customer-focus into the RTSC starting with commitment expressed by upper management and consider a regional mindset to be a key criterion in selecting candidates to work for the Commission.	

Initiative	Description	Target outcomes
5.3 Bring the right complement of regional and global expertise to the RTSC	Work closely with leadership from municipal transit agencies to identify and transition transit professionals and third-party providers to deliver services under the RTSC, while also utilizing an executive search firm to recruit for new roles required by the Commission, so it is successful in achieving its objectives for the region.	
5.4 Maintain connection with the transit service and regularly interact with customers	Establish a requirement of being employed by the RTSC to participate in a program that provides opportunities to personally use, assess and provide feedback on different services offered by the Commission to promote a continual focus on customer experience and service improvement.	
5.5 Implement diversity and inclusion targets and policies	Develop and enforce policies that facilitate the establishment of a diverse and inclusive organization that represents the strength and diversity of customers served by the Commission and people who live in communities across the region.	

Priority #6 growth and sustainability

The RTSC's transit planners will work collaboratively with the Edmonton Metropolitan Region Board (EMRB), municipal land-use planners, the provincial government and industry partners to influence developments that have greater access to transit, thus reducing people's dependency on private vehicles. A direct by-product will be less traffic congestion, reduced energy consumption and better air quality. By providing a more integrated, multi-modal transit network, the RTSC will improve the lives of people across the region. Residents will have better access to jobs, schools, health services and places of leisure thereby creating a happier, healthier, more productive and connected region as per the RTSC vision. The RTSC will implement a regional route network that removes duplication of routes without compromising service quality and will have a greater ability to deploy fleet efficiently.

Key growth and sustainability initiatives
Table 10 - Growth and sustainability initiatives and target outcomes

Initiative	Description	Target outcomes
6.1 Support the integration of land-use, infrastructure and transit planning regionally	Work with municipalities to develop a process and cadence for collaboration to align significant transit planning activities with municipal land-use plans to facilitate an increase in transit-oriented development and therefore lower infrastructure costs to the region.	► Increase in the number of transit-oriented developments ► Increase ridership between surrounding municipalities ► Number of Public Private Partnerships (P3) ► Reduced greenhouse gas emissions
6.2 Implement streamlined process to bring transit services to new businesses	Establish an efficient business process that allows private businesses to enter into agreements with the RTSC to purchase transit services from the Commission, thereby attracting investment in the region by providing greater access to places of employment around the region.	
6.3 Accelerate growth of region by increasing standard of living through increased connectivity	Measure changes in the level of coverage the regional transit network provides over time in relation to the impact regional transit has on quality of life using various metrics across different customer segments.	
6.4 Reduce duplication of bus services and strategically deploy fleet mix to lower greenhouse gas emissions	Measure changes in the number of kilometers driven by buses before and after the implementation of a regional transit network, considering the type of fleet vehicle deployed across routes to identify opportunities to reduce emissions.	

Priority #7 Safety

A safety focused culture will be championed across RTSC leadership, management, employees and contracts who may deliver services on behalf of the organization. It is paramount to the success of the RTSC that people are trained on safety and security policies and practices, and information is both kept current and relevant to their role. Preventative safety will be prioritized. Open and anonymous mechanisms for customers and employees to report safety risks, concerns and issues will be established as supplement.

Safety and security activities will be led by a dedicated in-house resource who will work with members from operations, communications, human resources and customer experience teams to assess safety on an ongoing basis, respond to incidents and recommend resolutions. They will also work with community organizations to create a safe space for marginalized groups in transit and to implement alternative ways of improving safety and security at transit hubs and other areas of increased incident activity.

Key safety initiatives

Table 11 - Safety initiatives and target outcomes

Initiative	Description	Target outcomes
7.1 Develop a strong safety and security program with role-based training	Embed a culture of safety throughout the RTSC by implementing strong internal safety initiatives and providing role-based training that set the tone for prioritizing safety and security measures for employees, contractors and customers.	► Reduction in the number and severity of incidents ► Decrease in incident response time, claims and litigation costs ► Increase customer satisfaction and ridership
7.2 Empower all employees and contractors to identify and address any safety hazards or concerns	Appoint champions who are responsible for identifying what is required to improve safety and who encourage employees and contractors to report incidents; these individuals lead others in addressing current hazards, recommending training, gathering incident reports, and investigating issues to be addressed.	
7.3 Keep safety top of mind at all levels of the organization by promoting a "safety first" culture	Create a safety-first culture promoting it at every level of the organization for all employees and customers and using performance metrics to emphasize their importance, such as one describing whether an employee is up to date on safety training or to track incidents associated with front line operations.	
7.4 Partner with key stakeholders in the region to gather insights on how to deliver safer services	Develop strong partnerships with community organizations, employers, protective services, and other stakeholders to actively seek input on how to improve safety surrounding transit at transit hubs and in areas of elevated incidents across the region to deliver safer services.	

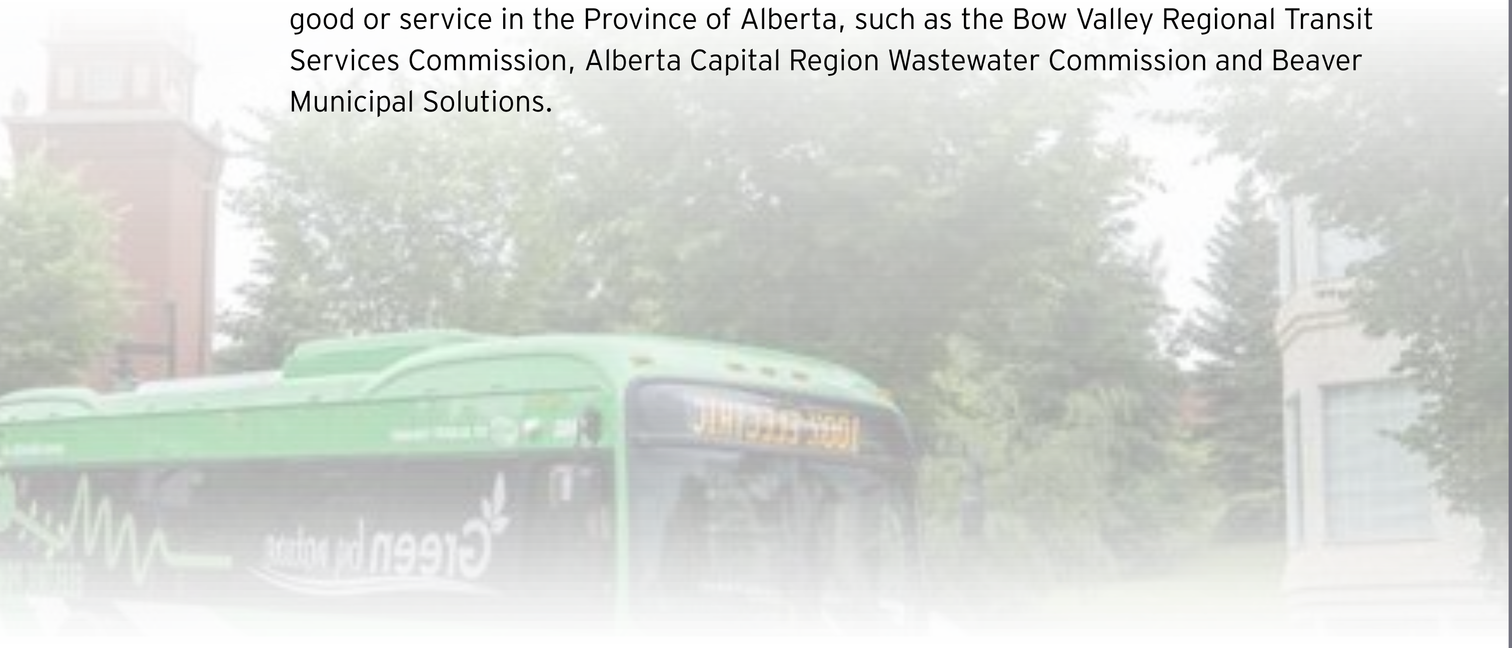
Overview

Effective governance enables an organization to deliver on its strategy and allows it to provide appropriate control and direction of its people, plans and processes. Governance provides the mechanisms by which the organization and its people are held accountable to meeting the organization's mandate and objectives. It includes rules and practices to ensure accountability, fairness and transparency in an organization's relationship with all stakeholders.

Why a commission structure?

As previous reports have noted, given the governance options available to public transit organizations in the Province of Alberta, a commission structure, would be the most appropriate for the RTSC. A commission structure under the *MGA* would result in the RTSC being governed by a board of constituent entities. This structure allows the RTSC to better match transit service to riders' needs without regard to jurisdictional boundaries. It also enables a greater focus on regional transit development, thereby supporting the region's transit objectives and long-term goals. Commissions in Alberta are governed by a board of directors.

A commission structure is aligned with other similar organizations providing a public good or service in the Province of Alberta, such as the Bow Valley Regional Transit Services Commission, Alberta Capital Region Wastewater Commission and Beaver Municipal Solutions.



Preferred structure of RTSC board

The model that was selected for further consideration and refinement for the RTSC is a board of all elected officials appointed by the councils of member municipalities.

This model with a board consisting of elected officials from each of the member municipal councils during the transition and start-up period will:

- Enable the RTSC to meet its objectives;
- Address local municipal concerns; and,
- Meet the *MGA* requirements.

In addition, the following principles for the RTSC governance model for the start-up / transition period would include:

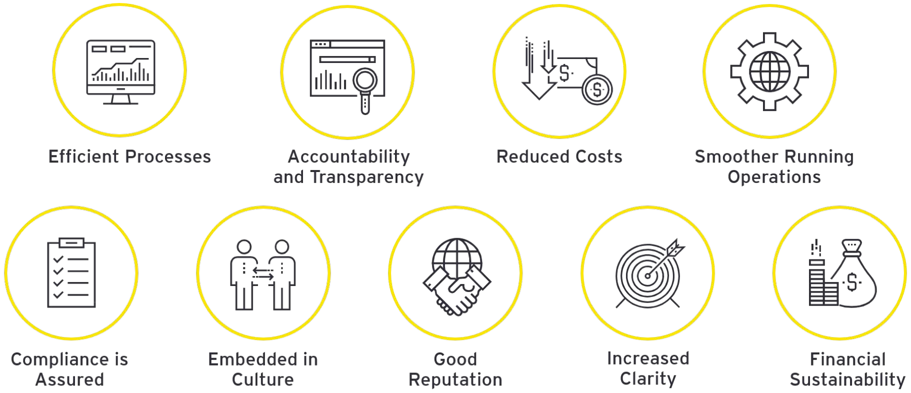
- Mechanism(s) to inject non-elected, skills-based resources into the RTSC governance structure; and,
- Be subject to an independent review of the RTSC governance model to be conducted 24 months from inception for the purposes of examining appropriate board size, composition, effectiveness and efficiency bring forward recommendations to enhance RTSC governance.

Benefits of good governance for the RTSC

The governance structure will outline how the RTSC makes decisions and delivers services on behalf of the region, while also maintaining balance across the member municipalities, stakeholders and other decision-making bodies. It will provide a framework for how the RTSC engages stakeholders and member municipalities, laying out the interfaces for engagement and the process for providing feedback and input on moving the RTSC forward.

Good governance is a key enabler in the RTSC achieving its strategic objectives and supports it in functioning effectively, as summarized in the following figure.

Figure 14 - Results of good governance



A clearly defined governance framework will enable:

- **Equitable representation:** Municipalities will feel they have a voice at the table and that decisions consider the best interests of the group. Good governance helps to manage any perceived conflict that may arise from balancing local municipal interests with broader regional objectives.
- **Clear accountabilities, roles and responsibilities:** Clarity surrounding decision-making will create equity across stakeholders and foster a culture of accountability. Good governance can isolate challenges and problems to reduce impacts to all stakeholders.
- **Achieving objectives:** The organization will regularly set performance objectives that are public, clearly defined, and meaningful to member municipalities and customers. Success in meeting these objectives will be measured and metrics will be established to drive behaviour and align with the purpose, vision, and mission of the organization.
- **Efficient processes and procedures:** A framework will result in consistency across different divisions and functions. Repeatability and consistency highlights errors in processes and opportunities to eliminate waste.
- **Culture of excellence:** Leadership's behaviour and standards set the tone and expectations for the behaviour of the workforce, as it permeates through the organization. Good governance at all levels embeds a culture of excellence across the organization.

A strong governance model will address one of the key concerns that usually accompanies moving to a regional organization, which is compensating for the perceived loss of local control when focusing on regional objectives. Building trust will be key to the development of a governance model for the RTSC as well as in overcoming any lack of trust among stakeholders due to any challenges in the past. Smaller municipalities need to trust that the three larger municipalities will not make decisions that only prioritize transit investment into more urban areas with existing service; conversely, the larger municipalities need to trust that the smaller municipalities will not block efforts to enhance transit service in communities with high ridership demand.

A clear governance model embeds a culture of accountability and clearly identifies responsibilities and should clearly delineate local and regional roles. This helps to address the real or perceived loss of control by local municipalities. For instance, if a passenger is dissatisfied with the services provided by the RTSC, local elected officials may be viewed as the party responsible according to the citizen, even if that responsibility has been transferred to the regional commission. The governance structure outlined for the RTSC below should help to avoid this confusion.

Governance model options

In developing the governance model options that would enable the RTSC to deliver regional services, the following principles of good governance were applied:

- **Legitimacy and voice:** All parties have a voice in decision-making with the aim to reach broad consensus on what is *in the best interests of the group*, and where possible on policies and procedures.
- **Performance:** All parties have a *broad* and *long-term strategic perspective*.
- **Direction:** Organizations try to *serve all stakeholders* and produce results that *meet the needs of the region's municipalities* and *make the best use of collective resources*.
- **Accountability:** *Accessible to all* stakeholders and information provided allows stakeholders to *understand and monitor* the organization.
- **Fairness:** Stakeholders have opportunities to maintain or improve and the decisions are made in the best interest of the group as *frameworks are impartial* and enforced.

In alignment with the *MGA*, there are several options that were considered for the board composition of the RTSC. Each model has associated benefits and challenges and is outlined below:

Table 12 - Potential board structures

Elected officials	Skills based	Hybrid
▶ Elected members of councils appointed by members of the commission	▶ Non-elected representatives appointed or nominated by members of the commission. These representatives have skills in areas related to public transportation, legal, human resources, finance, etc.	▶ A combination of elected officials and skills-based members.
Benefits		
▶ Local municipal interests represented at RTSC table ▶ Elected officials have stewardship over RTSC resources ▶ RTSC is accountable to public through elected officials serving as directors	▶ RTSC oversight and direction is provided by directors with a diverse set of skills ▶ Directors less burdened by representing local interests and potentially freer to focus on fiduciary duty to RTSC	▶ Member municipalities have representation ▶ Elected officials have stewardship over RTSC resources ▶ Any gaps in skills or experiences amongst elected official directors are filled by industry / public representatives

Elected officials	Skills based	Hybrid
Challenges		
► May require additional skills to effectively provision regional transportation ► Tension between making decisions in the best interest of the RTSC, not necessarily individual municipalities ► May require voting structure in place to consider financial and ridership representation	► Individual municipalities may feel local interests not represented ► Public perception that non-elected officials overseeing the RTSC is less transparent ► Organizations may appear to be less accountable to transit riders and tax payers ► Tension between local elected bodies and RTSC Board	► May be too large a board to effectively make decisions ► Addition of skills-based directors may mean fewer municipalities have a representative on the board ► Possible tensions due to different perceived mandates and responsibilities between elected officials and industry representatives

To mitigate challenges associated with the models, there are tools available to boards to support them in their decision-making and achieving the objectives of the RTSC, including:

- The use of sub-committee(s) and / or advisory boards to access specific skills and expertise as required. Representatives may provide knowledge on several different perspectives including: finance, human resources, legal, regional public transit, etc.
- The addition of non-voting members on the board to augment the board with representation from advocacy groups, industry, public, etc.
- Establishing an appropriately sized board to match the organization's size and complexity

Comparator models

In addition to the peer review outlined in *Section 4: Current State and Future Opportunities*, the Transition Team heard from an industry panel focused on addressing key governance considerations, challenges and opportunities for standing up a regional transit body. The panel included Denver's Regional Transportation District (RTD), the Montreal Regional Metropolitan Transportation Authority (ARTM), and the King County Metro from King County in Washington which includes the City of Seattle.

Figure 15 - Comparable regional transit agency governance and organizational design

Regional Transportation District Denver

- 3 elected boards for transit in the area
- Originally 25 appointed officials
- Current structure is a 15 member elected board with regional representation
- Only non-appointed transit board in the US
- Elected board drives equity in the region
- District collaboration on decision making
- Strong leadership enables a unified perspective and advocacy for change

Montreal Regional Metropolitan Transportation Authority

- Mixed board of 10 appointed experts from the province, by council and municipal elected officials
- The metropolitan governance structure includes 3 levels:
  - Political level: Montreal Metropolitan Community elected official responsible for setting orientations
  - Strategic level: Regional authority, mixed board of directors (independent experts and elected officials), responsible for planning, financing and contracting public transportation facilities and services
  - Operational level: Project and service delivery broken out into 5 key areas

King County Metro Seattle Region

- Governed by the 9 person elected King County Council with recommendations from the Regional Transit Committee and a nonpartisan Executive group
- The Regional Transit Committee is a federated body comprised of members from King County Council, Seattle City Council and regional cities
- The Executive is a nonpartisan group that is elected every 4 years
- Committee is used as a deliberate attempt to balance small cities and give them near equal power

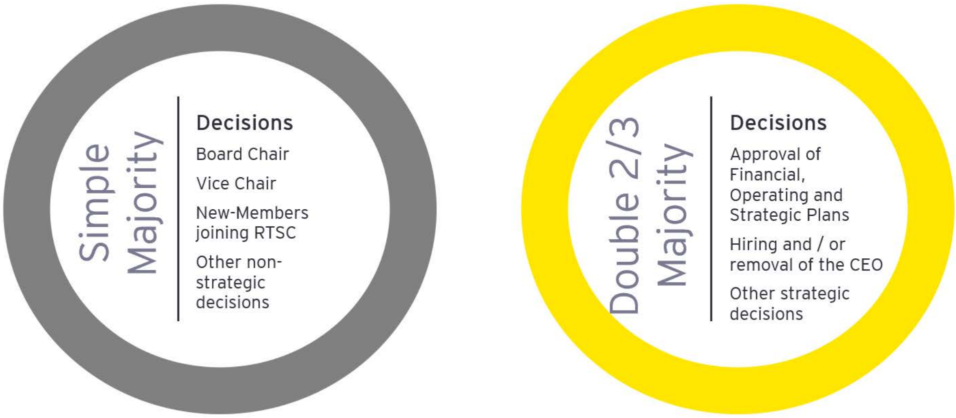
Bylaws

To apply to form a Commission within the Province of Alberta, the application needs to contain Bylaws addressing how the board of the organization will operate on day one. These bylaws will need to be developed and finalized following the vote by municipalities and will form part of the application that is submitted to the Government of Alberta.

A key component of the Bylaws for the RTSC is the determination of how the Board will make decisions. Given the challenges that comes with establishing a board with directors appointed by each of the member municipalities and the differences in the current amount of public transit provided, it was determined that a straight simple majority for all board decisions would not meet the needs of member municipalities.

The voting structure for the RTSC was workshopped with the Transition Team. Based on feedback from the Transition Team, the voting structure for key board decisions will be outlined in the bylaws and summarized below.

Figure 16 - Voting structure for key board decisions


Simple Majority
Decisions
Board Chair
Vice Chair
New-Members joining RTSC
Other non-strategic decisions
Double 2/3 Majority
Decisions
Approval of Financial, Operating and Strategic Plans
Hiring and / or removal of the CEO
Other strategic decisions

For the more strategic, directional board decisions, the Transition Team has indicated that a double 2/3 majority is preferable. For decisions to be approved, the affirmative vote of 2/3 of member municipalities and 2/3 weighted cost factor is required. The weighted cost factor is assigned to each municipality based on their municipal requisition noted in *Section 10: Financial Model*. The sample voting structure by member municipality is noted on the following table:

Table 13 - Voting structure

Member	Cost allocation*	Member vote
City of Edmonton	41.9%	1
Strathcona County	26.0%	1
City of St. Albert	19.1%	1
City of Spruce Grove	3.5%	1
Parkland County	1.2%	1
City of Leduc	2.1%	1
City of Fort Saskatchewan	2.4%	1
Sturgeon County	0.3%	1
City of Beaumont	0.6%	1
Town of Stony Plain	1.1%	1
Leduc County	1.2%	1
Town of Morinville	0.3%	1
Town of Devon	0.2%	1

** Numbers may not tally to 100% due to rounding*

Other considerations

The Transition Team determined that an interim governance structure and voting system for the initial the start-up years should be included in the bylaws for the application and be reviewed by an independent third party two years after inception. This mandated review would look at the Board's effectiveness, size, composition and skills mix, and recommend alignment with leading practices given the size and scope of the RTSC as an organization. As the organization matures, there are several iterations that the Board may wish to consider:

- As members become more comfortable with the services provided to their municipality by the RTSC, they may choose to manage the contracted services instead of having a seat at the board table;
- Members may choose to reduce the size of the RTSC board to more accurately reflect the size of the RTSC organization and may consider having a single representative for multiple municipalities; and,
- Members may choose to more formally engage industry representation by moving away from a board of elected officials to a skills-based board that would include non-elected directors with specific skills and experience that would best support a regional transit commission.

The options noted above would require a change to the RTSC bylaws which would require the approval of the Minister of Municipal Affairs. The changes noted above would not require change to the *MGA*; however, should the Board wish to go to an all non-elected officials board, then there would be implications based on the *MGA*.

Agreements

It was also noted by Transition Team members that agreements on how decisions are made regarding asset transfers between member municipalities and the RTSC may need to be developed during the initial transition in the years prior to the full ETS local service upload to account for variations in asset transfer values by member municipalities. This would account for the range of assets being transferred that may not be reflected in the cost allocation model, which is driving the voting structure for strategic decisions by the RTSC Board. Asset transfers are anticipated at start-up when all member municipalities, except for Edmonton, transfer their assets to the RTSC and subsequently when Edmonton transfers assets. As such, it is likely best that this arrangement is managed in a complementary agreement instead of embedded into the bylaws.

Policies

It should be noted that the Bylaws do not cover in the entirety, all the requirements of the RTSC. The RTSC will need to create policies and procedures that outline how the organization will operate. The creation of these policies will begin early in the formation phase of the RTSC and policies should be reviewed on a regular basis thereafter.

Mayors from municipalities in the Edmonton Metropolitan Region signing of the MOU in October 2018

Overview

The RTSC operating model has been designed to help RTSC leadership organize and resource the Commission to deliver services effectively and efficiently over time.

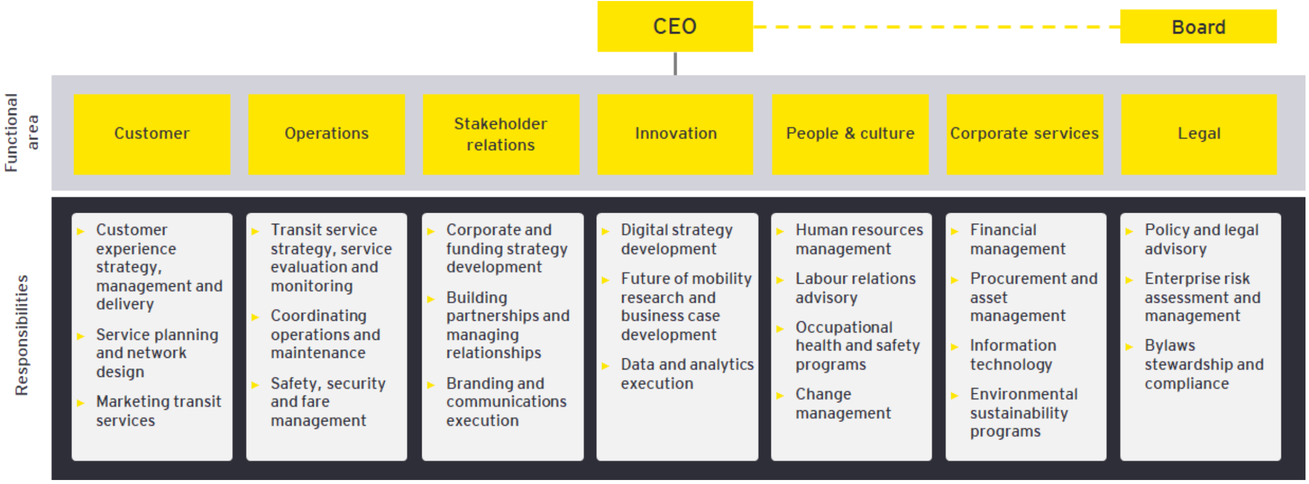
The model envisioned by the Transition Team is structured around key capabilities required by a forward-thinking transit organization, such as enhanced customer experience, effective transit service planning and delivery, partnering abilities, a culture of safety, and creating innovation capacity, among others. Given that the organization as envisioned is expected to have only a few service lines (e.g. regional and local service) in its early stages, this approach will enable it to remain as nimble as possible. As the RTSC matures and additional services are added (e.g. paratransit, ETS local services, first mile/last mile services, etc.), it will be important to re-evaluate whether a more service-based approach is appropriate.

This section describes the capabilities that will be required at start-up and the expected contribution to the RTSC's ability to deliver on its strategy.

Key executive portfolios

The RTSC organization will be structured around seven functional areas, each representing a different portfolio of responsibility for future RTSC executive team members. The key responsibilities for each portfolio are summarized in the diagram below.

Figure 17 – Proposed RTSC functional areas



	Customer	Operations	Stakeholder relations	Innovation	People & culture	Corporate services	Legal
Responsibilities	Customer experience strategy, management and delivery Service planning and network design Marketing transit services	Transit service strategy, service evaluation and monitoring Coordinating operations and maintenance Safety, security and fare management	Corporate and funding strategy development Building partnerships and managing relationships Branding and communications execution	Digital strategy development Future of mobility research and business case development Data and analytics execution	Human resources management Labour relations advisory Occupational health and safety programs Change management	Financial management Procurement and asset management Information technology Environmental sustainability programs	Policy and legal advisory Enterprise risk assessment and management Bylaws stewardship and compliance

To minimize the potential for silos, care was given to assign responsibilities in manner that promotes collaboration. For example, the responsibility for service planning and network design has been assigned to the customer portfolio instead of the operations portfolio. This approach to assigning responsibilities should encourage RTSC leadership and employees to work as a cohesive team and remain connected to the overall strategy and direction for the organization.

The **value and linkages between functional areas** have been described in further detail below.

The **customer** functional area:

- Focuses on delivering customer-centric services from strategy, through to planning and delivery of services in the field, which is fundamental to the RTSC strategy
- Is closely tied to operations, particularly at the strategic level with the development of a customer and transit service strategy as well as in stewarding the service level guidelines
- Includes field customer service support as a contracted-out capability because it is the most common and cost-effective approach to creating temporary surge capacity to customer service when transit services noticeably change for customers, such as during the initial roll-out of the regional transit route network

The **operations** functional area:

- Enables the day-to-day delivery of transit services, involving the strategy, planning, coordination and support of transit operations delivery which includes bus driving, dispatching, maintenance, and inspection
- Includes transit strategy, planning and coordination capabilities to be delivered "in-house" by RTSC employees, unlike front-line operations and maintenance delivery activities that will be contracted out
- Allows for a more smooth, cost-effective transition to delivery under a Commission and reduces the effort required to integrate ETS local services in the future, given how municipalities operate today

The **stakeholder relations** functional area:

- Involves building relationships and partnerships with municipalities, the provincial and federal government, businesses, and community organizations to help the Commission remain relevant to the region and customers it serves
- Drives the development of a corporate strategy that neither favors customer nor operations priorities over one another and is stakeholder focused, as opposed to being "lost" to a back-office corporate function
- Leads the creation of the RTSC brand and compelling messaging around transit services that resonates with current and future customers and beneficiaries of transit services

The **innovation** functional area:

- Sharpens the RTSC's digital acumen by examining how the Commission does business to create value, uses new technologies to improve customer service, and implements processes that allow the organization to be agile
- Emphasizes the important investment the RTSC will make in data and analytics from the beginning, which is instrumental to the Commission's success in delivering efficient, customer-centric services
- Provides the organization with capacity to research and explore future of mobility technologies and trends that could otherwise negatively disrupt the RTSC's operations had they not been proactively identified

The **people and culture** functional area:

- Positions human resources as a strategic business partner that goes beyond providing transactional support to management and employees to promote a high performing, customer-focused culture
- Attracts top talent from municipal transit agencies in the region and broader to mobilize a workforce that has deep knowledge, expertise and commitment to the success of regional transit services
- Advises leadership and the board on how to reinforce the desired culture for the Commission and handles topics of importance during the transition, such as unions, hiring and in assessing the "health" of the organization from a people perspective

The **corporate services** functional area:

- Enables other functional areas to deliver services most efficiently by providing insights on financial performance across the organization, support to operations in procurement activities, guidance across the asset management cycle, and expertise needed for effective program and project management
- Serves as a strategic advisor to all functional areas of the RTSC in the establishment of a strong information management discipline and implementation of new enterprise technologies that result in high availability and quality of data
- Leads environment and sustainability programs both through transit service operations and at a corporate level to increase attractiveness of RTSC services to key customer segments, drive long term savings, and increase access to related grants

The **legal** functional area:

- Advises RTSC leadership and functional areas on how to navigate the complexity of Commission, transit and municipal bylaws to minimize the probability and severity of risk events impacting the delivery of transit services in the region
- Reviews RTSC policies to manage legal exposure and supports negotiations of key contracts to facilitate a smooth transition to regional service delivery
- Stewards RTSC bylaws and monitors governance processes for compliance to ensure member municipalities are treated equitably and appropriately

The above seven functional areas position the RTSC to deliver on the strategy and are enabled by a specific set of underlying capabilities the Commission will require to operate, which have been developed based on a set of design principles described in *Appendix E: Operating model design principles*.

Building a customer-centric operation

A key value proposition for the RTSC is its ability to improve upon the experience of transit users across the region relative to the status quo. It will be critical for the RTSC to tightly integrate work surrounding customer and transit services strategy development, as well as the standards that customers of transit will expect from the Commission. The tables that follow describe critical focus areas for the RTSC organization in this regard, including how they are anticipated to operate, and the value expected to be derived from investing in these areas.

The capabilities that transcend two functional areas, customer and operations, are described below. It will be critical for the RTSC to tightly integrate work surrounding customer and transit services strategy development, as well as the standards customers of transit will expect services to be delivered according to.

Customer capabilities: These capabilities emphasize the investment and consequent value derived from the RTSC delivering with a focus on customer satisfaction.

Table 14 - Customer focus areas

Focus area	How it will work	Value to the region
Customer and transit service strategy *Developing the strategy and approach to delivering transit services, including how to attract and retain customers*	▶ Developed by RTSC leadership and guides all RTSC service delivery activities ▶ Input gathered from transit and land-use planners	The RTSC strategy will help drive an increase in the number of customers of transit, while facilitating a cost savings through the more efficient deployment of resources to operations.
Service level guidelines stewardship *Developing and maintaining transit service standards and guidelines for effective transit planning and implementation*	▶ Unifies guidelines for local and paratransit services that are created prior to regional services roll-out ▶ Progressively developed with input from transit planners, leadership and citizens	Transit service guidelines provide an appropriately standardized level of services across the region to facilitate better connectivity and customer experience.
Transit master planning *Managing the development of the Transit Master Plan in alignment with the organizational strategy and objectives*	▶ Plan development using input collected from many stakeholders, internal and external, over ~12 months ▶ Strategic planning process that occurs every 5-10 years, beginning in year 1	Development of a unified regional transit master plan (instead of multiple) will lead to greater influence over transit-oriented development, resulting in reduced infrastructure costs across the region.
Service planning and network design *Designing regional transit network, routes and services based on the transit master plan, service level guidelines and ridership data*	▶ RTSC transit resources develop new services and routes within the Transit Service Level Guidelines ▶ Public engagement occurs to gather input on certain proposed service changes	A network designed to serve the region is more efficient and integrated because services are less likely to be impeded or "interrupted" by required transfers nor are they arbitrarily changed just by way of crossing of municipal boundaries.

Focus area	How it will work	Value to the region
Customer service management *Designing and reacting to customer interactions to result in higher customer satisfaction, loyalty and advocacy*	▶ Lead research and analysis of customer segments or 'personas' to address their path points ▶ Recommend new and better ways of delivering services to customers	The RTSC is more equipped to respond to changes in customer preferences and mobility trends by committing resources to executing on its customer-centric strategy
Customer service delivery management *Providing daily customer service support to inquiries and complaints, by responding to emails, calls, and social media; also involves field work*	▶ Provided by customer service representatives with deep knowledge of regional services ▶ Serve as the first line of support to customers of transit, escalating issues to management if required	Customer service can be delivered in a more streamlined and cost-effective manner using a single call center team who will be equipped with knowledge of RTSC services to provide high quality support to all areas of the region.
Marketing *Developing campaigns and executing marketing activities to enhance the relationship between the Commission and its customers*	▶ Use customer experience insights to develop marketing campaigns that promote transit services ▶ Leverage customer service reps to perpetuate the brand and sell transit	The RTSC will have a brand with regional reach, which will increase the return on investment for marketing expenditures and competitiveness of transit services.
Field customer service support *Providing daily customer service support during the first year and a half of service roll-out*	▶ Provide in-person customer service support to transit riders at key locations and transit hubs ▶ Are deployed during periods of more significant change to services	In-person, field customer service resources provide high-touch customer service support while serving as ambassadors of the RTSC brand, which goes beyond what can be offered by smaller agencies today.

Operations capabilities: These capabilities are core to the RTSC's ability to deliver transit services and address specific regional and transitional requirements specified by the Transition Team.

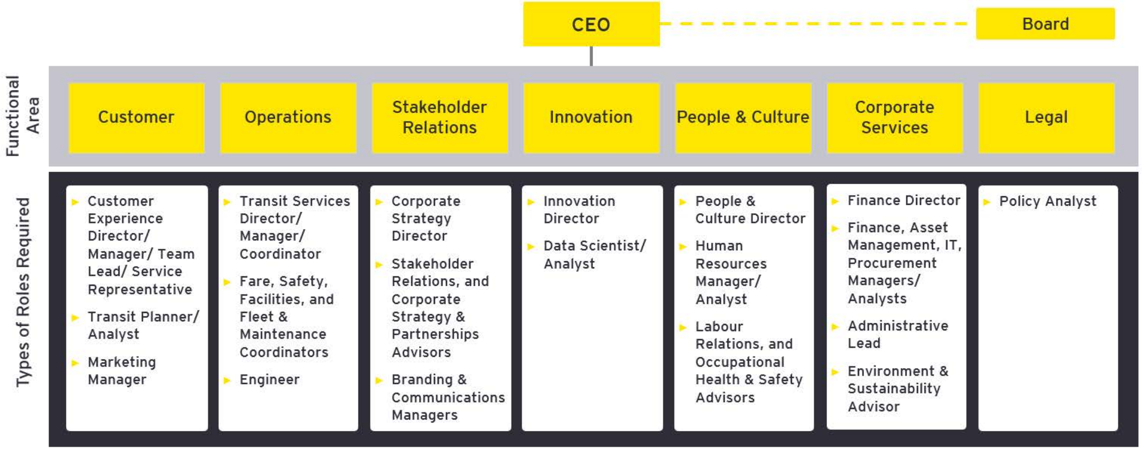
Table 15 - Operations focus areas

Focus area	How it will work	Value to the region
Operations and maintenance coordination *Coordinating operations and maintenance amongst multiple providers in accordance with service agreements*	▶ Coordinate contracted delivery of operations, including bus operators, fleet inspection and maintenance, collision investigation, and facilities management	Centralized coordination of transit operations and maintenance under a RTSC will increase how quickly fleet vehicles can be deployed and maintenance schedules can be standardized to improve service reliability.
Operations and maintenance delivery *Operating fleet vehicles, inspecting and maintaining the fleet, investigating collisions, and managing facilities*	▶ Bus operators, dispatchers, fuelers, mechanics, inspectors, collision investigators, cleaners and facility managers deliver day-to-day services and reports to coordinators	The RTSC will deliver a more efficient, cost-effective service by contracting operations and maintenance until ETS local services can also be assumed by the Commission.
Safety and security *Managing customer and employee safety associated with transit operations, including the planning and use of security measures*	▶ Develop strategies and practices for managing physical safety ▶ Investigate, address and prevent safety incidents across the region	A RTSC would have greater access to safety resources, programs and monitoring (e.g. CCTV on buses) to provide customers with a safer transit experience.
Fare and revenue management *Setting fares, distributing fare information, centralized fare processing, management and control of fare revenue*	▶ Manage implementation of the fare strategy, working closely with branding, data and analytics ▶ Provide cash management oversight and spot check fare collection	Centralized management of fare programs and fare system integration will reduce barriers to mobility in the region and make transit more attractive to customers.
Fleet engineering and technical support *Providing technical expertise over transit asset requirements and support reliability of daily operations*	▶ Engineers advise on fleet purchases and provide expertise to prevent breakdowns and failures ▶ Maintain and equip the fleet with technologies	Compared to smaller transit agencies, the RTSC will have greater access to fleet engineering and technical support, which increases reliability of the fleet and reduces operating costs.

Resourcing the RTSC

Put simply, people are needed to deliver on capabilities required by the RTSC. Based on the RTSC strategic priorities and activities outlined by the implementation plan, the Commission's workforce will gradually grow from about 30 to 50 Full Time Equivalents (FTE) over the period 2021-2025, excluding operations and maintenance staff. The types of roles that RTSC leadership may choose to hire at various levels to establish the its workforce are described in the diagram below.

Figure 18 - Types of roles required by the RTSC



Functional Area	Customer	Operations	Stakeholder Relations	Innovation	People & Culture	Corporate Services	Legal
Types of Roles Required	► Customer Experience Director/ Manager/ Team Lead/ Service Representative ► Transit Planner/ Analyst ► Marketing Manager	► Transit Services Director/ Manager/ Coordinator ► Fare, Safety, Facilities, and Fleet & Maintenance Coordinators ► Engineer	► Corporate Strategy Director ► Stakeholder Relations, and Corporate Strategy & Partnerships Advisors ► Branding & Communications Managers	► Innovation Director ► Data Scientist/ Analyst	► People & Culture Director ► Human Resources Manager/ Analyst ► Labour Relations, and Occupational Health & Safety Advisors	► Finance Director ► Finance, Asset Management, IT, Procurement Managers/ Analysts ► Administrative Lead ► Environment & Sustainability Advisor	► Policy Analyst

At the outset of the RTSC, certain roles are expected to be sourced externally, either from member municipalities or other third parties, to enable a smooth transition to the RTSC. Roles that are expected to be sourced externally include operations and maintenance delivery resources, such as bus dispatchers, operators, fuelers, cleaners, field inspectors and mechanics who perform regular maintenance for example. Other contracted roles may include information technologists, program managers and lawyers.

As previously mentioned, over a five-year period from initial stand up it is estimated the RTSC will require approximately 30 to 50 FTEs. Approximately 55% of these roles could be filled by transferring existing municipal transit resources to the RTSC, resulting in zero net new costs for these roles. The remaining roles, including the executive leadership team and certain strategic or specialized roles, represent new skills to the region and their associated incremental costs have been accounted for in the financial model.

The operating model defined by the Transition Team provides a roadmap to the future RTSC leadership of the skills and capabilities that need to be developed over time as well as the level of investment required. It will be the specific responsibility of future RTSC leadership to both confirm an organization structure that positions the Commission to deliver on its strategy and to identify suitable current municipal transit employees and external candidates needed to fill the roles to bring the right combination of regional expertise and new skills to the RTSC.

8 RTSC TRANSIT SERVICE DELIVERY

Overview

The RTSC's core function will be to deliver a more seamless, integrated transit network for customers across the region. As previously discussed, seven municipal transit agencies currently serve different areas of the region today with limited integration between the systems. Population growth, the blurring of municipal boundaries, and a growing demand for more intermunicipal travel will require public transit to be planned at a regional level to be fully effective at enabling this growth[9].

This section describes how a regional transit service network can be delivered under a RTSC in comparison to how transit services are delivered today by separate municipal transit agencies. Specifically, it includes:

- An overview of current regional travel patters from a customer perspective;
- Proposed transit service level guidelines that describe how regional services would be planned and continuously improved under a RTSC;
- A conceptual transit services design illustrating how regional services could be delivered under a RTSC; and,
- Transit modelling insights on what additional resources the RTSC will require to operate future levels of service based on the conceptual transit service map, as compared to existing levels of service.

Together, these describe the proposed service delivery in the region during the first five years of operations and inform both the financial model, as well as the overall business case evaluation. As noted previously, the initial transition to the RTSC includes an upload of regional and local services, except for ETS local services and paratransit services which will occur as a secondary phase of upload.

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[9] Mass Transit Backgrounder: Edmonton's Transit System in Context. (2019). [PDF file]. Retrieved from https://www.edmonton.ca/city_government/documents/PDF/Edmonton_Mass_Transit_Backgrounder.pdf

How do customers currently move around the region?

The conceptual design was developed with strong recognition that it needed to address how people currently move around the region. In addition to municipal stakeholder consultations, analysis of the overall travel demand in the region was conducted using data collected from the Edmonton and Region Household Travel Survey (HTS)[10]. The findings of this analysis provided validation that regional transit customers' needs are not being adequately served by the current disparate transit systems.

The 2015 HTS results revealed a low transit mode share of only 2.1% in the region, with a rapidly increasing use of individual vehicles. As previously mentioned, the number of daily transit trips has increased by almost 9,000 since 2005, while the number of car trips has increased by about 236,000 across the region[11]. Reconfiguring services to respond to regional demand will be critical to building a sustainable transportation system and enabling municipalities to achieve the target outcomes outlined in the RTSC Strategic Plan.

More detailed evaluation of the HTS survey results identified and quantified regional transit customer needs and provided additional insight as to why their needs are not being satisfied across the current system.

Table 16 - HTS takeaways informing the RTSC conceptual transit services design

Survey findings	Key takeaways informing the RTSC conceptual transit services design
A long average distance for regional transit trips exists *A principal finding is the increasingly long average distance of regional transit trips, which has grown from 14.1 km in 2005 to 21.5 km in 2015, representing an increase of 69%.*[12]	► Given the average travel speed of transit, these trips would represent up to a one-hour transit commute. ► Over these longer distance trips, competing effectively with single occupancy vehicles requires dedicated attention to the unique demands of regional commuters.

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[10] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx.

[11] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

[12] Edmonton and Region Household Travel Survey. (2015). 40. Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

Survey findings	Key takeaways informing the RTSC conceptual transit services design
Current transit service is mainly for work purposes *The current system is focused on travel in and out of the Edmonton Downtown and University.*	► While this is the primary market for transit, it is critical that the service be able to provide for a range of trip purposes. ► By providing a regional network that can service major activity centres, such as hospitals, shopping centres, recreation centres, major employment areas or other locations of regional significance, residents across the region can use public transit to meet their daily travel needs.
Post-secondary students are the largest market in terms of transit mode share *Post-secondary students in the region report 32% of trips using public transit, which is by far the largest market in terms of transit mode share.*[13]	► It will be critical to build and maintain the core transit markets that will enable a successful public transit system across the region. ► A regional service would allow post-secondary students from across the region to access the value of the U-Pass system that is currently in place. ► With the RTSC, understanding the travel needs and patterns of post-secondary students to effectively serve the region will be critical. ► For communities that do not have public transit, providing service allows residents who are attending a post-secondary institution to remain in their home community and be provided with access to an affordable transportation option to attend school. ► Generally, communities that currently offer intermunicipal transit services offer a limited service, which is not well suited for students who often need evening and weekend service in addition to service outside of peak hours. ► Given the increasingly unstructured nature of part time employment and schooling, it is important to provide a longer service span to attract and retain transit customers.
Downtown commuters are the second largest market in terms of mode share	► Downtown commuters highly value rapid and reliable services that are provided at a competitive cost to parking. ► Therefore, a regional service needs to provide a comfortable and compelling travel option for this key market segment. ► While these commuters typically travel during the peak, they also receive benefits from off-peak services that are offered

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[13] Edmonton and Region Household Travel Survey. (2015). 36. Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

Survey findings	Key takeaways informing the RTSC conceptual transit services design
The total transit trips from Outer areas to the Central area have a mode share of 28% and represent the total largest number of transit trips.[14]	because they allow these customers to respond to flexible trip needs. ▶ For example, if a commuter is not able to travel home during the day when there is no service offered, the fear of not being able to respond to specific needs may deter that person from switching to transit.
The employment base of Edmonton is relatively dispersed, where a large percentage of places of employment exist outside of Central Edmonton and in industrial areas	▶ Serving customers who need to travel outside of Central Edmonton and in industrial areas is typically one of the more challenging types of trips to service with public transit given the multiple jurisdictional boundaries that are crossed in the provision of service, which makes them expensive to serve. ▶ Current services in many regional industrial areas is very inconsistent and not well utilized. ▶ A Commission could provide a structured approach to regional employment areas, such as industrial parks in Leduc and Parkland County. ▶ These services could be provided in a cost-effective manner and ultimately would support the competitiveness of the Edmonton Metropolitan Region as a whole.

In summary, these above five key findings and respective insights were used to inform the RTSC conceptual transit services design, including proposed service types and their suggested routing.

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[14] Edmonton and Region Household Travel Survey. (2015). 40. Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

Proposed RTSC transit service level guidelines

The RTSC Transit Service Level Guidelines will serve as a powerful tool to support future decision-makers within the Commission in creating, evaluating, and improving the regional transit network. These guidelines describe how regional transit services could be delivered under the RTSC and were used to design and validate the conceptual transit service design. While the guidelines provide direction on where transit should be implemented and what level of service should be offered, they should not be construed as indisputable rules. Instead, combined with sound policy and effective board governance, the guidelines create alignment between the services provided for the benefit of regional customers and the collective direction provided by member municipalities. The complete RTSC Transit Service Level Guidelines document can be found in *Appendix P: Proposed RTSC Transit Service Level Guidelines*.

These guidelines support day-to-day operations of the Commission by:

- Creating a common language to ease conversation between stakeholders;
- Providing tools to support the creation, evaluation and continuous improvement of a transit network;
- Establishing the benchmarks for service targets and defining how a successful transit service can meet those targets;
- Offering transparency and clarity to a process that could otherwise be complex, such as when adjusting current transit service;
- Allowing transit administrators to focus their efforts on proactive development and implementation of transit services; and,
- Facilitating equity throughout the region by providing clear direction on how to develop a transit network.

Ultimately, service level guidelines enable a process of continual improvement where services are regularly measured and evaluated to capitalize on improvement opportunities, thereby building trust from the region in the Commission's ability to deliver services. Details on how the guidelines can enable a process of continuous improvement can be found in *Appendix F: Process for the continuous improvement of transit services*.

Guidelines overview

Within the RTSC Transit Service Level Guidelines document, service types and service metrics define the target proposed level of service that could be delivered by the Commission. While the Guidelines also describe target service levels for additional service types, such as for customized and local services, the three service types outlined below were the focus of the RTSC conceptual transit services design.

Table 17 - Proposed target levels of service under the RTSC according to the guidelines

	Service type				
Service metric	Rapid Transit (RE)	Regional Express (RE)		Major Trip Attractions (MTA)	
Frequency (in minutes)	15 or less	15 - 30	30 - 60	15 - 30	30 - 60
Service span	All Day + Evening / Weekend	Peak	All Day + Evening / Weekend	Depends on shift schedule or business hours	
Directness	High	High		Moderate - High	Low - Moderate
Land-use density	High	High / Major Transit Hub		Low / Major Transit Hub	
Ridership (daily)	High	Moderate - High	Low - Moderate	Moderate	Low - Moderate
Vehicle load	High	Moderate - High	Low	Moderate	Low - Moderate
Boarding per revenue Hour (of the route)	High	Moderate - High	Low - Moderate	Moderate	Low - Moderate
Recovery ratio	High	Moderate		Moderate	
Priority	High	Moderate		Low	

Further details on the service types and metrics are outlined below, as well as in the RTSC Transit Service Level Guidelines in *Appendix P: Proposed RTSC Transit Service Level Guidelines.*

Service types

The RTSC Transit Service Level Guidelines define three types of regional services, which inform the conceptual transit service design described later on in this section.

1. **Rapid Transit (RT):** These routes serve as the backbone of a regional transit network and can be thought of as a "premium bus" or Bus Rapid Transit (BRT) "light." They provide transit service between high density hubs where high travel demand exists as well as offer both a rapid and frequent service along their corridor using high capacity vehicles such as double decker and articulated buses. Over the long term, these routes could see additional capital investments to support high priority transit, such as exclusive or semi-exclusive rights-of-way, transit signal priority, increased station and waiting area infrastructure, prepaid boarding, and other BRT related improvements.

   In the context of the broader Edmonton Metropolitan Region, the RT services contemplated will be delivered with buses, including higher capacity double decker and articulated vehicles. Within the boundaries of the City of Edmonton, RT services are delivered by Light Rail Transit (LRT). For clarity, LRT service is not in scope as part of the initial implementation of this RTSC conceptual transit services design. Instead, that service would be brought under the Commission at a later phase.

2. **Regional Express (RE):** These routes can operate either all day or at peak-only times. They provide fast and convenient connections for people to travel across the region. They connect major transit centers and service both residential areas and areas of high job density with fast, efficient, and direct service.

3. **Major Trip Attraction (MTA):** These routes provide a customized service to cover origin to destination travel that are not covered by the regional services either because their location is on the outskirts of main destinations or because the required schedule has its own special requirements. They imply a certain level of collaboration with a third-party to identify a customized schedule to accommodate specific travel needs, such as those identified by major facility operators, business associations, major employers and/or operators of recreational and leisure activity centers for instance.

Once established, the RTSC would develop guidelines for other service types. Specifically, on-demand, paratransit (specialized), and other route typologies that answer local customer needs. Given that local transit services were added to the scope of the RTSC after the proposed guidelines were drafted, this section of the guidelines will need to be developed in further detail.

It will also be important to consider how service types are measured and evaluated once they are put into action across the region. This measurement would be accomplished using the service metrics described below.

Service metrics

The RTSC Transit Service Guidelines metrics help answer important questions about where transit will be effective, how the service will be provided, whether it is effective, and how the RTSC can ensure customers' travel experience is comfortable. They will be used by future RTSC leadership to develop and evaluate transit services under the Commission. Thirteen service metrics were developed with the Transition Team, each describing how the service types will be measured.

Figure 19 - Overview of service types described by the guidelines

01	02	03
		RIDERSHIP
LAND USE DENSITY	FREQUENCY	VEHICLE LOAD
TRANSIT HUB	SERVICE SPAN	BOARDING PER REVENUE HOURS
COVERAGE	DIRECTNESS	RELIABILITY
EQUITY	STOP SPACING	RECOVERY RATIO
Where transit services should be operated	**How the service should be operated**	**Validate and assess**

The first element to consider is where transit services should be operated, which is addressed through the following four metrics.

1. **Land use density:** Land use density corresponds to the number of residents and jobs per square kilometer. High density neighbourhoods attract a high number of transit customers or potential customers and allow for the implementation of efficient and frequent transit services. Neighbourhoods with a lower density may still require transit service, but transit vehicles will need to travel further distances to serve a relatively smaller number of customers. The level of service warranted will therefore be lower in areas of low land use density. Rapid Transit routes and Regional Express routes will primarily serve high land use density areas, although they may also serve lower density areas between major urban cores with fewer bus stops along the route.

2. **Transit hub:** Where land use density might not warrant enough service on its own, transit hubs provide an opportunity to concentrate high numbers of transit customers and consequently provide the right amount of transit service. Transit hubs are places of connectivity where several transportation modes converge.

Park and rides, cyclist and pedestrian facilities, bikes and car shares, tais and bus terminals are examples oftransit hub facilities. To warrant the implementation of Rapid Transit routes or Regional Express routes, major transit hubs should be implemented in cases where land-use density is not sufficient. Examples of functional transit hubs may include regional destinations that support multi-modal transportation options such as car and bike share.

3. **Coverage:** Coverage is the area that is within a reasonable walking distance of transit system access points, such as transit stops or transit centers. Regardless of land-use density, transit service tends to cover most residents and areas of employment within an urban area. The metric for coverage establishes if areas need to be served by transit service to provide mobility and maintain a degree of equity throughout the region. For example, Regional Express routes should provide a moderate level of coverage that considers a 400-meter walking distance to the bus stop. Rapid Transit routes, in contrast, must provide a higher level of coverage with an average distance of 800 meters between bus stops.

4. **Equity:** While an area may not warrant providing transit service based on any of the above three metrics, it may still require service. Neighbourhoods with low-income residents or with a low level of car ownership are examples of areas where transit needs to be offered for equity and economic reasons. It is important to identify these areas using an equity metric to provide an effective transit service for the region.

Once the areas requiring transit service have been identified, the next step is to establish how the service should be operated, which is addressed by the next four metrics.

5. **Frequency:** Frequency is the number of transit vehicles per hour serving the same route in the same direction. Where there is a high demand for transit, the frequency will be higher. Where frequency is higher, customers can spend less effort planning their trip, as the transit vehicle will serve the bus stop on a more frequent basis. Regional Express routes typically have a moderate level of frequency, while Rapid Transit routes should have a high level of frequency, usually with a minimum of 4 to 6 buses per hour.

6. **Service span:** Service span refers to the period when a specific service is operated, from time of the day of the first departure to time of the day of the last arrival. Service span will vary depending on demand. Services may be operated only during peak hours, weekdays, weekends, or across all these time periods. The wider the service span, the higher the likelihood customers will use transit for most or all their trips, irrespective of the trip purpose or the time of the day. Service span is most often associated with Regional Express routes that provide service seven days a week and Regional Transit routes that provide evening services during off-peak times. In contrast Regional Express Peak service will only run during peak hours on weekdays.

7. **Directness:** Directness measures the amount of route deviation compared to the most direct path for travel. Depending on the travel demands and the purpose of the route, some routes must be more direct to provide a rapid path to a customer's destination. Others warrant a more meandering path and might be slower but are necessary to provide access to a destination. Both Regional Express routes and Rapid Transit routes are designed to provide a high level of directness to support a fast and direct service for riders between destinations.

8. **Stop spacing:** Stop spacing is the distance between two stops or two transit stations served by the same route. Stop spacing affects the speed of a route, as each stop slows the trip to increase access to the route. A balance between travel time and accessibility is required and will depend on the route's demand and purpose. Some service types will require fewer stops to provide a faster trip, while other service types will favour closer stop spacing to minimize customer walking distances and increase access to transit. When measuring stop spacing, there are commonalities between Regional Express routes and Rapid Transit routes, both with significant distance between each bus stop to enable a fast and direct service to the destination. The level of density along the corridor will further affect stop spacing along the route.

The last step is to validate if the service provided is successful and whether it meets the route objectives. The following five metrics provide the tools to make this assessment.

9. **Ridership:** Daily ridership is the average number of boardings along a specific route over the course of a day. A route that fittingly addresses the travel demand will have a significant number of customers and be considered successful. The expectation of both Regional Express and Rapid Transit routes is that they attract high levels of daily ridership as they meet the demand for reliable service. Both Regional Express routes and Rapid Transit routes should have high level of daily ridership as they should be an answer to high level of travel demand.

10. **Vehicle load:** Vehicle load measures the number of passengers inside a transit vehicle at a single point in time. It is related to the vehicle capacity and provides an indication of the level of comfort for passengers, such as whether all passengers can be seated or must stand, and the utilization of the transit vehicle in terms of how empty or full it is. Typically, both Regional Express Routes and Rapid Transit routes reflect a high volume of passengers per vehicle, particularly during peak hours.

11. **Boarding per revenue Hours:** Boardings per revenue hour measures the volume of passengers compared to the number of revenue or in-service hours required to provide the service. This metric provides information regarding how well utilized a transit vehicle is for each hour of service provided to operate a route. The average boarding per revenue hour for both Regional Express routes and Rapid Transit routes is typically higher than regular routes due to the high level of service performance.

12. **Reliability:** Reliability measures the consistency of a service relative to its posted time table. A service is normally considered reliable if the vehicle does not leave later than within a five-minute time frame of its scheduled time at specific time point. If customers and operators are confident that transit vehicles will arrive or depart a specific location at a specific time, the service is reliable. Reliability is an effective metric to estimate how trusted customers believe a service is.

    Both Regional Express routes and Rapid Transit routes are designed to be highly reliable. These routes prioritize the efficient use of resources and as a result tend to deliver a highly reliable service. Congestion or other disruptions to routes can lead to a lower reliability rating and an overall decrease in service quality. These barriers have the potential to lead to lower ridership and additional cost to the RTSC, therefore close monitoring of these routes is required.

13. **Recovery ratio:** The recovery ratio is the ratio of revenue collected to the total costs of operating a system. It helps transit authorities establish the performance of each route and is an indicator of the transit network's degree of financial sustainability.

    Regional Express routes typically produce a moderate recovery ratio, with the off-peak periods seeing less riders than peak hours. Rapid Transit routes will garner a higher recovery ratio, as these routes offer the "premier" service of the transit network.

It should be noted that routes implemented based on equity might not rate highly for any of the above five metrics. The success of these types of routes will depend on the specific objectives behind their implementation, which could widely vary from one route to the other. Providing a travel option to customers that may otherwise not be able to access employment or travel o their medical appointments, for example, could be a measure of success for these specific routes.

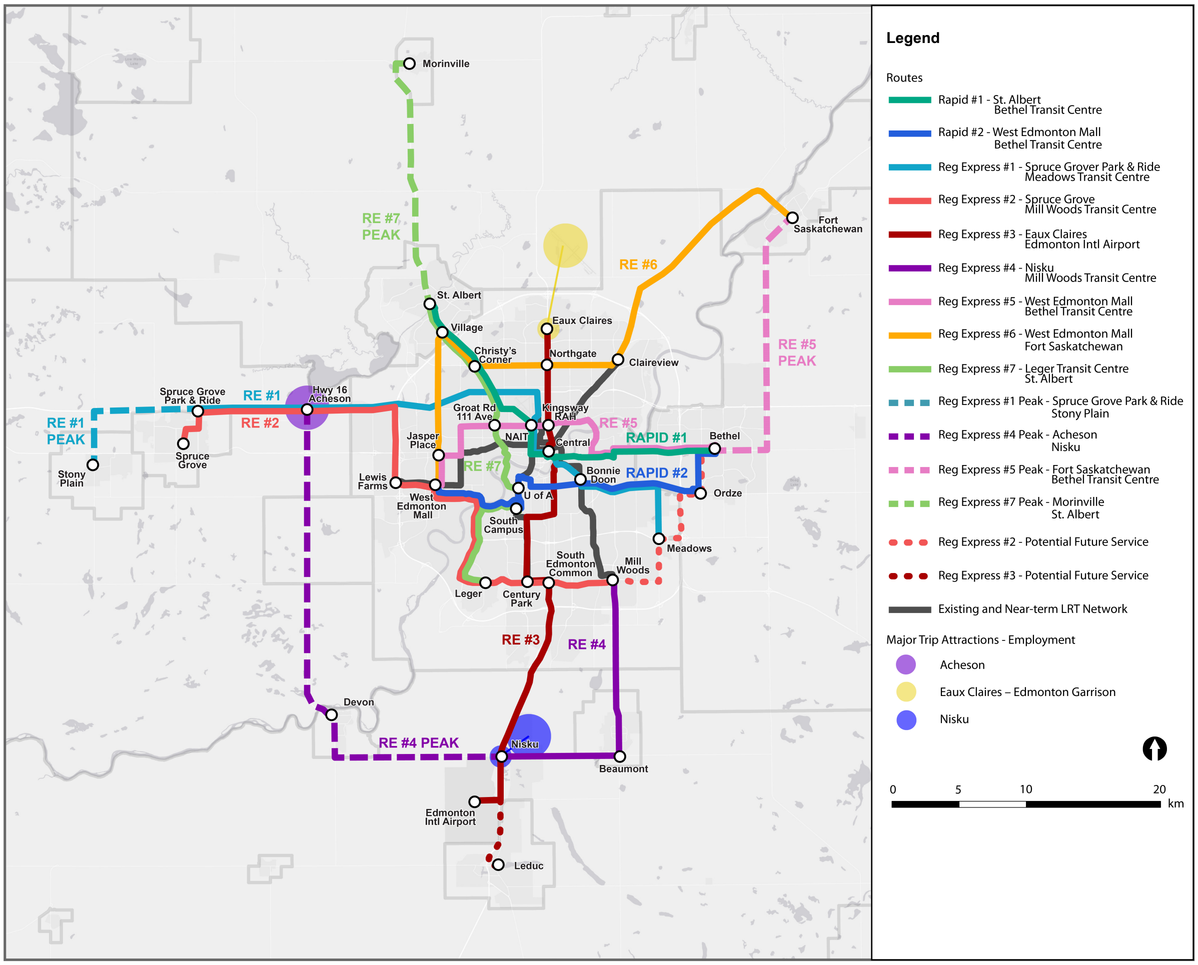
Taken all together, these service types and metrics will equip the RTSC with the initial tools needed to effectively plan, monitor and improve regional transit services. Once the Commission is established, the Transit Service Level Guidelines will need to be adapted after they are built out for other relevant service types (e.g. local services), refined with input from member municipalities, and ultimately adopted. In their current form, they have provided directional guidance needed to develop the RTSC conceptual transit services design helped to articulate characteristics of different service types under the Commission and how these services would be improved over time.

RTSC conceptual transit service design

The conceptual transit service design summarizes the regional services that could be delivered under a RTSC, including the nature of the services and where they would run. The conceptual design was modelled and validated with municipalities and heavily informed by customers' perspectives both from municipal stakeholder consultations and the HTS[15] analysis. The intent of the conceptual design is to provide a framework by which potential route planning, service hours and costs can be evaluated against. It should be used by the RTSC to develop, through further consultation, the detailed services to be provided.

In alignment with the RTSC Transit Service Guidelines, the conceptual transit services design includes the three previously mentioned service types: Rapid Transit, Regional Express, and Major Trip Attractions. The specifics of each conceptual route and the value they add to a regional transit network is explained in this section, as well as enhanced services requested by some municipalities.

Figure 20 - RTSC conceptual transit services design


Morinville
RE #7 PEAK
RE #6
Fort Saskatchewan
St. Albert
Village
Eaux Claires
Christy's Corner
Northgate
Claireview
RE #5 PEAK
Spruce Grove Park & Ride
RE #1
Hwy 16 Acheson
RE #1 PEAK
RE #2
Groat Rd 111 Ave
Kingsway RAH
RE #5
NAIT
Central
RAPID #1
Bethel
Jasper Place
RE #7
Spruce Grove
Stony Plain
Lewis Farms
Bonnie Doon
RAPID #2
Ordze
U of A
West Edmonton Mall
South Campus
Meadows
South Edmonton Common
Mill Woods
Leger
Century Park
RE #3
RE #4
Devon
RE #4 PEAK
Nisku
Beaumont
Edmonton Intl Airport
Leduc
Legend
Routes
Rapid #1 - St. Albert Bethel Transit Centre
Rapid #2 - West Edmonton Mall Bethel Transit Centre
Reg Express #1 - Spruce Grover Park & Ride Meadows Transit Centre
Reg Express #2 - Spruce Grove Mill Woods Transit Centre
Reg Express #3 - Eaux Claires Edmonton Intl Airport
Reg Express #4 - Nisku Mill Woods Transit Centre
Reg Express #5 - West Edmonton Mall Bethel Transit Centre
Reg Express #6 - West Edmonton Mall Fort Saskatchewan
Reg Express #7 - Leger Transit Centre St. Albert
Reg Express #1 Peak - Spruce Grove Park & Ride Stony Plain
Reg Express #4 Peak - Acheson Nisku
Reg Express #5 Peak - Fort Saskatchewan Bethel Transit Centre
Reg Express #7 Peak - Morinville St. Albert
Reg Express #2 - Potential Future Service
Reg Express #3 - Potential Future Service
Existing and Near-term LRT Network
Major Trip Attractions - Employment
Acheson
Eaux Claires – Edmonton Garrison
Nisku
0
5
10
20
km

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[15] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

While local services play an important role in "feeding" regional services, a review of local route design for transit services that operate solely within a municipality was not in-scope nor a focus of the design. Therefore, local services are not included in the conceptual design.

This design would be finalized and implemented once detailed transit service planning, demand analysis and public engagement occur under the Commission. Although the routes and services shown in the map are subject to change, they are valuable for the purposes of comparing services envisioned under the RTSC with current transit service.

Rapid Transit (RT)

These routes integrate services across municipal boundaries and consolidate multiple overlapping routes into a single, more rapid service. They are designed to attract customers by being competitive with private vehicle travel times by connecting high ridership destinations with only key transfers locations.

The RTSC conceptual transit services design includes two RT routes:

- **RT #1** provides a direct connection between St Albert Transit Centres, Downtown Edmonton, and Strathcona County's Bethel Transit Centre
- **RT #2** connects West Edmonton Mall, South Campus, the University of Alberta, Bonnie Doon Transit Centre, as well as Strathcona County's Ordze and Bethel Transit Centres along a major demand corridor in south-central Edmonton

These routes are supportive of the City of Edmonton's LRT network and avoid direct competition with established lines. Importantly, they connect the region with higher-speed, long distance transit service and align transit service with transit demand and existing travel flows. Along designated RT corridors shown in the map, capital improvements could be implemented over time to increase the speed and reliability of the service. Potential capital improvements would be planned in a collaborative manner across the region along with input from the RTSC to support an integrated approach.

Regional Express (RE)

These routes provide fast and convenient connections for longer distance trips throughout the region, both inside the City of Edmonton and between municipalities that surround it. RE services follow established patterns of demand, providing a fast and reliable travel option. A basic level of all-day service is recommended with peak extension service during peak hours to support developing ridership markets in strategic areas.

The RTSC conceptual transit service map includes seven routes, including three with peak extensions:

- **RE #1:** Direct Downtown and NAIT service that connects the Stony Plain, Spruce Grove and the growing Southeast quadrant of Edmonton
- **RE #2:** South Edmonton crosstown connector service between Mill Woods and West Edmonton Mall with an extension to Spruce Grove
- **RE #3:** North / South transit spine that connects Eaux Claires Transit Centre to Downtown and ultimately to the Edmonton International Airport
- **RE #4:** Regional circulator service that connects Beaumont and Leduc County with a peak extension to Devon and to provide developmental service to Parkland County
- **RE #5:** Inner Edmonton crosstown service connecting West Edmonton Mall, NAIT and then direct service to Strathcona County and an extension to Fort Saskatchewan
- **RE #6:** Outer Edmonton crosstown service from West Edmonton Mall to St. Albert, Northgate, Clareview and the Fort Saskatchewan
- **RE #7:** Radial University service from Southwest Edmonton along Terwillegar Drive and then to St. Albert with a peak extension to the Morinville

RE #1, #3 and #7 provide radial or downtown focused services with routing from outer communities into the Central area of Edmonton, including the University of Alberta Campus and Downtown. Alternatively, RE #2, #4, #5, and #6 provide regional crosstown or circulator services to connect major regional locations in patterns that do not directly access central Edmonton. These are expected to have a higher number of stops to provide some service to communities and activity centers along the corridors. Specifically, a future extension for RE #2 continuing east of Mill Woods Transit Centre to Strathcona County has been identified as a service of interest until enough crosstown service hours in southeast Edmonton exists.

RE services are valuable to a regional network because they provide an enhanced all-day express service to efficiently connect key destinations, including transit hubs, across a large geographic area. They offer a base level of service all day to serve non-peak trip generators like downtowns, post-secondary institutions and major hospitals.

Most notably several the RE services shown in the design represent new proposed service to outer municipalities based on modelled travel demand. Peak only services create an opportunity to strategically develop demand for transit services to strengthen regional mobility. Furthermore, the circulator services mentioned above help connect key travel patterns between central radials.

Major Trip Attraction (MTA)

These routes provide customized service to cover origins and destinations that are not covered by regional services to maintain a fast and reliable regional service. They primarily serve industrial employment centers which have an important economic role, however are difficult to directly serve due to their location and relatively low density. The schedule of travel demands to service these locations are also highly variable resulting in the need for a customized service that is adapted to large employer shift needs and other localized concerns.

Several MTA routes were developed early in the process of developing a RTSC conceptual transit services design. Due to the difficulty in developing MTA services without first engaging the partners, final MTA services proposed in the conceptual model connect existing regional employment areas to nearby transit hubs. MTA service to the following regional industrial areas is proposed[16]:

- To Nisku, replicating existing Leduc Transit Route 5
- On-demand service to Acheson
- A reinstated service to the Edmonton Garrison

MTA services are valuable because they provide service to activity centers that currently do not have a transit service thereby drawing travelers from across the region. To provide a cost-effective service, MTA service schedules are developed on case-by-case basis with partners, depending on ridership demand and each partner's willingness to draw travelers to their destination, whether for employment or leisure purposes for example. In cases where a third-party transit provider is already serving a major destination, it is acknowledged that the RTSC would need strong rationale for taking over the delivery of respective transit services and that the intent is not for the RTSC to assume delivery of these services.

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[16] Note: While a contract between Sturgeon County and a third-party transit provider for service to the Garrison was recently discontinued, MTA service and corresponding vehicle capacity serving this route could be tailored to closely match travel demand to manage costs of providing the service.

Enhanced services

As per the MOU, municipalities may request services that directly benefit their community and go beyond the level of service suggested by the RTSC Transit Service Level Guidelines. In validating the RTSC conceptual transit services design, two municipalities requested enhanced services, as summarized below:

- Strathcona County's current transit service has direct routes between both of its Transit Centres, Bethel and Ordze, to Edmonton's Central Business District (CBD) and the University of Alberta. An earlier iteration of the conceptual design proposed consolidation of these routes into two main services. Strathcona County Transit requested direct services from Bethel to the University of Alberta and Ordze to Edmonton CBD. Strathcona County Transit's routes 414 and 401 were categorized as enhanced services to address current customer expectations.
- Leduc Transit offers a unique routing pattern for its intermunicipal Route 1 and a strong desire to maintain a direct service to Century Park. Within the proposed model, it is categorized as an enhanced service with AM peak direct trips to Century Park and PM direct trips to Leduc. The opposite peak direction service provides local service within the City of Leduc and Nisku. This service was originally intended to be a part of RE #3, although the lack of a suitable transit location for buses to turn around and the limitation for buses to circulate on some roads due to their structure and configuration resulted in a terminus at the Edmonton International Airport. Over time it is anticipated that associated infrastructure challenges will be resolved, and the services can be amalgamated to provide a more regional service.

Enhanced services are defined as a category of service that under a RTSC would be funded by the requesting municipality according to the cost allocation model. The specifics of the cost allocation concept are described in more detail in *Section 10: Financial Model*.

Transit model

The objective of the transit model is to assess service efficiency of the RTSC conceptual transit services design in comparison to the current network. Transit model outputs also serve to ease any concerns that current service would be drastically altered or reduced under the Commission.

The Base Case for transit services represents the number of service hours and fleet vehicles required to deliver services under separate transit agencies without a Commission. It was developed using General Transit Feed Specification (GTFS) data to build a database of existing transit services. The transit model also then builds up a "RTSC Case," using a high-level 'shadow' GTFS dataset for the routes that make up the RTSC conceptual transit services design. The high-level service plans included in the Base and RTSC Cases are summarized in the table below.

Table 18 – Service plans included in the transit model

	Service plans included in the transit model		
	Regional Services	**Local Services**	**Enhanced Services**
Base Case	▶ As exists today	▶ As exists today	▶ Not applicable
RTSC Case	▶ RT #1 and #2 ▶ RE #1 to #7 ▶ MTA (3 routes)	▶ As exists today	▶ Strathcona County Transit – Routes 401, 414 ▶ Leduc Transit – Route 1

Key assumptions and model simplifications are described in *Appendix G: Transit model assumptions and RTSC Case simplifications*.

The transit model produced metrics for total revenue hours,[17] kilometers travelled, and the number of vehicle trips required under each case. These metrics were then aggregated by service type, municipality, operating agency, time of day, and day of the week to compare services across the business case period from 2022-2026. Additionally, a high-level comparison of fleet requirements was developed based on existing service schedules and conceptual RTSC service schedules needed over the same period.

All transit model outputs were validated extensively through one-on-one meetings with municipalities and served as inputs to the financial model. Key validations included a comparison of service span and frequency to existing services, travel speeds, revenue service hours and kilometers, total number of trips by time of day, and in some cases additional high-level calculations to verify capacity would exist to deliver services to customers under the RTSC.

A service hour reallocation exercise was then conducted to determine overlap of existing regional services with the proposed RTSC regional network, in both geography and function, and to identify efficiencies in combining of routes under a regional commission. This process involved a desktop review of current regional routes and service plans, in addition to validation of reallocation percentages and hours with each municipality.

A review of each existing transit service informed the Base Case and established which routes could be partially or fully reallocated to the Commission under the RTSC Case. Existing routes that provided similar alignment to the proposed RTSC routes or that would achieve a specific objective under the regional transit services design, were analyzed to determine whether they could be reallocated to the Commission for the purposes of the transit model.

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[17] Service hours include revenue hours and non-revenue hours. Revenue hours refers to scheduled hours of service available to transit customers for transport on the routes, excluding deadhead hours but including recovery time and layover time. Non-revenue hours or "deadhead hours" refers to where a bus is travelling but is unavailable to transport customers, such as when it is required to travel to or from a garage from a route terminus.

Some routes were only partially reallocated to the RTSC Case because a given portion of their alignment was considered more of a local service than regional for example. Where routes were partially reallocated, a percentage of revenue hours were deliberately left unallocated to a regional service to maintain a modelled level of local service like what is provided today.

Finally, to support the business case evaluation, a model to estimate the resources required for the new network was developed starting with the creation of a database of service based on GTFS data from early 2019. This model used an estimate of the existing services that would be uploaded to the RTSC at its formation to form the Base Case. The same methodology was used to model the new services of the RTSC Case to compare the impact of a combined service operating with regional characteristics. Validation sessions were held with municipalities to address potential local system concerns and develop an equivalent service model for comparison purposes.

The overall philosophy for service reallocation has been to provide a comparable or better service for the purposes of a business case comparison. The final level of service for the community would be determined by the RTSC using the bylaws and RTSC Transit Service Level Guidelines.

Reallocated service hours to regional routes

A total of 6,794 weekly revenue hours were identified within the existing transit system for reallocation to **regional routes** under the RTSC Case as outlined in the following table. This includes a breakdown of the number of hours allocated to the RTSC Case from existing service modelled under the Base Case by municipality. In addition to existing transit services, municipality planned investments in future transit services under the five-year business case have also been converted to service hours and identified for reallocation. Under the financial model, municipalities contribute a certain number of hours required to service a new regional route.

Table 19 - Summary of weekly hours reallocated to regional routes under the RTSC Case

RTSC conceptual transit service route	Municipality	Route reallocation details	Reallocated hours by municipality	Reallocated hours by RTSC route
RT #1	Strathcona County	Routes 411, 403	295	1,397
	Edmonton	Route 1 - 12.5% Route 52 - 75% *Additional required hours	559	
	St. Albert	Routes 201, 202, 207, 208, 211	543	
RT #2	Strathcona County	Route 404	115	1,348
	Edmonton	Route 4 - 25% Route 920X *Additional required hours *Future growth	1,233	
RE #1	Spruce Grove	Route 560, 561	221	518
	Stony Plain	*As per Financial Model	77	
	Edmonton	Route 500X *Future growth	220	
RE #2	Spruce Grove	Route 562	64	469
	Edmonton	Route 56 - 50% *Future growth	405	
RE #3	Edmonton	Routes 110X, 700X, 747 *Future growth	1,247	1,247
RE #4	City of Leduc	*As per Financial Model	25	166
	Leduc County	*As per Financial Model	14	
	Parkland County	*As per Financial Model	39	
	Devon	*As per Financial Model	46	
	Beaumont	Route 540	42	
RE #5	Strathcona County	Route 413	76	396
	Edmonton	Route 52 - 75% Route 3 - 50%	281	
	Fort Saskatchewan	*As per Financial Model	39	
RE #6	Fort Saskatchewan	Route 580	65	586
	St. Albert	Route 205	71	
	Edmonton	Route 54	450	
RE #7	St. Albert	Route 203	105	555
	Edmonton	*Future Terwillegar Drive bus way	415	
	Morinville	*As per Financial Model	35	
MTA - Edmonton Garrison	Sturgeon County	Route 599	38	38
MTA - Nisku	City of Leduc	Route 5	22	34
	Leduc County	Route 5	12	
MTA - Acheson	Parkland	On-demand Shuttle	40	40
Total Service Hours Reallocated to Regional Routes				6,794

A description of the hour reallocations and overall transit service benefit of contributing to the RTSC regional network is described below by municipality or where they are delivered through an agreement of two or more municipalities.

City of Beaumont

Beaumont Transit recently introduced service between the Ken Nichols Regional Recreation Centre and Century Park LRT station. This service is operated by ETS as Route 540. In the proposed regional concept this route would be adjusted to link to Mill Woods and the future Valley Line LRT as part of RE #4.

With the implementation of the RTSC, Beaumont will benefit from direct and rapid routes that are connected to Mill Woods and Leduc County seven days a week, as well as Devon and Acheson during peak hours.

Table 20 – City of Beaumont route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by the City of Beaumont
RE #4	Route 540	42
Total		42

Town of Devon

Currently, the Town of Devon does not have transit service. The proposed RE #4 peak extension will serve Devon, offering a direct connection with Leduc County and Acheson during peak hours. The proposed RE #4 will also offer a direct connection to Beaumont and Mill Woods. This route will require an additional cost equivalent to 46 revenue hours from Devon to provide this additional service.

Table 21 - Town of Devon route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by the Town of Devon
RE #4	*As per the Financial Model	46
Total		46

City of Edmonton

Edmonton Transit Service (ETS) is the largest system in the region and would consequently represent the largest reallocation of existing services estimated at 4,800 hours per week. It would have services reallocated to almost all regional routes included in the RTSC conceptual transit services design and would become connected across all quadrants of its municipal boundaries.

Based on the strategic direction developed with the Transition Team, ETS is the only agency that would not immediately fully upload its services to the RTSC. Instead, the transition of ETS to the RTSC would be planned in two phases to manage the size and complexity of moving to a fully integrated regional transit service network. The first phase would include the transfer of service hours that support the regional network. The second stage would occur after the stabilization of the initial regional upload of service into the RTSC.

The estimated 4,800 hours of service for reallocation to the RTSC considers both the current amount of service along the regional corridors as identified in the transit design, as well as how it could align with the needs of Edmonton residents who rely on these existing services. Eventually, ETS local services would be uploaded to the RTSC and be amalgamated with the services from other regional agencies that would already have come under the Commission. The goal of the Commission would be to deliver a complete mobility solution that allows for seamless travel across the region. Through the formation of a fully integrated regional network it is also anticipated there will be an opportunity for operational efficiency due to the reduction of overlapping services and a better alignment of rapid regional services with long distance trip demands.

The City of Edmonton is undertaking the Bus Network Redesign (BNR), which involves the implementation of a new service model that will change the services being delivered by ETS. The last time a change of this magnitude was implemented in Edmonton was in the 1990's. Given the complexity this change and that the development of the BNR is still in progress, it is challenging to specify exactly how services would be reallocated to a regional model. Using the following three principles an estimated reallocation was developed:

Table 22 - Principles to inform the service hour reallocation approach in the context of the BNR

#	Principle	Reallocation approach
1	Strong alignment between regional services and planned express routes	▶ Allocate to RTSC where alignments can potentially serve regional needs
2	Some alignment between regional services and planned crosstown routes	▶ Serving long distance trips across Edmonton and the region ▶ Challenge of ensuring appropriate local coverage where 600m of spacing is needed along the corridor where no underlying local is being provided ▶ Allocate to RTSC with provision for separate local services in cases where change in alignment is needed
3	Frequent Transit Network (FTN) is challenging to integrate with a regional service	▶ High level of frequency to encourage spontaneous travel is best suited to shorter distance trips ▶ Regional Rapid services align best with FTN routes, as enough frequency is planned on those corridors ▶ Potential for skip stop service to provide both a local and express service with an equivalent frequency ▶ Partial allocation of service is possible in certain locations where service corridors align

Due to inherent efficiency of the BNR, if allocation of FTN services is not possible then service hours not specifically part of a route may be required. Magnitude and scope of redesign requires an allocation of contingency service hours to address future growth.

In total, an estimated 1,300 service hours per week are required from the Edmonton system that are not part of a specific route in the current version of the BNR (v2.4). These services would be required over the five-year period and represent what would be uploaded to the RTSC as part of the initial phase. Alternatively, regional service levels within Edmonton could be reduced and comparable services would be provided by ETS along the same corridors by either existing or planned future services.

With the implementation of the RTSC, Edmonton would benefit from rapid, crosstown routes that provide direct access to all the other 12 municipalities seven days a week.

Table 23 - *City of Edmonton route reallocation*

RTSC route	Route reallocation details	Reallocated hours by the City of Edmonton
RT #1	Route 1 - 12.5%	559
	Route 52 - 75%	
	*Additional required hours	
RT #2	Route 4 - 25%	1,233
	Route 920X	
	*Additional required hours	
	*Future growth	
RE #1	Route 500X	220
	*Future growth	
RE #2	Route 56 - 50%	405
	*Future growth	
RE #3	Routes 110X, 700X, 747	1,247
	*Future growth	
RE #5	Route 52 - 75%	281
	Route 3 - 50%	
RE #6	Route 54	450
RE #7	*Future Terwillegar Drive bus way	415
Total		4,810

City of Fort Saskatchewan

The City of Fort Saskatchewan currently provides two local routes and one regional route (Route 580) with service to the Clareview Station in northeast Edmonton during peak hours. The proposed RE #6 will maintain the service to Clareview Station but will provide daily departure and the alignment to create a direct connection with St. Albert and West Edmonton Mall. A peak service will also be added to provide a direct connection with Strathcona County and downtown Edmonton. A full reallocation of Route 580 will be required under the RTSC to provide this additional service at a cost from Fort Saskatchewan equivalent to 39 revenue hours.

With the implementation of the RTSC, Fort Saskatchewan will benefit from direct and rapid routes that are connected to the north of Edmonton, St. Albert and West Edmonton Mall seven days a week, as well as to Strathcona County and downtown Edmonton during peak hours.

Table 24 - City of Fort Saskatchewan route reallocation

RTSC Case route	Route reallocation Details	Reallocated hours by City of Fort Saskatchewan
RE #5	*As per the Financial Model	39
RE #6	Route 580	65
Total		104

City of Leduc and Leduc County

As a joint venture between the City of Leduc and Leduc County, Leduc Transit provides five routes connecting the local areas, Nisku and the Edmonton International Airport (EIA) as well as an intermunicipal connection to Century Park LRT Station. Based on their current agreement, the City of Leduc and Leduc County are splitting costs 65%/35% respectively to operate these five routes.

Due to the unique nature of the routing of the Leduc Route 1 and the lack of a suitable transit centre in the City of Leduc, the extension of RE #3 is not proposed in the RTSC conceptual transit services design and the current Route 1 is recommended to remain until these feasibility issues can be addressed. The specific routing of Route 3 is recommended to provide connectivity in a stop in Nisku to other regional services, subject to further planning and detailed route development. Leduc Transit Route 5 is proposed to be reallocated to MTA service, as it primarily connects Nisku and Leduc. The remaining services are recommended to remain as local services. An additional RE #4 route is proposed to connect from Beaumont to Nisku, the EIA and Devon for which Leduc and Leduc County will contribute through the cost allocation model. This latest route will require an additional cost of 25 and 14 equivalent revenue hours to Leduc and Leduc County respectively to provide this additional service.

With the implementation of the RTSC, Leduc will maintain their existing service, and will benefit from the RTSC network through the service provided in Leduc County. This includes connections to RE #3 through a transfer at the Edmonton International Airport or Century Park and connections to Beaumont, Devon, Acheson, Spruce Grove and countless other destinations through the regional model.

Table 25 - City of Leduc route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by the City of Leduc
RE #4	*As per the Financial Model	25
MTA - Nisku	Route 5	22
Total		47

With the implementation of the RTSC, Leduc County will benefit from direct and rapid routes that are connected to the Airport, downtown Edmonton, north of Edmonton, Beaumont and Strathcona County seven days a week and Devon and Acheson during peak hours.

Table 26 - Leduc County route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by Leduc County
RE #4	*As per the Financial Model	14
MTA - Nisku	Route 5	12
Total		26

Town of Morinville

Currently, the Town of Morinville does not provide transit service. Under the RTSC, RE #7 will provide a peak hour service to Morinville. This route will provide a direct connection through the University, to St. Albert and to southwest Edmonton along a bus way proposed for Terwillegar Drive. This route will require an additional cost equivalent to 35 revenue hours from Morinville to provide this additional service.

Table 27 - Town of Morinville route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by the Town of Morinville
RE #7	*As per the Financial Model	35
Total		35

City of Spruce Grove, Town of Stony Plain, and Parkland County

Spruce Grove, Stony Plan and Parkland County have a tri-municipal agreement in place. Spruce Grove Transit currently manages three services operated by ETS: Route 560, 561 and 562. The total reallocation of service hours is expected to be 441 hours per week across the three municipalities. In the regional model, there would be a RE #1 connection between NAIT, Downtown Edmonton, Spruce Grove and Stony Plain which would provide a pendulum service with ETS service to the expanse Southeast areas of Meadows. With the implementation of the RTSC, these three municipalities will benefit from direct and rapid routes that are connected seven days a week to downtown Edmonton, South of Edmonton, and Strathcona County.

While the Town of Stony Plain does not currently have transit service, an estimated 16% of riders on the current Spruce Grove Transit service are residents of Stony Plain. The RTSC Case transit model accounts for an additional cost equivalent to 75 revenue hours of local service per week in Spruce Grove and 54 hours in Stony Plain required to provide these services.

The Acheson shuttle provides on demand transit service between Route 561 and Route 562 bus stops and employers in the Acheson Industrial Area. This service is a partnership between Parkland County, Spruce Grove, and Edmonton to connect Acheson to main transit routes in Edmonton and Spruce Grove. With the implementation of the RTSC, the Acheson shuttle will be provided as a regional major trip attraction service.

Table 28 - City of Spruce Grove route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by the City of Spruce Grove
RE #1	Route 560, 561	221
RE #2	Route 562	64
Total		285

Table 29 - Town of Stony Plain route reallocation

RTSC Case route	route reallocation details	Reallocated hours by the Town of Stony Plain
RE #1	*As per the Financial Model	77
Total		77

Table 30 - Parkland County route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by Parkland County
RE #4	*As per the Financial Model	39
MTA - Acheson	On-demand Shuttle	40
Total		79

City of St. Albert

St. Albert Transit is the third largest transit provider in the region with eight commuter routes and 15 local service routes. The total reallocation of services from St. Albert is estimated at 1,570 service hours per week. The main commuter corridor along St Albert Trail would entail a consolidation of services to create the RT #1 service. The specific routing of the service is subject to more detailed route planning through the central area of Edmonton, including NAIT. Service that currently operates to West Edmonton Mall would combine with Edmonton Transit crosstown services to form RE #6. For a connection through the University, RE #7 is proposed which would have further connections to southwest Edmonton along a bus way proposed for Terwillegar Drive. An extension from St. Albert to Morinville is also included in the RTSC transit services conceptual design. For local services in St Albert, an estimate of 850 weekly hours is maintained.

With the implementation of the RTSC, St. Albert would benefit from maintaining direct, rapid connections to Edmonton, new one-seat trips to Strathcona County and Fort Saskatchewan seven days a week, and new access to Morinville during peak hours. These services go above and beyond the current offerings of St. Albert Transit and improve customer experience by providing more connections with fewer transfers. St. Albert also benefits from access to the wider regional network which connects key destinations across the region.

Table 31 - City of St. Albert route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by the City of St. Albert
RE #1	Routes 201, 202, 207, 208, 211	543
RE #6	Route 205	71
RE #7	Route 203	105
Total		719

Strathcona County

Strathcona County Transit operates the second largest transit system in the region with a comprehensive system of local and commuter routes. For the commuter system, six routes are operated with destinations primarily in the Downtown and University area. Three of the routes originate at Bethel Transit Centre and three of the routes originate at Ordze Transit Centre. The proposed reallocation of the entire transit system represents 2,343 weekly service hours. The services from Bethel to Downtown would be combined with Edmonton and St. Albert services to create the RT #1 service. The services from Ordze to University would combine with Edmonton services to form the RT #2 services along the Whyte Avenue Corridor. Additional service from Bethel to NAIT would be developed through the RE #5 service which would service Capilano and connect through to West Edmonton Mall.

Enhanced services are proposed to maintain the balance of routes from Bethel to the University and Ordze to Downtown in a similar routing and service pattern as is currently being provided. For local service, an additional 1,506 weekly hours would remain to connect the transit centres to the neighbourhoods within the Urban Service Area of Sherwood Park.

With the implementation of the RTSC, Strathcona County would benefit from direct, rapid connections to Edmonton, new one-seat trips to St. Albert and West Edmonton seven days a week, and new access to Fort Saskatchewan during peak hours; these services improve the customer experience by providing new connections with no transfers. Strathcona County also benefits from access to the wider regional network which connects key destinations across the region.

Table 32 - Strathcona County route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by Strathcona County
RT #1	Routes 411, 403	295
RT #2	Route 404	115
RE #5	Route 413	76
Total		486

Sturgeon County

Sturgeon County formerly provided a route to the Edmonton Garrison. Under the RTSC, this route is more appropriately categorized and served as MTA based on service demand and other characteristics of the MTA service type. Indirectly, Sturgeon County could also benefit from the transit services in Morinville, Fort Saskatchewan, St. Albert and Spruce Grove, as they will be the nearest municipalities with more regular transit service.

Table 33 - Sturgeon County route reallocation

RTSC Case route	Route reallocation details	Reallocated hours by Sturgeon County
MTA - Edmonton Garrison	Route 599	38
Total		38

Service hours required under the RTSC Case

The RTSC Case regional transit model is comprised of three different service types: Regional, Local, and Enhanced Services. This section outlines the estimated total required service hours under the RTSC Case including hours from these three service types to determine the expected service hour efficiencies under the Commission compared to current transit services delivered across the region.

Through the amalgamation of services and the formation of a regional network, synergies are possible when compared with the model separate agency delivery model. Based on the reallocation of services developed with the working team members and the modelled service hours as shown in Exhibit 12, a total system savings could be realized by the conceptual service model. As the development of the service model is subject to a number of assumptions that will need to be validated in future planning efforts, a service contingency is maintained of approximately 14% of service requirements. This approach to calculating service savings is conservative with a focus on service adjustments that have a higher probability of being realized. The following section discusses the fundamental drivers behind those savings and any potential service risks.

The table on the following page reflects the allocation of service hours by municipality. It starts with the weekly hours that each municipality produces under their own systems. It then adds new service hours as identified through the conceptual model. The third column reflects the reallocation of regional hours. The remaining columns are explained in the subsections that follow. Through the synergies realized through the consolidation of services, approximately 1,539 hours of savings can be captured by municipalities. This figure needs to be reduced by a service contingency of 731 hours as previously described. This results in a net savings of approximately 850 hours per week, which are reflected in the financial model.

This approach allows for the better coordination of approximately 6,800 weekly hours of service that are currently being delivered across the region. **By combining the resources and capabilities of the 13 municipalities under the RTSC, a robust network can be built to provide an improved service** while achieving an estimated total savings of 850 service hours per week. That **translates to approximately $5.5 million in efficiency savings per year when synergies are fully realized.**

Table 34 - Potential Regional Service savings

	Existing weekly revenue service hrs	Additional weekly service hrs reflected in RTSC model	Regional Service reallocation by municipality to the RTSC	Savings realized through consolidation	Weekly revenue service hrs after Regional Service reallocation	Contingency hrs @ 14%	Direct Enhanced Services	Local Service reallocated to RTSC by municipalities	Weekly revenue service hrs with regional local upload
City of Edmonton	37,652		(4,809)		32,843			-	32,843
RTSC	-		6,793	(1,538)	5,255	731		2,965	8,951
Strathcona County	2,342		(486)		1,856		(350)	(1,506)	-
City of St. Albert	1,569		(719)		850			(850)	-
City of Spruce Grove	360		(285)		75			(75)	-
Parkland County	51	39	(79)		11			(11)	-
City of Leduc	280	39	(47)		272		(63)	(209)	-
City of Fort Saskatchewan	234	39	(104)		169			(169)	-
Sturgeon County	38		(38)		-			-	-
City of Beaumont	42		(42)		-			-	-
Town of Stony Plain	-	131	(77)		54			(54)	-
Leduc County	151		(26)		125		(34)	(91)	-
Town of Morinville	-	35	(35)		-			-	-
Town of Devon	-	46	(46)		-			-	-
	42,719	329	-	(1,538)	41,510	731	(447)	-	41,794

Regional Service hours required

Based on the model results shown in the table below, the total service required for the conceptual design is 5,255 revenue hours per week. An estimate of per week hours was scaled to annual hourly estimates using a factor of 52. Added to these weekly service hours is a contingency of 731 hours or 14% of the estimated service requirement. Headways and service spans were based on an evaluation of existing services and adjusted based on validation meetings held with Working Team members.

*Table 35 – Total weekly **regional service hours** required under the RTSC Case*

RTSC Case route	Modelled Regional Service hours required	Contingency (14%)	Total Regional Service hours required
RT #1	1,219	170	1,389
RT #2	1,028	143	1,171
RE #1*	300	42	342
RE #2	323	45	368
RE #3	1,067	149	1,216
RE #4*	149	20	169
RE #5*	295	41	336
RE #6	427	59	486
RE #7*	335	47	382
MTA - Edmonton Garrison	38	5	43
MTA - Nisku	34	5	39
MTA - Acheson	40	6	46
Total	**5,255**	**731**	**5,986**

**Refers to RTSC routes that include a peak hour extension.*

In addition to the estimation of savings related to revenue hours of service in the conceptual model, an estimate of non-revenue savings was developed. This was achieved by comparing the potential routing of non-revenue service to and from the nearest garage facilities to operate the regional services. An estimate of 150 to 200 hours per week of savings were identified by the model, subject to the development of a specific operating plan for services across the network. These additional savings have all been reflected in the financial model.

Local Service hours required

The original MOU signed by the municipalities called for regional services to be transferred to the Commission first, with local services to transfer later. During this work, the municipalities identified that by reallocating their regional routes to the Commission, the local services they would retain could not be delivered in a cost-effective manner due to lost economies of scale; Edmonton was the only exception to this.

A decision was made to accelerate their proposed upload of local services to coincide with the regional upload. Due to the size of ETS's operations this was not an issue for Edmonton and the remainder of the service was decided to be uploaded at some time after 2026. For that reason, there are no hours allocated to Edmonton local service to the Commission. Based on the model results shown on the following table, the total service required for Local Services is 2,965 revenue hours per week. An estimate of per week hours was scaled to annual hourly estimates using a factor of 52.

Table 36 – Total weekly ***Local Service hours*** *transferred to the Commission under the RTSC Case*

Municipality	Modelled Local Service hours	Total Local Service hours transferred to the Commission
City of Edmonton	32,843	-
Strathcona County	1,506	1,506
City of St. Albert	850	850
City of Spruce Grove	75	75
Parkland County	11	11
City of Leduc	209	209
City of Fort Saskatchewan	169	169
Sturgeon County	-	-
City of Beaumont	-	-
Town of Stony Plain	54	54
Leduc County	91	91
Town of Morinville	-	-
Town of Devon	-	-
Total	**35,808**	**2,965**

Enhanced Service hours required

Based on the model results shown on the following table, the total service required for the Enhanced services is 447 revenue hours per week. An estimate of per week hours was scaled to annual hourly estimates using a factor of 52.

Table 37 – Total weekly enhanced hours requested by municipalities under the RTSC Case

Municipality	Total modelled Enhanced Service hours requested by municipalities
City of Edmonton	-
Strathcona County	350
City of St. Albert	-
City of Spruce Grove	-
Parkland County	-
City of Leduc	63
City of Fort Saskatchewan	-
Sturgeon County	-
City of Beaumont	-
Town of Stony Plain	-
Leduc County	34
Town of Morinville	-
Town of Devon	-
Total	**447**

Synergies in regional transit provision

Concept planning contingencies are not being allocated to a specific agency, as that approach does not align with the approach of the RTSC business case. The RTSC guidelines would provide guidance on how to design and allocate available service hours in the future RTSC Case. As part of the formation of a regional service, there is a balance needed for this shared service between multiple communities. With a new mandate for delivering efficient and effective regional services, there will be a restructuring of services that would likely not have the same degree of customization for travel patterns from individual communities into and out of Edmonton. The recommended approach is to use guidelines for regional services.

The service hour savings used in the financial model show an ability to offset the investment in formation of a regional commission over time. As service efficiencies are realized, it is the role of the RTSC to allocate resources to either new services, increase current services to respond to growth demands or to return the savings back to the municipal agencies that have been requisitioned for transit costs. The benefits as well as implications and challenges of an amalgamated regional service are summarized in Exhibit 13. Further investment in regional service by the municipal councils will enhance the mobility of the region and further support achievement of positive community, environmental and economic outcomes.

Table 38 - Regional transit service efficiencies and potential implications

Regional transit service efficiency	Rationale	Potential implications
Increased travel speed	A focus on regional trip patterns and reduced local stops to increase the overall speed of the regional transit service	While longer distance trips benefit, local service gaps may be created in areas with limited services or where crosstown service has a local function
Reduced direct service to lower demand destinations	The creation of a broader transit network to remove the need for direct service to small activity centres	Individuals who used direct services will now require a transfer to reach smaller scale destinations
Reduction of service overlap	Removal of overlapping services along a common corridor to create service synergies	Removing overlapping service will create a higher load on new services and some trip patterns
Streamlining routing through the Downtown area	Removal of looping routes through the downtown core is not required with a regional model where service can be planned to continue through to another destination	While there is a potential reduction in unproductive service, there may not be enough demand from both ends of a route to justify "pendulum" service
Increased use of transit signal priority measures	With a regional mandate, the RTSC will be able to effectively plan capital improvements within Edmonton to facilitate the flow of transit vehicles	May result in increased congestion in Edmonton that offsets potential savings from Transit Signal Priority measures
Increased service plan due to reallocated efficiency gains	With the development of more productive services there is an opportunity to expand service span and frequency in key corridors	Increased demand for transit services may require further investment of public funds in transit services for communities with funding challenges

RTSC Case fleet requirement

Based on the total amount of service required and the schedule of service developed for modelling purposes, an estimated fleet size was developed for the RTSC Case. A total of approximately 212 vehicles would be required for regional, local and enhanced regional transit services. This includes an overall spare ratio of 30%, which was selected as a conservative average assumption.

Table 39 - Estimated required fleet for RTSC services

Route name	Estimated number of fleet vehicles required
RT #1	24
RT #2	17
RE #1*	6
RE #2	6
RE #3	14
RE #4*	6
RE #5*	6
RE #6	6
RE #7*	6
MTA – Edmonton Garrison	1
MTA – Nisku	1
MTA – Acheson	1
Local Services	60
Direct Enhanced Services	9
Subtotal	163
30% Spare Ratio	49
Estimated total	**212**

It should be noted that the estimated fleet requirement is based on the RTSC conceptual transit services design and the associated transit service plan developed for the business case. The fleet requirement is a conservative estimate, as an interlining of transit services was not conducted for the purposes of the business case. Additionally, this was a simplified analysis which did not factor in the home location of the various fleet types that are currently operated or operational constraints across the region. Fleet estimates included garage facilities, specific vehicle types (double decker, articulated, etc.) and transportation network limitations including pavement bearing capacities and overhead clearance.

Based on this analysis, the implementation of the conceptual transit services design is feasible with the fleet available. The development of a detailed fleet and service plan would be required for implementation in the future.

Regional service risks and mitigation

Meetings were held with transit and operations professionals from each municipality that currently delivers transit to understand of any areas of concern or perceived risk to implementing the regional service. Several key themes were captured through discussion including a concern over a possible decrease in the level of service that currently exists for some. A high-level summary of these risks is provided below to provide a balanced perspective and identify potential areas that will require attention during implementation.

Table 40 - Potential regional service risks and proposed mitigations

Potential risk	Risk	Proposed mitigation
Corridor capacity	The consolidation of transit services poses a risk that service under a RTSC will be unable to meet ridership demand.	Analysis on ridership to date shows that on average, transit services provided within the region are not at capacity. By combining existing routes, it is possible to provide an optimal level of service that accommodates for all existing ridership within existing capacity. Refinements to future service designs can account for detailed ridership estimates implementing service with additional service hours as required and planning for contingencies.
Reconcile differing service standards	Riders in the region have become accustomed to varying levels of service across transit service providers including seating room, direction of routes, frequencies and infrastructure quality. This results in a disparity in customer expectations of service standards. Adapting to new service standards under an RTSC may be difficult for riders due to changes in service offerings.	Through the detailed planning work required at the formation of the RTSC items such as bus matching to specific route times, enhanced service delivery, bus size and legacy bus allocations to routes can minimize impacts. As with any service modification, communication and interactions with customers is paramount.

Potential risk	Risk	Proposed mitigation
Perceived lower service quality	Regional customers who currently experience a direct route to their destination using transit may be inconvenienced by delays in the system as routes accommodate for new detours and riders from other municipalities.	As a regional service, transit routes must account for all residents along major corridors, providing improved and accessible transit services. At the same time, routes running along these high-density corridors must account for efficiency and enforce reduced stopping to remain competitive as a regional service in comparison to existing local services. Detailed service planning and community engagement will be required prior to the implementation of any service changes.

In addition to the above concerns, the following items were identified for consideration in future planning:

- What will service look like going into and through the downtown core? Where will bus services terminate if there are no existing transit centres?
- What specific corridor improvements are needed to maintain rapid and reliable transit service?
- How will the fleet of double decker buses be allocated?
- Will the level of cleanliness be consistent across the region?

With respect to service delivery, the development and endorsement of the Transit Service Level Guidelines will be a critical first step for the formation of a successful Regional Transit Services Commission. By moving toward an approach based on the technical parameters established in guidelines, the service delivered by the Commission can provide a more consistent and effective mobility network across the region in a sustainable manner. The guidelines also provide the technical foundation for a centralized planning function that would balance local needs with providing an effective service for the whole region.

A regional commission has the potential to improve the coordination of services across municipalities, ultimately leading to transit services being delivered as an integrated whole. Centralizing planning resources and allowing the pooling of services across regional boundaries, reduces the cost of entry for communities seeking access to transit service. The Commission creates an opportunity for municipalities to provide a range of different service types, including ‘on-demand’ service for low density areas. Compared to existing transit systems in the region, centralized planning can reduce overlaps, create efficiencies and address gaps in service for intermunicipal and long-distance travel.

9 RTSC IMPLEMENTATION PLAN

Overview

The implementation plan outlines the key activities required to transition from separate municipal transit organizations to a RTSC. The work identified through this plan has also been used as the basis for estimating one-time costs and investments required to transition to a fully functioning RTSC by 2023.

Several categories of activities are contemplated and organized into five key stages: (1) Pre-implementation work leading up to its legal formation; (2) Work involved in the formation and set-up of the Commission within the first year of it being established; (3) Work required to prepare for the deployment of regional services under the Commission; (4) Initial deployment of the regional transit services in alignment with finalized Transit Service Level Guidelines; and, (5) Work involved in stabilizing and enhancing regional and local services. The anticipated upload of local ETS services is expected to occur after 2026 and is not included in the current plan, although regional components of the ETS routes have been included, as they will be transitioned earlier.

Pre-implementation activities should begin in early 2020 to seek approval of the Commission from the Government of Alberta, and perform the detailed planning required to fully stand up the RTSC by the beginning of 2021. At the outset, while the RTSC is being set up in early 2021, member municipalities will continue to deliver transit services, resulting in duplication of activity across the region. While the RTSC will not be delivering services during this period, it will be involved in route planning, procurement and other transition activities required to prepare it to begin delivering transit services in the second half of 2022.

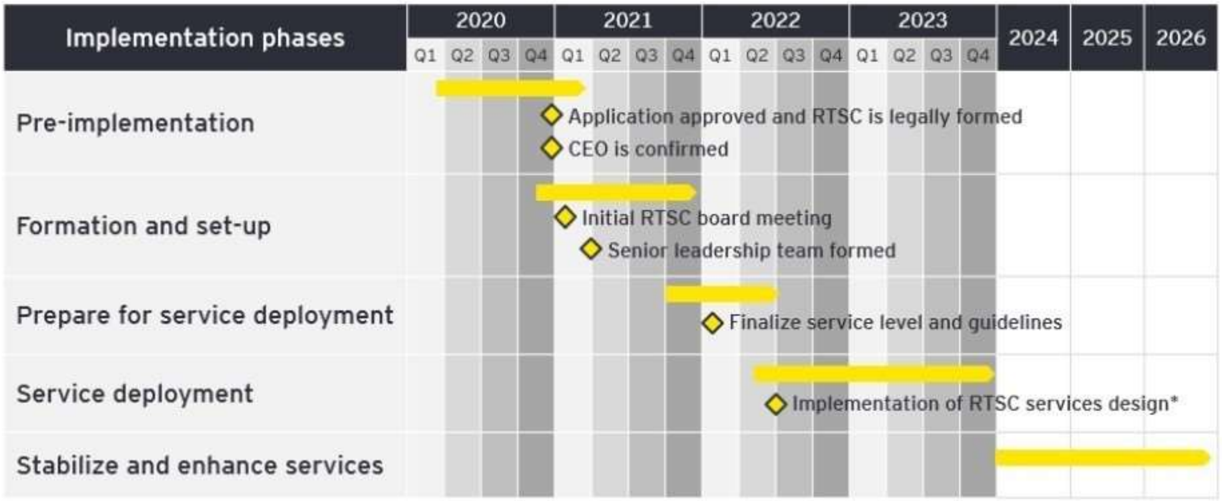
As the RTSC begins the transition of services, the implementation plan may need to be adjusted as appropriate as more information becomes available. Ultimately, the Transition Team will own the implementation plan until the RTSC is legally formed, at which time it will become the responsibility of the Commission's senior leadership.

This section highlights specific key activities and milestones associated with the plan. A more detailed version can be found in *Appendix H: Detailed Implementation Plan*.

Key activities and milestones

The RTSC implementation plan activities align to one of five phases within the plan: Pre-implementation, Formation and Set-up, Prepare for Service Deployment, Service Deployment, and Stabilize and Enhance Services.

Figure 21 - Implementation plan overview



** Implementation of the RTSC regional transit services design begins no later than July 1, 2022 to avoid deferring roll-out to the following spring when transit ridership is lower and there is less risk to changing transit schedules*

Of these implementation activities several are critical for the implementation to remain on schedule. Of utmost importance is the timely approval of the application for the formation of a regional commission and the cabinet approval by the Government of Alberta, allowing the RTSC to operate as a legal entity. These include:

- Approval of the application to the Government of Alberta to legally form the RTSC by the end of 2020
- Confirmation of the CEO prior by the end of 2020 and onboarding of the remaining members of the senior leadership team by no later than March 31, 2021
- Initial meeting of the RTSC Board within one month of inception to prevent delays to decisions required for initial implementation
- Finalization of Transit Service Level Guidelines for local services prior to the initial roll-out of regional services on July 1, 2022 to govern future changes to this type of transit service

Pre-implementation

Transition Team members will undertake pre-implementation activities in 2020 to seek approval for the Commission by the Government of Alberta and develop the detailed plans to fully stand up the RTSC in 2021. Key activities include:

- Submission of the application to the Government of Alberta in the Spring of 2020, subsequent confirmation of the interim governance structure comprised of municipalities who vote to join the RTSC, and approval of the application by December 2020
- Detailed transition assessments and recommendations with respect to transit agency assets, contracts, transit-related facilities, enterprise technologies, paratransit, and safety processes under the RTSC to minimize risk and cost, each due at various points in 2020
- After the application is submitted, recruitment of the RTSC CEO by the end of 2020. Once the CEO is confirmed, recruitment of the remaining senior leadership team will occur with the goal of having the full executive team in place by the end of March 2021

Formation and set-up

After the application is approved by the Government of Alberta and the RTSC is legally formed, work will be required to establish the initial workforce, workplace infrastructure, policies, business processes, and enterprise technologies to guide daily operations. Key activities over 2021 include:

- Development of the first RTSC strategic plan with the Board and senior leadership team to validate the strategic priorities, create the annual business plan, develop RTSC brand strategy, affirm RTSC core values, and provide input to the change management strategy and plan by September 2021
- Implement the transition recommendations developed in 2020, with a focus on transferring assets, negotiating new contracts under the RTSC, and establishing lease agreements for transit-related facilities by December 2021
- Initiate detailed regional transit planning activities, such as: finalizing the regional service design with public engagement; developing Service Level Guideline for local services; and engaging in ongoing transit initiatives (e.g. Smart Fare, U-Pass renegotiations, etc.)

Prepare for service deployment

In the first six months of 2022, the RTSC will onboard the remaining resources needed to fully establish business operations in preparation for the roll-out of the new regional transit services network beginning in July. Key activities in this phase include:

- Develop a marketing strategy and brand identity design roll-out strategy, based on the RTSC brand strategy, including a website launch in April 2022 and gradual rebrand of transit assets and materials from July 2022 to December 2023
- Transition remaining municipal transit resources to the RTSC by June 2022. At this point, municipal transit agencies will be wound down, except for local ETS and municipal resources delivering paratransit services
- Prepare for the operational roll-out of integrated regional services under the RTSC in July 2022, including: planning fleet deployment, aligning maintenance schedules, confirming data collection processes, and establishing safety protocols and tools to deliver services

Service deployment

Service deployment involves implementing the regional services network design over time. This phase also includes establishing processes to assess and monitor the results of service changes. Key activities include:

- Gradual roll-out of the integrated regional service design under the RTSC from July 2022 to December 2023 with a strong focus on ongoing customer support and communications to minimize confusion as services are transitioned.
- Analyze the first cycle of customer and operational data to evaluate the performance of regional transit services in comparison to baseline data gathered prior to July 2022 and adjust
- Recruit and onboard RTSC employees required in year three of operations over 2023 to guide the successful execution of the regional services roll-out

Enhance and stabilize services

When the regional services roll-out under the RTSC is completed by the end of 2023, the focus shifts to assessing and improving service delivery in preparation for assuming operations of ETS local services. Key activities include:

- Assess customer satisfaction through surveys and analysis. The learnings from the regional services transition should be used to inform the transition of ETS local services to the RTSC, which would ultimately reduce the number of transit agencies in the region to one entity
- Use data and insights to inform service improvements, including new mobility options, optimal deployment of the fleet across the network, and standardization of asset features (e.g. safety shields, Wi-Fi-enabled buses, etc.)
- Align municipal local services over time to bring them into alignment with local Transit Service Level Guidelines while working closely with ETS to prepare for the RTSC to assume the delivery of ETS local transit services

Success factors

Several factors are critical to the success of the consolidation of regional transit services under the RTSC, including:

- **Mobilize expertise and build on successes by:**
  - Leveraging transit expertise that already exists within the region, to ensure that institutional knowledge and continuity is maintained throughout the transition
  - Understanding initiatives that are already underway at various stages across individual transit agencies, and determining whether they are relevant to the RTSC, to ensure a smooth transition
  - Leveraging capabilities that exist within ETS where appropriate to allow for a smooth integration when ETS local service is uploaded to the RTSC
  - Managing the change for municipalities, the RTSC, and each of their respective workforces through specialized in-house or contracted change management expertise

- **Build trust across the region by:**
    - Building relationships early on with current providers, while becoming involved with in-flight and new transit initiatives (e.g. Smart Fare, U-Pass and community group engagement to enhance services)
    - Committing to treating paratransit as an important initiative given the importance of accessible and safe transit in the region
    - Collaborating closely with municipalities in the time leading up to and during roll-out of regional transit services to maintain a smooth transition
    - Utilizing data to support evidence-based decisions that meet or exceed RTSC Transit Service Level Guidelines and ensure transparency across member municipalities
    - Working alongside RTSC leadership to develop the change management strategy in alignment with core values developed through the strategic planning process
- **Support employees, customers and other stakeholders through the start-up, transition and continuous improvement of the RTSC by:**
    - Investing in change management to support municipalities, RTSC leadership and employees through the transition to regional transit service delivery under the Commission
    - Identifying resources required to deliver in-house and contracted services to inform a workforce transition plan
    - Assessing union requirements associated with proposed workforce changes, if any
    - Conducting a change impact assessment to understand the implications associated with the changes and the change activities to address the impacts
    - Developing a change management plan, engagement and communications plan, and training plan that includes key messaging to communicate change impacts to municipalities including targeted, organization and strategic messages

These key activities will help to realize the success of the RTSC when addressed early in its establishment.

10 FINANCIAL MODEL

Overview

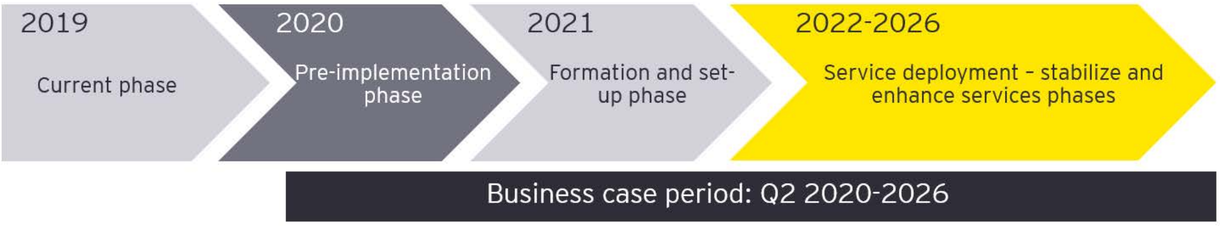
The financial model quantitatively assesses two primary areas:

- It compares the estimated costs of operating the RTSC to the total cost of municipalities continuing to deliver transit services separately; and,
- It estimates how the funding shortfall related to operating the RTSC will be allocated back to municipalities.

The financial model covers the business case period from 2020 to 2026 inclusive and was developed using information gathered through consultation activities with municipalities as described in *Appendix I: Financial model consultation and development process*. The Base Case represents the cost of delivering services under separate transit agencies without a Commission, using the operational forecasts for each municipality consolidated into annualized figures. The financial model then provides a "RTSC Case," represented by the Base Case, plus incremental costs of standing up and operating the Commission, less the estimated incremental savings from the more efficient delivery of services under the RTSC. The outputs of the financial model are used as inputs to the cost allocation model later in this section and to inform the financial account of the business case in *Section 11: Business case evaluation*.

In the region today, the revenue earned by municipal transit agencies from fares and other sources does not fully cover the costs of operating transit services. The result is a "funding shortfall" that municipalities then cover using a percentage of property tax receipts. Under a commission, this funding shortfall will continue to exist, therefore requiring an approach to allocating these costs back to member municipalities. The funding allocation framework explains how this funding shortfall is equitably distributed across the 13 municipalities.

Figure 22 - Funding model and business case considerations


2019
Current phase
2020
Pre-implementation phase
2021
Formation and set-up phase
2022-2026
Service deployment – stabilize and enhance services phases
Business case period: Q2 2020-2026

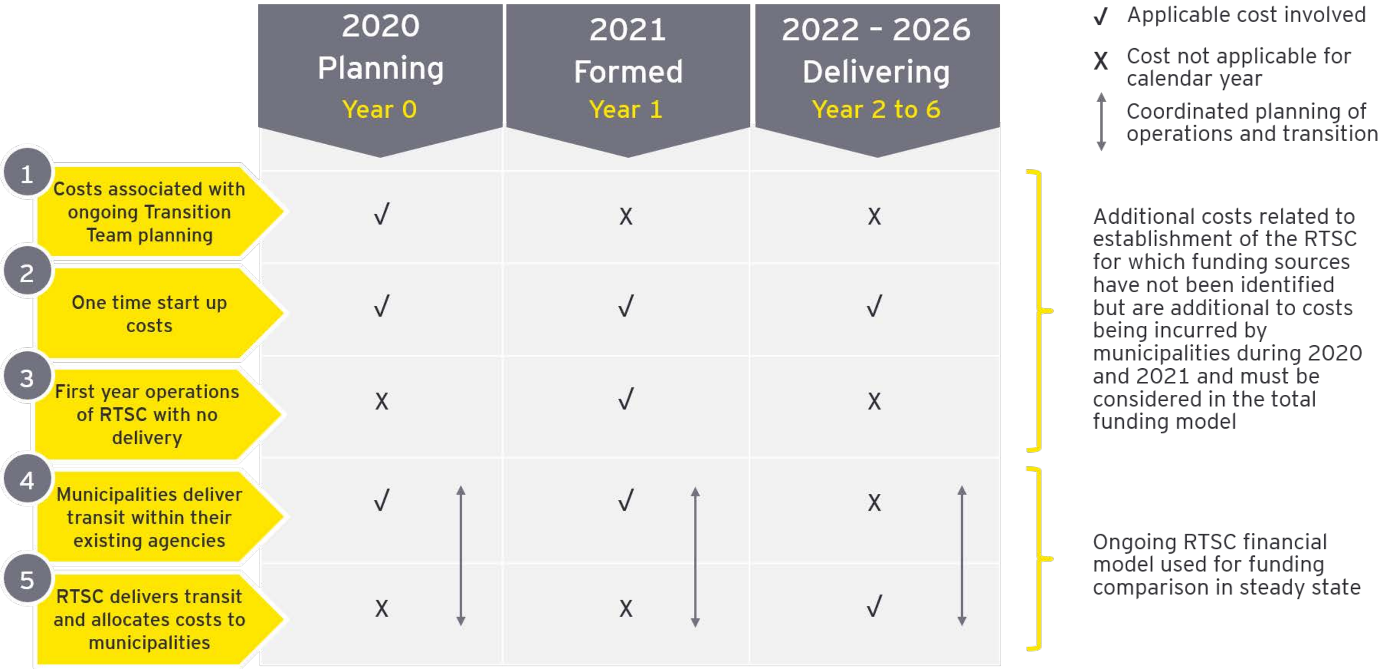
The funding models and business case must consider the following:

- Costs associated with the work before the entity is legally established (Pre-Implementation Phase)
- Costs associated with the RTSC's formation and in its first year of operations when it is not yet delivering regional transit services (Formation and Set-up Phase)
- The expected repayment period during which costs associated with Formation and Set-up Phase are to be recovered from realized annual efficiency savings
- The future cost of steady state operations and enhanced regional transit service delivery (Service Deployment Phase, Stabilize and Enhance Services Phase)
- The allocation between fixed and variable funding shortfall allocations to municipalities

Further information on the financial model approach can be found in *Appendix J: Details of the financial model approach*.

The following figure outlines how costs are anticipated to be incurred by the RTSC during the Pre-implementation Phase in 2020 through to the end of the business case period in 2026 when the RTSC is delivering regional transit services.

Figure 23 - Anticipated timing of costs under the RTSC



	2020 Planning Year 0	2021 Formed Year 1	2022 - 2026 Delivering Year 2 to 6
1 Costs associated with ongoing Transition Team planning	√	X	X
2 One time start up costs	√	√	√
3 First year operations of RTSC with no delivery	X	√	X
4 Municipalities deliver transit within their existing agencies	√	√	X
5 RTSC delivers transit and allocates costs to municipalities	X	X	√

√ Applicable cost involved

X Cost not applicable for calendar year

↕ Coordinated planning of operations and transition

Additional costs related to establishment of the RTSC for which funding sources have not been identified but are additional to costs being incurred by municipalities during 2020 and 2021 and must be considered in the total funding model

Ongoing RTSC financial model used for funding comparison in steady state

The following tables and graphs provide a summary of the financial model results.

Table 41 - RTSC Case annual summary

Thousands $CAD

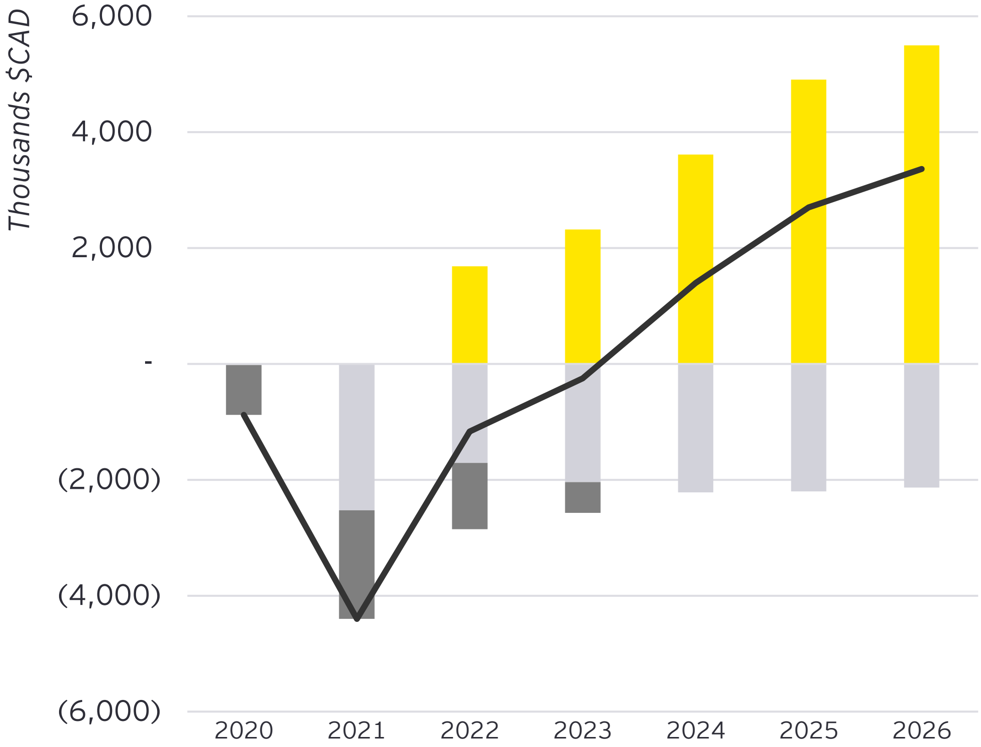
Account	2020	2021	2022	2023	2024	2025	2026
Total Base Case Funding Shortfall	-	-	55,679	56,507	57,698	58,842	59,975
Add: One-time/Start-up Costs	864	1,877	1,141	531	-	-	-
Add: Recurring Incremental Costs	17	2,524	1,711	2,042	2,218	2,202	2,136
Less: Service Efficiency Savings	-	-	(1,685)	(2,322)	(3,615)	(4,907)	(5,500)
Total RTSC Funding Shortfall	$881	$4,401	$56,846	$56,757	$56,301	$56,138	$56,610
Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	4,401	1,166	250	(1,397)	(2,704)	(3,364)
Cumulative Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	5,282	6,448	6,699	5,302	2,597	(767)

The *RTSC Case Annual Summary* table above represents the summary of information discussed in this section. It takes the Base Case funding shortfall associated with the cost of municipalities continuing to provide their own transit services, adds additional costs related to standing up and operating the RTSC, and then deducts efficiency savings which can be realized through the consolidation of services.

One-time and incremental costs associated with the Commission included costs such as branding and marketing, stakeholder engagement activities, and additional costs related to future detailed route planning for integration. They also included the incrementally higher resource costs estimated for the staff and contractors that would continue to operate their own transit services in 2020 and 2021 while the Commission requires similar resources to stand-up and begin their own planning and operational activities. Service efficiency savings were first addressed in *Section 8: RTSC Transit Service Delivery* and are related to savings realized due to the reduction of duplicative or overlapping routes along with a reduction in dead-heading hours.

By combining the resources and capabilities of the 13 municipalities under the RTSC, **a robust network can be built to provide an equivalent or better service while achieving an estimated total savings of 850 service hours per week,** plus efficiencies through the reduction of non-revenue service hours. That translates into **approximately $5.5 million in efficiency savings per year when synergies under the regional network are fully realized.** The table below shows how those savings are recognized gradually over time, with the first realized in 2022 with $1.7 million of efficiency savings and building up to $5.5 million in 2026.

These efficiency savings more than offset one-time and recurring costs associated with forming and operating the Commission with these costs fully recovered by 2026. In addition, a net savings in annual shortfall compared to Base Case of approximately $3.4 million annually could be realized from 2026 onward.



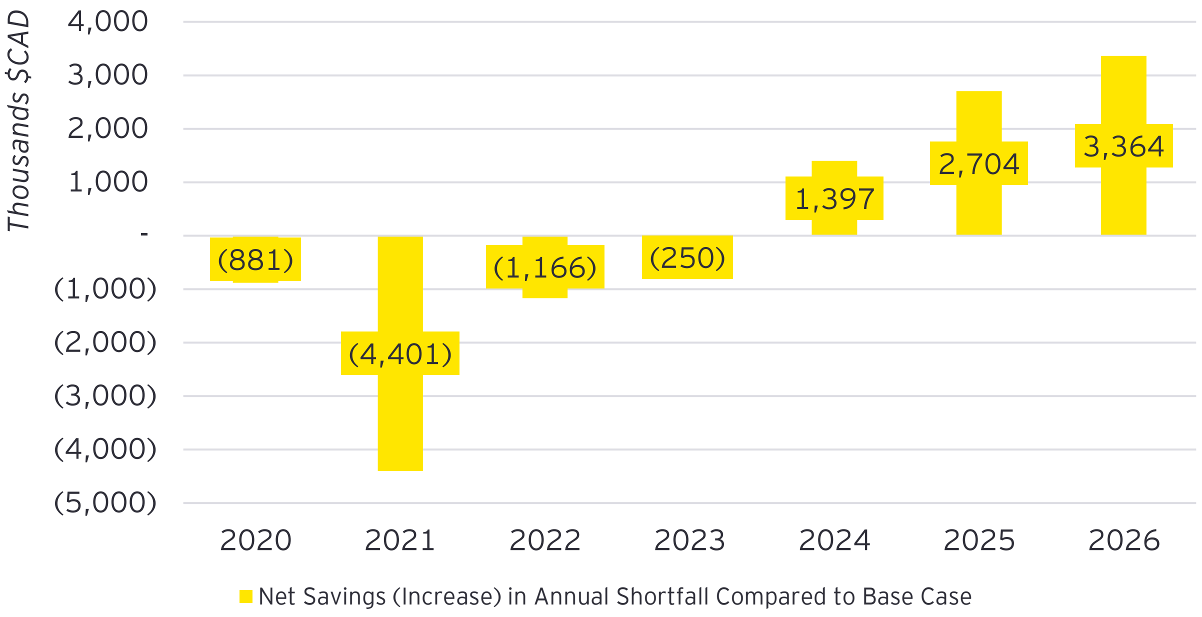
	2020	2021	2022	2023	2024	2025	2026
▬ One-time/Start-up Costs	(864)	(1,877)	(1,141)	(531)	-	-	-
▬ Recurring Incremental Costs	(17)	(2,524)	(1,711)	(2,042)	(2,218)	(2,202)	(2,136)
▬ Service Efficiency Savings	-	-	1,685	2,322	3,615	4,907	5,500
— Net Savings (Increase) in Annual Shortfall Compared to Base Case	(881)	(4,401)	(1,166)	(250)	1,397	2,704	3,364

The increase in annual funding shortfall continues through 2023 with a peak in 2021 at an estimated $4.4 million additional funding shortfall in excess of the Base Case. However, these additional shortfalls resulting from the Commission begin to reverse in 2024 with an excess efficiency savings over incremental costs (primarily due to the end of one-time costs that are the result of forming the Commission) and reach a net annual estimated savings of $3.4 million in 2026. **This demonstrates that the Commission can operate at a lower cost than the cumulative costs of the existing transit agencies continuing to deliver services separately.** These estimated savings would be projected to continue past the business case period and can be reinvested back into transit service enhancements.

The net annual shortfall compared to Base Case increases significantly in 2021, resulting from the stacking of one-time costs and recurring incremental costs at Commission start-up. As the one-time costs drop off, the incremental costs stabilize, and service efficiency savings are realized.

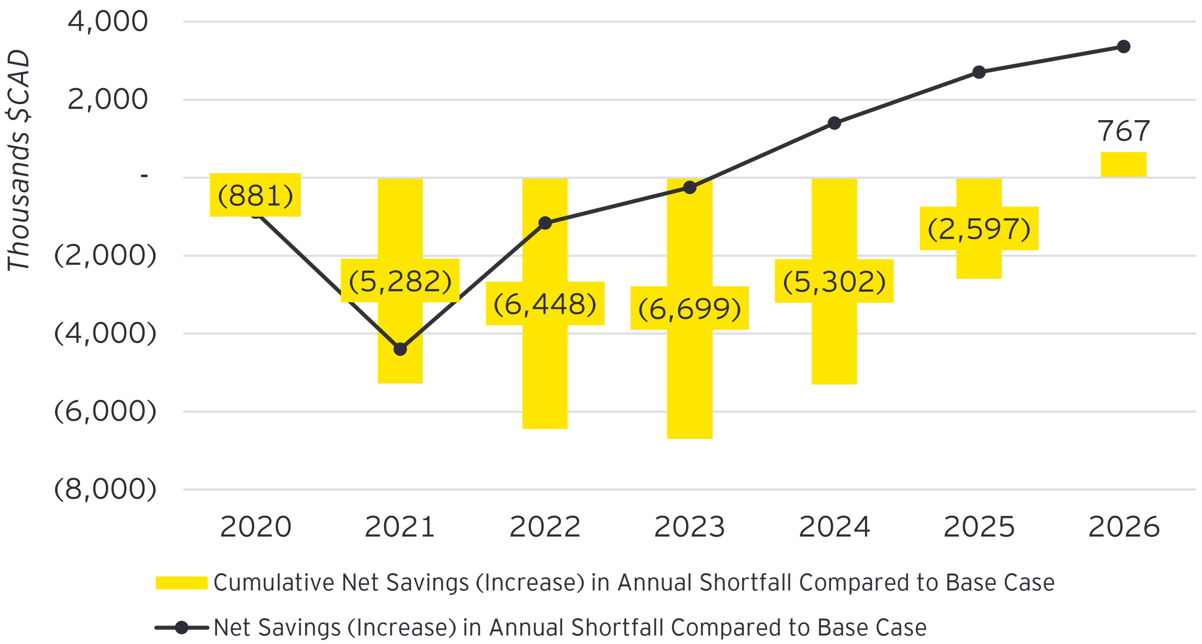
Building on the previous discussion, the RTSC Case Funding Shortfall reflected in the below graph combines the various cost and savings elements to show the net incremental difference from the Base Case funding shortfall. It illustrates an estimated low point of $4.4 million in additional costs over Base Case (resulting from one-time and recurring costs) through to the estimated net realized savings over Base Case of $3.4 million.

Table 43 - RTSC Case funding shortfall – Net incremental costs and savings difference from Base Case



As reflected in following graph, the financial model demonstrates the ability for the Commission to break even in 2026 when it comes to recovering the cumulative incremental costs incurred since 2020. This is evidenced by the estimated $767 thousand in cumulative net savings in annual shortfall compared to Base Case shown in 2026.

Table 44 - RTSC breakeven – Recovery of one-time and recurring incremental costs

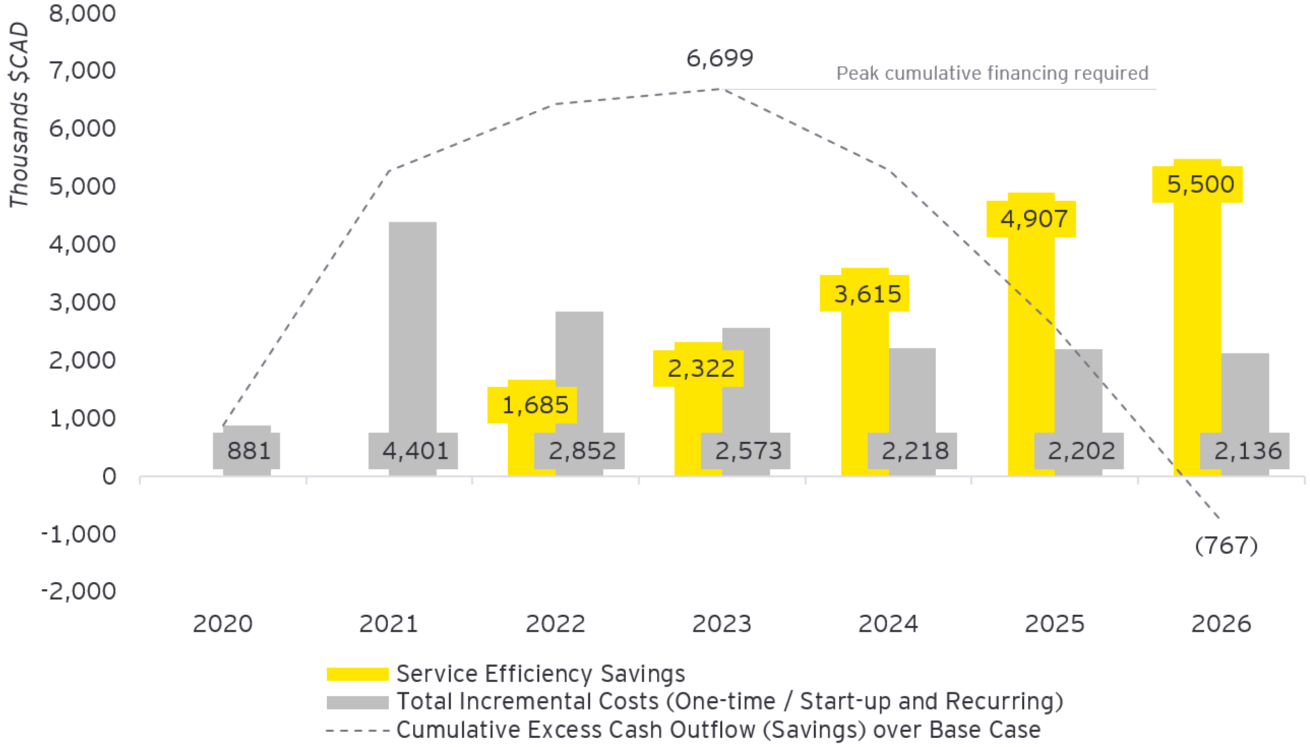


The pace at which estimated savings can be realized is accelerated if the RTSC can obtain additional funding sources, including grant contributions, to offset the one-time costs associated with standing up the commission. For the purposes of this financial analysis, no additional revenue sources such as grant funding have been recognized as part of the creation of the RTSC because they cannot necessarily be sure to be realized. Should they have been included in the financial model but not later realized, municipalities would be left accountable to cover unanticipated additional costs which would have negative consequences.

The graph that follows provides a summary of the annualized incremental costs and service efficiencies (savings) over the course of the business case period (2020-2026). The cash flow requirement in excess of the estimated aggregate Base Case is illustrated alongside the annual estimated service efficiency savings realized. The cumulative net cash flow requirement in excess of the existing aggregate Base Case contribution is shown by the black dashed line and represents the anticipated use of a short-term revolving loan facility. The projected financing required reaches a peak cumulative drawdown of approximately $6.7 million in 2023. As RTSC operations begin to stabilize in the later years of the business case, increased service efficiencies are estimated and the proceeds of which will go towards repayment of the short-term financing facility. Full repayment of the financing facility and a net savings over Base Case of approximately $767 thousand is expected by 2026.

This short-term funding can be reduced through either additional revenue sources for the RTSC or by obtaining additional grant funding related to the standing up of the Commission. Not only would this reduce the required financing, it would thereby reduce associated interest carrying costs and accelerate time needed to realize net savings over the Base Case; this would allow the RTSC to re-invest into enhancing the delivery of transit services even sooner than 2026.

Table 45 - Estimated RTSC incremental costs, service efficiencies and cash flow requirements



Thousands $CAD	2020	2021	2022	2023	2024	2025	2026
Total RTSC Funding Shortfall	881	4,401	56,846	56,757	56,301	56,138	56,610
Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	4,401	1,166	250	(1,397)	(2,704)	(3,364)
Cumulative Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	5,282	6,448	6,699	5,302	2,597	(767)

Base Case

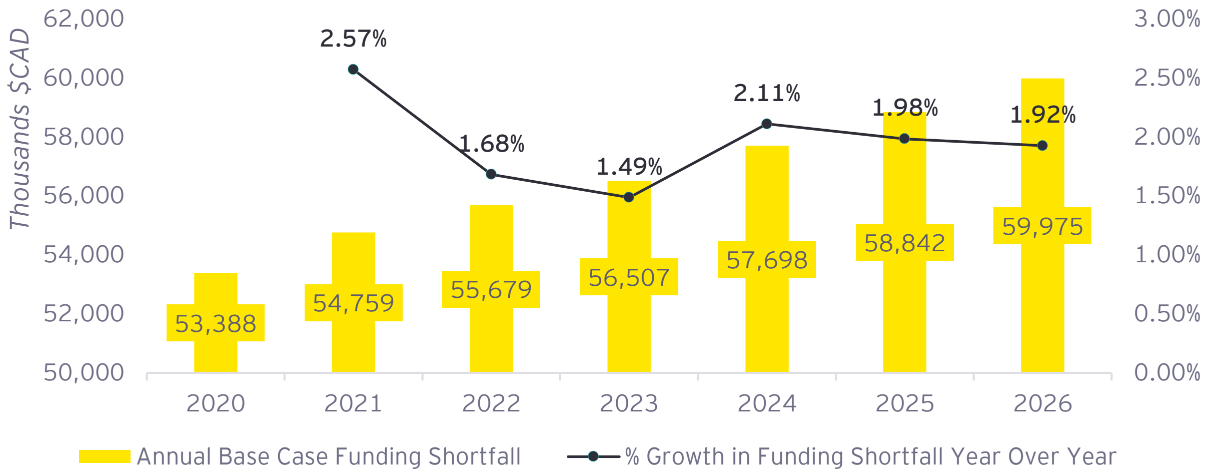
The Base Case is defined as the operational forecast of each municipality, consolidated to form a single annualized figure for the duration of the business case. It provides a benchmark estimate of expected revenues, expenses and resulting operating shortfall (or surplus) of existing and future transit services should they continue to be delivered by separate municipal transit agencies without a commission.

Summary of Base Case financials

The average estimated Base Case funding shortfall through the duration of the business case period is forecasted to be approximately $57.8 million and was calculated in conjunction with individual municipalities who are either currently providing transit services or will commence services within the business case period.

The following figure illustrates the annual estimated funding shortfall for the Base Case and annual year over year growth rate. The variation in the annual growth rate of the funding shortfall can be attributed to increased and/or new transit services planned by some municipalities, as well as each municipality's unique growth rates.

Table 46 - Estimated Base Case aggregate annual funding shortfall (2020-2026)



The net aggregate funding shortfall of continuing to operate separate municipal transit agencies over a five-year period is forecasted to be approximately $288.7 million (stated in nominal 2019 dollars). The aggregate funding shortfall from delivering transit services without a commission is estimated to increase over time at an average rate of 1.88% based on taking an average of the individual growth rates used by municipalities in budgeting. The following table summarizes Base Case financials adjusted for a common growth factor, both by municipality and in aggregate. For purposes of assessing the financial impact to municipalities, the forecasted funding shortfall for each year of the business case period will be compared to the funding shortfall of operating under a commission in the RTSC Case.

Table 47 - Annual Base Case funding shortfall summary table

Base Case Funding Shortfall	*Annual Base Case transit operations forecasted for business case operating period (2022-2026)*							
Thousands $CAD	2022	2023	2024	2025	2026	**Total**	Average	% of Total
Edmonton	23,632	23,983	24,489	24,975	25,456	**122,536**	24,507	42.4%
Strathcona County	14,592	14,809	15,121	15,421	15,718	**75,662**	15,132	26.2%
St.Albert	10,702	10,861	11,090	11,310	11,528	**55,492**	11,098	19.2%
Spruce Grove	1,969	1,998	2,040	2,081	2,121	**10,208**	2,042	3.5%
Parkland County	645	654	668	681	695	**3,343**	669	1.2%
Leduc	1,153	1,170	1,194	1,218	1,242	**5,977**	1,195	2.1%
Fort Saskatchewan	1,292	1,311	1,338	1,365	1,391	**6,697**	1,339	2.3%
Sturgeon County	-	-	-	-	-	**-**	-	0.0%
Beaumont	392	398	406	414	422	**2,031**	406	0.7%
Stony Plain	500	507	518	528	538	**2,592**	518	0.9%
Leduc County	621	630	643	656	669	**3,218**	644	1.1%
Morinville	-	-	-	-	-	**-**	-	0.0%
Devon	182	185	189	193	196	**946**	189	0.3%
Base Case Funding Shortfall Total	$ 55,679	$ 56,507	$ 57,698	$ 58,842	$ 59,975	$ 288,701	$57,740	100.0%

Key takeaways of Base Case financials

The Base Case financials reflect budget figures and escalation assumptions provided by each municipality, including forecasted revenues and costs associated with planned service changes throughout the duration of the business case operating period. Information gathered from each municipality depended on the extent of transit services delivered and generally included operating budgets, capital budgets, fleet inventories, and capital reserves used to pay for fleet vehicle upgrades and acquisitions. It is important to note that the Base Case does not include capital amounts as the RTSC will require a consolidation of assets and a coordinated capital program to address the various capital investments currently planned by each municipality.

Edmonton's estimated costs, revenues and resulting funding shortfall for the service hours allocated to the RTSC are an exception to the Base Case development methodology stated above. As the entirety of Edmonton's services are not planned for upload to the RTSC for the duration of the Business Case, representatives from ETS worked together to build an estimated operating cost of the allocated Edmonton service. This is important to keep in mind while reviewing the RTSC financials, as the Edmonton 'carve-out' of service has implications for the system's funding shortfall estimated growth rate and by extension the funding shortfall allocation methodology.

No costs are included over the Base Case period for municipalities that do not operate transit today and do not have immediate plans to deliver these services. Devon and Stony Plain are slated to begin new services in the year 2020 and 2021, respectively. These figures have been estimated by the respective municipalities and forecasted for the duration of the business case operating period. Given the initial scope of transit services to be transitioned to the RTSC, costs of operating the Light Rail Transit (LRT), local services delivered by ETS and any paratransit services delivered by municipalities are also not reflected in the Base Case.

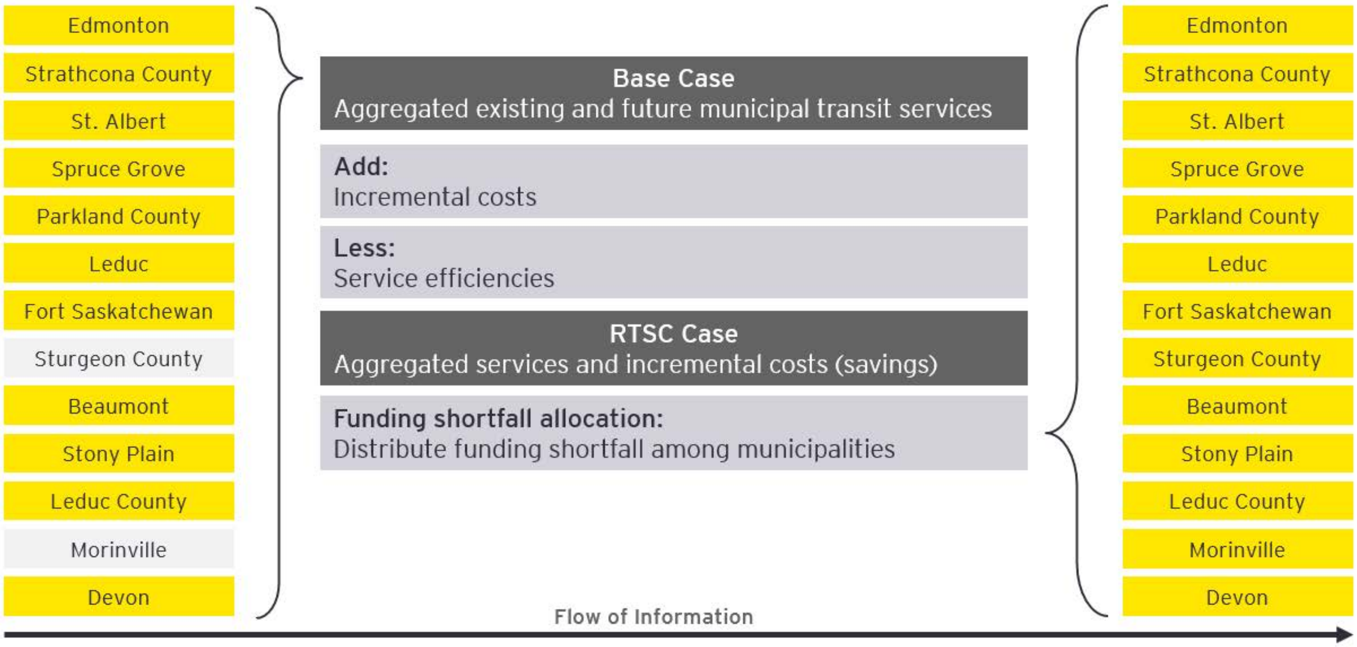
Municipalities would be responsible for covering their own funding shortfalls over 2020 and 2021 because the RTSC not expected to be operating and delivering regional transit services until 2022; therefore, the funding shortfall from operating under separate municipal transit agencies versus under the RTSC can only be compared from 2022-2026.

RTSC Case

The RTSC Case defines the costs and savings associated with transitioning to a commission structure of transit services delivery over a seven-year period from 2020-2026 as described in the section overview.

To build the RTSC Case, incremental costs of standing up and operating the Commission are added to the Base Case funding shortfall. Savings from the more efficient delivery of services under the RTSC are then deducted to arrive at an aggregate annualized funding shortfall. Under the RTSC Case, all 13 municipalities in the region will receive transit services unlike under the Base Case, where Sturgeon County and Morinville are not forecasted to receive transit services over the business case period.

Figure 24 – Build-up of the RTSC Case



Summary of RTSC Case financials

The following table summarizes the RTSC Case financials on an annual basis, built up from the estimated Base Case funding shortfall. It describes the forecasted funding shortfall under the Commission for each year of the business case period the RTSC is expected to be operating and delivering regional transit services from 2022-2026. It also incorporates anticipated implementation and incremental operating costs due to start-up activity and financing requirements in the two years prior to regional services being rolled out under the RTSC in 2022.

Table 48 - RTSC Case: Funding shortfall build-up

RTSC Case - Funding Shortfall Build-up	Non-Operating Period		Operating Period					
Thousands $CAD	2020	2021	2022	2023	2024	2025	2026	**Total**
Total Base Case Funding Shortfall	-	-	55,679	56,507	57,698	58,842	59,975	288,701
One-time / Start-up Costs								
Branding	-	140	187	375	-	-	-	702
Infrastructure & Assets	-	123	-	-	-	-	-	123
Legal and professional	150	50	-	-	-	-	-	200
Organizational	110	656	103	-	-	-	-	869
Public Engagement	104	208	208	-	-	-	-	520
Service Delivery	-	450	393	156	-	-	-	999
Program Delivery	500	250	250	-	-	-	-	1,000
Total one-time / start-up costs	864	1,877	1,141	531	-	-	-	4,413
Recurring Incremental Costs								
Incremental Resourcing Cost	-	2,018	1,078	1,368	1,537	1,573	1,611	9,185
Office Lease & Utilities	-	155	155	155	155	155	155	930
Policy & Legal	-	29	29	29	29	29	29	174
Technology Licenses and Service	-	100	117	130	132	136	138	753
Interest carrying costs	17	122	232	260	265	209	103	1,207
Other Incremental Costs	-	100	100	100	100	100	100	600
Total recurring incremental costs	17	2,524	1,711	2,042	2,218	2,202	2,136	12,849
Total Incremental Costs	881	4,401	2,852	2,573	2,218	2,202	2,136	17,262
Service Efficiency Savings								
Revenue Hours	-	-	1,485	1,922	3,015	4,107	4,500	15,029
Non-Revenue Hours	-	-	200	400	600	800	1,000	3,000
Total Service Efficiency Savings	-	-	1,685	2,322	3,615	4,907	5,500	18,029
Total RTSC Funding Shortfall	881	4,401	56,846	56,757	56,301	56,138	56,610	287,934
Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	4,401	1,166	250	(1,397)	(2,704)	(3,364)	
Cumulative Net Increase (Savings) in Annual Shortfall Compared to Base Case	881	5,282	6,448	6,699	5,302	2,597	(767)	

Key takeaways of RTSC Case financials

As shown above, the aggregate net funding shortfall of operating the RTSC over a seven-year period is forecasted to an estimated $287.9 million, which is comparable to the aggregate Base Case figure of $288.7 million over a five-year period.

As previously mentioned, funding shortfalls could be reduced through a variety of funding mechanisms, including municipal, provincial, and federal operating contributions and grants. Contributions used in the model are comprised of existing municipal operating contributions only and escalated to account for the inflation of costs and revenues, as well as short term financing as required. Use of a short-term financing facility was incorporated to mitigate increases to each municipality's contributions for services, as forecasted in the Base Case. Financing is discussed in more detail below and will help municipalities avoid increases in their required contributions to the RTSC until savings from efficiencies can be realized to offset initial financing draws.

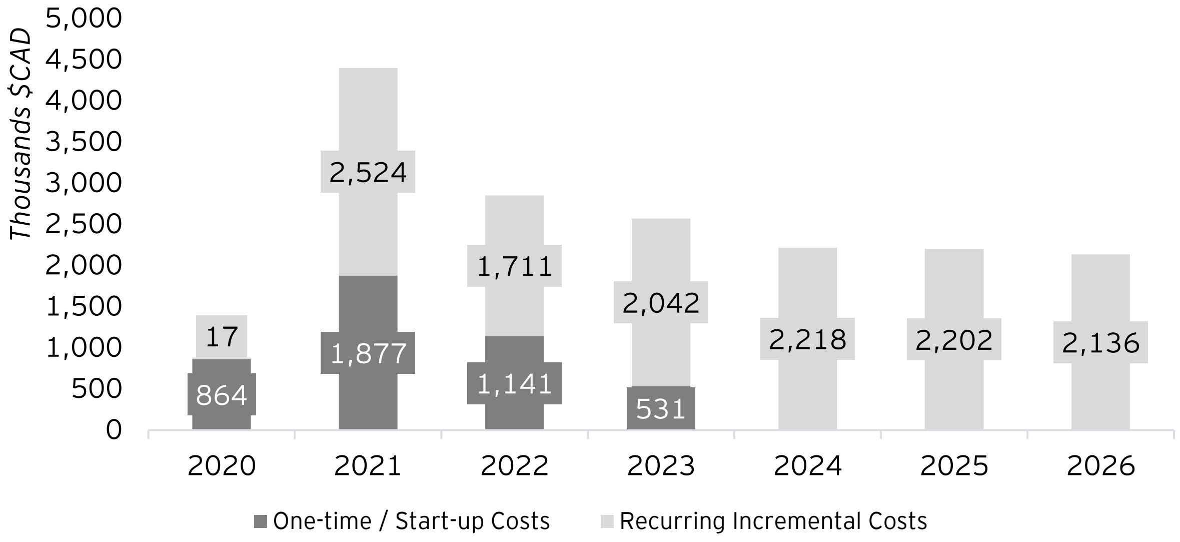
Incremental costs

There are costs associated with forming and operating the Commission that are above and beyond what municipal transit agencies are otherwise forecasted to spend to provide services under the Base Case. These are defined as "incremental costs," which are classified either as:

- **One-time / Start-up Costs:** These costs are derived from implementation plan activities required to form the RTSC and transition to service delivery under the Commission; or,
- **Recurring Incremental Costs**: These represent the elevated ongoing costs associated with operating a commission year over year.

The following graph summarizes the annual estimated incremental costs from 2020-2026.

Figure 25 - Incremental cost breakdown: One-time / Start-up versus recurring costs



As shown above, the highest aggregate incremental costs of the Commission are expected to be incurred in 2021 at an estimated $4.4 million, given municipal transit agencies and the RTSC will be operating concurrently and resource capacity is needed across both. Recurring incremental costs are estimated to be approximately $2.2 million on an annual basis thereafter. Further information on incremental costs, including rationale and assumptions, are explained further in *Appendix K: RTSC Case incremental cost descriptions and assumptions*.

One-time and start-up costs are expected in the year prior to the RTSC being formed and for three years after. This investment will facilitate a smooth transition to the RTSC from municipal transit agencies, of which the latter will cease to operate by mid-2022 with some exceptions. While the RTSC is not expected to be formed until 2021, the cost of paying interest on a loan will be incurred as early as in 2020 to cover one-time and start-up costs.

Service efficiencies

Service efficiencies are realized through the consolidation of routes and stop locations, which results in a reduction in the number of hours required to deliver the same service. This reduction in service hours equates to a lower service delivery cost. Efficiencies gained through the consolidation of the service delivery model can be classified into two categories:

- **Revenue hour**: scheduled hours of service available to passengers for transport on routes. Calculated on a route-by-route basis for all hours that a revenue vehicle is in operation.
- **Non-revenue hour**: non-revenue earning service hours (movement of a transit vehicle without passengers aboard) required to deliver planned transit service.

It is important to note that service efficiency savings do not include estimated savings from potential reductions in operating costs, which may be realized through the consolidation of procurement processes and other operational efficiencies over the business case period. The estimated annual efficiency savings are calculated using the following hourly operating costs. This is equivalent to the estimated direct operating costs of service, as provided by Edmonton Transit Service.

Table 49 - Hourly rates used to calculate service efficiencies

Type of service hour efficiency	Rate per hour
Non-revenue	$101
Revenue	$101

The service efficiencies estimated are reduced at the beginning of RTSC operations to remain conservative as it will take time for the Commission's operations to stabilize and for service efficiencies to be fully realized. It is incumbent upon future RTSC leadership to remain focused on realizing the operational efficiencies available to them. The estimated annual service efficiencies realized are summarized in the table below. Revenue hour savings are calculated using approximately 850 hours per week.

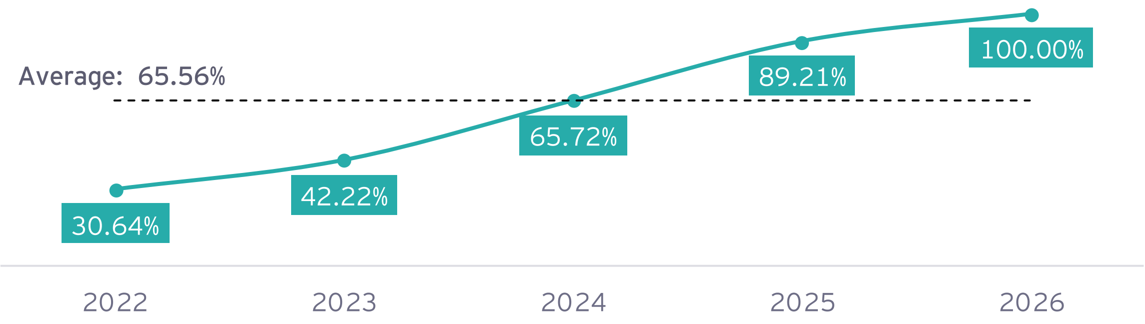
Table 50 - Annual realized service efficiencies

Thousands $CAD

Service Efficiency	2022	2023	2024	2025	2026	Average
Revenue Hours	1,485	1,922	3,015	4,107	4,500	3,006
Non-revenue Hours	200	400	600	800	1,000	600
Total	$ 1,685	$ 2,322	$ 3,615	$ 4,907	$ 5,500	3,606
Estimated Realization of Potential Efficiency (%)	30.64%	42.22%	65.72%	89.21%	100.00%	65.56%

The percentage of total estimated service efficiencies are illustrated below to show their gradual realization over the business case period.

Table 51 - Total estimated service efficiencies realized over time



Financing

Because of the incremental costs incurred in advance of the commission beginning operations in 2022, the financial model includes the provision of a short-term financing facility. This facility will also be used to service additional cash outflows required as part of incremental costs incurred throughout the business case period (2020–2026). The following assumptions were made as part of this facility:

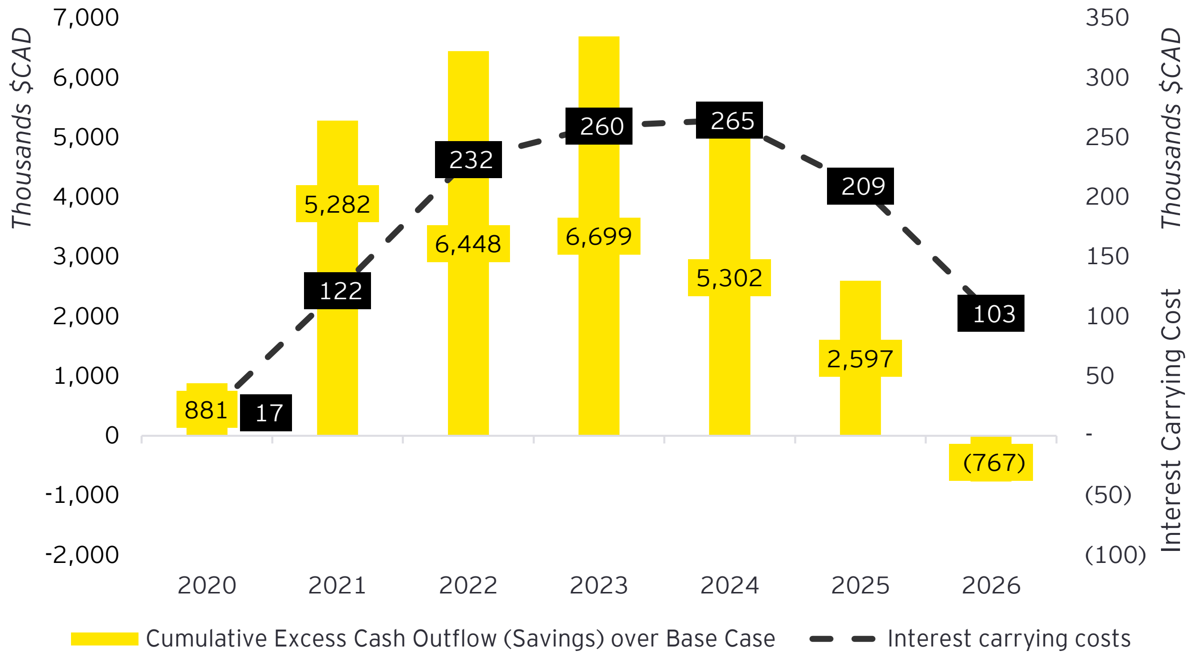
- **Revolving credit facility:** The financing facility functions as an operating line of credit, incurring interest charges against the funds that have been drawn less any repayments for the year. Calculations are completed on annual basis. Required funds are drawn at the beginning of year and repayments occur at the end of year. The opening balance plus funds drawn and interest accrued less any repayments form the closing balance.
- **Interest rate:** Interest applied to financing facility was assumed at 3.95% (current Prime Rate in Canada at the time of this report being issued).
- **Interest carrying costs**: The model was developed on an annual basis and as such the financing interest charges are calculated on an annual basis using the equation shown below.
- **Capitalized interest**: Interest charges incurred for the required financing are serviced through additional drawdown on the short-term financing facility.

Equation 1 - Interest calculation methodology

$$\textit{Previous year closing balance} + (\textit{Current year use of funds} / 2)] * \textit{Interest Rate}$$

The following graph shows the annual financing facility balance for each year of the business case, as well as the associated interest carrying costs incurred each year.

Table 52 – Estimated cumulative shortfall (savings) and interest carrying cost



Funding shortfall allocation

The approach to funding shortfall allocation was developed through an iterative process while adhering to the guiding principles. Multiple funding shortfall allocation models were explored and discussed with the Transition Team members in arriving at the selected allocation methodology. Matters such as proportionate distribution of costs related to services within each municipality's respective jurisdiction, modification in the event of service changes, and classification of routes were discussed. The selected funding shortfall allocation methodology balances the outcomes of those discussions while adhering to the following guiding principles.

Table 53 - Guiding principles to funding shortfall allocation

Principle	Intent
Cost equity	Allocation of costs should be equitable in that municipalities are paying their respective portions relative to services delivered.
Clarity	The allocation methodology should be approachable for a range of audiences, including citizens, Council members, and transit service delivery professionals.
Administrative feasibility	Related to clarity, administrative staff should not be burdened by excessive administrative requirements.
Mobility effectiveness	The funding shortfall calculation methodology should incentivize increased transit ridership and operational efficiency.
Durability	The allocation methodology should be flexible and withstand both the expected and unexpected changes in the Commission's operating and service delivery model with a structure that is easy to update.

The funding shortfall calculation is classified into four components. Each component is summarized below and explored in greater detail throughout this section.

- **Base Fee:** An annual fee comprised of per capita (variable) and upfront (fixed) components. Intentionally scaled to avoid becoming cost prohibitive for smaller municipalities.
- **Regional Service Allocation:** Distribution of the collect RTSC regional service routes. The estimated funding shortfall from each route was allocated to associated municipalities.
- **Local Service Allocation:** Local service uploaded to the Regional Transit Services Commission and calculated as the number of annual service hours multiplied by an estimated shortfall per hour rate.
- **Enhanced Service Allocation:** Estimated cost of enhanced service is distributed across participating municipalities. The enhanced service hourly rate is estimated to be slightly higher than regional and local service funding shortfall per hour.

Figure 26 - Summary of the RTSC funding shortfall calculation components

Base Fee

- Serves the purpose of paying to be at the table and a member of the RTSC
- Fixed, variable, or combination

+

Local Services (Community Specific)

- Interim solution of allocating costs associated with local services, as the operation of local services remains the same and Transit Service Level Guidelines are developed

+

Regional Services (Core)

- Allocation of all RTSC regional service
- Routes are allocated to municipalities proportionate to benefits received

+

Enhanced Services (Direct)

- Allocation of any service that is above and beyond the RTSC service standards
- Allocation of routes not identified by the RTSC service standards, but requested by a municipality

---

Sum of all must correspond to **Total Shortfall**

RTSC Transition Team members in November 2019

Municipal requisitions

Each municipality's requisition for the Commission's average annual operating shortfall is shown in the following table. The municipal requisitions form each municipality's operating contribution to the RTSC's operating budget, are shown on financial statements provided later on in this section. Additional information regarding the funding shortfall methodology and allocation itself is described in the subsections that follow.

It is important to note that the estimated municipal requisitions for the RTSC do not include capital requisitions, which are intended to cover fixed asset reserve contributions and lifecycle costs, such as engine and transmission overhauls. Additional information regarding the Asset Transfer Framework can be found at the end of this section. Refinement and approval of the asset transfer framework will need to be done during the coming months in order for municipalities to understand potential implications to both their municipality's specific asset portfolio and financial position.

Table 54 – Municipal requisition per municipality for duration of business case operating period

Thousands $CAD

Municipality	2022	2023	2024	2025	2026	Total	Average	% of Total
City of Edmonton	23,356	23,692	24,195	24,675	25,147	121,065	24,213	41.93%
Strathcona County	14,464	14,686	15,001	15,305	15,605	75,061	15,012	26.00%
City of St. Albert	10,621	10,774	11,009	11,232	11,451	55,086	11,017	19.08%
City of Spruce Grove	1,954	1,984	2,025	2,065	2,104	10,132	2,026	3.51%
Parkland County	656	666	678	691	703	3,394	679	1.18%
City of Leduc	1,177	1,199	1,221	1,244	1,268	6,109	1,222	2.12%
City of Fort Saskatchewan	1,358	1,380	1,408	1,435	1,462	7,044	1,409	2.44%
Sturgeon County	191	194	196	199	202	981	196	0.34%
City of Beaumont	314	319	324	329	334	1,619	324	0.56%
Town of Stony Plain	595	604	615	626	637	3,076	615	1.07%
Leduc County	685	698	710	723	737	3,554	711	1.23%
Town of Morinville	180	182	184	187	190	923	185	0.32%
Town of Devon	129	130	132	133	135	658	132	0.23%
Total	$ 55,679	$ 56,507	$ 57,698	$ 58,842	$ 59,975	$ 288,701	$ 57,740	100.00%

The following table indicates the annual difference between the allocated Municipal Requisitions and Base Case financials for each municipality throughout the business case operating period. This represents the estimated increase (or decrease shown by bracketed numbers) over the annual Base Case funding shortfall for each municipality.

Table 55 – Municipal requisition difference from Base Case for duration of business case operating period

Thousands $CAD

Municipality	2022	2023	2024	2025	2026	Total	Average	% Delta to Base Case
City of Edmonton	(276)	(291)	(294)	(300)	(309)	(1,471)	(294)	-1.20%
Strathcona County	(128)	(123)	(120)	(116)	(113)	(601)	(120)	-0.79%
City of St. Albert	(82)	(87)	(82)	(79)	(77)	(406)	(81)	-0.73%
City of Spruce Grove	(14)	(14)	(15)	(16)	(17)	(76)	(15)	-0.75%
Parkland County	11	12	10	9	9	51	10	1.52%
City of Leduc	24	29	27	26	27	133	27	2.22%
City of Fort Saskatchewan	66	70	69	70	71	346	69	5.17%
Sturgeon County	191	194	196	199	202	981	196	N/A
City of Beaumont	(78)	(79)	(82)	(85)	(88)	(412)	(82)	-20.29%
Town of Stony Plain	95	96	97	98	99	484	97	18.68%
Leduc County	65	68	67	67	68	336	67	10.43%
Town of Morinville	180	182	184	187	190	923	185	N/A
Town of Devon	(54)	(55)	(57)	(60)	(62)	(287)	(57)	-30.38%
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	

These figures will continue to be refined by the RTSC through their annual planning and budgeting cycle and will be impacted by actual operating results. These estimates are provided for municipalities to consider the potential funding shortfall allocated to them compared to their planned funding shortfall they would otherwise expect to realize if they continued to deliver transit services separately without a Commission or continued to not receive transit under the Base Case.

The table above reflects the estimated annual contributions by municipalities to the RTSC. When compared to municipalities anticipated future net funding shortfall amounts to deliver transit, for those that have existing agencies or intend to commence transit services in the next two years, the annual contributions are comparable and thereby reflect that their costs under the RTSC do not need to increase considerably.

For those that are not able to receive transit services without the support of the RTSC, the costs associated with obtaining those services are reasonable and provide a lower cost of entry than if they were to provide the services on their own.

Finally, for those that are increasing service levels because of the Commission, the incremental costs are outweighed by the benefits of the additional services offered. **Overall, the net funding shortfall allocations passed back to the municipalities from the Commission are reasonable compared to their own costs, especially when assessed against the improved services and opportunities within the region.**

Example build-up of funding shortfall allocation

The following table provides a summary of the build-up of the annual municipal requisition throughout the RTSC business case operating period. Each municipality is allocated a portion of the Base Fee, Regional, Local, and Enhanced Services funding shortfall per the respective component methodologies.

The figures shown in the below table represent the average estimated funding shortfalls for the duration of the operating period. Detailed schedules of the funding shortfall build-up for each year of the business case operating period can be found in *Appendix L: RTSC funding shortfall allocation - Annual schedules.*

Table 56 – Example build-up of funding shortfall allocation per year (average)[18]

Thousands $CAD

Municipality	Base Fee	Local Service	Regional Service	Enhanced Service	Total Cost per Municipality	% System Shortfall
City of Edmonton	2,043	-	22,170	-	24,213	41.9%
Strathcona County	260	8,949	3,341	2,463	15,012	26.0%
City of St. Albert	190	5,052	5,775	-	11,017	19.1%
City of Spruce Grove	123	300	1,603	-	2,026	3.5%
Parkland County	119	44	516	-	679	1.2%
City of Leduc	114	835	-	273	1,222	2.1%
City of Fort Saskatchewan	102	674	633	-	1,409	2.4%
Sturgeon County	94	-	102	-	196	0.3%
City of Beaumont	87	-	237	-	324	0.6%
Town of Stony Plain	87	216	312	-	615	1.1%
Leduc County	79	365	119	147	711	1.2%
Town of Morinville	71	-	113	-	185	0.3%
Town of Devon	64	-	68	-	132	0.2%
Total	$ 3,432	$ 16,436	$ 34,990	$ 2,883	$ 57,740	100.0%

Each component of the funding shortfall allocation methodology is explored in greater detail in the subsections that follow.

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[18] For detailed annual schedules of the funding shortfall allocation build-up, please see *Appendix N: RTSC funding shortfall allocation – Base fee annual schedules.*

Base fee

Composed of a variable ($2 per capita) and fixed ($50,000) component, the Base Fee is intended to serve as a 'cost of entry' to the RTSC. The structure of the fee and proportions of fixed and variable components were designed to balance a reasonable fee against the capacity of municipalities' budgets to absorb incremental cash outflow over existing annual budgets. To achieve this, the Base Fee was designed to remain below $10 per capita for all municipalities. For a detailed analysis of the Base Fee rationale and methodology, refer to *Appendix N: RTSC funding shortfall allocation – Base fee component sensitivity analysis.*

The following table demonstrates the forecasted Base Fee per municipality for each year of the Commission's operations throughout the business case period (2022-2026).

Table 57 - Forecasted base fee per municipality yearly

Thousands $CAD

Municipality	2022	2023	2024	2025	2026	Average
City of Edmonton	1,990	2,016	2,042	2,069	2,096	2,043
Strathcona County	254	257	259	262	265	260
City of St. Albert	186	188	190	192	194	190
City of Spruce Grove	121	122	123	124	125	123
Parkland County	117	118	119	119	120	119
City of Leduc	112	113	114	115	116	114
City of Fort Saskatchewan	100	101	102	102	103	102
Sturgeon County	93	93	94	94	95	94
City of Beaumont	86	87	87	88	88	87
Town of Stony Plain	86	86	87	87	88	87
Leduc County	79	79	79	80	80	79
Town of Morinville	70	71	71	71	72	71
Town of Devon	64	64	64	64	64	64
Total	$ 3,359	$ 3,395	$ 3,431	$ 3,468	$ 3,506	$ 3,432

On average, the Base Fee component contributes 5.94% or an estimated $3,431,816 towards the total Funding Shortfall. The following table demonstrates the build-up of the Base Fee using the average Base Case Funding Shortfall and average population figures for the duration of the business case operating period.

Table 58 – Build-up of base fee per municipality – Average figures (2022-2026)

Thousands $CAD

Municipality	**Fixed Portion**	**Variable Portion**	**Total Base Fee**	**% of Base Case Shortfall**	**Basis Points Equivalent**
City of Edmonton	50	1,993	2,043	3.54%	353.8
Strathcona County	50	210	260	0.45%	44.9
City of St. Albert	50	140	190	0.33%	32.9
City of Spruce Grove	50	73	123	0.21%	21.3
Parkland County	50	69	119	0.21%	20.5
City of Leduc	50	64	114	0.20%	19.8
City of Fort Sask	50	52	102	0.18%	17.6
Sturgeon County	50	44	94	0.16%	16.2
City of Beaumont	50	37	87	0.15%	15.1
Town of Stony Plain	50	37	87	0.15%	15.0
Leduc County	50	29	79	0.14%	13.8
Town of Morinville	50	21	71	0.12%	12.3
Town of Devon	50	14	64	0.11%	11.1
Total	$ 650	$ 2,782	$ 3,432	5.94%	594.4

Note: These figures are developed using average Base Case Figures (2022-2026).

Variable Rate: 2.00 $ per capita

Fixed Portion: 50,000 $ amount

Service based cost allocations

Following the Base Fee allocation, the remainder of the funding shortfall allocated according to the type of service and the degree of service allocated to each municipality. Each service type (Regional, Local, and Enhanced) is assigned an estimated Funding Shortfall per hour rate, shown below in on the following table.

Table 59 – Transit service rate table for funding shortfall allocation methodology

Funding shortfall allocation - hourly service rate table						
Service type	**2022**	**2023**	**2024**	**2025**	**2026**	**Average rate**
Regular service	110.10	111.69	114.15	116.48	118.78	**114.24**
Small bus	73.94	75.42	76.90	78.43	80.06	**76.95**
Enhanced service (Strathcona County)	130.00	132.60	135.25	138.00	140.75	**135.32**
Enhanced service (Leduc)	80.00	81.60	83.20	84.90	86.60	**83.26**
Average growth rate	-	**1.85%**	**2.04%**	**2.03%**	**2.00%**	

Summary of service allocation

Each service type, the weekly hours, and the classification of annual funding shortfall rate assigned are summarized in the *RTSC service summary and annual shortfall calculation* table shown on the next page. Regional Service routes are estimated on a per-route basis, while Local and Enhanced Services are estimated on a per-municipality basis. The projected service hours for Regional, Local, and Enhanced Services are used to forecast the annual operating shortfall associated with each of the different service types.

Table 60 – RTSC service summary and annual shortfall calculation table[19]

	RTSC (Regional) route service	Weekly hours	Hourly rate	Annual Cost[1]	% of total
RTSC (regional) service	Rapid 1	1,389	Regular	8,251,378	15%
	Rapid 2	1,171	Regular	6,956,345	12%
	RE1	342	Regular	2,031,657	4%
	RE2	368	Regular	2,186,110	4%
	RE3	1,216	Regular	7,223,668	13%
	RE4 (S)	169	Small bus	676,233	2%
	RE5	336	Regular	1,996,014	4%
	RE6	486	Regular	2,887,091	5%
	RE7	382	Regular	2,269,277	4%
	MTA (S)	128	Small bus	512,177	1%
	Total RTSC service hours	**5,987**		$34,989,951	64.11%
Local direct service	**Local direct service**	**Weekly hours**	**Hourly rate**	**Annual cost[1]**	**% of total**
	City of Edmonton	-		-	
	Strathcona County	1,506	Regular	8,948,896	16%
	City of St Albert	850	Regular	5,051,917	9%
	City of Spruce Grove	75	Small bus	300,104	1%
	Parkland County	11	Small bus	44,015	0.08%
	City of Leduc (S)	209	Small bus	834,810	2%
	City of Fort Saskatchewan	169	Small bus	674,433	2%
	Sturgeon County	-		-	
	City of Beaumont	-		-	
	Town of Stony Plain	54	Small bus	216,075	1%
	Leduc County (S)	91	Small bus	365,484	1%
	Town of Morinville	-		-	
	Town of Devon	-		-	
	Total Local direct service hours	2,965		$16,435,733	31.43%
Enhanced direct service	**Enhanced direct service**	**Weekly hours**	**Hourly rate**	**Annual cost***	**% of total**
	City of Edmonton	-		-	
	Strathcona County	350	Enhanced (Strathcona)	2,462,831	4%
	City of St Albert	-		-	
	City of Spruce Grove	-		-	
	Parkland County	-		-	
	City of Leduc	63	Enhanced (Leduc)	272,976	0.7%
	City of Fort Saskatchewan	-		-	
	Sturgeon County	-		-	
	City of Beaumont	-		-	
	Town of Stony Plain	-		-	
	Leduc County Local	34	Enhanced (Leduc)	146,987	0.4%
	Town of Morinville	-		-	
	Town of Devon	-		-	
	Total Enhanced Service Hours	447		$2,882,795	4.76%
	Total for allocation	9,399		$54,308,478	100%
	Base Fee			$3,431,816	
	Total annual funding shortfall for allocation	$57,740,294			

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[19] Note: Annual costs represent show average annual cost for each route or service for duration of business case operating period (2022-2026). Service Cost summary tables are provided for each year of the business case operating period in *Appendix O: RTSC service – Annual funding shortfall schedules.*

Regional Service

The regional service allocation is distributed across the municipalities according to the following methodology. The annual funding shortfall for the Regional Service, which is reflected by the RTSC conceptual transit services design, is estimated by:

- Multiplying the respective annual shortfall rate by the number of weekly service hours, and,
- Multiplying the resulting figure by 52 to arrive at an annual estimated funding shortfall per Regional route.

The total funding shortfall of each route is then allocated across municipalities by assigning an estimated percentage of each route to municipalities receiving the service. It is important to note that this is *an interim model* proposed for the business case operating period. The final percentage allocations of each Regional route are subject to confirmation by the RTSC prior to commencing operations. In general, the percentage allocations reflect the amount of service or benefit received by each respective municipality. In adhering to the principles and intent of the Commission, the assignment of Regional Service route funding shortfall values was completed using integers in intervals of 5%.

The total estimated Regional Service funding shortfall allocated to each municipality per year of the operating period is provided in the following table.

Table 61 – Regional route service cost per municipality

Regional Service	2022	2023	2024	2025	2026	Average
City of Edmonton	21,365,861	21,675,976	22,152,856	22,605,559	23,050,666	22,170,184
Strathcona County	3,219,837	3,266,387	3,338,332	3,406,570	3,473,607	3,340,947
City of St. Albert	5,565,398	5,646,404	5,770,526	5,888,426	6,004,419	5,775,035
City of Spruce Grove	1,545,214	1,567,690	1,602,158	1,634,894	1,667,096	1,603,410
Parkland County	496,613	505,418	515,824	526,204	536,910	516,194
City of Leduc	-	-	-	-	-	-
City of Fort Saskatchewan	609,731	618,546	632,170	645,092	657,786	632,665
Sturgeon County	98,430	100,399	102,367	104,404	106,576	102,435
City of Beaumont	227,428	231,977	236,523	241,231	246,250	236,682
Town of Stony Plain	301,144	305,498	312,227	318,609	324,879	312,471
Leduc County	114,195	116,479	118,761	121,125	123,645	118,841
Town of Morinville	109,351	110,932	113,375	115,693	117,969	113,464
Town of Devon	64,979	66,279	67,578	68,923	70,357	67,623
Total Funding Shortfall	$ 33,718,181	$ 34,211,985	$ 34,962,696	$ 35,676,731	$ 36,380,161	$34,989,951

Throughout the consultation process with the Transition Team, multiple potential funding allocation methodologies were evaluated, including those that relied on proportion of population and fixed assessment values. The long-term goal of the RTSC is to harmonize the service levels and resulting funding shortfall across the Region to provide an improved service to all municipalities. As such, the use of route-based allocation percentages serves as an interim model.

The intent was to arrive at an interim allocation model that aligns with the principles described above, while balancing the resulting municipal requisitions with the estimated Base Case funding shortfall. The Regional Service Route Allocation Methodology outlined below shows the percentage allocation of each Regional Service route and the resulting funding shortfall allocated to each municipality.

Table 62 – Regional service route allocation methodology[20]

	RTSC (Regional) Route	**Rapid 1**	**Rapid 2**	**RE1**	**RE2**	**RE3**	**RE4**	**RE5**	**RE6**	**RE7**	**MTA**	**Total Shortfall**
Municipality	City of Edmonton	40%	80%	45%	55%	100%	15%	75%	50%	35%	25%	22,170,184
	Strathcona County	20%	20%					15%				3,340,947
	City of St Albert	40%							35%	60%	20%	5,775,035
	City of Spruce Grove			40%	35%						5%	1,603,410
	Parkland County			5%	5%		30%				20%	516,194
	City of Leduc											-
	City of Fort Sask							10%	15%			632,665
	Sturgeon County										20%	102,435
	City of Beaumont						35%					236,682
	Town of Stony Plain			10%	5%							312,471
	Leduc County						10%				10%	118,841
	Town of Morinville									5%		113,464
	Town of Devon						10%					67,623
	Total % Allocation	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	**$ 34,989,951**

The average annual shortfall for each Regional Service route is provided in the following table for reference. Each Regional Routes' annual estimated shortfall is allocated to the associated municipality per the percentages assigned above. It is important to note that the annual shortfall for allocation shown represents the average cost across the business case operating period (2022-2026).

Route	**Annual Shortfall for Allocation**[1]
Rapid 1	8,251,378
Rapid 2	6,956,345
RE1	2,031,657
RE2	2,186,110
RE3	7,223,668
RE4	676,233
RE5	1,996,014
RE6	2,887,091
RE7	2,269,277
MTA	512,177
Total	$ **34,989,951**

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[20] Note: Average annual costs for duration of the business case operating period are shown. Percentage allocations do not change year over year. Detailed schedule of Annual Service Shortfall for allocation can be found in *Appendix O.*

Local Service

Local Service uploaded to the RTSC is calculated as the number of annual service hours multiplied by an estimated shortfall per hour rate. The cost of Local Service is directly assigned to the respective community that receives that service. The annual estimated Local Service costs are provided in the following table.

Table 63 – Local Service cost per municipality

Local Service	2022	2023	2024	2025	2026	Average
City of Edmonton	-	-	-	-	-	-
Strathcona County	8,624,498	8,749,185	8,941,891	9,124,672	9,304,232	8,948,896
City of St. Albert	4,868,784	4,939,174	5,047,962	5,151,148	5,252,514	5,051,917
City of Spruce Grove	288,371	294,138	299,902	305,872	312,236	300,104
Parkland County	42,294	43,140	43,986	44,861	45,795	44,015
City of Leduc	802,172	818,215	834,250	850,855	868,558	834,810
City of Fort Saskatchewan	648,065	661,026	673,981	687,396	701,698	674,433
Sturgeon County	-	-	-	-	-	-
City of Beaumont	-	-	-	-	-	-
Town of Stony Plain	207,627	211,779	215,930	220,228	224,810	216,075
Leduc County	351,195	358,219	365,239	372,509	380,259	365,484
Town of Morinville	-	-	-	-	-	-
Town of Devon	-	-	-	-	-	-
Total Funding Shortfall	$ 15,833,006	$ 16,074,877	$ 16,423,141	$ 16,757,540	$ 17,090,102	$16,435,733

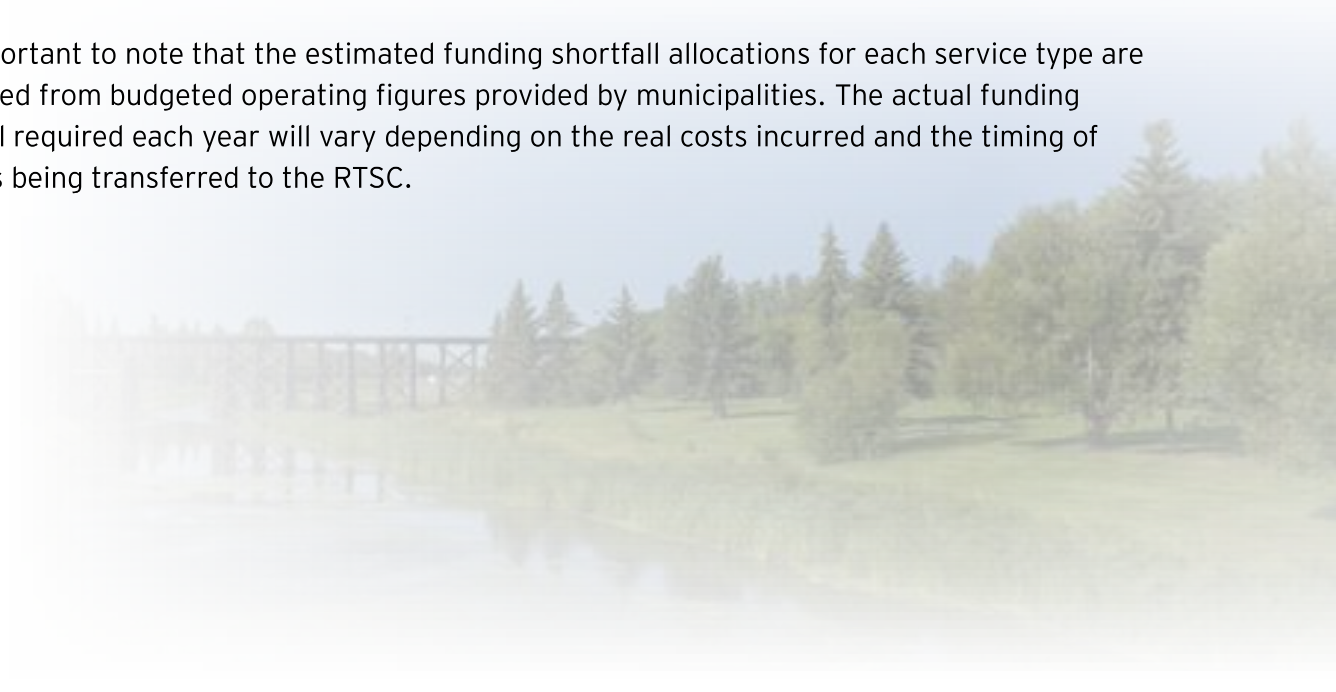
Enhanced Service

Enhanced Services include those developed in consultation with individual municipalities (Strathcona County, City of Leduc, and Leduc County) and allocated at 100% to the respective municipalities receiving the service. As per the MOU, municipalities may request services that directly benefit their community and go beyond the level of service suggested by the RTSC Transit Service Level Guidelines. As such, Enhanced Service are allocated using an increased hourly service rate that is different for each community. The following table demonstrates the allocation of Enhanced Services to the respective municipalities who requested this component.

Table 64 – Enhanced Service cost per municipality

Enhanced Service	2022	2023	2024	2025	2026	Average
City of Edmonton	-	-	-	-	-	-
Strathcona County	2,366,000	2,413,320	2,461,586	2,511,600	2,561,650	2,462,831
City of St. Albert	-	-	-	-	-	-
City of Spruce Grove	-	-	-	-	-	-
Parkland County	-	-	-	-	-	-
City of Leduc	262,288	267,534	272,780	278,353	283,927	272,976
City of Fort Saskatchewan	-	-	-	-	-	-
Sturgeon County	-	-	-	-	-	-
City of Beaumont	-	-	-	-	-	-
Town of Stony Plain	-	-	-	-	-	-
Leduc County	141,232	144,057	146,881	149,882	152,884	146,987
Town of Morinville	-	-	-	-	-	-
Town of Devon	-	-	-	-	-	-
Total Funding Shortfall	$ 2,769,520	$ 2,824,910	$ 2,881,247	$ 2,939,836	$ 2,998,460	$ 2,882,795

It is important to note that the estimated funding shortfall allocations for each service type are developed from budgeted operating figures provided by municipalities. The actual funding shortfall required each year will vary depending on the real costs incurred and the timing of services being transferred to the RTSC.



Financial statements

2020 - 2026 Operating budget	2020	2021	2022	2023	2024	2025	2026	Total
Thousands $ CAD								
INCOME								
Fare revenue								
Farebox revenue	-	-	21,625	21,980	22,345	22,720	23,086	**111,757**
Total Fare revenue	**-**	**-**	**21,625**	**21,980**	**22,345**	**22,720**	**23,086**	**111,757**
Non-Fare revenue	-	-	-	-	-	-	-	**-**
Non-Fare revenue	-	-	487	494	502	512	523	**2,519**
Total non-fare revenue	**-**	**-**	**487**	**494**	**502**	**512**	**523**	**2,519**
Other income	-	-	-	-	-	-	-	**-**
Other recoveries	-	-	-	-	-	-	-	**-**
Other income	-	-	-	-	-	-	-	**-**
Grant income	-	-	-	-	-	-	-	**-**
Total other income	-	-	-	-	-	-	-	**-**
Total income before requisitions	**-**	**-**	**22,112**	**22,475**	**22,847**	**23,233**	**23,609**	**114,276**
Requisitions - operating								
Operating requisition - Edmonton	-	-	23,356	23,692	24,195	24,675	25,147	**121,065**
Operating requisition - Strathcona County	-	-	14,464	14,686	15,001	15,305	15,605	**75,061**
Operating requisition - St. Albert	-	-	10,621	10,774	11,009	11,232	11,451	**55,086**
Operating requisition - Spruce Grove	-	-	1,954	1,984	2,025	2,065	2,104	**10,132**
Operating requisition - Parkland County	-	-	656	666	678	691	703	**3,394**
Operating requisition - Leduc	-	-	1,177	1,199	1,221	1,244	1,268	**6,109**

2020 - 2026 Operating budget	2020	2021	2022	2023	2024	2025	2026	Total
Thousands $ CAD								
Operating requisition - Fort Saskatchewan	-	-	1,358	1,380	1,408	1,435	1,462	**7,044**
Operating requisition - Sturgeon County	-	-	191	194	196	199	202	**981**
Operating requisition - Beaumont	-	-	314	319	324	329	334	**1,619**
Operating requisition - Stony Plain	-	-	595	604	615	626	637	**3,076**
Operating requisition - Leduc County	-	-	685	698	710	723	737	**3,554**
Operating requisition - Morinville	-	-	180	182	184	187	190	**923**
Operating requisition - Devon	-	-	129	130	132	133	135	**658**
Total requisitions - operating	**-**	**-**	**55,679**	**56,507**	**57,698**	**58,842**	**59,975**	**288,701**
Requisition recoveries (non-partners)	-	-	-	-	-	-	-	**-**
TOTAL INCOME	**-**	**-**	**77,792**	**78,981**	**80,546**	**82,075**	**83,584**	**402,978**
Expenses								
Operating costs								
Labour - direct	-	-	34,826	35,145	35,690	36,236	36,793	**178,690**
Labour - contracted services	-	-	14,852	15,314	15,805	16,257	16,718	**78,947**
Fleet services expenses[1]	-	-	24,617	24,966	25,416	25,869	26,278	**127,146**
Revenue hour efficiency savings	-	-	(1,485)	(1,922)	(3,015)	(4,107)	(4,500)	**(15,029)**
Non-revenue hour efficiency savings	-	-	(200)	(400)	(600)	(800)	(1,000)	**(3,000)**
Total fleet services expenses	**-**	**-**	**72,610**	**73,103**	**73,297**	**73,455**	**74,289**	**366,753**
General operating expenses								
General	-	-	1,502	1,528	1,560	1,592	1,626	**7,808**
Advertising & communications	-	-	250	254	259	265	271	**1,300**

2020 - 2026 Operating budget	2020	2021	2022	2023	2024	2025	2026	Total
Thousands $ CAD								
Consulting & professional Services	-	-	162	162	165	169	172	**829**
Utilities	-	-	835	857	878	899	921	**4,389**
Rental	-	-	56	57	58	59	60	**290**
Office supplies	-	-	653	659	673	688	703	**3,376**
Membership fees	-	-	39	40	40	41	42	**203**
Total general operating expenses	**-**	**-**	**3,497**	**3,556**	**3,634**	**3,714**	**3,795**	**18,195**
One-time/Start-up incremental expenses								
Branding	-	140	187	375	-	-	-	**702**
Infrastructure & assets	-	123	-	-	-	-	-	**123**
Legal and professional	150	50	-	-	-	-	-	**200**
Organization	110	656	103	-	-	-	-	**869**
Public engagement	104	208	208	-	-	-	-	**520**
Service delivery	-	450	393	156	-	-	-	**999**
Program delivery	500	250	250	-	-	-	-	**1,000**
Total one-time/start-up incremental expenses	**864**	**1,877**	**1,141**	**531**	**-**	**-**	**-**	**4,413**
Recurring incremental expenses								
Incremental resourcing cost	-	2,018	1,078	1,368	1,537	1,573	1,611	**9,185**
Office lease & utilities	-	155	155	155	155	155	155	**930**
Policy & legal	-	29	29	29	29	29	29	**174**
Technology licenses and service	-	100	117	130	132	136	138	**753**
Interest carrying costs	17	122	232	260	265	209	103	**1,207**
Other incremental costs	-	100	100	100	100	100	100	**600**
Total recurring incremental expenses	**17**	**2,524**	**1,711**	**2,042**	**2,218**	**2,202**	**2,136**	**12,849**
Total operating expenses	**881**	**4,401**	**78,958**	**79,231**	**79,149**	**79,371**	**80,220**	**402,211**

2020 - 2026 Operating budget *Thousands $ CAD*	2020	2021	2022	2023	2024	2025	2026	Total
Surplus (deficiency) prior to amortization	**(881)**	**(4,401)**	**(1,166)**	**(250)**	**1,397**	**2,704**	**3,364**	**767**
Lifecycle and amortization expenses[2]								
Asset lifecycle reserves	-	-	-	-	-	-	-	-
Amortization	-	-	-	-	-	-	-	-
Total lifecycle and amortization expenses	-	-	-	-	-	-	-	-
Net surplus (deficiency)	**(881)**	**(4,401)**	**(1,166)**	**(250)**	**1,397**	**2,704**	**3,364**	**767**

[1] *Includes fuel, maintenance, repair and insurance premium expenses.*

[2] *Amortization has not been considered as part of this analysis, as it is a non-cash item and will not have an impact on the financial assessment related to a commission.*

[2] *Capital reserves are not included in this analysis. Further in this section is a start of an asset transfer framework for consideration by the RTSC. There are number of considerations to be evaluated by potential RTSC members. At present, municipalities providing transit services are reflecting capital reserve contribution related to rolling stock assets. The amounts are not included in their Base Case figures. It should be anticipated that these contributions will continue under the RTSC based upon the assets ultimately transferred to the Commission.*

Schedule of operating credit requirements								
Opening balance	-	881	5,282	6,448	6,699	5,302	2,597	**-**
Add: financing drawdown	881	4,401	1,166	250	-	-	-	**6,699**
Less: financing repayment	-	-	-	-	(1,397)	(2,704)	(2,597)	**(6,699)**
Cumulative operating surplus (deficiency)	**881**	**5,282**	**6,448**	**6,699**	**5,302**	**2,597**	**-**	**-**

Asset transfer framework

Consideration will need to be given to the future transfer of assets from participating municipalities into the RTSC. Initial focus needs to be given to buses and other rolling stock required to deliver services anticipated under the RTSC. Of equal importance, but less time sensitive, will be the evaluation of other infrastructure assets to assess need by the Commission and municipalities and if there should be a transfer of ownership or control.

To ensure fairness and transparency, the asset valuation must be on a like-to-like basis, providing value for money to taxpayers with the help of a clearly defined framework.

The following key principles should be considered in structuring this Asset Transfer Framework:

- Taxpayer paid funds remain with the municipality
- Open, transparent and fair process which stands up to scrutiny
- Assets being transferred into the Commission are in good condition, well maintained and reliable in terms of their intended use
- Control of capital and operations costs in an efficient and cost-effective manner
- Encourage opportunities for sharing resources to obtain efficiencies and value-add
- Are municipalities allowed to generate revenue off an asset either transferred by title or control to the Commission if there was previously no revenue generating component

Asset transfer options

Two asset transfer options exist: ownership and control.

- **In an ownership model**, asset titles change from municipalities to the Commission
- **In a control model**, the Commission pays operating costs and the municipality maintains ownership

The table below outlines some asset types that may be considered under and Asset Transfer Framework.

Table 65 - Types of assets considered for transfer to the RTSC

Asset type	Examples
Rolling inventory	▶ Buses, crew cab, flat deck, trailer, van
Land	▶ Parking lot, terminal site
Buildings	▶ Bus barn / garage, bus stop shelter, fuel bay, bus terminal / hub
Other assets	▶ Computer equipment and software such as digital sign systems and busline IVR software ▶ Furniture and Equipment such as fixed assets in bus buildings ▶ Machinery such as bus lifts, skid steers and sweepers
Asset reserves	▶ Balances, annual calculations, allocations across other municipalities

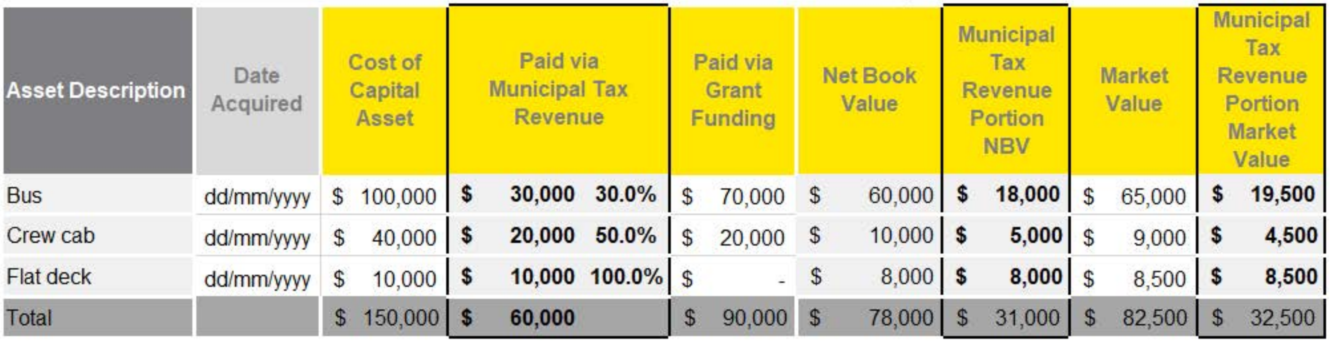
The asset transfer framework takes into consideration the following three areas of analysis:

Table 66 - Analysis required under the asset transfer framework

Analysis of taxpayer value	Analysis on change of ownership	Analysis on change of control
Tax revenue ▶ Asset value applies to the portion of tax revenue the municipality receives from taxpayers which is then used to purchase the asset being transferred **Grant funding** ▶ Asset value does not apply to the portion of grant funding the municipality receives which is then used to purchase the asset being transferred	**Asset value options** ▶ Net Book Value ▶ Fair Market Value **Payment options** ▶ Full payment upfront ▶ Fixed repayment terms ▶ Payout from future savings	**Restrictions on** ▶ Use, term, handback to municipality, and any related compensation for use (calculation varies by asset) **Beneficial use** ▶ Capital allocations for return to original condition vs betterment

An example of an asset transfer calculation is illustrated below.

Table 67 - Sample asset transfer calculation



Asset Description	Date Acquired	Cost of Capital Asset	Paid via Municipal Tax Revenue		Paid via Grant Funding	Net Book Value	Municipal Tax Revenue Portion NBV	Market Value	Municipal Tax Revenue Portion Market Value
Bus	dd/mm/yyyy	$ 100,000	**$ 30,000**	**30.0%**	$ 70,000	$ 60,000	**$ 18,000**	$ 65,000	**$ 19,500**
Crew cab	dd/mm/yyyy	$ 40,000	**$ 20,000**	**50.0%**	$ 20,000	$ 10,000	**$ 5,000**	$ 9,000	**$ 4,500**
Flat deck	dd/mm/yyyy	$ 10,000	**$ 10,000**	**100.0%**	$ -	$ 8,000	**$ 8,000**	$ 8,500	**$ 8,500**
Total		$ 150,000	**$ 60,000**		$ 90,000	$ 78,000	$ 31,000	$ 82,500	$ 32,500

Next steps

To move the asset transfer framework discussion forward, a series of workshops should be conducted with Finance, Transit and Asset Managers to evaluate the assets to be requested by the Commission from each municipality. From there, consideration must be given to the nature of ownership or control transfers to answer the questions needed to perform an in-depth analysis with municipalities that seek to join the RTSC. A formal appraisal processes, consistent across municipalities would need to be undertaken to finalize asset values involved in transfer activities.

Evaluation approach

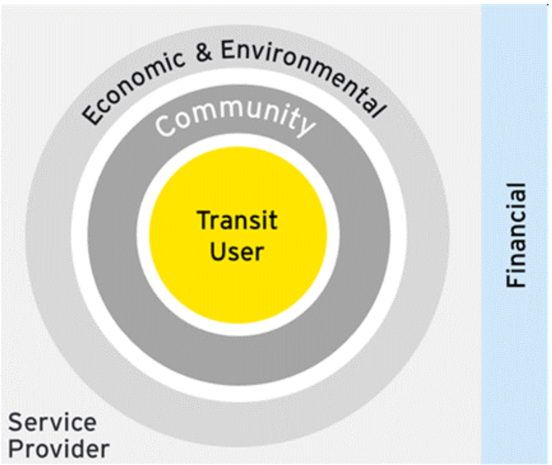
A Multiple Account Evaluation (MAE) framework was used to evaluate the costs and benefits of developing and implementing a RTSC. The MAE framework is based on the Multiple Account Evaluation Guidelines used by Alberta Transportation. A version of this framework was used to assess the business case for the RTSC. The following framework does not produce a single conclusion, but rather a conclusion for each evaluation account, recognizing that there is no single measure of benefit for the RTSC project, but multiple. Project decisions that have many non-monetary considerations, such as coming together to form a regional public transit commission, lend themselves to this framework.

The framework provides:

- The flexibility to evaluate across several factors using a mix of quantitative and qualitative considerations
- Precedent to assist provincial governments in the decision-making process for major capital investments, including transportation projects

Using the MAE framework, as shown below, an overall assessment of factors that fall within each evaluation account are discussed in this section for consideration.

Figure 27 - Overview of the Multiple Account Evaluation (MAE) framework



The MAE framework explicitly includes costs and benefits that are quantified, as well as qualitative factors in its evaluation approach recognizing that several factors may be difficult or impossible to quantify. The weighting and the relative importance of the evaluation account conclusions will be influenced by an individual's own values, interests and beliefs.

The six evaluation accounts include:

- **Financial Account:** Assesses the financial implications of delivering regional transit, considering forecasted costs and savings of providing services
- **Transit User Account:** Assesses the customer experience implications of delivering regional transit, considering interactions and measures of service performance
- **Service Provider:** Assesses the Commission's potential to achieve regional objectives through transit service delivery, considering the size and complexity of operations
- **Community Account:** Assesses the social impacts of delivering regional transit, considering quality of life, safety and community vitality
- **Economic Account:** Assesses the economic impacts of delivering regional transit, considering business investment and regional prosperity
- **Environmental Account:** Assesses the environmental impact of delivering regional services, considering resource use and sustainability

The cost benefit analysis associated with the business case requires a Base Case status quo scenario in which the costs and benefits of implementing the RTSC can be compared.

The business case is based on the detailed, quantifiable cost and revenue numbers provided by the member municipalities, leading practice and other inputs gathered through focus groups. It relies on the assumptions outlined in *Section 10: Financial Model*, to evaluate the costs and benefits of forming and operating the RTSC over the business case period of 2020-2026.

Projects like this also include non-monetary benefits, which are inherently more difficult to quantify. Therefore, both the quantifiable items and the qualitative narrative should together be understood in forming a conclusion from this analysis.

The resulting narratives for each of the six accounts are summarized below.

Figure 28 - RTSC business case evaluation summary of accounts

Financial Account

The forecasted funding shortfall of operating transit services under the RTSC is lower than that of operating services separately, despite savings calculations only including service hour efficiencies and reduction in non-revenue hours.

Transit User Account

A regional transit services network provides more seamless and efficient movement of people across municipal boundaries resulting in a better customer experience as a result of factors such as increased directness, speed of travel and simplicity of trip planning.

Service Provider Account

A regional transit services provider is more equipped to action on regional objectives and engage with stakeholders to enlist support in transit for the purposes of improving service delivery and facilitating regional mobility on a larger scale.

Community Account

Through the delivery of regional transit services, people can become less reliant on personal vehicle use and have more choice when it comes to where they want to live, work and play, which equates to a higher quality of life and community prosperity.

Economic Account

Regional transit services improve the connectivity and economic growth of the region by increasing access to employment opportunities, attractiveness of the region for business investment, and reduced infrastructure costs to municipalities and the province.

Environmental Account

A regional transit service allows for the more efficient deployment and management of assets across the network to reduce waste and emissions across the system, and supports a mode shift away from personal vehicles reducing overall environmental impact to the region.

Many non-monetary benefits from the qualitative accounts may support the implementation of the RTSC even if the financial benefits are relatively modest. Such qualitative benefits could include:

- A greater ability of the RTSC members to access additional grants or funding sources beyond fare revenue as one large service provider compared to separate smaller agencies;
- A removal of duplicate routes to more efficiently deploy resources across the region;
- A lessened amount of congestion, thus reducing both infrastructure wear and greenhouse gas emissions (GHG); and,
- A seamless and viable way for citizens to move between municipalities using public transit.

In assessing monetary benefits, the evaluation has been limited to quantitative measures related to the direct financial impact on both municipalities and the RTSC in operating transit services. These figures represent the immediate financial impact as compared to costs forecasted under the Base Case and are the most relevant monetary measure to municipalities today. While qualitative considerations related to environmental impacts have been considered, calculations for the exact financial impact of reduced GHG emissions has not been considered. Similarly, no quantitative calculation for reduced wear on regional infrastructure, such as roadways, is included in the business case evaluation. Other examples of qualitative considerations included but not financially assessed were values associated with projected growth in the regional economy and increased regional employment resulting from improved access to jobs.

Problem definition

Several municipalities in the Edmonton Metropolitan Region currently provide a range of public transit services. The services range from no existing transit service to peak hour transit service only, to full transit services provided by the larger municipalities as outlined in *Section 4: Current State and Future Opportunities*.

This report has previously highlighted a number of challenges with the way public transit is currently delivered in the region, including:

- Trade-offs that exist between service frequency and coverage of key areas and destinations
- Smaller municipalities' limited ability to provide their citizens access to the region through connections to other municipalities and destinations
- Residents having limited access to a seamless customer experience between multiple transit systems, especially in the Edmonton core where there is a duplication of service
- Difficulties integrating fare and ensuring equitable cost sharing across municipalities
- High costs to delivering regional transit today and no mechanism to split costs across municipalities for regional services
- Difficulty interfacing commuter systems with local systems in municipalities, which contributes to a disjointed customer experience
- A lack of formal processes to integrate land-use and infrastructure planning with transit planning within and between municipalities
- Difficulty influencing travel behaviours and shifting travel modes towards mass transit when automobile travel accounts for 87% of all travel within the region, demonstrating a steady increase[21]
- A potential risk to the reputation of the region and municipalities if nothing is done to improve transit today

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[21] Edmonton and Region Household Travel Survey. (2015). Retrieved from https://www.edmonton.ca/transportation/traffic_reports/travel-surveys.aspx

As previously discussed, the RTSC can provide the following opportunities:

- Increased efficiencies and cost savings from maximizing capabilities, resources, and capital. These results can be achieved through economies of scale, joint procurement and maintenance, right sizing of fleet, and investment in strategic transit infrastructure and services
- Transit planning and scheduling done at a regional level
- A customer service experience that crosses municipal boundaries without requiring a transfer to another agency vehicle
- Reduction in duplicated services to minimize the financial impact of transit services to municipal budgets and citizens
- One source of information and better evidence-based decision making; common systems and one user application
- Shared projects and resources with clearer outcomes and applicability for all
- One voice for transit funding that can influence a travel mode shift and behavioural patterns in the region
- Integrated mobility management and regulation for the region
- Fare integration across the transit network rather than requiring multiple fares when transferring buses
- Integrated service standards and benchmarks for when service increases (types, metrics, etc.)

A regional body has the opportunity to enable a higher level of public investment in transit which would benefit the region. The value in regional services can be enhanced through discussion and collaboration between stakeholders. In turn, the challenges of a fragmented service will be resolved as integration provides increasingly effective and efficient transit.

When considering the points above, some municipalities may not view the RTSC as the only viable solution to addressing current challenges of existing transit systems or implementing opportunities for improvement. Municipalities often use ridership as a primary measure to assess the success of municipal transit services, focusing on moving their residents in and out of the Edmonton downtown core and to key education destinations. Municipalities are encouraged to look beyond their boundaries when it comes to making decisions related to transit, moving away from planning according to lines on a map.

This view may be applicable in the short term; however, it does not recognize the long-term benefits of regionally integrated planning of transportation corridors. As population densities increase and the availability of capital funding becomes scarcer, municipalities must proactively shape the future of transit. Shared infrastructure costs across the region and increased utilization of assets will help to address these challenges. While the current business case is focused on a shorter timeframe according to project scope, it is important to consider longer-term benefits beyond the next five to seven years of working together through a commission versus continuing to go it alone.

Analysis of evaluation outputs

This section considers the evaluation accounts which can be used to form a conclusion as to what aspects the implementation of the RTSC would provide benefits or drawbacks in comparison to the Base Case. The relative weighting or assigned level of importance of each account is subjective based on one's own values, interests and beliefs and therefore all accounts should at a minimum be considered in forming an opinion or decision. This section describes the business case evaluation, both quantitatively and qualitatively, based on factors that can be reasonably assessed under the case of a Commission.

The accounts examine the potential benefits and drawbacks of the RTSC Case, which are defined as follows:

- **Benefits** are positive outputs or consequences which are desired or for which individuals are willing to pay.
- **Drawbacks** are negative inputs or consequences for which individuals would have to be compensated, including the consideration of alternative uses of required funds, often referred to as opportunity costs.

The evaluation of these accounts is complex, as it involves converting a project's costs and benefits into dollars where possible. It looks to monetize both market values and non-market values.

The following sub-sections outline the assessment of the costs and benefits associated with each of the MAE accounts. At the start of each account, a summary infographic is provided to show the overall assessment of the account and subsequently presents in detail, our assessment of the costs and benefits for consideration.

Financial Account

Overview

The RTSC has the opportunity to capture savings by operating transit services regionally compared to the current system operated by separate transit agencies. The RTSC is expected to achieve savings through the reduction in duplicated routing and the optimization of routes leading to minimized non-revenue hours. The RTSC could allow a more efficient use of fleets and fixed assets across the region compared to the individual municipalities.

ACCOUNT SUMMARY

Financial Account

Description:
Assesses the financial implications of delivering regional transit, considering forecasted costs and savings associated with providing services.

Overall Assessment:
The forecasted cost of operating transit services under the RTSC is lower than that of operating services separately, despite savings calculations only including service hour efficiencies and reduction in non-revenue hours.

Assessed impact of the RTSC:

- + Net savings in annual funding shortfall compared to Base Case of $3.4 million per year after stabilization
- + Savings from service hour efficiencies of approximately $5.5 million per year by 2026
- + Greater opportunity to reduce overall service delivery cost per hour (economies of scale)
- + More efficient utilization of capital assets
- + Increased service delivery risk to municipalities over the transition period requiring larger investment in service delivery
- − Capture of target savings is highly dependent on management
- − Recurring incremental costs due to commission of approximately $2.2 million per year after stabilization

Directional Assessment of Account: Net Positive (Moderate)

Relevant financial account benefits

Lower net funding shortfall

The revenue municipal transit agencies earn from fares and other revenue sources does not cover the costs of operating public transit services for each of the individual agencies. The result is what is referred to as a "funding shortfall" that municipalities have historically covered using a percentage of what they collect from property taxes. Under a commission, this funding shortfall would still exist; however, the savings in operating costs, such as through economies of scale in administration, reducing duplicative routes, etc., can be reinvested back into the Commission, thereby reducing the funding shortfall in the long term.

Savings from service hour efficiencies

Currently, there are multiple transit agencies running duplicate routes within the Edmonton boundaries due to restrictions on their ability to pick-up and drop-off along ETS routes. With regional transit, riders are not viewed solely from the perspective of where they live. The RTSC will be able to combine routes to minimize duplicative service and the deadheading of buses back to their place of origin.

Service efficiencies gained through the consolidation of the service delivery model can be classified into two categories:

- Revenue hours
- Non-revenue hours

Revenue hour service efficiencies are best described as those resulting in the consolidation of routes, thus reducing the service hours required to deliver the same service. Revenue service hours include layover time (time between the end of the route prior and the beginning of the next route), recovery of delays, and preparation for the return trip.

Non-revenue service efficiencies are a function of synergies that are realized through the consolidation and reorganization of the service delivery model. For example, with a new network of bus and maintenance depots, deadhead hours can be reduced by optimizing buses to return to the nearest bus depot rather than their point of origin if that is a greater distance.

Opportunity to reduce service delivery cost

Regional transit agencies have recognized economies of scale when separate agencies come together. Many have realized advantages through shared services with their administrative functions. A RTSC can support the pooling of resources across planning, scheduling, safety, communications, information technology, finance, etc.

Furthermore, municipalities can realize savings through the ability to make bulk purchases resulting in volume discounts. Some regional transit agencies have realized savings of approximately 20% on fuel costs through bulk purchases and savings on vehicle purchases due to volume discounts.

Efficient utilization of capital assets

Regional transit commissions are often better able to maximize capital investments, as decisions are based on regional needs and not solely individual municipality needs. This results in the ability to rationalize and optimize assets both for fixed assets and rolling stock. The RTSC would have the opportunity to optimize the facility size, utilization and location of its bus barns for example, as each municipality may not require such a facility. Additionally, those that currently exist may be better utilized. The RTSC can more effectively make decisions surrounding when and what rolling stock (e.g. buses) to purchase, and where to deploy them across the network to match fleet with ridership levels by route.

Potential financial account drawbacks

Service delivery risk

Moving to a regional transit agency is not without challenges to service delivery and the investment required. Riders may have an affinity to their local service and perceive the service that they receive to be superior to what may exist under a regional commission. This may lead to riders seeking alternatives when regional transit services are deployed. Local transit agencies may require additional efforts, such as increased investment in service delivery and communications to ensure their riders do not become disengaged. Riders may tend to focus less on who operates the system and more on the system's ability to get where they are going as quickly, comfortably and as reliably as possible. Any perceived negative changes to service levels may result in riders failing to embrace the RTSC.

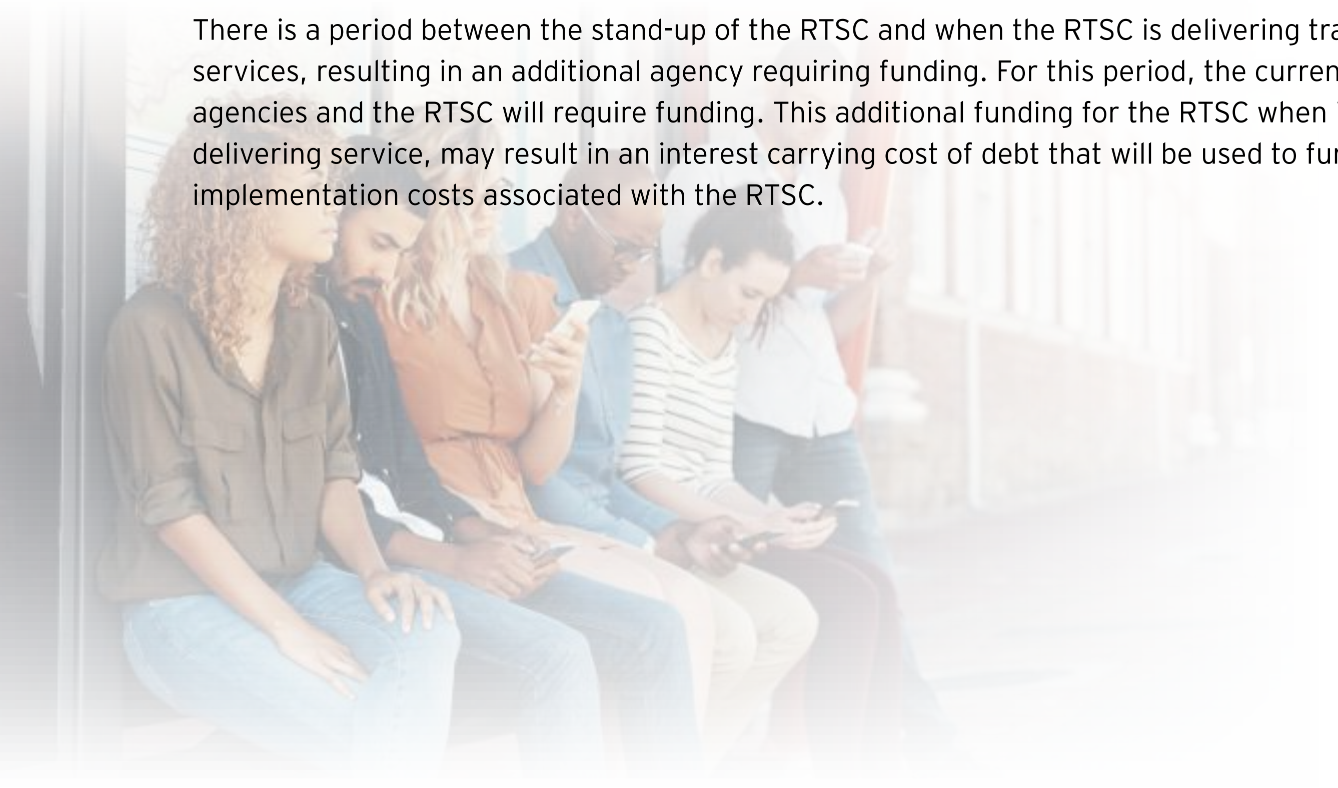
Funding dependencies

Financial sustainability will require enough funding by the member municipalities to address capital and operating costs, financing costs, and asset management costs. These will include costs associated with maintaining capital and rolling stock assets in a state of good repair. This funding must be aligned with regional planning and needs to be sustainable and reliable. Challenges within individual municipality budgets may result in member municipalities looking to reduce services to save costs, resulting in a challenge for the RTSC in predicting what can be reliably delivered year over year.

Savings are also highly dependent on the RTSC management's ability to effectively optimize the transit services provided across the region. While some savings will always occur with the RTSC's ability to remove duplicative routes and minimize non-revenue hours, demand over the next two years may change significantly and those savings may be immediately deployed into providing additional service to meet expanding demand.

Recurring implementation costs

There is a period between the stand-up of the RTSC and when the RTSC is delivering transit services, resulting in an additional agency requiring funding. For this period, the current agencies and the RTSC will require funding. This additional funding for the RTSC when it is not delivering service, may result in an interest carrying cost of debt that will be used to fund the implementation costs associated with the RTSC.



Transit User Account

Overview

With or without an integrated regional transit service delivery, the customer experience should not be compromised. However, to offer the same transit experience, a non-integrated regional service will require the 13 municipalities to work closely on several projects and may require the creation of ad-hoc agreements to ensure a smooth experience for all customers. An integrated regional transit service should ease the process of providing a uniform travel experience across municipal boundaries, as all decisions across the "user journey" would be taken under the responsibility of one authority.

ACCOUNT SUMMARY

Transit User Account

Description:
Assesses the customer experience implications of delivering regional transit, considering interactions and measures of service performance.

Overall Assessment:
With an integrated regional service, it may be easier to propose an improved experience for transit customers by providing a uniform travel experience across municipal boundaries.

Assessed impact of the RTSC:

- + Provide a uniform travel experience across the region
- + Potential decrease in bus transfer times as a result of more integrated regional and local routes
- + Greater consistency of service levels across the region
- − Potential decrease in customer familiarity and connection with current bus operators
- − Definitions of service quality and related impacts, either positive or negative, will vary across the region

Directional Assessment of Account: Net Positive (Moderate)

Relevant transit user account benefits

Uniform travel experience

Under a RTSC, customers will be able to consult one authority to plan their travel by transit. One regional network and one brand would exist for the entire region, which can allow for a seamless experience to all riders. Informative media around fares, schedules, and wayfinding can be consolidated to promote trip planning and accessibility for customers. Comments and complaints to the transit authority will have a direct and central avenue to address concerns that arise across operations in the region. With the recent introduction of a new fare collection and structure approach, it is clear that new and innovative ideas are needed to increase the appeal of transit services. In the future, the RTSC could deliver similar updates and changes in a significantly more efficient and effective manner.

Service level consistency

Across the region, the RTSC should be able to provide a greater consistency of service levels. However, a consideration could be the implications of a condition in the MOU that allows municipalities to introduce additional transit service for the benefit of their own residents. This consideration could impact the level of consistency experienced by riders across the region. The RTSC should strive to provide a minimal standard of service for the whole region.

Potential to reduce transfer time

By operating one regional service, there is the potential ability to better adjust schedules to reduce the transfer time between two buses at major transfer points. Adjusting schedules without the RTSC will require coordination and a strong connection between several transit authorities who may have several contradictory obligations to fulfill. While it is not impossible to realize as separate transit providers, it could be much more difficult to implement. The RTSC could prioritize transfer points where the transfer between buses could be easier or less time consuming for customers.

Safety and security

From the origin of a rider’s trip to when they arrive at their destination, safety and security is a priority for residents in the region. Negative perceptions that exist around transit services today include a lack of security that some riders feel at points in their journey. Whether it is at transit hubs during off peak hours or when travelling through areas of higher criminal activity during their trip, this concern is prominent with existing services. The RTSC has the potential to act as a regional entity to create and enforce safety standards that enable a safer rider experience from start to finish. Through route planning, the RTSC can enforce the Commission’s Transit Service Level Guidelines to improve the accessibility and reliability of service, so riders are better able to plan their trips and ride with greater comfort. This provides increased certainty, decreased wait times, and increased rider confidence when traveling to new areas in the region.

Potential transit user account drawbacks

Adapting to new regional routes

During the transition period, existing customers would need to adapt to changes in routes and schedules. There is a risk that some customers may feel negatively affected over the transition, particularly if they are not communicated with or engaged appropriately.

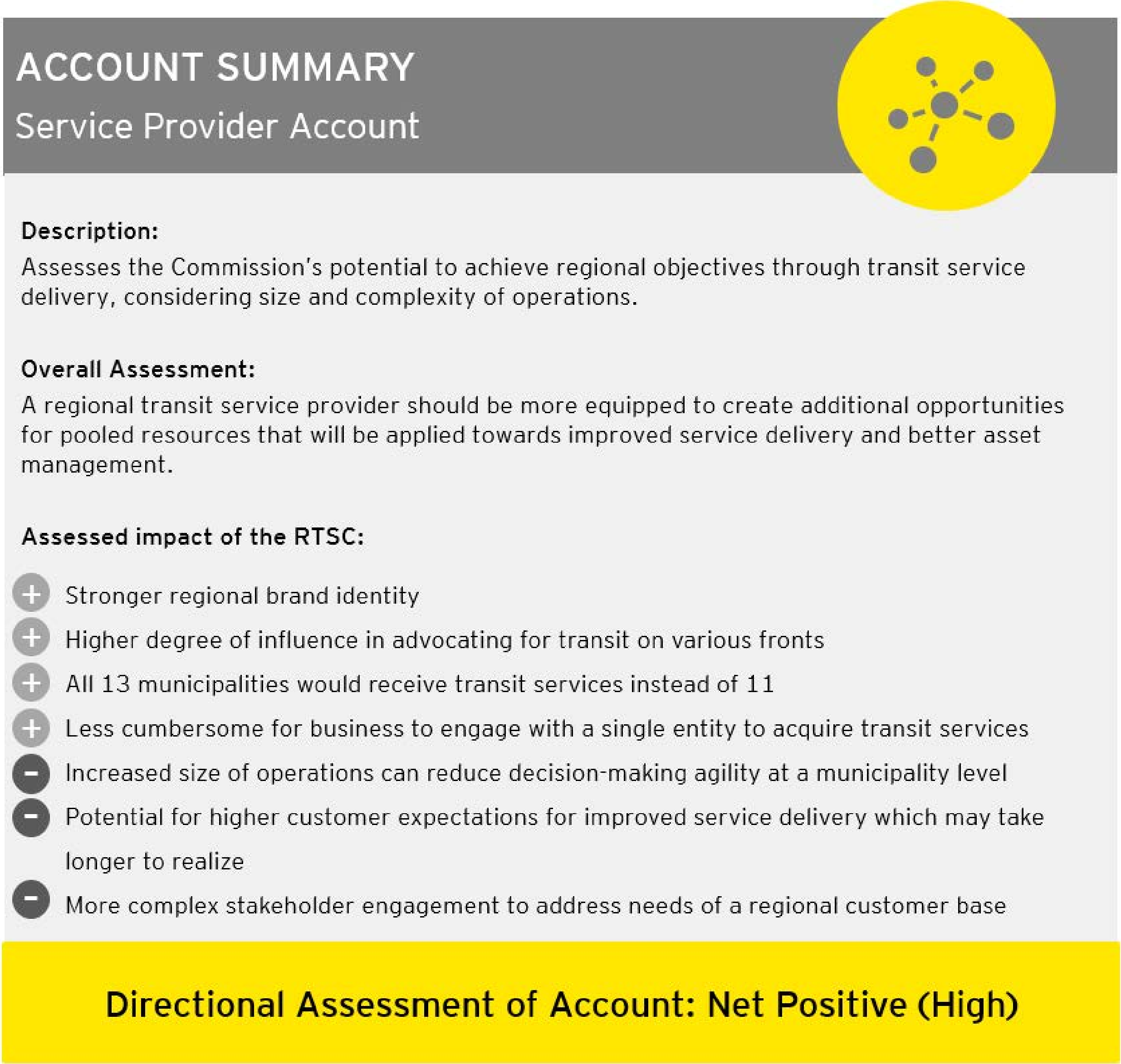
Lower customer familiarity

With the implementation of a regional network, the local characteristics offered by the current bus operators may be reduced. While some customers may know their existing bus operator, drivers under an RTSC could be deployed to several different areas across the region. This could lead to a reduced feeling of connection and familiarity for the customer.

Service Provider Account

Overview

An evaluation of the service provider account for the RTSC ultimately depends on how effective and efficiently it provides regional services at the same time it maintains the relationship between stakeholders. A well-organized regional commission should be more equipped to create additional opportunities for pooled resources that can be deployed to improve service delivery and better perform asset management. However, without the appropriate structure, relationships and conflicts could create more issues than benefits, in which case a model with separate transit agencies could be more beneficial.



ACCOUNT SUMMARY

Service Provider Account

Description:

Assesses the Commission's potential to achieve regional objectives through transit service delivery, considering size and complexity of operations.

Overall Assessment:

A regional transit service provider should be more equipped to create additional opportunities for pooled resources that will be applied towards improved service delivery and better asset management.

Assessed impact of the RTSC:

⊕ Stronger regional brand identity

⊕ Higher degree of influence in advocating for transit on various fronts

⊕ All 13 municipalities would receive transit services instead of 11

⊕ Less cumbersome for business to engage with a single entity to acquire transit services

⊖ Increased size of operations can reduce decision-making agility at a municipality level

⊖ Potential for higher customer expectations for improved service delivery which may take longer to realize

⊖ More complex stakeholder engagement to address needs of a regional customer base

Directional Assessment of Account: Net Positive (High)

Relevant service provider account benefits

Customer experience

Per the transit user account, an integrated transit provider could have a greater ability to improve the transit user's experience.

Savings

Benefits associated with savings forecasted from delivering integrated, regional services are discussed under the *Financial account benefits* subsection.

Service seamlessness

When undertaking regional integration, improved customer service is a likely outcome. This includes a variety of considerations that would contribute to a consistent and reliable service for customers. Informative media around fares, schedules, and wayfinding can be consolidated and optimized, while the fare pricing structure becomes more legible and consistent, and cost savings can be realized through bulk purchasing. Reducing the number of independent operators is a valuable incentive and can improve service provision. Coordinated service across municipal boundaries can provide more seamless travel and minimize existing transfers.

Transit availability

Customers can benefit from logical routing within a service area, that extends across municipal boundaries. Transit agencies benefit when improved availability results in increased ridership. Expanding the service area allows additional travel opportunities while integration may allow for increased services hour offerings through consolidation, thereby benefiting the customer. Decreasing duplicative services provides value under an integrated delivery model and can lead to shorter distances between maintenance and operation yards depending on start and end locations of transit routes. Conversely, there are examples of challenges with vehicle layover locations based on longer regional routes, so this is not necessarily a clear-cut benefit.

Revenue and cost-sharing

An integrated agency can anticipate cost-savings through better coordination and utilization of resources. For example, shared fare media can cost less to produce, as well as account for and manage additional considerations around fraud and recognition. Shared costs for a project or service will allow each existing agency to realize savings by not paying for services separately. Savings through group purchasing of vehicles may also be realized.

Economic and facilities development

It could be easier to plan the location of facilities at a regional scale. Transit hubs could be placed where it would be most optimal and additional amenities could be implemented to the benefit of a larger number of customers. This has the potential to spur additional economic and transit-oriented development. Facility development can benefit from overhead savings under an integrated service delivery approach; however, there will also be challenges that arise around design, siting, and other alignment considerations.

Organizational relationships

Collaborative relationships among existing agencies will be essential to the success of an integrated commission. Trust, backing, and brand can be valuable for larger organizations, resulting in increased funding mechanisms alongside increases in ridership. Assuming all participants have representation under the Commission and that processes are set up to ensure all members feel there is fair representation, organizational integration has the potential to build stronger relationships with an integrated system of delivery across the region.

Sharing resources

A regional transit provider will be able to use its resources in an efficient way. Multiple providers typically do not share resources and cannot ensure that they are deployed in the most efficient way for the region.

Potential service provider account drawbacks

Agreement on operational objectives

There may be different operational objectives that could be difficult to consolidate under a regional service delivery model. Some agencies may have a mission of improving mobility, while others may seek to provide transit to reduce congestion. A regional provider would need to drive a clear, unified direction, which may not fully satisfy all member municipalities in every circumstance. The expectations around service offerings may be difficult to manipulate at a regional scale compared to under the Base Case scenario where transit service agencies have full autonomy to decide on their operational objectives.

Complexity of stakeholder engagement

With a regional provider, stakeholder engagement could become more complex. Residents from adjacent municipalities may want to influence the transit service offering within the region even if the service does not impact them. More engagement will likely be required to ensure all parties are consulted and that all residents feel that their voices are heard.

Community Account

Overview

Transit influences communities through the livelihood of residents and the economic prosperity of businesses. Accessibility to additional services and facilities can result in a more attractive community for all demographics; however, building communities to successfully support these developments can be challenging.

ACCOUNT SUMMARY

Community Account

Description:

Assesses the social impacts of delivering regional transit, considering quality of life, safety and community vitality.

Overall Assessment:

The RTSC influences communities through the livelihood of residents, supporting their choice on where to live while still gaining access to regional opportunities, thereby supporting the growth and prosperity of communities.

Assessed impact of the RTSC:

- + Increased ability for municipalities to retain residents in their communities
- + Increased quality of life, and productivity due to increased access to schools, employment and essential services across boundaries
- + Opportunity to closer align land-use planning and transit planning with fewer transit agencies
- + Increased opportunity for transit-oriented development and urban density
- + Increased capacity and resources to manage stakeholder relations and public engagement
- + Improved sophistication of safety and security measures across the service network

Directional Assessment of Account: Net Positive (Moderate - High)

Relevant community account benefits

Transit oriented development and land use planning

Land use planning can be closely tied to the development of transit and the resulting accessibility that residents have to regional destinations. Transit oriented development can create mixed-use communities that are centered around transit systems, which reduce residents' dependency on a car for mobility. Land use density is a key factor to understanding the potential demand for transit in an area and in designing routes that compliment travel demand patterns. Transit oriented development encourages growth in corridors that connect activity centers, consequently discouraging sprawl and reducing the cost of new infrastructure. Benefits of transit-oriented development result in the following[22]:

- A more available and therefore attractive transit service that allows residents to work and play in the region without a need for a personal vehicle
- Improved modes of mobility
- Reduced incentive for municipalities to sprawl and an increased incentive for density in key areas
- Reduced traffic congestion, car accidents and injuries
- Increased transit ridership

Under the RTSC, land use planning across the region can be further integrated with transit service planning and as a result, service requirements can be defined based on demand. The RTSC can further support municipalities in transit-oriented development. Travel patterns that exist for destinations across the region can be monitored and a centralized body can plan transportation more efficiently and proactively compared to fragmented planning efforts that would have to be organized across municipalities.

Residential renewal and impacts

Services that promote mobility within communities build vibrancy and flexibility for residents. Residents are better able to utilize the resources in their communities by having alternative ways to access these products and services, which results in in greater community prosperity. The RTSC could enhance local routes by operating transit with greater efficiencies according to density and demand and in the long term, bring in a broader ridership base.

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[22] As per the Transit Oriented Development Institute.

This improved service delivery can ultimately increase the livability of communities and improve municipal metrics, including the retention of residents and businesses. Finally, transit facility planning can be aligned with other municipal renewal plans aimed to enhance community spaces. In comparison to existing transit delivery, the RTSC would potentially be in a position to better deliver existing and new services while promoting community enhancements that complement the needs of residents across the region.

Quality of life and community livability

As residents face increasing opportunities in where they live and work, smaller municipalities are struggling to retain citizens outside of the Edmonton core. This requires residents to invest in a personal vehicle to commute to work or leisure activities and this option may not be feasible for all citizens. This may result in youth moving from smaller municipalities to Edmonton in order to better access education and employment.

Currently, the transit service that exists does not provide a practical alternative to driving a personal vehicle. Residents therefore do not have the flexibility they need to justify remaining in their communities without one. The RTSC has the potential to alleviate this burden from families and communities by providing truly integrated regional transit services that match growing demand in municipalities surrounding Edmonton in the long term. Increasing service frequency and reliability can build a larger ridership base and result in a growing transit service in neighbourhoods that may have been excluded from services in the past.

While individual municipalities may not have the resources to introduce new routes for isolated populations, the RTSC has the potential to assess the need for transit across the region and using efficiency savings, find ways to increase the coverage of services to new communities.

Safety

With the centralized planning functions of a RTSC, investments can be made in transit assets that increase user comfort and standardize safety across the region. Examples include buses that are equipped with safety features and transit hubs that can be revitalized with considerations for lighting, cameras, and security precautions to ease riders’ discomfort that may exist. It is difficult for each municipality to create and implement their own standards due to both financial restrictions and the risk of further fragmenting service levels across the region.

Potential community account drawbacks

No potential drawbacks identified.

Economic Account

Overview

Transit services improve the connectivity and prosperity of the region by providing people with access to a greater number of employment opportunities. New business investment looks for areas that provide integrated transit services that support the mobility of their workforce.

ACCOUNT SUMMARY

Economic Account

Description:

Assesses the economic impacts of delivering regional transit, considering business investment and regional prosperity.

Overall Assessment:

Transit services improve the connectivity and prosperity of the region by providing people with access to a greater number of employment opportunities. New business investment looks for areas that provide integrated transit services that support mobility of their workforce.

Assessed impact of the RTSC:

- ⊕ Increased employment levels as a result of greater regional mobility
- ⊕ Greater political support for investment in transit due to relative size of operations
- ⊕ Increased attractiveness of business investment in the region due to integrated transit services
- ⊕ Greater ability to pursue public-private partnerships (P3) and other sources of funding
- ⊕ Lower infrastructure costs to the region by combating urban sprawl with transit-oriented development, impact personal vehicle use that causes wear and tear on roads, and costly road expansions to manage congestion
- ⊖ Requires upfront investment to secure return on investment over a long-term time horizon

Directional Assessment of Account: Net Positive (Moderate)

Relevant economic account benefits

Employment

For organizations and employees alike, accessibility is an important criterion when considering a new opportunity. For organizations looking for opportunities to expand and develop, a key influencing factor is the ability for their employees to come and go with ease to their place of employment. This can sway both the quantity and quality of candidates that a company is able to both attract and retain. In some cases, this accessibility piece extends to the ability for customers to access a product or service. If these services do not exist within a reasonable proximity to the area of interest, it can dramatically reduce the appeal of a location. Recently in the Edmonton Metropolitan Region, employers who are looking to expand and or open new facilities have specifically noted in their evaluations that access to transit is a requirement. For employees, the commute to work is a factor in assessing job opportunities and can restrict individuals from applying to certain positions if the travel is not practical and affordable.

Political and public support

The integration of transit services introduces new opportunities for political and public support across the region. Benefits of the RTSC and in enabling regional collaboration may include access to different municipal, provincial and federal government grants, and the ability to harness the support of residents across the region to support new service offerings. With existing services today, municipalities may struggle to form a compelling business case for new investments in transit services due to the limited impact measured on any one community. The RTSC can be scaled to provide service that positively influences ridership, businesses and communities alike, forming a persuasive case for further development. New routes and facilities demonstrate an impact on the livelihood of residents that cannot be replicated when funding is fragmented and distributed to independents service providers.

Transit oriented development

Transit access is a valuable convenience and makes the land surrounding transit hubs more valuable. This can lead to more residents and businesses wanting to locate in particular areas and can strengthen transit corridors while increasing population density. A regional transit body could shift the mentality of participants to assess developments with a regional lens rather than prioritizing the needs of individual municipalities. Developments including transit hubs, leisure facilities and new regional projects can be viewed collectively by municipalities assessing the potential for additional transit services or increased efficiencies.

Many residents are increasingly reliant on services outside of their communities for services including healthcare and recreation. As new facilities are built to serve these needs, residents require new modes to access these services. There is an opportunity for the RTSC to bridge this gap. As individual municipalities, it can be costly to develop routes for residents to travel anywhere outside of the corridors in and out of the Edmonton core. The RTSC can use its regional vantage point to plan and develop routes and provide alternative mobility options that serve these locations. In turn, the usage of these new and existing destinations will prosper as shared resources for all residents in the region.

Transit hubs developed to support RTSC services can be advantageous to not only promote increased accessibility to transit services, but also to build spaces that serve as community resource centers. Transit facilities can become multipurpose spaces that elevate communities by providing additional services such as retail or convenience store options. Transit hubs can also attract businesses and residents.

Economic productivity

As the Edmonton Metropolitan Region continues to experience growth in both population and economic development, efficiencies become more important to optimize methods of mobility in the region. Existing congestion and bottle necks are increasingly common on roadways and corridors, restricting the ease of movement for residents. In turn, the productivity of the region as a whole is reduced. As the population of cities grows in tandem with the number of personal vehicles, alternatives for commuting must be explored to reduce inevitable overcrowding on roads.

The productivity of both business and individuals is compromised by wasted time taken to travel within the region. To decrease this lost time from commuting, cities are required to explore innovative solutions and the RTSC could provide alternative mobility options to existing transit service. By providing a reliable, practical and accessible alternative to driving, the RTSC can reduce the number of vehicles on the road, and act as a manager of mobility to implement policies that advances the way residents move within the region.

This same congestion can discourage employers from setting up within the region, if they know that the infrastructure is not capable of handling the extra capacity. This can reduce the attractiveness of the region both now and in the future. This principle can also apply to new residents who may be looking to relocate to the Edmonton Metropolitan Region. In addition, municipalities may be affected if the business and residential tax base of the region is negatively impacted due to the challenges mentioned above.

Potential economic account drawbacks

Disruption

Although transit centers can provide valuable hubs in the region to access services, their construction can be disruptive to communities. Proper consultation is required to hear the needs of residents surrounding proposed locations for new developments. This process can be extensive but proves to maintain rapport business owners and build support with residents alike.

Impacting affordable housing

While transit access is a valuable amenity, it can drive up the value of the land closest to transit options. This can result in affordable housing being replaced by more expensive housing options and potentially displacing those who cannot afford to pay premium rates to live near hubs. This can result in citizens needing to look in areas outside transit corridors to meet their housing needs.

In a study on household incomes in transit zones in Chicago, the median income increased by 27% in transit zones while the region experienced a smaller 18% increase in median income.[23] Transit areas may gentrify areas and potentially displace low- or moderate-income households.

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[23] Transit-Oriented Development in the Chicago Region. (2013). [PDF file]. Retrieved from ttp://www.tod.org/research/reports.html

Environmental Account

Overview

The RTSC has the potential to contribute to the growth of the region in a sustainable and environmentally conscious way. The RTSC can optimize routes around the region to minimize unnecessary travel and mileage while making investments in fleets that could reduce greenhouse gas (GHG) emissions.

ACCOUNT SUMMARY

Environmental Account

Description:
Assesses the environmental impact of delivering regional services, considering resource use and sustainability.

Overall Assessment:
The RTSC can leverage its internal capabilities and centralized position to invest in sustainable change. It can implement new standards that prioritize the environment and the impact of transit in the region, while supporting mode shifts from personal vehicles and their related environmental impacts.

Assessed impact of the RTSC:

- + Reduced Green House Gas (GHG) emissions through more efficient use of service hours across the regional network
- + Improved air quality and public health as a result of reduced personal vehicle use
- + Increased capacity to implement environmental management system standards due to relative scale of operations
- + Greater flexibility and ability to deploy vehicles across the network so vehicle capacity better matches demand
- + Improved ability to invest in and deploy a fleet focused on reducing environmental impacts
- − Potential for increased public scrutiny and pressure to modernize fleet to reduce emissions

Directional Assessment of Account: Net Positive (Moderate)

Relevant environmental account benefits

Vehicle emissions

Residents of the Edmonton Metropolitan Region have been measured to have a high reliance on personal vehicle usage with a disproportionate growth in personal vehicle usage in comparison to transit adoption. Over the years, the amount of congestion and number of cars on the road has increased at a steady rate. By reducing the number of cars on the road and providing residents with new and reliable mobility options, this congestion has the potential to decrease and along with it, the concentration of emissions in the region. Lower emissions lead to positive benefits to both communities and the environment. When assessing the difference between existing service and an RTSC, the consolidation of routes poses a compelling case to reducing excess emissions.

The RTSC can reduce the kilometers that buses are on the road by reducing deadheading between the Edmonton core and surrounding municipalities. By removing duplicative routes and reducing trip times across the region (without compromising service), there is a further reduction in emission hours for buses commuting between municipalities. Finally, improved service delivered under the RTSC can provide an increasingly convincing case for residents to opt for transit rather than personal vehicles. The quantitative impact of the RTSC on vehicle emissions cannot yet be measured; however, the positive benefits of an overall reduction in emissions proves to be an attractive factor for improving the environment and livability of the region.

Public health impacts

Public health is a priority for residents and municipal leaders alike. The emissions from vehicles can lead to poor air quality and in turn, trigger a variety of health conditions to those that reside across the region. Calculating the reduced kilometers of vehicles due to the adoption of transit can lead to an understanding of the impact current car usage has on air quality in the region. By implementing a RTSC, a case can be made that reflects lower emissions and reduced concentration of pollution in the air that citizens consume every day.

Environmental sustainability

By adopting sustainable practices in day to day operations, the RTSC can centrally plan and reduce its environmental footprint in the process. One example is by using an Environmental Management System (EMS), enabling the RTSC to integrate their processes and function in a way that prioritizes environmental performance, whereas smaller transit providers may not have the capacity to deploy an EMS.

By investing in new green technology and setting the bar for environmental standards in the region, the RTSC could become a regional entity that leads by example for similar initiatives both locally and across the county. Initiatives may include the investment in green buses or warehouse facilities that maintain best practices in energy efficiency.

In addition, as the RTSC matures, there is an opportunity for fleet consolidation along with integrated purchasing decisions. Investing in new and efficient vehicles allows the RTSC to decommission its older less fuel-efficient vehicles. This process would pose to be very challenging for individual municipalities due to their eligibility for funds towards make these investments and smaller fleet size. With a growing ridership base, there may not be a case for independent municipal transit providers to decommission old vehicles, despite their relative environmental impact.

Potential environmental account drawbacks

Public perception

There may be an increase in public scrutiny and pressure on the RTSC to pioneer changes immediately to meet the high expectations of residents for environmentally friendly initiatives.

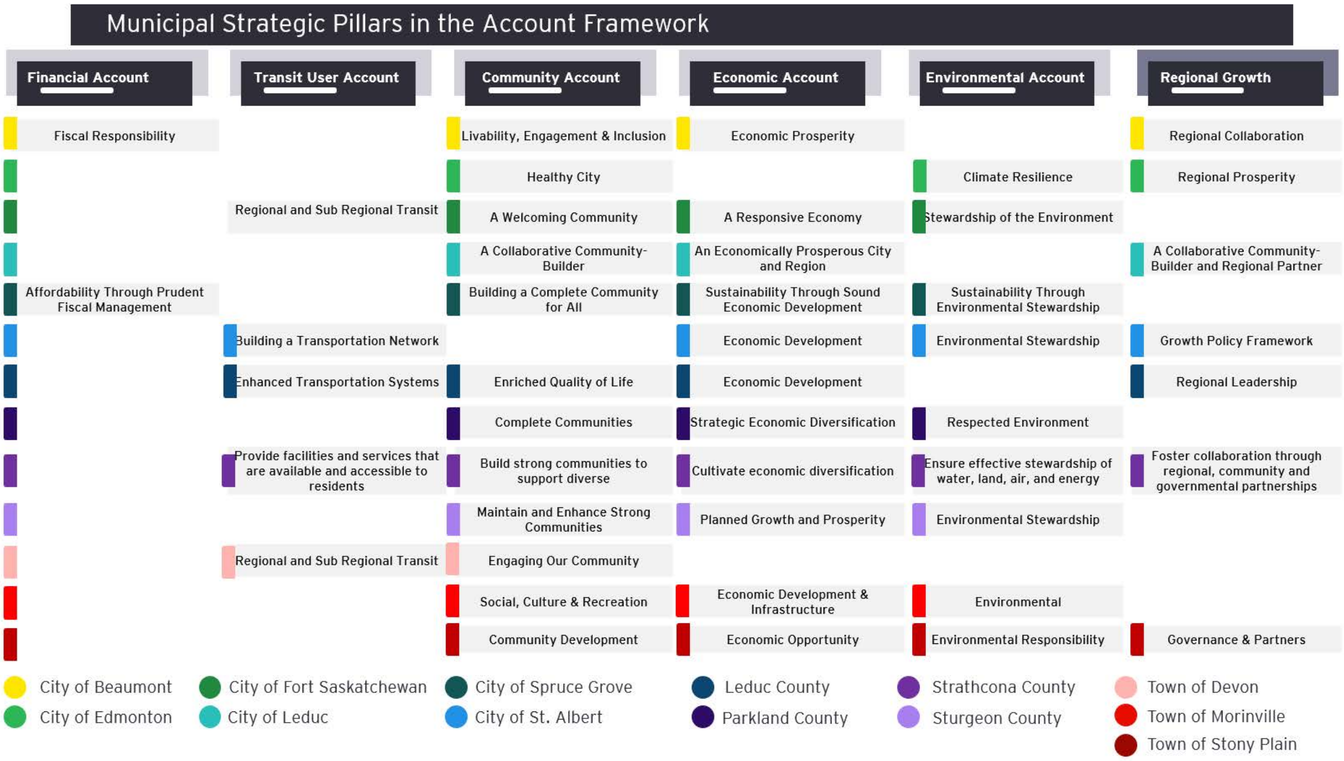
Alignment with municipal strategic plans

Municipalities in the Edmonton Metropolitan Region have a history of collaboration and the RTSC provides an opportunity to leverage and enhance regional collaboration with a focus on seamless mobility.

The work of the RTSC aligns with the mandate of the Edmonton Metropolitan Region Board (EMRB) in which each of the 13 municipalities set a precedent for future through municipal collaboration and managing regional growth responsibly. The EMRB Growth Plan [24] recognizes the link between the efficient movement of people, goods and regional prosperity. This ability for residents to work and play in the region is enhanced by multi-modal and integrated regional transportation systems. The EMRB works to connect municipalities in regional initiatives and a RTSC can harness this collaboration to deliver transit services that enable the growth of infrastructure, economic opportunities and local communities.

Each individual municipality has developed their own strategic plans to address challenges faced in providing the necessary services to support the growth in their individual municipality, let alone patterns in population and future growth of the region. The RTSC would endeavor to remove regional barriers to mobility by increasing modes, coverage, and frequency, while building a transit system that enables the free movement for residents across the region.

Figure 29 - Alignment of individual municipal strategic plan pillars with the account framework



Municipal Strategic Pillars in the Account Framework

	Financial Account	Transit User Account	Community Account	Economic Account	Environmental Account	Regional Growth
City of Beaumont	Fiscal Responsibility		Livability, Engagement & Inclusion	Economic Prosperity		Regional Collaboration
City of Edmonton			Healthy City		Climate Resilience	Regional Prosperity
City of Fort Saskatchewan		Regional and Sub Regional Transit	A Welcoming Community	A Responsive Economy	Stewardship of the Environment	
City of Leduc			A Collaborative Community-Builder	An Economically Prosperous City and Region		A Collaborative Community-Builder and Regional Partner
City of Spruce Grove	Affordability Through Prudent Fiscal Management		Building a Complete Community for All	Sustainability Through Sound Economic Development	Sustainability Through Environmental Stewardship	
City of St. Albert		Building a Transportation Network		Economic Development	Environmental Stewardship	Growth Policy Framework
Leduc County		Enhanced Transportation Systems	Enriched Quality of Life	Economic Development		Regional Leadership
Parkland County			Complete Communities	Strategic Economic Diversification	Respected Environment	
Strathcona County		Provide facilities and services that are available and accessible to residents	Build strong communities to support diverse	Cultivate economic diversification	Ensure effective stewardship of water, land, air, and energy	Foster collaboration through regional, community and governmental partnerships
Sturgeon County			Maintain and Enhance Strong Communities	Planned Growth and Prosperity	Environmental Stewardship	
Town of Devon		Regional and Sub Regional Transit	Engaging Our Community			
Town of Morinville			Social, Culture & Recreation	Economic Development & Infrastructure	Environmental	
Town of Stony Plain			Community Development	Economic Opportunity	Environmental Responsibility	Governance & Partners

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[24] Re-imagine. Plan. Build. Edmonton Metropolitan Region Growth Plan. (2016). [PDF file]. Retrieved from http://emrb.ca/Website/media/PDF/Publications/EMRGP-Interactive.pdf

Financial Account

Municipalities need to be fiscally responsible to act in the best interest of residents. Cost savings and efficiencies are important to prioritize as municipalities adapt to changes in the region. Operating transit services locally requires funding for capital investments and operating costs, both which can be optimized across the region by the RTSC. Although there are costs to municipalities in joining the RTSC, the Commission has the potential to lower operating costs and capture hour efficiencies that will reduce non-revenue hours and ultimately lower costs for municipalities operating transit services independently over the longer term.

Transit User Account

Building a future for transit in the Edmonton Metropolitan Region has not always held the urgency that it does today. Transit has not been explicitly identified as a priority for many municipalities as depicted in the previous figure. The need for multi-modal mobility options and integrated planning has only been amplified over recent years. Municipalities are working to optimize the services they provide to residents and effective transit has become a new priority. Through the RTSC, municipalities can invest in transit in a new way to collaboratively increase neighbourhood vibrancy and provide connection to infrastructure and amenities across the region.

Community Account

A high-quality standard of living for residents is at the center of each municipality's strategic plans. Goals surrounding collaboration, livability and engagement are prominent as communities work to enhance the experiences of their residents whether it be through facilities or service delivery. Accessibility to these services typically varies across communities with transit services being an underutilized or impractical alternative to personal vehicles. The RTSC introduces the opportunity for communities without transit to provide a new mobility option to residents, and those with existing local and commuter routes, to enhance the level of service they feasibly provide. Increased service leads to community access both locally and regionally, providing residents with the opportunity to live in their local municipalities while accessing the services they need in other areas of the region.

Economic Account

Economic prosperity is central to the growth and success of all municipalities across the region. A variety of goals exist in municipal plans that aim to enhance economic performance and a significant portion of these goals can be supported by operating more efficient and effective transit services. The RTSC supports employment growth by attracting employers and connecting them with people across the region. The mobility of residents enables locations across the region to prosper including employment hubs and leisure facilities. The benefit to individual municipalities includes effective mobility services that increase awareness for each municipality and the region, as preeminent locations to live, explore and invest.

Environmental Account

Through environmental initiatives, municipalities have been increasingly diligent about setting goals to lower their environmental footprint. Several municipalities in the Edmonton Metropolitan Region have established an environmental pillar as part of their strategic plan. The objectives of the RTSC align with various climate-oriented goals set by municipalities, including reducing emissions by increasing transit offerings and reducing vehicles on the road. The RTSC will provide optimized routes that will lead to reduced energy outputs to lower the environmental strain cities are putting on the environment.

Service Provider Account

Delivering transit services is complex and fragmented in the region today, as it is delivered by multiple individual transit agencies. Those municipalities that have existing services must navigate the complexity of route planning, service levels and funding for both capital and operational costs. As demand fluctuates, municipalities are required to adjust quickly and generally with limited resources. Under the RTSC, planning, funding and operations will no longer be the sole responsibility of individual municipalities. This leads to an opportunity for pooled resources, improved service delivery and a centralized planning function that can visualize mobility delivered today and in the future.

12 FUTURE CONSIDERATIONS FOR RTSC EXECUTIVE

There is no single “right” way to implement a regional transit commission or to provide public transit services across a region. It will be incumbent on the RTSC executive team to understand the common characteristics of successful integration efforts in the context of unique elements of the Edmonton Metropolitan Region, as these will dictate how the implementation of the RTSC will ultimately unfold[25].

Common characteristics of successful implementations include:

- **Commitment:** Member municipalities and their representatives need to accept responsibility for advancing regional transit for all citizens in the Edmonton Metropolitan Region. Success comes when member municipalities are committed to the process and are interested in reaching common goals.
- **Perseverance:** The implementation of a fully-formed RTSC delivering regional transit across the Edmonton Metropolitan Region does not happen overnight. Like other transit commissions, this implementation is scheduled to occur over a multi-year period. Ongoing contact through regular touchpoints with municipalities helps members persevere, as they can see achievements building as the implementation progresses.
- **Trust:** Key to implementation will be the trust that member municipalities have in each other and in the RTSC executive team. Trust can be easily damaged by: a lack of communication; perceptions of historical challenges resurfacing; personality differences; inconsistencies in services provided; inability of meeting customer needs and expectations; or failure in following through on commitments. Trust can be built by working incrementally and continually evaluating the effectiveness of the relationships.
- **Connection:** Building on the experience and commitment of transit individuals from member municipalities and providing them with a role in shaping policies, programs and the image of a regional transit service provides RTSC staff with a personal stake in the operations. Leveraging their knowledge of history can go a long way into avoiding previous mistakes and increasing buy-in to the Commission.

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[25] Transit Cooperative Research Program Report 173: Improving Transit Integration Among Multiple Providers. (2014). [PDF file]. Retrieved from https://nelsonnygaard.com/wp-content/uploads/2015/01/tcrp_rpt_173v1.pdf.

- **Acceptance:** Member municipalities need to be open to change to see the benefits that can be achieved for their citizens by working together. Providing regional transit through a single organization requires new ways of working together as well as in considering different ways of funding projects, operating services and making decisions.
- **Creativity:** The RTSC allows the flexibility to share and test new innovative ideas that might not be feasible under individual transit organizations. Pioneering mobility centers, resourceful financing efforts and networking can be achieved through a regional planning effort. Ideas can be generated at all levels from riders to staff to elected officials and should be considered to help advance buy-in.

Strong leadership will be required to sustain an integration effort over the long-term. The implementation plan for the RTSC outlined in this report takes place over a 5-year time frame and more will still be required to successfully integrate the anticipated upload of ETS local services that would shortly follow. Progress will be made gradually, and leadership will need to keep member municipalities up to date to build trust and help them to continue to see the end state when current challenges and possibly competing priorities arise.

RTSC Leadership will need to balance local control with regional interests and build trust. Smaller municipalities need to trust that transit decisions will provide them with access to services and not focus all the resources on supporting the region’s core. The larger municipalities need to support decisions that demonstrate service enhancements across the region and support smaller communities. Decision making in the beginning may be slower than anticipated to enable support from the broader stakeholder group. This may be a trade-off in efficiency, but over time this can be overcome as trust is built across the member municipalities.

Strategic decisions, including decisions regarding costs and revenue allocations, will need to be transparent as ceding local control and thinking regionally will be required by the RTSC Board and Leadership Team under an integrated service delivery model. The Board and executive leadership team will need to recognize when local political demands are making it a challenge to reach agreement on strategies and solutions. It will be important for costs and revenues to be equitably and appropriately allocated and clearly communicated, especially during the initial stages as progress may not be plainly visible.

The more people within the RTSC and within the Edmonton Metropolitan Region that embrace the implementation of the Regional Transit Service Commission, build upon it and promote it, the better the chances of a successful implementation. Measuring success of the RTSC will be key for the RTSC executive especially in the early stages of the implementation to continue to drive support for the Commission. Establishing realistic goals for the implementation will be critical to its success.

13 CONCLUSION

The work of the RTSC Transition Team has produced a path forward for municipalities in the region and presents a unique opportunity to advance their shared goals in a very tangible way that will benefit residents and businesses in every community.

While this work provides a clear roadmap for moving forward, there is also a recognition that previous efforts have been made over the years to enhance mobility through greater regional coordination. The opportunities and challenges facing the region and a desire to not let this effort merely become yet another "report on a shelf gathering dust" has created a sense of urgency to move forward.

Based on the comprehensive business case and the evidence collected through this process it is recommended that the municipalities in the Edmonton Metropolitan Region take the next step in forming a Regional Transit Services Commission.

Municipalities in the Edmonton Metropolitan Region have a long history of collaborating to provide services to their citizens. Services which are required and attractive for a municipality and services that can be more effectively provided when working together. Public transit is another service that can benefit from this history of collaboration to provide a truly regional transit service.

The implementation of the RTSC for the member municipalities in the Edmonton Metropolitan Region will support expected growth over the next two decades and make better use of existing transit resources to provide residents in the region with a truly regional transit experience. Given the anticipated growth in the region, transit services cannot continue to be planned and delivered in the same way as has been done in the past. New ways of collaborating to delivering transit need to be considered so the region not only remains desirable and economically viable but becomes even more sought after in the future.

People don't move around the region according to municipality lines on a map. They access housing, employment and leisure services based on many factors, including where services are available in the region. Presently, more citizens rely on private vehicles as their primary choice to enable them to move around the region. Now, more and more citizens are looking for a variety of mobility options that support them in living, working and playing across a region, with transit being one of the options that residents expect to be improved upon, so they can access the service to meet their needs.

For those individuals who rely on public transit or who use it as a primary mode of transportation, moving between municipalities in the region may not be a feasible option and has the potential to restrict their access to services. The intermunicipal services that exist in the region today focus on getting riders in or out of the Edmonton core. While sub-regional planning does occur, a truly integrated regional service does not exist.

The RTSC can enable the delivery of fluid mobility options across the region. The RTSC will enable planning for a truly regional service that focuses on moving riders around the region based on where the riders would like to go, without barriers based on municipal boundaries.

The RTSC can provide a consistent level of service across the region, streamline policies to support improved trip integration, allow for additional mobility options and provide centralized service planning while recognizing the nuances of the regional municipalities. Riders would access one system resulting in a more streamlined approach to moving around the region.

The RTSC can enable the more efficient use of transit assets, both financial and capital, and resources through removing duplicate routes and minimizing the number of non-revenue hours across the region. Maintenance buildings and other fixed assets for transit can be more effectively utilized across all the entire region instead of within a single municipality. A municipality may be able to repurpose certain assets once required assets are optimized by the RTSC. In addition to improved utilization of assets throughout the region, including fixed and rolling stock, the RTSC can improve operating efficiencies through economies of scale. The RTSC has an increased ability to improve cost management of transit services through the combination of contract management costs for services and acquisition of fleet assets to maximize utilization and appropriately plan the mix of the fleet across a larger service area.

The Edmonton Metropolitan Region is facing unprecedented growth over the next two decades and its ability to effectively plan and prepare for the near doubling of the population will rely on the member municipalities' ability to work collectively to implement effective land use and transportation planning across the region. **The RTSC will bring a unified approach in delivering transit services that meet the evolving needs of the region in the decades to come.**

In addition, the RTSC can advocate for funding and alternative revenue sources to support public transit at both the provincial and federal levels. Working together as a collective provides other levels of governments with the knowledge that the funding will be optimized as it will benefit citizens across the region instead of a single municipality.

The RTSC can create an integrated system that supports a high quality of life, creates a healthy environment and increases economic prosperity in the Edmonton Metropolitan Region both now and in the decades ahead. Timely and optimized transit infrastructure and services is one of many underpinnings for success in the region. The RTSC will enable the region to attract people to live, work, learn, play and invest so they don't look elsewhere.

> “ Our panel envisions the Edmonton Metro Region taking its rightful place as the strong and confident heart of a more resilient and competitive Alberta. We have a limited window to get in the game, and fashion an Edmonton Metro Region that is recognized as a globally competitive place to live, work, play, invest and do business. Unless action is taken soon, our region risks being relegated to the class of “flyovers” and “other places” that aren't notable or sought after even though we have a wealth of assets, people and potential.
>
> \- *Metro Mayor's Alliance Report, May 2016*

14 APPENDICES

Appendix A: Project context and history

Appendix B: Overview of stakeholders involved in developing the RTSC

Appendix C: Existing intermunicipal transit services and transit agencies

Appendix D: Case study – Integrating autorité régionale de transport métropolitain (ARTM)

Appendix E: Operating model design principles

Appendix F: Process for the continuous improvement of transit services

Appendix G: Transit model assumptions and RTSC Case simplifications

Appendix H: Detailed implementation plan

Appendix I: Financial model consultation and development process

Appendix J: Details of the financial model approach

Appendix K: RTSC Case incremental cost descriptions and assumptions

Appendix L: RTSC funding shortfall allocation – Annual schedules

Appendix M: RTSC funding shortfall allocation – Base fee annual schedules

Appendix N: RTSC funding shortfall allocation – Base fee component sensitivity analysis

Appendix O: RTSC service – Annual funding shortfall schedules

Appendix P: Proposed RTSC transit service level guidelines

Appendix A: Project context and history

Integrating transit in the region has been a prominent topic of study and planning for well over a decade in the Edmonton Metropolitan Region. Key work related to regional transit was driven by the creation of the Capital Region Board (CRB) in April 2008. The Government of Alberta tasked the CRB with preparing a growth plan for the area, which included a regional intermunicipal transit component. Under the CRB, a Public Transit Committee was formed to lead most of the initiatives related to regional transit.

Since its creation, the CRB completed numerous regional transit initiatives including studies and plans related to transit cost sharing, fare strategy, governance, service standards, network planning, service planning, and implementation planning. Some of these initiatives include:

Intermunicipal Transit Network Plan (March 2009)

Under the mandate of the CRB's Public Transit Committee, the Intermunicipal Transit Network Plan was developed as one part of a four-component plan, also including Land Use, GIS, and Housing. All four plans were developed together to respond to the Capital Region Board Regulation. The Transit Network Plan highlights existing transit conditions, guiding principles, potential land use scenarios, intermunicipal transit services, specializes transit provisions, a governance framework for intermunicipal transit, a transition and implementation plan, operating and capital costs for the short and long term, and a recommended performance monitoring program.

Regional Transit Cost Sharing Formula Report (October 2009)

The Government of Alberta Minister of Municipal Affairs requested the CRB to develop a cost sharing formula to identify the municipal allocation of transit costs related to transit projects. The report identifies guiding principles, governance implications, and cost sharing models including comparisons to other jurisdictions. It further analyzes these cost sharing models and related formulas to recommend a transit cost sharing formula that could be utilized in the Capital Region, including implementation considerations. The recommended formula included a core fee applied to all municipalities in the first year of the project with the remainder of the costs shared on the proportion of total population and total equalized assessment, each weighted at 50%. It was noted that direct benefit models, such as ones incorporating ridership statistics, would be the most ideal, but integration is low throughout the region and there is little ability to measure ridership per municipality.

Transit Service Standards for Inter-Municipal Transit (August 2010)

Transit Service Standards were developed as one part of three strategic planning projects to develop and implement a regional transit network in the capital region. The report includes a peer comparison of service standards from cities in Canada and the United States, goals for transit in the region, objectives for each goal, and metrics and targets to guide services. The service standards were developed to serve as the basis for the 30 Year Transit Service Plan that would be developed in 2011.

Integrated Regional Transportation System Study – Technical Report (June 2011)

The Integrated Regional Transportation System Study identifies key elements of the Capital Region's future transportation system. Its purpose was to fill a gap in the regional planning framework by defining a regional transportation system that serves the region's land use and transportation needs that is consistent with the CRB's Growth Plan. The study documents the alternatives developed for a regional transportation system, analysis, and subsequent recommendation. This study formed the technical foundation for the Integrated Regional Transportation Master Plan.

30 Year Transit Service Plan (September 2011)

The 30 Year Transit Service Plan presents and analyzes three service scenarios for future development of an intermunicipal transit service based on alternative LRT networks and high, medium, and low funding scenarios. The plan builds off the Transit Service Standards for Intermunicipal Transit (2010) previously developed. The 30 Year Service Plan ultimately serves to guide the planning of an intermunicipal transit system in the region by comparing the three service scenarios including the costs and revenues, funding required, and system performance. The plan recommends the high funding scenario as it offers the most cost-effective mix of bus and rail services for the region over the 30-year horizon. The plan also indicates that services will need to become more integrated in the future to realize the benefits of the scenario, including integrated fare, cost sharing, and alternatives to the multi-operator model.

Integrated Regional Transportation Master Plan (September 2011)

The Integrated Regional Transportation Master Plan aims to integrate land use and transportation networks including roadways, railways, and transit into a comprehensive transportation plan for the region. A policy framework founded upon the CRB's Land Use Plan and its related principles, are outlined to guide the development of the master plan. The policy framework focuses on integrating with the Capital Region's Growth Plan, increasing transportation choices, reducing environmental degradation, and advocating for more effective coordination of infrastructure between all jurisdictions. A recommended transportation system for the region until 2044 is outlined including a regional roadway network and road classification, goods movement and related corridors, regional transit facilities including LRT network, Park & Rides, and Regional Bus, and air and rail transportation. The master plan also indicates 10-year investment priorities for the region.

Intermunicipal Transit Governance Study and Implementation Plan (November 2012)

The Intermunicipal Transit Governance Study and Implementation Plan was developed to support the implementation of the recommended Transit Committee governance model identified in the Inter-Municipal Transit Network Plan. The original objective of the report was to review the existing governance model for intermunicipal transit and outline a strategy to implement the recommended Transit Committee model with consideration for opportunities, risks, challenges, and limitations. The objective of the report changed when analysis indicated that the Transit Committee governance model had various limitations and therefore other governance models were analyzed and compared. These alternative governance models were a non-profit corporation, controlled corporation, intermunicipal partnership, and a regional commission. After the assessment of alternative models, a recommendation was made for a regional commission model and high-level next steps to develop it were outlined, including a recommendation to develop a regional commission 5-year business case.

Intermunicipal Transit Governance Study (April 2014)

> The Intermunicipal Transit Governance Study aimed to develop a high-level business case to assess the costs and benefits of implementing a regional transit commission model for the region. The study compared three scenarios over a 30-year time horizon from 2020-2049. The scenarios included “status quo” (conventional, specialized and LRT delivered by separate agencies currently operating), regional commission combining all transit agencies and contracted services (conventional, specialized and LRT delivered by a regional commission), and a regional commission minus Strathcona County Transit (conventional, specialized and LRT for Edmonton, St. Albert, and contracted services delivered by a regional commission). The study used the regional bus and LRT transit network outlined in the City of Edmonton’s 30-Year Transportation Master Plan and the CRB’s 30 Year Transit Service Plan as the basis for the service concept in scenario 1 and scenario 2 respectively, with scenario 3 having a less extensive and integrated network including the elimination of part of the planned East LRT line. A Multiple Account Evaluation framework was utilized to assess the three scenarios across 5 accounts including the impact to transportation users, financials, environmental factors, economic development, and to the social community. After analysis, the report recommended that the region should transition to a regional transit commission. After the report was released, municipalities issued responses highlighting that more information and analysis would be needed for a regional transit commission to be adopted in the near future, including details on how the model would be implemented and transitioned to.

The culmination of prior studies, plans, and collaboration amongst municipalities in the region eventually hit a turning point and in 2014, the City of St. Albert approached the City of Edmonton to explore the idea of a single transit agency between the two municipalities. Both cities collaborated on a white paper called “Moving Integrated Transit Forward” which detailed a vision and case to integrate the two cities into one transit system, while also highlighting opportunities and challenges. The white paper included working principles and the development of a work plan to further explore integrated transit between the two municipalities.

In April 2015, St. Albert's Council unanimously passed a motion, subject to approval from the City of Edmonton, to evaluate the integration of St. Albert Transit with Edmonton Transit Services. In May, Edmonton approved the work plan outlined in "Moving Integrated Transit Forward" and recommended that administration continue to work with the City of St. Albert to evaluate the integration of both systems. To continue the work, an interim report was brought forward to the City of Edmonton's Transportation Committee and St. Albert's City Council in March 2016, with a recommendation to further assess a separate regional commuter transit system. A motion was passed for administration to return to the Committee in late 2016 with a report addressing the following six items pertaining to:

1. Costs and benefits for a regional commuter service
2. Potential for expanding regional commuter service to include other interested municipalities in the region
3. Potential for provincial funding assistance for start-up, operations and capital contributions
4. Mechanisms available to establish a sustainable funding and cost-sharing model
5. Available governance options including costs, benefits, risks, and timing issues associated with each option
6. A recommendation on the preferred model for implementation of a regional commuter service

As momentum started to build towards regional transit collaboration, the Metro Mayor's Advisory Panel simultaneously released a report in May 2016 called "Be Ready or Be Left Behind" which provided recommendations on how Edmonton and surrounding areas, could achieve global competitiveness with the caveat that "it will require municipalities planning, delivering and acting as one Metro Region in certain key areas." One of these key areas or "cornerstones" is public transit, which is a primary factor considered by the private sector when deciding where to invest or build.

The report emphasized the need to work to build regional systems with shared investment and shared benefits to shift the perspective from individual municipalities to what is best for the region. In terms of public transit, the report proposed that the region needs "integrated transportation and public transit networks that enable efficient movement of people and goods" and that the region "lacks the cohesive regional systems to successfully attract jobs and investment now and in the future." It further indicated that "citizens in the Metro Region currently experience a patchwork of multiple public transit networks operated by each municipality," resulting in "regional inefficiencies and higher costs as the region develops."

The report recommended that an entity should be established to be "responsible for planning, decision-making and delivering core public transit across the Edmonton Metro Region" with a focus on commuter corridors that enhance mobility in the region.

To continue the momentum to evaluate integrating the St. Albert and Edmonton's transit systems, a report was completed in August of 2016, by the Steward Group titled "Regional Commuter Service Assessment." At a high-level, the report discussed the current state of transit in the Edmonton Metropolitan Region and made recommendations for a commuter service entity regarding governance and funding, service concept, service delivery, and an implementation strategy for the near and long term.

In September 2016, administration returned to the City of Edmonton's Transportation Committee and delivered the "Regional Commuter Service Phased Implementation Report." The report briefly discussed the previous six items noted (from the March 2016 meeting) and determined that a three-phased implementation plan be followed to explore the development of a regional commuter service entity.

The three phases of the "Regional Commuter Service Phased Implementation Report" are summarized below:

Phase 1: Governance design

- The Task Force would design the governance for a regional transit service entity and create a Memorandum of Understanding (MOU) between the City of Edmonton and City of St. Albert. The MOU would confirm the governance design for the regional commuter entity, in which other municipalities could join once approved by their two respective Councils.

Phase 2: Establish and transition

- The development and direction on four areas for a regional commuter entity, including: the scope and delivery of service; funding and financial management; administration and logistics management; and the establishment of administration and managerial functions.

Phase 3: Service Operations

- The operation of the new regional commuter entity within one year of a formal agreement being approved by municipalities involved and provincial legislation being established.

To meet the objectives outlined in the report, the Joint City Manager's Regional Commuter Service Task Force was formed in late 2016. The Task Force was comprised of elected officials and administration from the City of St. Albert and the City of Edmonton. The Task Force would action Phase 1 of the implementation plan and set out an objective to complete a Memorandum of Understanding to create a regional entity to deliver commuter services for the region.

The Task Force released a series of findings related to the formation of a regional commuter entity, which are summarized below:

- An opportunity exists for greater collaboration in how transit services are delivered across the Edmonton Metropolitan Region
- Lessons learned and governance structures across Canada and US
- That a commission structure was determined to be the best model for delivering transit
- A double majority voting structure could be established for the transit entity
- Identified costs for Phase 2 of implementation plan was estimated at $3.7M

Following the release of the findings, a non-binding Memorandum of Understanding (MOU) was drafted and signed by both the City of Edmonton and City of St. Albert in December 2017. Per the MOU, the RTSC would: support connected and active communities and provide inclusive and accessible transportation options for residents in the region; serve as a transit backbone to help connect communities to enable a stronger more prosperous region; and act as a coordinating body for regional transit related projects.

After successfully establishing a MOU between the City of Edmonton and the City of St. Albert, full funding for Phase 2 of the implementation plan was awarded by the Government of Alberta.

In October 2017, the Government of Alberta announced a name change from the CRB to the Edmonton Metropolitan Region Board (EMRB) and in doing so reduced the size of the region and EMRB membership from 26 to 13 representatives comprised of reginal municipalities with populations of 5,000 or more. A year later in October 2018, the mayors from all 13 of the following municipalities in the Edmonton Metropolitan Region (members of the EMRB) signed on to the MOU, effectively joining the Regional Transit Services Commission Transition Team:

- City of St. Albert
- City of Edmonton
- City of Beaumont
- Town of Devon
- City of Fort Saskatchewan
- City of Leduc
- Leduc County
- Town of Morinville
- Parkland County
- City of Spruce Grove
- Town of Stony Plain
- Strathcona County
- Sturgeon County

As per the MOU, each municipality appointed two elected representatives to the project Transition Team. The Transition Team would meet monthly to guide Phase 2 of the implementation plan and provide strategic direction.

In November 2018, a Request for Proposal (RFP) for consulting services to support Phase 2 of the implementation plan, was released by the City of Edmonton. EY was the successful proponent of the RFP process and began work in February 2019. It was at that time the RTSC Transition Team began the development of components described through this report to prepare for the implementation of a Commission.

Appendix B: Overview of stakeholders involved in developing the RTSC

Establishing a firm understanding of each stakeholder group and how they interact was a critical first step to developing the engagement and communications plan. Recognizing each group's unique needs, concerns and interests in building an RTSC often required a tailored approach to engagement and communications.

The stakeholder groups involved in the development of the RTSC, and the primary method in which they were engaged throughout the project is described below.

Municipal Councils: Elected officials from each municipality are key decision makers representing the interest of their respective municipal residents. Councilors were engaged through in person presentations by EY where attendees had the opportunity, during closed session, to ask questions and provide commentary on the project progress according to the needs of their municipality and the region. These Councilors will ultimately be tasked with making a yes or no decision during final voting, on whether their respective municipality will sign on to participate as a member of the RTSC.

Transition Team: A group of elected officials assigned to provide strategic direction, make key decisions, identify issues and risks, and provide feedback and approval throughout the project progress. Each municipality has one primary representative that acts as a voting member within the RTSC governance structure and a secondary representative to enable continuity when the primary could not be in attendance. This group would gather monthly for full day sessions that focused on project updates and workshop activities used to set the direction for upcoming work by EY.

Working Team: The Working Team was comprised of representatives from member municipalities, consisting of individuals supporting administrative and transit related roles within their organization. As per the project governance structure, this group was collectively responsible for co-developing project outputs with the EY Project team, reviewing and validating deliverables, and liaising with their respective Transition Team member(s) for input on the work.

Municipal Government Relations and Communications: Government relations and communications representatives from each municipality were involved to support the RTSC program. These representatives were involved in project activities that focused on project updates, validating public engagement and communications strategies for the project. Their insight helped create consistency in messaging, alignment in project approaches to Council engagement, and defining municipality involvement across the region

RTSC Project Team: The Chair and Vice Chair of the RTSC provided project guidance and input, working with the EY Project team to guarantee progress, outcomes and expectations were met.

Other Key Influencing Stakeholder Groups: Several additional stakeholders were identified during the project that helped shape final recommendations for the RTSC development. Members of these key groups were engaged through targeted engagement and communications or through focus groups conducted in August 2019. The focus group engagement provided an initial opportunity to capture perspectives of people who live in the region and who represent sectors including health, education, recreation, commerce, non-profit, and municipal, provincial and indigenous governments. These sessions provided insight into what the future of transit could like in the Region from the perspective of impacted stakeholders.

- Government of Alberta – Ministry of Transportation and Ministry of Municipal Affairs
- Indigenous Communities (those which are within the service area scope of the project were invited, including Enoch Cree Nation who had representation at Transition Team meetings)
- Edmonton Metropolitan Region Board (EMRB)
- Post-Secondary Institutions
- Edmonton International Airport
- Municipal Chamber of Commerce
- Community Associations

Appendix C: Existing intermunicipal transit services and transit agencies

The seven municipal transit agencies whose intermunicipal transit services were reviewed as part of the current state assessment are described below based on information gathered and available in the Spring of 2019. This information helped set the context required to identify and discuss opportunities to improve intermunicipal transit across the region. In some cases, the below details evolved through the transit service delivery work that followed.

Beaumont Transit

- Beaumont Transit started in 2017 and has one fixed bus route from Beaumont (Ken Nichol Regional Recreation Centre) to the Edmonton Century Park LRT. Beaumont Transit plans their own service and owns a fleet of buses but has an operating agreement with ETS to operate the service and maintain the buses on behalf of Beaumont Transit.

Edmonton Transit Service

- The Edmonton Transit Service (ETS) is the largest transit agency in the region, operating two Light Rail Transit (LRT) routes and 194 fixed bus routes including one regional bus route from the Century Park LRT station to the Edmonton International Airport. ETS has fully integrated transit operations meaning that they plan and operate their service, and own and maintain their fleet of buses.

Fort Saskatchewan Transit

- Fort Saskatchewan Transit has three fixed bus routes including one regional bus route from the Dow Centennial Centre to the Edmonton Clareview LRT Station. The regional bus service is planned by Fort Saskatchewan Transit but delivered through an operating agreement with ETS, in which ETS operates the service, and owns and maintains the fleet of buses used.

Leduc Transit

- Leduc Transit has six fixed bus routes, including three regional bus routes starting from 50 Street/47 Avenue and Alexandra Arena to Nisku, Leduc County Centre, Edmonton Century Park LRT, and the Edmonton International Airport. Leduc Transit plans their service, and owns and maintains their fleet, while PWTransit operates the service through an operating agreement.

Spruce Grove Transit

- Spruce Grove Transit has four fixed bus routes including three regional bus routes starting from Spruce Grove Century Road to Downtown Edmonton, MacEwan University, the Northern Alberta Institute of Technology (NAIT), Acheson Industrial Park, Westmount, Kingsway, the University of Alberta South Campus, Fort Edmonton Park, and West Edmonton Mall. The regional bus services are planned by Spruce Grove Transit but delivered through an operating agreement with ETS to operate the service and maintain the fleet of buses used on the routes. Both ETS and Spruce Grove Transit own buses used to deliver the regional services.

St. Albert Transit

- St. Albert Transit has 25 fixed bus routes including seven regional bus routes starting from St. Albert Centre Exchange and Village Transit Station to Downtown Edmonton, MacEwan University, Northern Alberta Institute of Technology, Kingsway, Government Centre, and West Edmonton Mall. St. Albert Transit plans their service, and owns and maintains the fleet of buses, but has an operating agreement with PWTransit to operate the service.

Strathcona County Transit

- Strathcona County Transit has 28 fixed bus routes including six regional routes from Bethel Transit Terminal and Ordze Transit Centre to Downtown Edmonton, Government Centre, MacEwan University, Northern Alberta Institute of Technology, and the University of Alberta. Strathcona County Transit has fully integrated transit operations meaning that they plan and operate their service, and own and maintain their fleet of buses.

Appendix D: Case study – Integrating autorité régionale de transport métropolitan (ARTM)

Up to the mid-1980s, there were three transit operators (Montréal, Longueuil and Laval) in the Montreal Region. They provided transit services for remote suburbs. Due to poor service, mayors of those municipalities asked the provincial government to create their own service. A provincial bylaw creating Conseil Intermunicipal de Transport or CIT (Intermunicipal Transit Council) was passed that specified the need to create these new entities with the provision that they could not be the owner of transit vehicles (buses). Bus operations were contracted out and CIT remained responsible for fares, scheduling and routes. Transit services were provided primarily to/from their jurisdictions to downtown Montreal, while some of CIT had developed local service. About 13 agencies under CIT were created throughout the Montreal area.

This original system created a patchwork of services that required increased levels of coordination. In 1995, the provincial government created the Agence métropolitaine de transport (AMT). The main goal of the AMT was to manage commuter trains (operation and planning) and coordinate transit service. It helped CIT gain access to bus terminals, metro stations and created park and rides. In 2017, under a redefinition of the transit governance in the Montreal area, the provincial government put in place two new entities. One for regional planning, transit management, budget, and fare policy (Autorité régionale de transport métropolitain or ARTM) and another for the operation of commuter trains and services provided by CIT (Réseau de transport Métropolitain or RTM). CIT was merged into the RTM (now with EXO as the brand name). EXO continues to contract out bus operations. The other transit authorities (STM, STL, RTL) have been reduced to transit providers and receive their revenues (grants, farebox, municipal contribution) from ARTM. AMT staff have been split into these two new bodies (ARTM and EXO). Marketing, communication and other transit user-related activities have been consolidated by EXO. Fare policy is under ARTM and fare collection is under the transit provider (STM, STL, RTL, EXO).

Until 2017, each CIT were responsible for local and intercity transit services. They contracted out bus operations and maintenance. They had their own fare structure, although a monthly pass structure fee for multizone users was provided by AMT. Some CIT agencies offered free bus service inside their city limits. Throughout the region, service across boundaries was not permitted. As such, all of CIT developed services in silos with disregard for seamlessness. Over the years, some of CIT merged together, creating a broader territory. The merging of two CIT agencies eased transit flow between the territories and helped local integration. In addition, some areas through CIT agencies offered a combined route, but these were infrequent.

During the AMT era, CIT gained accessibility to Montreal Island. They were able to have quality access to metropolitan terminals (managed by AMT) and metro stations. In the first year of AMT's operations, CIT harmonized their bus stop signage. However, they continued to manage their own transit services, and develop services where their constituents wanted to go, until 2017 without any official request from AMT.

Montreal's experiences with transit regionalization are relevant to the Edmonton Metropolitan Region in the contexts of governance. Montreal has had several iterations in changes in governance around transit. A main lesson learned, is defining a service area and providing a clear communication of what is intended and planned for should a regional commission be selected. If continuing with the Base Case of non-integrated service, again it is important to effectively explain to the constituency, how customer trips can be undertaken, regardless if they fall over municipal boundaries. Travellers by transit ultimately want to get from A to B, regardless of boundaries and service providers. Being able to accommodate this through either case can be achieved but it needs to be well communicated and reliable.

Appendix E: Operating model design principles

Design principles are a set of guiding criteria that inform the development of the RTSC operating model. They translate key elements of the strategy into high-level requirements for how the Commission should operate and deliver services in the future.

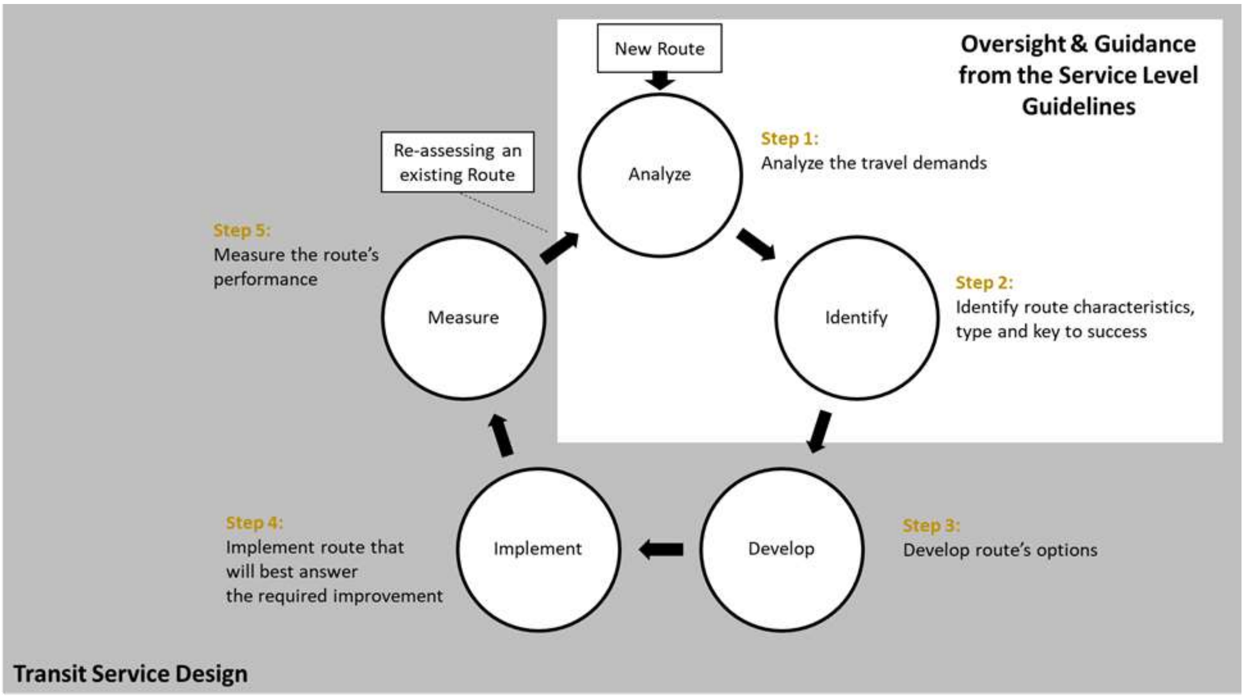
- **Enable Transparency and Equity:** Transparent roles and accountabilities are established for the organization and member municipalities within a framework that fosters equality.
- **Customer-centric:** Services are integrated and driven by a focus on customer experience.
- **Operational Efficiency:** Functions and capabilities are shared and standardized to drive economies of scale and cost savings.
- **Clear and Effective Accountability:** Clear organizational performance measures and transit service standards will guide decisions and investments.
- **Strategic and Agile in Nature:** The design will enable sustainable operations while building the capabilities to be agile for future innovation and growth including a future merger with Edmonton Transit services.
- **Collaborate and Build Relationships:** Relationship development with stakeholders is prioritized and collaboration is core to culture, where people are empowered to share and learn.
- **Adopt Digital:** Digital technology is adopted wherever feasible to facilitate service delivery, people and asset interaction, decision making, and continuous improvement.

Appendix F: Process for the continuous improvement of transit services

The RTSC Transit Service Guidelines document found in Appendix P, forms part of the continuous improvement process for creating transit services. Planning a new route or re-assessing an existing route requires an analysis of travel demand. The guidelines provide tools to undertake this analysis, with the result of identifying the route characteristics and level of service required to meet the demand. The design of the route would start to take form, with detailed analysis and public engagement that would influence the final version of the route. Validation with the guidelines will be maintained all along the process to ensure the purpose of the designing route is maintained.

The guidelines also provide information on the performance metrics that could be used to evaluate the route once it is implemented to confirm that the performance of the route is still as expected.

Figure 30 - Continuous improvement process for transit services


New Route
Oversight & Guidance from the Service Level Guidelines
Re-assessing an existing Route
Analyze
Step 1:
Analyze the travel demands
Step 5:
Measure the route's performance
Measure
Identify
Step 2:
Identify route characteristics, type and key to success
Step 4:
Implement route that will best answer the required improvement
Implement
Develop
Step 3:
Develop route's options
Transit Service Design

The approach provided in the guidelines provides flexibility and allows planners and users to adjust transit service as demand grows or changes. Within the framework of the guidelines, it is expected that service will develop over time as the transit demand and the ridership increase.

Appendix G: Transit model assumptions and RTSC Case simplifications

The analysis comparing Base and RTSC Cases of transit service, relied on the following key assumptions and simplifications for modelling the conceptual RTSC transit service:

- **Service planning assumptions:** Trip times for proposed RTSC Case routes (patterns) were estimated by summing Google Maps travel time estimates with dwell time for an estimated number of stops per route (pattern), plus recovery time as a function of travel time. Travel time estimates were validated through a comparison to existing transit schedules. While some existing regional transit operators reported ongoing challenges in meeting existing scheduled travel times during peak hours, to create an 'apples to apples' comparison to existing scheduled hours, RTSC Case travel time estimates were not revised to address existing schedule challenges.
- **Preliminary schedule estimates:** Creating a detailed schedule for a transit service requires an understanding of layover locations, refueling practices, key connections to other transit services or events (e.g. school times or sporting events), driver working hour restrictions, and many other considerations. Planning to this level of detail was not within the scope of this study. Instead, high-level schedules were produced based on proposed service frequency and span.
- **Fleet assumptions:** The high-level fleet estimate was developed using preliminary schedules, assuming no interlining of routes within the RTSC. Interlining of routes would require a detailed schedule to be produced for each route, which was outside the scope of this study (refer to 'Preliminary schedule estimates' above). Fleet estimates were therefore created as a function of estimated cycle times (i.e. round-trip times) and headway.
- **Organizational/operational assumptions:** It was assumed that buses would be shared across the region and would therefore be stored in the garage closest to the routes served by the vehicles in question. Specific garage/maintenance requirements and capacities were not incorporated.
- **Data:** Existing transit service was modelled using Fall/Winter 2018 schedules provided by agencies at the outset of the project.

Appendix H: Detailed implementation plan

The detailed implementation plan includes major activities and sub-activities associated with implementing the RTSC. Proposed start and end dates of activities have been included along with key milestones that signify important events to occur over the transition. Sub-activities are shown as indented lines under bolder, major activities.

The detailed plan contemplates several categories of activities that are required to manage the transition to the RTSC, including:

- **Program delivery (PD)** activities, which include program management and pre-implementation tasks required to prepare for RTSC stand-up and regional services roll-out
- **Policy & professional (PO)** activities, which include policy review, development or legal counsel required to submit a successful application, stand up the RTSC and roll-out regional services
- **Public engagement (PE)** activities, which include consultation with the public, often supported by third-party support, to guide how regional services roll-out will occur
- **Organization (OR)** activities, which include preparing and empowering municipalities, RTSC leadership and employees to manage through the change
- **Strategy & governance (SG)** activities, which include senior leadership and board oversight, planning, and decision-making to guide the transition to operations under a RTSC
- **Service delivery (SD)** activities, which include development, execution, monitoring and improvement of business processes required to deliver regional services
- **Technology (TE)** activities, which include set up and ongoing use of enterprise and employee information management and technology resources
- **Infrastructure & assets (IA)** activities, which include establishment of the RTSC workplace and transfer of assets from municipalities to the RTSC within its first two years of operation
- **Branding (BR)** activities, which include design, marketing and gradual roll-out of RTSC branded assets to communicate and promote the transition to regional services

The detailed implementation plan is shown by the below table, beginning in March 2020 following municipality voting to determine RTSC membership and extending to the end of 2026. It should be noted that while local ETS is not in-scope for the initial transition to a RTSC, that this activity, along with others, may occur sooner than indicated by the plan at the discretion of the Transition Team or future senior leadership of the Commission.

Table 68 - Detailed implementation plan

Category	Activity	Start	Finish	Mile-stone
Pre-implementation phase				
PO	**Develop application for submission to Government of Alberta (GOA) with municipal legal and professional services support**	**1-Mar-20**	**17-Apr-20**	
PO	Undertake legal work to establish the commission through a combination of shared legal services and contracted support assuming GoA approval of submission	1-Apr-20	31-Dec-20	
PO	Council resolutions are passed by members approving the business plan, rate structure and membership in the commission	30-Mar-20	30-Mar-20	Yes
PO	Proposed RTSC bylaws are finalized	30-Mar-20	30-Mar-20	Yes
PO	Names of directors, alternate directors, term of first board and name the director designated as chair are confirmed	30-Mar-20	30-Mar-20	Yes
PO	Application is submitted to the Government	17-Apr-20	17-Apr-20	Yes
PE	**Develop joint media release to update the public on the status of the submission and next steps**	**1-Apr-20**	**22-Apr-20**	
PE	Joint media release is delivered	22-Apr-20	22-Apr-20	Yes
PD	**Establish interim governance structure and support Government application process**	**1-Apr-20**	**31-Dec-20**	
PD	Confirm interim governance structure and cadence to lead preparation activities during pre-implementation phase	1-Apr-20	20-Apr-20	
PD	Interim governance structure is in place	20-Apr-20	20-Apr-20	Yes
PD	Investigate provincial, federal and alternative funding options	1-Apr-20	31-Dec-20	
PD	Respond to information requests in a timely manner to expedite the approval process	20-Apr-20	31-Dec-20	

Category	Activity	Start	Finish	Mile-stone
PD	Application is approved and the RTSC is legally formed under the Municipal Government Act	31-Dec-20	31-Dec-20	Yes
PD	**Perform detailed assessment of transit agency assets, contracts, technology and safety processes**	**20-Apr-20**	**31-Dec-20**	
PD	Refine Asset Inventory list for buses (including method to maintain currency)	20-Apr-20	31-Jul-20	
PD	Perform asset valuation and analysis for buses to inform an Asset Transfer Plan	20-Apr-20	31-Jul-20	
PD	Refine Asset Inventory list for all other assets, excluding buses (including method to maintain currency)	20-Apr-20	30-Sep-20	
PD	Perform asset valuation and analysis for all other assets, excluding buses to inform an Asset Transfer Plan	1-Jun-20	30-Sep-20	
PD	Perform an inventory of transit related contracts and develop Contract Plan (including method to maintain currency)	20-Apr-20	30-Sep-20	
PD	Review transit-related facilities and their associated lease agreements	20-Apr-20	30-Sep-20	
PD	Plans to manage asset transfer and contracted services are established	30-Sep-20	30-Sep-20	Yes
PD	Perform assessment of current transit agency enterprise information management and technology (IMT) landscape	1-Jul-20	30-Sep-20	
PD	Assess existing safety and security processes, technology and infrastructure	1-Jul-20	31-Dec-20	
PD	Safety, security and technology recommendations are developed	31-Dec-20	31-Dec-20	Yes
PD	**Perform program management and activities with third-party contracted support**	**20-Apr-20**	**31-Dec-22**	
PD	Review and update RTSC Implementation Plan	20-Apr-20	31-Dec-22	
PD	Manage and report on the status of Pre-Implementation Phase deliverables required for stand-up	20-Apr-20	31-Dec-20	

Category	Activity	Start	Finish	Mile-stone
OR	**Recruit senior leadership team and employees required for "day one" operations and to perform core functions**	**15-May-20**	**31-Mar-21**	
OR	Executive search for Chief Executive Officer with contracted support	15-May-20	31-Dec-20	
OR	Chief Executive Officer is confirmed	31-Dec-20	31-Dec-20	Yes
OR	Executive search for remaining senior leadership team members with contracted support	1-Sep-20	31-Mar-21	
OR	Senior leadership team is fully formed	31-Mar-21	31-Mar-21	Yes
OR	Recruit Transit Services Manager, HR Manager, Finance Manager, Procurement Manager and Policy Analyst	1-Jan-21	31-Mar-21	
PD	**Review current paratransit services and develop roadmap for integrated delivery (in alignment with strategic plan)**	**1-Jul-20**	**31-Dec-20**	
PD	Paratransit services integration recommendations and roadmap are developed	31-Dec-20	31-Dec-20	Yes
OR	**Prepare current transit agency workforces for the transition to service delivery under a RTSC**	**1-Jul-20**	**31-Dec-20**	
OR	Identify resources required to deliver in-house and contracted services under the RTSC to inform a workforce transition plan	1-Jul-20	30-Sep-20	
OR	Assess union requirements associated with proposed workforce changes, if any	1-Jul-20	30-Sep-20	
OR	Workforce transition plan is complete	30-Sep-20	30-Sep-20	Yes
OR	Conduct change impact assessment	1-Sep-20	30-Sep-20	
OR	Develop key messaging to communicate change impacts to municipalities	1-Sep-20	31-Dec-20	
OR	Change impact assessment is complete	31-Dec-20	31-Dec-20	Yes
PE	**Deploy public engagement third-party contractor to lead public consultation focus groups to inform the RTSC vision and implementation priorities**	**1-Aug-20**	**31-Oct-20**	
PE	Focus group consultation activities are complete	30-Sep-19	30-Sep-19	Yes

Category	Activity	Start	Finish	Mile-stone
Formation and set-up phase				
SG	**Establish RTSC governance and transition accountability for service delivery to the Commission**	**1-Nov-20**	**31-Dec-21**	
SG	Board is established as per the bylaws	31-Dec-20	31-Dec-20	Yes
SG	Establish governance processes	1-Nov-20	31-Jan-21	
SG	Accountability is fully transferred to the RTSC to deliver transit services (except ETS local)	31-Dec-21	31-Dec-21	Yes
PE	**Develop media release for the CEO to announce the formation of the RTSC**	**1-Jan-21**	**22-Jan-21**	
PE	First RTSC media release is delivered	22-Jan-21	22-Jan-21	Yes
SD	**Establish core business processes, policies and practices (e.g. finance, HR, procurement, IT)**	**1-Jan-21**	**30-Sep-21**	
SD	Establish core finance business processes, policies and practices (e.g. budgeting and reporting process)	1-Jan-21	30-Sep-21	
SD	Establish core human resources business processes, policies and practices (e.g. diversity and inclusion policies)	1-Jan-21	30-Sep-21	
SD	Establish core procurement business processes, policies and practices (e.g. contract management practices)	1-Jan-21	30-Sep-21	
SD	Establish core information management and technology (IMT) business processes, policies and practices (e.g. information privacy and security policies)	1-Jan-21	30-Sep-21	
PO	**Source RTSC general legal counsel**	**1-Jan-21**	**31-Jan-21**	
IA	**Establish a workplace for RTSC employees**	**1-Jan-21**	**30-Sep-21**	
IA	Secure building lease and commercial property insurance for RTSC workforce	1-Jan-21	28-Feb-21	
IA	Procure and install office furniture	1-Feb-21	30-Sep-21	
TE	**Establish enterprise and employee technology environment**	**1-Jan-21**	**30-Sep-21**	
TE	Procure technology services to provide employee hardware and desktop maintenance support	1-Jan-21	31-Dec-21	

Category	Activity	Start	Finish	Mile-stone
TE	Procure enterprise (including transit operations) solutions based on Information Management and Technology Recommendations to enable core business processes	1-Jan-21	30-Sep-21	
TE	Implement enterprise solutions, including training employees on the new software and system(s)	1-Jul-21	31-Mar-22	
OR	**Transition, recruit and onboard RTSC employees required in year one of operations**	**1-Jan-21**	**31-Dec-21**	
OR	Contract organizational design services to develop a structure with positions and job descriptions for resources required within five years	1-Jan-21	30-Apr-21	
OR	Transition and recruit municipal transit resources (~12) into the RTSC	1-May-21	31-Dec-21	
OR	Onboard employees to RTSC culture, strategy, vision, plans, and service guidelines and standards	1-May-21	31-Dec-21	
SG	**Facilitate first strategic planning cycle and develop first annual business plan**	**1-Apr-21**	**30-Sep-21**	
SG	Review strategic plan, develop RTSC core values and finalize plan	1-Apr-21	30-Jun-21	
SG	Determine business plan assumptions and target metrics (KPIs)	1-Apr-21	30-Sep-21	
SG	Develop operational plan, including business tactics and detailed drivers	1-Apr-21	30-Sep-21	
SG	Develop financial plan, and qualify it against the operating budget	1-Apr-21	30-Sep-21	
SG	Annual strategic planning process is formalized	30-Sep-21	30-Sep-21	Yes
OR	**Contract change management services to support transition of resources**	**1-Apr-21**	**31-Jul-22**	
OR	Work alongside RTSC leadership to develop the change management strategy in alignment with core values developed through the strategic planning process	1-Apr-21	31-Jul-21	
OR	Develop change management plan, engagement and communications plan, and training plan	1-May-21	31-Jul-21	
OR	Develop metrics to measure the effectiveness of the change management, engagement and communications and training plans	1-Jul-21	30-Sep-21	

Category	Activity	Start	Finish	Mile-stone
OR	Change management, engagement and communications and training plans are complete	30-Sep-21	30-Sep-21	Yes
OR	Execute plan and monitor performance, adjusting as required	1-Oct-21	31-Jul-22	
PO	**Perform legal and transit policy review activities to enable service delivery under the RTSC**	**1-Apr-21**	**31-Dec-21**	
PO	Review transit related municipal bylaws to identify policy barriers to regional operations and recommendations	1-Apr-21	30-Jun-21	
PO	Regional transit policy recommendations developed	30-Jun-21	30-Jun-21	Yes
IA	**Facilitate asset transfers and negotiate contract changes according to established plans**	**1-Apr-21**	**31-Dec-21**	
SD	**Initiate detailed regional transit planning activities with contracted services support**	**1-Apr-21**	**30-Jun-22**	
SD	Review existing service network and routes	1-Apr-21	30-Jun-22	
SD	Design service network to integrate regional routes with local routes	1-Apr-21	30-Jun-22	
SD	Develop Transit Service Level Guidelines for local services	1-Apr-21	30-Jun-22	
SD	Develop long-range Transit Master Plan (TMP) that aligns with EMRB land-use planning frameworks and policies	1-Apr-21	30-Jun-22	
SD	Represent the RTSC in ongoing transit initiatives in the region such as U-PASS renegotiations	1-Apr-21	30-Jun-22	
SD	Review and develop a fare strategy and structure that will be enabled by the Smart Bus implementation	1-Apr-21	30-Jun-22	
SD	Implement Paratransit Services Integration Recommendations and Roadmap	1-Apr-21	31-Dec-26	
PE	**Deploy public relations and engagement firm to engage the public on Service Level Guidelines and regional route design**	**1-Jul-21**	**30-Jun-22**	
SG	**Develop departmental plans and objectives in alignment with the strategic plan**	**1-Jul-21**	**31-Oct-21**	
BR	**Design the RTSC brand identity**	**1-Jul-21**	**31-Dec-23**	

Category	Activity	Start	Finish	Mile-stone
BR	Contract out design and build of the RTSC brand identity	1-Jul-21	31-Dec-21	
BR	RTSC brand identity design is confirmed	31-Dec-21	31-Dec-21	Yes
PO	**Establish transit policies required to support the smooth roll-out regional services**	1-Jul-21	30-Jun-22	
PO	Standardized transit policies that align to existing municipal bylaws are created	30-Jun-22	30-Jun-22	Yes
Prepare for service deployment phase				
BR	Develop marketing strategy and brand roll-out plan	1-Oct-21	31-Mar-22	
BR	Design and build RTSC website	1-Jan-22	31-Mar-22	
BR	RTSC website is launched	1-Apr-22	1-Apr-22	Yes
BR	Execute the marketing strategy, while gradually re-branding transit assets and materials, including buses, bus stops and brochures	1-Jul-22	31-Dec-23	
BR	Initial roll-out of branded assets is complete	31-Dec-23	31-Dec-23	Yes
OR	**Transition, recruit and onboard RTSC employees required in year two of operations**	1-Jan-22	30-Jun-22	
OR	Transition and recruit municipal transit resources (~14) into the RTSC	1-Jan-22	30-Jun-22	
OR	Onboard employees to RTSC culture, strategy, vision, plans, and service guidelines and standards	1-Apr-22	30-Jun-22	
OR	Develop internal program to promote employee experiences using the regional service	1-Apr-22	30-Jun-22	
OR	Municipal transit employees have transitioned (except for employees providing paratransit services and ETS resources delivering local services)	30-Jun-22	30-Jun-22	Yes
SD	**Prepare for the operational roll-out of integrated regional services under the RTSC**	1-Jan-22	30-Jun-22	
SD	Establish processes and approaches for engaging customers and gathering feedback on services, especially through digital methods	1-Jan-22	30-Jun-22	

Category	Activity	Start	Finish	Mile-stone
SD	Establish business development approach and processes for partnering with external organizations to deliver transit services	1-Jan-22	30-Jun-22	
SD	Align service and maintenance schedules	1-Jan-22	30-Jun-22	
SD	Assess and optimize fleet deployment to regional system and routes	1-Jan-22	30-Jun-22	
SD	Establish process for inspections and collision investigation	1-Jan-22	30-Jun-22	
SD	Align maintenance schedules and establish a preventative maintenance program	1-Jan-22	30-Jun-22	
SD	Establish safety incident management protocols, safety procedures and training requirements to keep safety top of mind	1-Jan-22	30-Jun-22	
SD	Align capital asset lifecycle processes, including decommissioning and mid-life refurbishments	1-Jan-22	30-Jun-22	
SD	Plan for periodic review and valuation of assets	1-Jan-22	30-Jun-22	
SD	Development of a trip planning app, website functionality, or integration with Google maps (leveraging existing technology and capabilities)	1-Jan-22	30-Jun-22	
SD	Municipal transit operations have ceased (except for paratransit services and ETS resources delivering local services)	30-Jun-22	30-Jun-22	Yes
	Service deployment phase			
TE	**Establish customer and operational data analysis and reporting cycle**	**1-Jan-22**	**31-Dec-22**	
TE	Collect baseline RTSC customer and operational data, including six months of data prior to changes in services	1-Jan-22	31-Dec-22	
TE	Assess gaps in existing data types, quality and collection timing to determine future requirements	1-Jan-22	31-Dec-22	

Category	Activity	Start	Finish	Mile-stone
SD	**Roll-out integrated regional service design under the RTSC**	**1-Jul-22**	**31-Dec-23**	
SD	Gradually implement the regional services network design	1-Jul-22	31-Dec-23	
SD	Standardize fleet and asset features	1-Jul-22	31-Dec-23	
SD	Recruit and deploy temporary field customer service support resources to support roll-out of regional service design	1-Jun-22	31-Dec-23	
SD	Regional transit services roll-out is complete	31-Dec-23	31-Dec-23	Yes
OR	**Recruit and onboard RTSC employees required in year three of operations**	**1-Jan-23**	**30-Jun-23**	
OR	Recruit resources (~8) into the RTSC	1-Jan-23	30-Jun-23	
OR	Onboard employees to RTSC culture, strategy, vision, plans, and service guidelines and standards	1-Jan-23	30-Jun-23	
Stabilize and enhance services phase				
OR	**Recruit and onboard RTSC employees required in year four of operations**	**1-Jan-24**	**30-Jun-24**	
OR	Recruit resources (~1) into the RTSC	1-Jan-24	30-Jun-24	
OR	Onboard employees to RTSC culture, strategy, vision, plans, and service guidelines and standards	1-Jan-24	30-Jun-24	
SD	**Assess and improve service delivery in preparation for the full upload of ETS local services**	**1-Jan-24**	**31-Dec-26**	
SD	Conduct customer satisfaction surveys and analysis to identify lessons learned over the regional services roll-out to inform integration of ETS local services	1-Jan-24	**31-Dec-26**	
SD	Continue to standardize mobility options available across the region	1-Jan-24	**31-Dec-26**	
SD	Make business and operational adjustments to improve service delivery	1-Jan-24	**31-Dec-26**	
SD	Align levels of service over time to adhere to Service Level Guidelines	1-Jan-24	**31-Dec-26**	

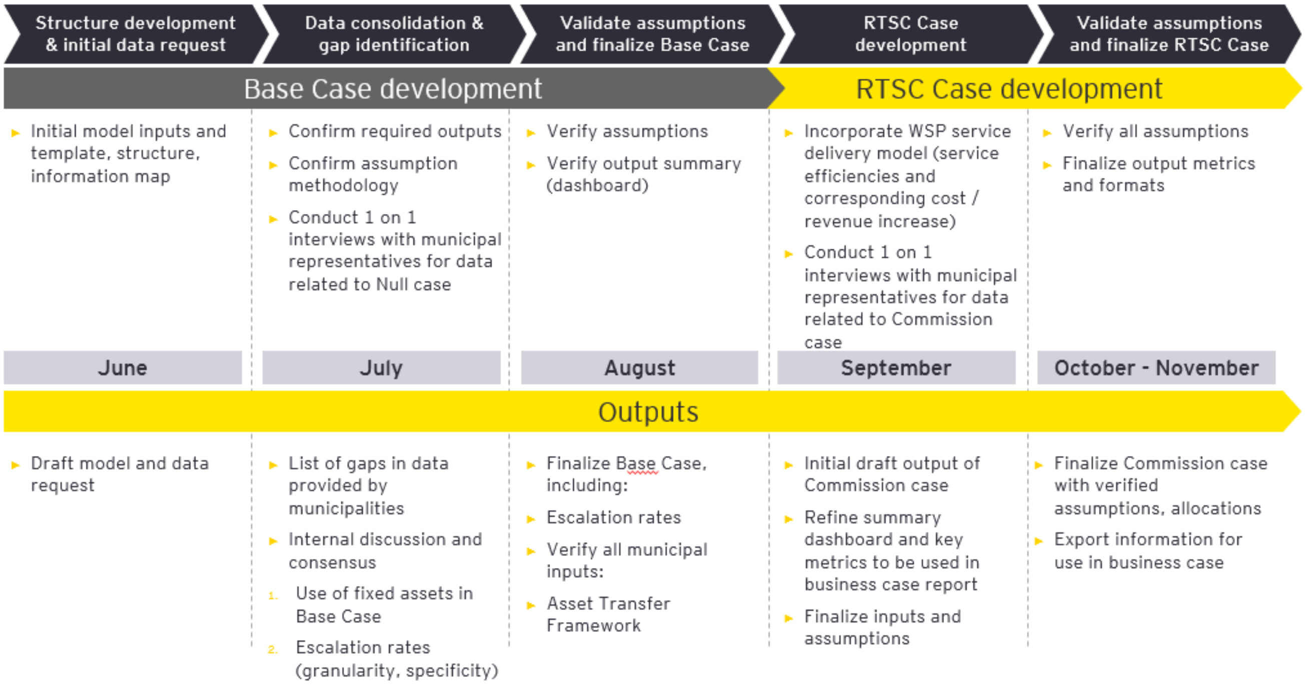
Category	Activity	Start	Finish	Mile-stone
SD	Implement transit customer experience improvements, such as digital mobile applications and fleet vehicle amenities	1-Jan-24	**31-Dec-26**	
SD	Research and develop new mobility options (e.g. new modes) and prepare for service enhancements (e.g. integration with ETS)	1-Jan-24	**31-Dec-26**	

Appendix I: Financial model consultation and development process

The table below summarizes consultation activities with municipalities as part of the financial model development process.

Dates	Activity	Outputs
May – June	▶ CUTA desktop study ▶ Structure development & initial data request	▶ 2018 CUTA data inputs
June – July	▶ Data consolidation and gap identification ▶ 1 on 1 Municipal financial sessions	▶ Draft Base Case system costs
August	▶ Assumption validation and finalize Base Case ▶ Municipal validation sessions	▶ Validated municipal budgets and escalation assumptions
September	▶ RTSC Case and incremental costs development ▶ Efficiency savings estimates	▶ Incremental costs (startup and recurring) ▶ Efficiency savings (revenue service hours and deadhead hours)
October - November	▶ Assumption validation and finalize RTSC Case ▶ Financing required	▶ Validate output formats ▶ Fixed asset inventory ▶ Estimated financing required and associated interest costs ▶ Operating and capital budgets ▶ Financial statement

The financial model development process is summarized in the figure below, highlighting the timeline and outputs of each phase of the process.



Structure development & initial data request	Data consolidation & gap identification	Validate assumptions and finalize Base Case	RTSC Case development	Validate assumptions and finalize RTSC Case
Base Case development			RTSC Case development	
Initial model inputs and template, structure, information map	Confirm required outputs Confirm assumption methodology Conduct 1 on 1 interviews with municipal representatives for data related to Null case	Verify assumptions Verify output summary (dashboard)	Incorporate WSP service delivery model (service efficiencies and corresponding cost / revenue increase) Conduct 1 on 1 interviews with municipal representatives for data related to Commission case	Verify all assumptions Finalize output metrics and formats
June	July	August	September	October - November
Outputs				
Draft model and data request	List of gaps in data provided by municipalities Internal discussion and consensus 1. Use of fixed assets in Base Case 2. Escalation rates (granularity, specificity)	Finalize Base Case, including: Escalation rates Verify all municipal inputs: Asset Transfer Framework	Initial draft output of Commission case Refine summary dashboard and key metrics to be used in business case report Finalize inputs and assumptions	Finalize Commission case with verified assumptions, allocations Export information for use in business case

Appendix J: Details of the financial model approach

A key distinction to be made when reviewing the financial model is that the model was built top-down, as opposed to bottom-up. In a bottom-up model, otherwise known as a demand or revenue model, future fares and ridership are projected to arrive at the total revenue from operations. Costs are developed in a similar fashion, with per-hour, per-service hour, and per-kilometer factors applied to the transit service delivery model to arrive at total costs for the entire system.

The financial model used in this business case is a top-down model, where revenues and costs from each municipality are consolidated and aggregated to arrive at a total top-line estimate, prior to adjustments for estimated financial impacts of the new model. The key characteristics and associated differences between a top-down and bottom-up, or demand model, are summarized below:

- The accuracy of the model outputs is heavily dependent and subject to variability due to the fidelity of the figures provided by the participating municipalities and the robustness of their financial reporting. As such, there is variability in the granularity of information available, as well as the ability to report operating metrics such as operating costs per hour, direct and indirect (overhead) costs per hour, among others.
- There is less consistency in the build-up of the financials due to the varying degrees of operating efficiency, partly as a function of each municipality's respective operating procedures, fleet in operation, financial reporting methodologies, transportation planning, and City/Town council objectives.
- There is a degree of reliability in that the model is founded upon actual figures, however, the budget figures were self-reported, and the initial projections provided by municipalities may or may not be impacted by service delivery and capital program projects that have yet to be realized.

In the case of the RTSC financial model, the top-down model has been selected as the most appropriate given the many of the municipalities are already providing transit services, that the larger providers are mature in their operations and understanding of revenues/costs, and that the services to be provided by the commission are rooted in the services already being provided by the municipalities today. Given the high degree of service and cost consolidate the top-down approach is perceived to have the higher degree of accuracy between the two model approaches.

Appendix K: RTSC Case incremental cost descriptions and assumptions

The following table provides a description of one-time and startup incremental costs to operating the RTSC, which are reflected in the RTSC Case financials.

One-time / startup cost	Description	Assumption
Program delivery	Contracted services or municipal resources provided through a loan staff agreement to lead program management activities over the transition to the RTSC	Estimated at $1,000,000 incurred over three years
Legal & professional	Contracted services to supplement municipal legal resources provided in-kind by member municipalities that are needed to legally establish the RTSC and enable key implementation activities, such as asset valuations, contract negotiations and policy reviews for example	Estimated at $200,000 incurred over 2020-2021
Public engagement	Third-party contracted services to provide capacity to coordinate and deliver public consultation activities to gather broader input on the RTSC strategy, vision and priorities to inform their finalization under the RTSC	Estimated at an average rate of $200 per hour for 120 hours to facilitate focus group sessions over a six-month period prior to 2021
	Contracted services to conduct public engagement activities required to finalize transit service guidelines for local services and the RTSC conceptual transit service design, as informed by estimates provided by municipalities who recently consulted on service changes	Estimated at an average rate of $200 per hour for 2,080 hours for the 12-month period leading up to the regional service design roll-out in 2022
Organizational	Contracted services to conduct executive search for RTSC CEO and remaining senior leadership team	Estimated at approximately 30% of each senior executive's annual base salary in search fees for seven executives including the CEO
	Contracted services to assist the CEO and senior leadership team in developing an optimized organizational design to manage growth of the organization and guide the transition and recruitment of resources into the RTSC	Estimated at an average rate of $200 per hour for a total of 875 hours incurred early in 2021

One-time / startup cost	Description	Assumption
	Contracted services to lead change management activities to ensure the successful transition of municipal transit resources to the RTSC leading up to the roll-out of the RTSC conceptual transit service design and for a few months after to sustain the change	Estimated at an average rate of $250 per hour for 1,000 hours over a 17-month period
Service delivery	Contracted services to supplement RTSC resources in performing detailed transit planning activities to review the RTSC conceptual transit service design, further integrate regional and local routes, develop transit service guidelines for local services and a long-range Transit Master Plan (TMP) for the region	Estimated at an average rate of $200 per hour for 3,500 hours incurred over 2021-2022
	Contracted services or municipal resources provided through a loan staff agreement to develop customer experience features to support the regional roll-out of services, such as through an integrated trip planning app specific website functionality, or updated general transit feed specification (GFTS) data	Estimated at an average rate of $100 per hour for 1,040 hours over a six-month period leading up to regional roll-out of services
	Recruitment and deployment of temporary resources to provide supplemental customer service in the field, such as at transit hubs, over the transition to the RTSC	Estimated at an average rate of $15 per hour for about 30 temporary resources or 15 full-time equivalents over a 13-month period
Infrastructure & assets	Office furniture for a workspace for RTSC employees	Estimated at $122,500 incurred in 2021
Branding	Contracted services to design the RTSC brand identity	Estimated at $100,000 in 2021
	Contracted services for web developers to design and build the RTSC website	Estimated at a flat rate of $40,000 incurred over a 6-month period leading up the regional services roll-out in 2022
	Partial asset re-brand and marketing materials re-brand, including buses, bus stops and brochures to be completed gradually over 2022-2023	Estimated at approximately $3,000 per bus and $350 per bus stop for a reasonable proportion of future RTSC fleet and bus stops respectively, plus approximately $125,000 to re-brand marketing materials

The following table provides a description of recurring incremental costs to operating the RTSC, which are reflected in the RTSC Case financials.

Recurring incremental cost	Description	Assumption
Incremental resourcing cost	Labour costs under the RTSC over five years taking into consideration the cost of net new roles required by the Commission and the cost of municipal transit agency roles already being compensated under the Base Case	Roles required under the RTSC were mapped against existing roles in municipalities to approximate the net new roles required under the Commission. Salary disclosure information from a comparable jurisdiction was adjusted by a 25% increase to provide a loaded labour cost. Using this information, net new roles were costed, Base Case transit resource labour costs were backed out of years 2022-2026, and a 30% uplift in resource costs in 2021 was applied to non-net new roles to represent supplemental support required over the transition period
Office lease & utilities	Office space leased by the RTSC to accommodate a team up to 50 employees over five years totalling approximately 9,000 square feet	Estimated at about $15 per square foot of space or about $140,000 annually, assuming municipalities would not see a reduction in office space required with the implementation of the RTSC
	Building utilities for leased office space, including internet, electricity, natural gas and wastewater	Estimated at about $2 per square foot of leased office space annually
Technology licenses & services	Enterprise solution for desktop software (e.g. Google Business Suite) to enable RTSC operations, which will be chosen with the current municipality IT environment in mind	Estimated at about $190 per license, per user, per year for about 50 employees
	Cloud hosting services to support database services for storage and analytics, as a strategic investment to enable operations and customer data analysis under the executive portfolio for innovation	Estimated at about $1000 per virtual machine, per month, assuming about 3 servers would be required (in addition to transit database infrastructure and services that already exist within municipalities under the Base Case)
	Enterprise software licences (e.g. Tableau) for data analytics and visualization software to provide document management, collaboration, analytics, data visualization capabilities, also as a strategic investment	Estimated at about $550 per license, per year for 10 users, assuming not all employees within the RTSC would need robust data analytics and visualization software

Recurring incremental cost	Description	Assumption
	Transit-specific software licenses to be used for various purposes, such as network planning and dispatching (e.g. HASTUS), operation control and real time passenger information (e.g. INIT), Geographic Information Systems (GIS) software for planning (e.g. ArcGIS), and facility and asset management software	Estimated at about $125 per license, per month for 24 users, assuming this would be supplemented by existing licenses paid for by municipalities and included in the Base Case figures
	Desktop managed services and leased hardware as a strategic investment to provide greater agility to the RTSC, minimize enterprise IT risk and reduce resources needed under the corporate services portfolio	Estimated at $50,000 annually to provides services to 50 employees
Policy & legal	Legal and professional fees needed to navigate complexities unique to a commission structure and to advise on policy matters where in-house contract management, procurement and policy resources need support	Estimated at an average rate of $300 per hour for about 100 hours per year over five years
Interest carrying costs	Interest paid on debt financing to manage cashflow of the RTSC over the transition period	Estimated at 3.95%, which is the prime rate in Canada
Other incremental costs	Contingency amount for other annual expenses under the RTSC, such as for: office supplies and furnishings, printing and copying, postage and courier, training and development, telecommunications, employee rewards and recognition, insurance premiums and travel	Estimated at $100,000 annually, assuming a degree of uplift in recurring expenses beyond what municipalities spend in aggregate under the Base Case

Appendix L: RTSC funding shortfall allocation – annual schedules

The following schedules provide a detailed summary of the build-up of the annual municipal requisition for each year of the RTSC Business Case operating period. The requisition amount represents the amount that each municipality is estimated to contribute towards the aggregate RTSC funding shortfall. Each schedule summarizes the amount from each component of the funding shortfall allocation.

RTSC Funding Shortfall Allocation - Municipal Requisition Annual Schedule					Year:	2022
Municipality	Base Fee	Local Service	Regional Service	Enhanced Service	Total Cost per Municipality	% System Shortfall
City of Edmonton	1,990,404	-	21,365,861	-	23,356,264	41.9%
Strathcona County	254,006	8,624,498	3,219,837	2,366,000	14,464,341	26.0%
City of St. Albert	186,475	4,868,784	5,565,398	-	10,620,657	19.1%
City of Spruce Grove	120,883	288,371	1,545,214	-	1,954,467	3.5%
Parkland County	116,786	42,294	496,613	-	655,693	1.2%
City of Leduc	112,408	802,172	-	262,288	1,176,868	2.1%
City of Fort Saskatchewan	100,248	648,065	609,731	-	1,358,044	2.4%
Sturgeon County	92,645	-	98,430	-	191,076	0.3%
City of Beaumont	86,197	-	227,428	-	313,625	0.6%
Town of Stony Plain	85,766	207,627	301,144	-	594,537	1.1%
Leduc County	78,673	351,195	114,195	141,232	685,295	1.2%
Town of Morinville	70,491	-	109,351	-	179,842	0.3%
Town of Devon	63,687	-	64,979	-	128,667	0.2%
Total	$ 3,358,670	$15,833,006	$33,718,181	$ 2,769,520	$ 55,679,376	100.0%

RTSC Funding Shortfall Allocation - Municipal Requisition Annual Schedule					Year:	2023
Municipality	Base Fee	Local Service	Regional Service	Enhanced Service	Total Cost per Municipality	% System Shortfall
City of Edmonton	2,016,239	-	21,675,976	-	23,692,215	41.9%
Strathcona County	256,722	8,749,185	3,266,387	2,413,320	14,685,615	26.0%
City of St. Albert	188,292	4,939,174	5,646,404	-	10,773,870	19.1%
City of Spruce Grove	121,827	294,138	1,567,690	-	1,983,654	3.5%
Parkland County	117,675	43,140	505,418	-	666,234	1.2%
City of Leduc	113,239	818,215	-	267,534	1,198,988	2.1%
City of Fort Saskatchewan	100,917	661,026	618,546	-	1,380,489	2.4%
Sturgeon County	93,213	-	100,399	-	193,612	0.3%
City of Beaumont	86,679	-	231,977	-	318,656	0.6%
Town of Stony Plain	86,242	211,779	305,498	-	603,520	1.1%
Leduc County	79,055	358,219	116,479	144,057	697,809	1.2%
Town of Morinville	70,764	-	110,932	-	181,696	0.3%
Town of Devon	63,869	-	66,279	-	130,149	0.2%
Total	$ 3,394,734	$16,074,877	$34,211,985	$ 2,824,910	$ 56,506,506	100.0%

RTSC Funding Shortfall Allocation - Municipal Requisition Annual Schedule Year: 2024

Municipality	Base Fee	Local Service	Regional Service	Enhanced Service	Total Cost per Municipality	% System Shortfall
City of Edmonton	2,042,371	-	22,152,856	-	24,195,227	41.9%
Strathcona County	259,470	8,941,891	3,338,332	2,461,586	15,001,279	26.0%
City of St. Albert	190,130	5,047,962	5,770,526	-	11,008,618	19.1%
City of Spruce Grove	122,782	299,902	1,602,158	-	2,024,842	3.5%
Parkland County	118,575	43,986	515,824	-	678,384	1.2%
City of Leduc	114,080	834,250	-	272,780	1,221,109	2.1%
City of Fort Saskatchewan	101,594	673,981	632,170	-	1,407,744	2.4%
Sturgeon County	93,787	-	102,367	-	196,154	0.3%
City of Beaumont	87,166	-	236,523	-	323,689	0.6%
Town of Stony Plain	86,724	215,930	312,227	-	614,880	1.1%
Leduc County	79,441	365,239	118,761	146,881	710,322	1.2%
Town of Morinville	71,040	-	113,375	-	184,415	0.3%
Town of Devon	64,054	-	67,578	-	131,632	0.2%
Total	$ 3,431,213	$16,423,141	$34,962,696	$ 2,881,247	$ 57,698,297	100.0%

RTSC Funding Shortfall Allocation - Municipal Requisition Annual Schedule Year: 2025

Municipality	Base Fee	Local Service	Regional Service	Enhanced Service	Total Cost per Municipality	% System Shortfall
City of Edmonton	2,068,977	-	22,605,559	-	24,674,537	41.9%
Strathcona County	262,267	9,124,672	3,406,570	2,511,600	15,305,110	26.0%
City of St. Albert	192,001	5,151,148	5,888,426	-	11,231,575	19.1%
City of Spruce Grove	123,753	305,872	1,634,894	-	2,064,519	3.5%
Parkland County	119,491	44,861	526,204	-	690,556	1.2%
City of Leduc	114,935	850,855	-	278,353	1,244,144	2.1%
City of Fort Saskatchewan	102,283	687,396	645,092	-	1,434,771	2.4%
Sturgeon County	94,372	-	104,404	-	198,776	0.3%
City of Beaumont	87,663	-	241,231	-	328,893	0.6%
Town of Stony Plain	87,214	220,228	318,609	-	626,051	1.1%
Leduc County	79,834	372,509	121,125	149,882	723,350	1.2%
Town of Morinville	71,321	-	115,693	-	187,014	0.3%
Town of Devon	64,241	-	68,923	-	133,165	0.2%
Total	$ 3,468,353	$16,757,540	$35,676,731	$ 2,939,836	$ 58,842,460	100.0%

RTSC Funding Shortfall Allocation - Municipal Requisition Annual Schedule **Year:** 2026

Municipality	Base Fee	Local Service	Regional Service	Enhanced Service	Total Cost per Municipality	% System Shortfall
City of Edmonton	2,096,024	-	23,050,666	-	25,146,690	41.9%
Strathcona County	265,110	9,304,232	3,473,607	2,561,650	15,604,599	26.0%
City of St. Albert	193,904	5,252,514	6,004,419	-	11,450,837	19.1%
City of Spruce Grove	124,741	312,236	1,667,096	-	2,104,073	3.5%
Parkland County	120,421	45,795	536,910	-	703,126	1.2%
City of Leduc	115,805	868,558	-	283,927	1,268,290	2.1%
City of Fort Saskatchewan	102,983	701,698	657,786	-	1,462,467	2.4%
Sturgeon County	94,966	-	106,576	-	201,543	0.3%
City of Beaumont	88,167	-	246,250	-	334,417	0.6%
Town of Stony Plain	87,713	224,810	324,879	-	637,401	1.1%
Leduc County	80,234	380,259	123,645	152,884	737,022	1.2%
Town of Morinville	71,607	-	117,969	-	189,576	0.3%
Town of Devon	64,432	-	70,357	-	134,789	0.2%
Total	**$ 3,506,109**	**$17,090,102**	**$36,380,161**	**$ 2,998,460**	**$ 59,974,832**	**100.0%**

Appendix M: RTSC funding shortfall allocation – base fee annual schedules

The following schedules provide a detailed summary of the build-up of the Base Fee for each year of the RTSC Business Case operating period. Each schedule includes the estimated annual Base Fee for each municipality. The Base Fee is comprised of two components (fixed and variable). The variable component is influenced by each municipality's respective population growth. For further information regarding the methodology and development of the Base Fee, refer to *Appendix N: RTSC funding shortfall allocation – base fee component sensitivity analysis*.

RTSC Funding Shortfall Allocation - Base Fee Annual Schedule				**Year:**	2022
Municipality	**Fixed Portion**	**Variable Portion**	**Total Base Fee**	**% of Base Case Shortfall**	**Basis Points Equivalent**
City of Edmonton	50,000	1,940,404	1,990,404	3.57%	357.5
Strathcona County	50,000	204,006	254,006	0.46%	45.6
City of St. Albert	50,000	136,475	186,475	0.33%	33.5
City of Spruce Grove	50,000	70,883	120,883	0.22%	21.7
Parkland County	50,000	66,786	116,786	0.21%	21.0
City of Leduc	50,000	62,408	112,408	0.20%	20.2
City of Fort Saskatchewan	50,000	50,248	100,248	0.18%	18.0
Sturgeon County	50,000	42,645	92,645	0.17%	16.6
City of Beaumont	50,000	36,197	86,197	0.15%	15.5
Town of Stony Plain	50,000	35,766	85,766	0.15%	15.4
Leduc County	50,000	28,673	78,673	0.14%	14.1
Town of Morinville	50,000	20,491	70,491	0.13%	12.7
Town of Devon	50,000	13,687	63,687	0.11%	11.4
Total	$ 650,000	$ 2,708,670	$ 3,358,670	6.03%	603.2

RTSC Funding Shortfall Allocation - Base Fee Annual Schedule Year: 2023

Municipality	Fixed Portion	Variable Portion	Total Base Fee	% of Base Case Shortfall	Basis Points Equivalent
City of Edmonton	50,000	1,966,239	2,016,239	3.57%	356.8
Strathcona County	50,000	206,722	256,722	0.45%	45.4
City of St. Albert	50,000	138,292	188,292	0.33%	33.3
City of Spruce Grove	50,000	71,827	121,827	0.22%	21.6
Parkland County	50,000	67,675	117,675	0.21%	20.8
City of Leduc	50,000	63,239	113,239	0.20%	20.0
City of Fort Saskatchewan	50,000	50,917	100,917	0.18%	17.9
Sturgeon County	50,000	43,213	93,213	0.16%	16.5
City of Beaumont	50,000	36,679	86,679	0.15%	15.3
Town of Stony Plain	50,000	36,242	86,242	0.15%	15.3
Leduc County	50,000	29,055	79,055	0.14%	14.0
Town of Morinville	50,000	20,764	70,764	0.13%	12.5
Town of Devon	50,000	13,869	63,869	0.11%	11.3
Total	$ 650,000	$ 2,744,734	$ 3,394,734	6.01%	600.8

RTSC Funding Shortfall Allocation - Base Fee Annual Schedule Year: 2024

Municipality	Fixed Portion	Variable Portion	Total Base Fee	% of Base Case Shortfall	Basis Points Equivalent
City of Edmonton	50,000	1,992,371	2,042,371	3.54%	354.0
Strathcona County	50,000	209,470	259,470	0.45%	45.0
City of St. Albert	50,000	140,130	190,130	0.33%	33.0
City of Spruce Grove	50,000	72,782	122,782	0.21%	21.3
Parkland County	50,000	68,575	118,575	0.21%	20.6
City of Leduc	50,000	64,080	114,080	0.20%	19.8
City of Fort Saskatchewan	50,000	51,594	101,594	0.18%	17.6
Sturgeon County	50,000	43,787	93,787	0.16%	16.3
City of Beaumont	50,000	37,166	87,166	0.15%	15.1
Town of Stony Plain	50,000	36,724	86,724	0.15%	15.0
Leduc County	50,000	29,441	79,441	0.14%	13.8
Town of Morinville	50,000	21,040	71,040	0.12%	12.3
Town of Devon	50,000	14,054	64,054	0.11%	11.1
Total	$ 650,000	$ 2,781,213	$ 3,431,213	5.95%	594.7

RTSC Funding Shortfall Allocation - Base Fee Annual Schedule Year: 2025

Municipality	Fixed Portion	Variable Portion	Total Base Fee	% of Base Case Shortfall	Basis Points Equivalent
City of Edmonton	50,000	2,018,977	2,068,977	3.52%	351.6
Strathcona County	50,000	212,267	262,267	0.45%	44.6
City of St. Albert	50,000	142,001	192,001	0.33%	32.6
City of Spruce Grove	50,000	73,753	123,753	0.21%	21.0
Parkland County	50,000	69,491	119,491	0.20%	20.3
City of Leduc	50,000	64,935	114,935	0.20%	19.5
City of Fort Saskatchewan	50,000	52,283	102,283	0.17%	17.4
Sturgeon County	50,000	44,372	94,372	0.16%	16.0
City of Beaumont	50,000	37,663	87,663	0.15%	14.9
Town of Stony Plain	50,000	37,214	87,214	0.15%	14.8
Leduc County	50,000	29,834	79,834	0.14%	13.6
Town of Morinville	50,000	21,321	71,321	0.12%	12.1
Town of Devon	50,000	14,241	64,241	0.11%	10.9
Total	$ 650,000	$ 2,818,353	$ 3,468,353	5.89%	589.4

RTSC Funding Shortfall Allocation - Base Fee Annual Schedule Year: 2026

Municipality	Fixed Portion	Variable Portion	Total Base Fee	% of Base Case Shortfall	Basis Points Equivalent
City of Edmonton	50,000	2,046,024	2,096,024	3.49%	349.5
Strathcona County	50,000	215,110	265,110	0.44%	44.2
City of St. Albert	50,000	143,904	193,904	0.32%	32.3
City of Spruce Grove	50,000	74,741	124,741	0.21%	20.8
Parkland County	50,000	70,421	120,421	0.20%	20.1
City of Leduc	50,000	65,805	115,805	0.19%	19.3
City of Fort Saskatchewan	50,000	52,983	102,983	0.17%	17.2
Sturgeon County	50,000	44,966	94,966	0.16%	15.8
City of Beaumont	50,000	38,167	88,167	0.15%	14.7
Town of Stony Plain	50,000	37,713	87,713	0.15%	14.6
Leduc County	50,000	30,234	80,234	0.13%	13.4
Town of Morinville	50,000	21,607	71,607	0.12%	11.9
Town of Devon	50,000	14,432	64,432	0.11%	10.7
Total	$ 650,000	$ 2,856,109	$ 3,506,109	5.85%	584.6

Appendix N: RTSC funding shortfall allocation – base fee component sensitivity analysis

The following population figures were used in the development of the Base Case. Population was forecast to grow at the four-year trailing average historical growth rate for the province of Alberta.

Table 69 – Municipal population growth estimates for duration of business case

Growth Rate (%)	1.36%	1.33%	1.33%	1.34%	1.34%	
Municipality	**2022**	**2023**	**2024**	**2025**	**2026**	**Average**
City of Edmonton	970,202	983,119	996,186	1,009,489	1,023,012	996,402
Strathcona County	102,003	103,361	104,735	106,133	107,555	104,758
City of St. Albert	68,237	69,146	70,065	71,001	71,952	70,080
City of Spruce Grove	35,442	35,913	36,391	36,877	37,371	36,399
Parkland County	33,393	33,838	34,287	34,745	35,211	34,295
City of Leduc	31,204	31,620	32,040	32,468	32,903	32,047
City of Fort Sask	25,124	25,459	25,797	26,141	26,492	25,803
Sturgeon County	21,323	21,606	21,894	22,186	22,483	21,898
City of Beaumont	18,098	18,339	18,583	18,831	19,084	18,587
Town of Stony Plain	17,883	18,121	18,362	18,607	18,857	18,366
Leduc County	14,336	14,527	14,720	14,917	15,117	14,724
Town of Morinville	10,246	10,382	10,520	10,661	10,803	10,522
Town of Devon	6,844	6,935	7,027	7,121	7,216	7,028
Total	**1,354,335**	**1,372,367**	**1,390,607**	**1,409,177**	**1,428,054**	**1,390,908**

In developing the Base Fee component of the cost allocation methodology, various combinations of the variable per capita fee and fixed fee components were explored to maintain the total Base Fee cost at or below $10 per capita for each municipality. The goal was to avoid the Base Fee becoming cost prohibitive for smaller prospective member municipalities. The estimated annual Base Fee per capita is provided on the following figure.

Table 70 - Annual base fee per capita

Base Fee per Capita	2022	2023	2024	2025	2026
City of Edmonton	2.05	2.05	2.05	2.05	2.05
Strathcona County	2.49	2.48	2.48	2.47	2.46
City of St. Albert	2.73	2.72	2.71	2.70	2.69
City of Spruce Grove	3.41	3.39	3.37	3.36	3.34
Parkland County	3.50	3.48	3.46	3.44	3.42
City of Leduc	3.60	3.58	3.56	3.54	3.52
City of Fort Sask	3.99	3.96	3.94	3.91	3.89
Sturgeon County	4.34	4.31	4.28	4.25	4.22
City of Beaumont	4.76	4.73	4.69	4.66	4.62
Town of Stony Plain	4.80	4.76	4.72	4.69	4.65
Leduc County	5.49	5.44	5.40	5.35	5.31
Town of Morinville	6.88	6.82	6.75	6.69	6.63
Town of Devon	9.31	9.21	9.12	9.02	8.93
Average Base Fee	4.41	4.38	4.35	4.32	4.29

The following sensitivity table demonstrates the various combinations of the Base Fee with different per capita fee per municipality (variable portion) and fixed fee portion of the fee.

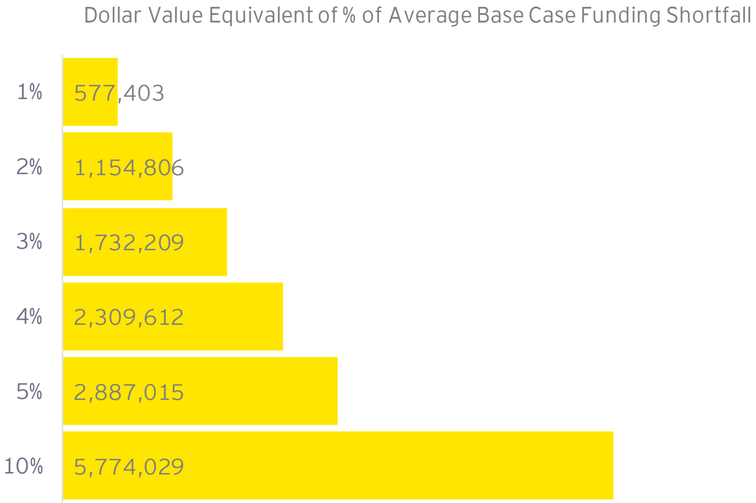
Table 71 - Fee sensitivity: proportion of total Base Case system cost

Fee Sensitivity: Proportion of Total Base Case System Cost

Fixed amount vs Per Capita Variable Amount

		Fixed Fee Portion ($)				
	5.63%	0	25,000	50,000	75,000	100,000
Variable portion ($ per capita)	$ 0.50	1.13%	1.69%	2.25%	2.82%	3.38%
	$ 1.00	2.25%	2.82%	3.38%	3.94%	4.51%
	$ 1.50	3.38%	3.94%	4.51%	5.07%	5.63%
	$ 2.00	4.51%	5.07%	5.63%	6.20%	6.76%
	$ 2.50	5.64%	6.20%	6.76%	7.32%	7.89%
	$ 3.00	6.76%	7.33%	7.89%	8.45%	9.02%
	$ 3.50	7.89%	8.45%	9.02%	9.58%	10.14%

For reference, the following graph highlights the dollar equivalent of the Base Case shortfall percentages. The percentages based off the business case operating period (2022-2026), which is forecast to $57,740,294 per year.


Dollar Value Equivalent of % of Average Base Case Funding Shortfall

Appendix O: RTSC service – annual funding shortfall schedules

The following schedules show the estimated annual funding shortfall per service type for each year of the business case operating period. An hourly funding shortfall rate table and funding shortfall summary table are provided immediately below for reference.

For reference, the hourly Funding Shortfall Rate for each type of service per year is provided. These rates can be seen in the regional service funding shortfall schedules that follow, corresponding with the respective service type and year.

Funding shortfall allocation - hourly service rate table						
Service type	**2022**	**2023**	**2024**	**2025**	**2026**	**Average rate**
Regular service	110.10	111.69	114.15	116.48	118.78	**114.24**
Small bus	73.94	75.42	76.90	78.43	80.06	**76.95**
Enhanced service (Strathcona County)	130.00	132.60	135.25	138.00	140.75	**135.32**
Enhanced service (Leduc)	80.00	81.60	83.20	84.90	86.60	**83.26**
Average growth rate	-	**1.85%**	**2.04%**	**2.03%**	**2.00%**	

The following table summarizes the Funding Shortfall per service and on aggregate for each year of the RTSC Business Case operating period. These figures can be seen in the regional service funding shortfall schedules that follow, corresponding with the respective service type and year.

Funding shortfall summary - annual aggregate funding shortfall per service						Thousands $CAD
Service type	**2022**	**2023**	**2024**	**2025**	**2026**	Average
Regional service	33,718	34,212	34,963	35,677	36,380	34,990
Local direct service	15,833	16,075	16,423	16,758	17,090	16,436
Enhanced direct service	2,770	2,825	2,881	2,940	2,998	2,883
Total service funding shortfall	52,321	53,112	54,267	55,374	56,469	54,308

	RTSC Service Annual Funding Shortfall Schedule			Year:	2022
RTSC (Regional) Service	RTSC (Regional) Route Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	Rapid 1	1,389	110.10	7,952,265	15%
	Rapid 2	1,171	110.10	6,704,177	12%
	RE1	342	110.10	1,958,009	4%
	RE2	368	110.10	2,106,864	4%
	RE3	1,216	110.10	6,961,810	13%
	RE4 (S)	169	73.94	649,795	2%
	RE5	336	110.10	1,923,658	4%
	RE6	486	110.10	2,782,434	5%
	RE7	382	110.10	2,187,016	4%
	MTA (S)	128	73.94	492,152	1%
	Total RTSC (Regional) Service Hours	5,987		$ 33,718,181	64.12%
Local Direct Service	Local Direct Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	1,506	110.10	8,624,498	16%
	City of St Albert	850	110.10	4,868,784	9%
	City of Spruce Grove	75	73.94	288,371	1%
	Parkland County	11	73.94	42,294	
	City of Leduc (S)	209	73.94	802,172	2%
	City of Fort Saskatchewan	169	73.94	648,065	2%
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	54	73.94	207,627	1%
	Leduc County (S)	91	73.94	351,195	1%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Local Direct Service Hours	2,965		$ 15,833,006	31.43%
Enhanced Direct Service	Enhanced Direct Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	350	130.00	2,366,000	4%
	City of St Albert	-	-	-	
	City of Spruce Grove	-	-	-	
	Parkland County	-	-	-	
	City of Leduc	63	80.00	262,288	0.7%
	City of Fort Saskatchewan	-	-	-	
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	-	-	-	
	Leduc County Local	34	80.00	141,232	0.4%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Enhanced Service Hours	447		$ 2,769,520	4.76%
	Total for Allocation	9,399		$ 52,320,706	100%
	Base Fee			$ 3,358,670	
	Total Annual Funding Shortfall for Allocation			$ 55,679,376	

	RTSC Service Annual Funding Shortfall Schedule			Year:	2023
RTSC (Regional) Service	RTSC (Regional) Route Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	Rapid 1	1,389	111.69	8,067,234	15%
	Rapid 2	1,171	111.69	6,801,102	12%
	RE1	342	111.69	1,986,317	4%
	RE2	368	111.69	2,137,323	4%
	RE3	1,216	111.69	7,062,459	13%
	RE4 (S)	169	75.42	662,791	2%
	RE5	336	111.69	1,951,469	4%
	RE6	486	111.69	2,822,661	5%
	RE7	382	111.69	2,218,634	4%
	MTA (S)	128	75.42	501,995	1%
	Total RTSC (Regional) Service Hours	5,987		$ 34,211,985	64.11%
Local Direct Service	Local Direct Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	1,506	111.69	8,749,185	16%
	City of St Albert	850	111.69	4,939,174	9%
	City of Spruce Grove	75	75.42	294,138	1%
	Parkland County	11	75.42	43,140	
	City of Leduc (S)	209	75.42	818,215	2%
	City of Fort Saskatchewan	169	75.42	661,026	2%
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	54	75.42	211,779	1%
	Leduc County (S)	91	75.42	358,219	1%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Local Direct Service Hours	2,965		$ 16,074,877	31.43%
Enhanced Direct Service	Enhanced Direct Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	350	132.60	2,413,320	4%
	City of St Albert	-	-	-	
	City of Spruce Grove	-	-	-	
	Parkland County	-	-	-	
	City of Leduc	63	81.60	267,534	0.7%
	City of Fort Saskatchewan	-	-	-	
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	-	-	-	
	Leduc County Local	34	81.60	144,057	0.4%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Enhanced Service Hours	447		$ 2,824,910	4.76%
	Total for Allocation	9,399		$ 53,111,772	100%
	Base Fee			$ 3,394,734	
	Total Annual Funding Shortfall for Allocation			$ 56,506,506	

	RTSC Service Annual Funding Shortfall Schedule			Year:	2024
RTSC (Regional) Service	RTSC (Regional) Route Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	Rapid 1	1,389	114.15	8,244,919	15%
	Rapid 2	1,171	114.15	6,950,900	12%
	RE1	342	114.15	2,030,066	4%
	RE2	368	114.15	2,184,399	4%
	RE3	1,216	114.15	7,218,014	13%
	RE4 (S)	169	76.90	675,780	2%
	RE5	336	114.15	1,994,451	4%
	RE6	486	114.15	2,884,831	5%
	RE7	382	114.15	2,267,501	4%
	MTA (S)	128	76.90	511,833	1%
	Total RTSC (Regional) Service Hours	5,987		$ 34,962,696	64.11%
Local Direct Service	Local Direct Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	1,506	114.15	8,941,891	16%
	City of St Albert	850	114.15	5,047,962	9%
	City of Spruce Grove	75	76.90	299,902	1%
	Parkland County	11	76.90	43,986	
	City of Leduc (S)	209	76.90	834,250	2%
	City of Fort Saskatchewan	169	76.90	673,981	2%
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	54	76.90	215,930	1%
	Leduc County (S)	91	76.90	365,239	1%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Local Direct Service Hours	2,965		$ 16,423,141	31.43%
Enhanced Direct Service	Enhanced Direct Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	350	135.25	2,461,586	4%
	City of St Albert	-	-	-	
	City of Spruce Grove	-	-	-	
	Parkland County	-	-	-	
	City of Leduc	63	83.20	272,780	0.7%
	City of Fort Saskatchewan	-	-	-	
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	-	-	-	
	Leduc County Local	34	83.20	146,881	0.4%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Enhanced Service Hours	447		$ 2,881,247	4.76%
	Total for Allocation	9,399		$ 54,267,084	100%
	Base Fee			$ 3,431,213	
	Total Annual Funding Shortfall for Allocation			$ 57,698,297	

	RTSC Service Annual Funding Shortfall Schedule			Year:	2025
RTSC (Regional) Service	**RTSC (Regional) Route Service**	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	Rapid 1	1,389	116.48	8,413,453	15%
	Rapid 2	1,171	116.48	7,092,983	12%
	RE1	342	116.48	2,071,563	4%
	RE2	368	116.48	2,229,050	4%
	RE3	1,216	116.48	7,365,558	13%
	RE4 (S)	169	78.43	689,231	2%
	RE5	336	116.48	2,035,220	4%
	RE6	486	116.48	2,943,800	5%
	RE7	382	116.48	2,313,851	4%
	MTA (S)	128	78.43	522,021	1%
	Total RTSC (Regional) Service Hours	5,987		$ 35,676,731	64.11%
Local Direct Service	**Local Direct Service**	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	1,506	116.48	9,124,672	16%
	City of St Albert	850	116.48	5,151,148	9%
	City of Spruce Grove	75	78.43	305,872	1%
	Parkland County	11	78.43	44,861	
	City of Leduc (S)	209	78.43	850,855	2%
	City of Fort Saskatchewan	169	78.43	687,396	2%
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	54	78.43	220,228	1%
	Leduc County (S)	91	78.43	372,509	1%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Local Direct Service Hours	2,965		$ 16,757,540	31.43%
Enhanced Direct Service	**Enhanced Direct Service**	Weekly Hours	Hourly Rate	Annual Cost	% of Total
	City of Edmonton	-	-	-	
	Strathcona County	350	138.00	2,511,600	4%
	City of St Albert	-	-	-	
	City of Spruce Grove	-	-	-	
	Parkland County	-	-	-	
	City of Leduc	63	84.90	278,353	0.7%
	City of Fort Saskatchewan	-	-	-	
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	-	-	-	
	Leduc County Local	34	84.90	149,882	0.4%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Enhanced Service Hours	447		$ 2,939,836	4.76%
	Total for Allocation	9,399		$ 55,374,106	100%
	Base Fee			$ 3,468,353	
	Total Annual Funding Shortfall for Allocation			$ 58,842,460	

RTSC Service Annual Funding Shortfall Schedule

Year: 2026

	RTSC (Regional) Route Service	Weekly Hours	Hourly Rate	Annual Cost	% of Total
RTSC (Regional) Service	Rapid 1	1,389	118.78	8,579,018	15%
	Rapid 2	1,171	118.78	7,232,563	12%
	RE1	342	118.78	2,112,328	4%
	RE2	368	118.78	2,272,915	4%
	RE3	1,216	118.78	7,510,501	13%
	RE4 (S)	169	80.06	703,571	2%
	RE5	336	118.78	2,075,270	4%
	RE6	486	118.78	3,001,730	5%
	RE7	382	118.78	2,359,384	4%
	MTA (S)	128	80.06	532,882	1%
	Total RTSC (Regional) Service Hours	5,987		$ 36,380,161	64.11%
	Local Direct Service	**Weekly Hours**	**Hourly Rate**	**Annual Cost**	**% of Total**
Local Direct Service	City of Edmonton	-	-	-	
	Strathcona County	1,506	118.78	9,304,232	16%
	City of St Albert	850	118.78	5,252,514	9%
	City of Spruce Grove	75	80.06	312,236	1%
	Parkland County	11	80.06	45,795	
	City of Leduc (S)	209	80.06	868,558	2%
	City of Fort Saskatchewan	169	80.06	701,698	2%
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	54	80.06	224,810	1%
	Leduc County (S)	91	80.06	380,259	1%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Local Direct Service Hours	2,965		$ 17,090,102	31.43%
	Enhanced Direct Service	**Weekly Hours**	**Hourly Rate**	**Annual Cost**	**% of Total**
Enhanced Direct Service	City of Edmonton	-	-	-	
	Strathcona County	350	140.75	2,561,650	4%
	City of St Albert	-	-	-	
	City of Spruce Grove	-	-	-	
	Parkland County	-	-	-	
	City of Leduc	63	86.60	283,927	0.7%
	City of Fort Saskatchewan	-	-	-	
	Sturgeon County	-	-	-	
	City of Beaumont	-	-	-	
	Town of Stony Plain	-	-	-	
	Leduc County Local	34	86.60	152,884	0.4%
	Town of Morinville	-	-	-	
	Town of Devon	-	-	-	
	Total Enhanced Service Hours	447		$ 2,998,460	4.76%
	Total for Allocation	9,399		$ 56,468,723	100%
	Base Fee			$ 3,506,109	
	Total Annual Funding Shortfall for Allocation			$ 59,974,832	

Appendix P: Proposed RTSC transit service level guidelines

The following appendix includes the Transit Service Level Guidelines, which is intended to be read as a standalone document, but which serves an important purpose in describing how transit services will be planned, delivered and improved under a Regional Transit Services Commission.

Regional Transit Services Commission

DRAFT

November 29, 2019

747 Airport
747
4853
ETS

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List of Abbreviations

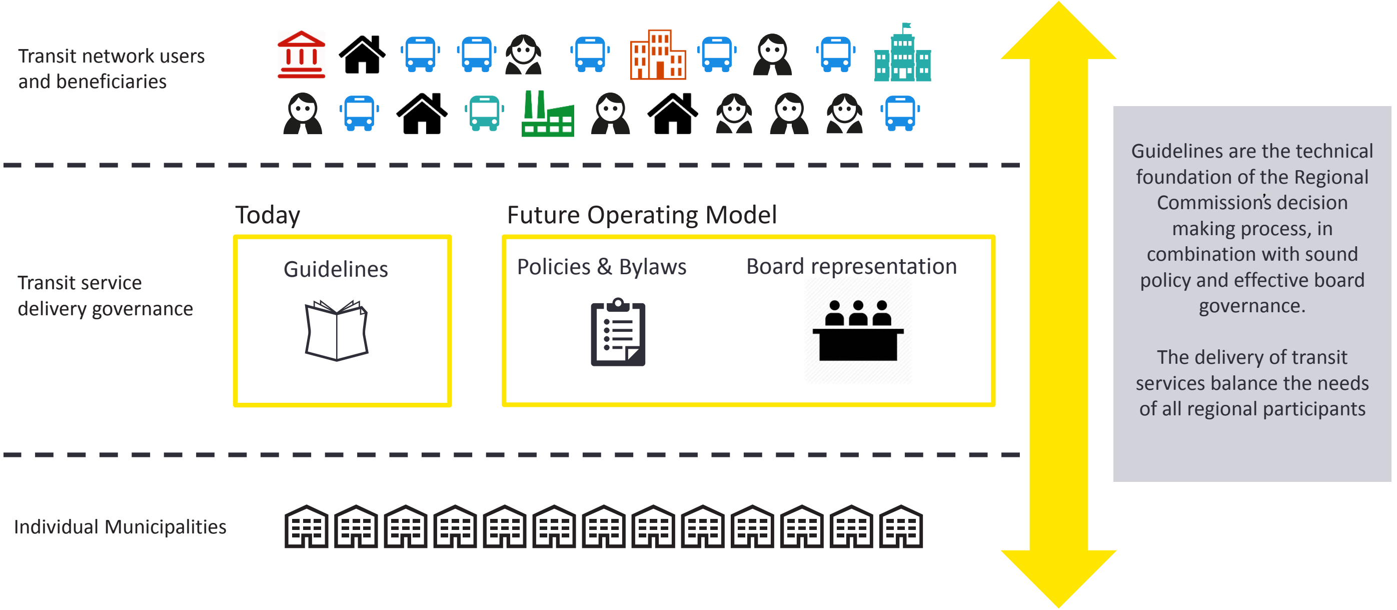
Abbreviation	Explanation
ACES	Automated, Connected, Electric, and Shared
AODA	Accessibility for Ontarians with Disabilities Act
AVL	Automatic Vehicle Location
BRT	Bus Rapid Transit
CAD	Computer Aided Dispatch
CRB	Capital Region Board
DMB	Dynamic Message Boards
EMRB	Edmonton Metropolitan Region Board
GPS	Global Positioning System
HR	Heavy Commuter Rail
HOV	High Occupancy Vehicle
IVR	Interactive Voice Recognition
LRT	Light Rapid Transit
MaaS	Mobility as a Service
MGA	Modernized Municipal Government Act
MOU	Memorandum of Understanding
PTPs	Private Transportation Providers
RTSC	Regional Transit Services Commission
TNCs	Transportation Network Companies
VKT	Vehicle Kilometres Travelled

EXECUTIVE
Summary

Executive Summary

The Edmonton region has grown rapidly in recent decades and has been striving to build a public transit system that provides a viable alternative to private vehicle travel. While there have been significant investments made in transit in the region, efforts have been fragmented across municipal boundaries and there are inconsistent levels of service provided. Individual travel demand patterns are not bound to jurisdictional boundaries and transit services in the Edmonton region have evolved to a critical point requiring regional integration; especially as the region continues to grow. To improve the regional transit service, 13 municipalities have signed a Memorandum of Understanding (MOU) to work together in creating an integrated transit system.

Figure ES-1: Role of the Transit Service Level Guidelines in Regional Transit Services Commission decision-making


Transit network users and beneficiaries
Today
Future Operating Model
Transit service delivery governance
Guidelines
Policies & Bylaws
Board representation
Individual Municipalities

Guidelines are the technical foundation of the Regional Commission's decision making process, in combination with sound policy and effective board governance.

The delivery of transit services balance the needs of all regional participants

To make this possible, one of the main steps is to imagine what a region-wide transit system might look like in the future. The Transit Service Level Guidelines help inform and conceptualize the transit service design. They are the technical foundation of decision making, and a tool to support decision-makers in creating, evaluating, and improving a regional transit network. As shown in **Figure ES-1**, guidelines are combined with sound policy and effective board governance to ensure alignment between the services provided for the benefit of regional customers and the collective guidance of the individual municipalities. Developed in consultation with the Working Team and based on industry leading practices, the guidelines use a common language to outline the transit performance metrics (Chapter 3) that will be used to evaluate the system by answering the following questions:

- — Where will transit be effective?
- — What transit service should be provided?
- — How do we determine if the service is successful?
- — How do we ensure a comfortable travel experience?

The process for development of transit services (Chapter 2) starts with analyzing travel needs, identifying desired outcomes, developing and implementing services, and measuring performance. Based on a cycle of continuous improvement, services are expected to be regularly reviewed and adjusted to improve operations.

Within the guidelines are common definitions of transit performance metrics (Chapter 3), including methods of calculation and expected ranges of performance. The range of metrics within the guidelines is shown in **Table ES-2.**

Table ES-2: Services Characteristics (Metrics)

Service Characteristics (Metrics) & Performance Expectation			
Chapter 3			
Where?	**How?**	**Success?**	**Comfort?**
Land Use Density	Frequency	Ridership	Type of Vehicle
Transit Hub	Service Span	Vehicle Load	Cleanliness
Coverage	Directness	Boarding / Revenue Hours	Technology
	Stop Spacing	Reliability	
	Priority Measures		
	First Kilometer / Last Kilometer		

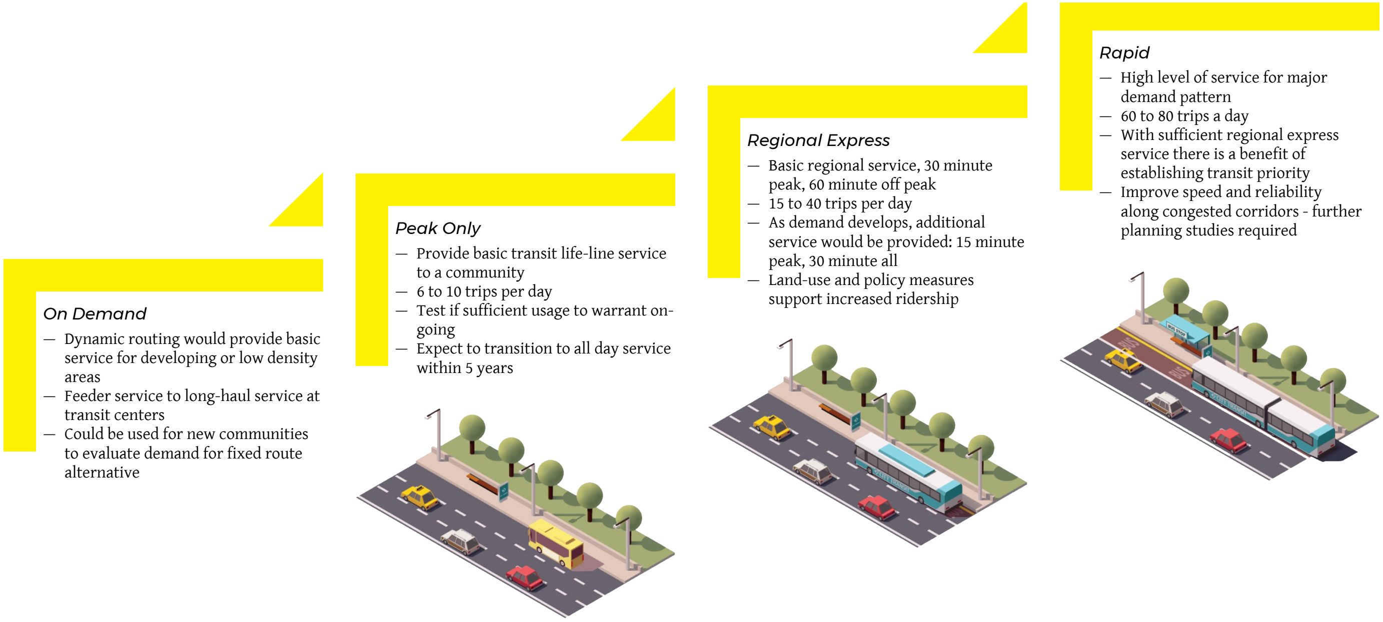
Land Use Density is a key factor in understanding the potential demand for transit service, including consideration of higher density and mixed-use development. In the regional context, there is a need to plan a network of transit hubs that covers several transportation modes and provides a method to concentrate demand from a relatively low-density area into a single location. In the design of transit routes, there is a need to balance route directness (which provides a more attractive service that can compete with private automobile travel) with coverage of the service area and ensuring there is a fair and equitable distribution of service across the region.

For the transit customers, service frequency and span are the most important aspects. These characteristics are key to retaining riders in the long term. Providing transit services compatible with travel demand needs to be balanced with service hours that span a sufficient amount of time to make the service attractive.

Effective regional services need to be planned as an integrated network (Chapter 4), rather than individual point-to-point services. The effect of a regional network is the opportunity for customers to travel across multiple jurisdictional boundaries, via direct connections or transfers. The ultimate benefit to the region and its customers is better combined outcomes than what is possible through a fragmented, multi-agency approach.

The guidelines outline types of transit services (Chapter 5) that function together to provide service to both short- and long-distance trips throughout the region. Each service has a different role within the overall transit network and different expectations for performance metrics. Rapid Transit is a higher speed service that provides some degree of transit priority along key demand corridors within the region. Regional Express services follow patterns

Figure ES-3 From On-Demand to Rapid Service



On Demand
- Dynamic routing would provide basic service for developing or low density areas
- Feeder service to long-haul service at transit centers
- Could be used for new communities to evaluate demand for fixed route alternative

Peak Only
- Provide basic transit life-line service to a community
- 6 to 10 trips per day
- Test if sufficient usage to warrant on-going
- Expect to transition to all day service within 5 years

Regional Express
- Basic regional service, 30 minute peak, 60 minute off peak
- 15 to 40 trips per day
- As demand develops, additional service would be provided: 15 minute peak, 30 minute all
- Land-use and policy measures support increased ridership

Rapid
- High level of service for major demand pattern
- 60 to 80 trips a day
- With sufficient regional express service there is a benefit of establishing transit priority
- Improve speed and reliability along congested corridors - further planning studies required

of established demand in the region and provides a reasonable mobility network. With both peak and all-day service, Regional Express Service will connect all four quadrants of the region with higher-speed, long distance transit service. Major Trip Attraction services provide connections for major employment and leisure activity centres with the Regional Express Service. While the focus of the guidelines is on regional services, there are also descriptions of local and specialized services that complement the rest of the network and should be designed to function an integrated system.

The approach provided in the guidelines provides flexibility, and allows planners and users to adjust transit service as demand grows or changes. Within the framework of the guidelines, it is expected that service will develop over time as the transit demand and the ridership increases from On-Demand, to Peak-only Fixed Route Service, and then to All Day Service. Ultimately, in areas where demand exists for a significant amount of All Day Regional Service, right-of-way improvements are critical to ensure a rapid service that is reliable and cost effective.

To complement a regional public transit service, private operators (Chapter 7) may provide service to more remote areas outside the regional network. These services could be delivered privately, or by the Regional Transit Services Commission, depending on whether the use of public funding is justified. Evaluating the use of public dollars is critical in determining whether the commission should partner with private organizations to operate transit services. However, there are potential benefits to achieving a basic level of integration across all transit services, both public and private, such as an improved customer experience.

To be successful, a transit system must be perceived as safe and secure (Chapter 8). While no tactics are guaranteed to be effective, there are different ways to improve the safety and security within a transit service, such as seeing and being seen, the implementation of cameras and emergency buttons, and the presence of a security team. A suite of tactics should be deployed to ensure the safety and security of both customers and transit employees (operators, supervisors, etc.).

Demand for travel is not bound to municipal boundaries, and neither are the new mobility options emerging to meet these demands. The transportation sector has experienced significant changes in recent years, leading to the emergence of new mobility options; many of which are privately-owned and operated. Among the most notable are ride-hailing or vehicle-for-hire services by Private Transportation

Providers (PTPs) or Transportation Network Companies (TNCs) such as Uber and TappCar (Chapter 9). While there are situations where these services can help to complement transit by filling in geographical and temporal gaps where transit service may be lacking, there are also situations where these services compete directly with transit services. There is a role for regional coordination in ensuring that there are common rules and practices in place to manage emerging mobility options. While transit remains a critical part of the transportation system, there are certainly circumstances where other emerging mobility services may be better suited to meet traveller needs. Improving integration between transit services and emerging mobility options can enable easier multi-modal trips that rely on a combination of transit and other mobility options. This integration will ultimately facilitate a shift away from reliance on the personal automobile.

CHAPTER

01

INTRODUCTION

Service

01 INTRODUCTION

1.1 Regional Transit Service Commission (RTSC) – Introduction & Background

The Edmonton region has grown rapidly in recent decades and has been challenged to build a public transit system that provides a viable alternative to private vehicle travel. While there have been significant investments made in the expansion of light rail transit (LRT) within the city of Edmonton, the majority of region growth in recent decades has been in the ex-urban and regional areas beyond the effective reach of the existing transit system. Accompanying travel patterns reflect this fact; the pace of vehicle trip increases has far exceeded transit trip demand. The number of daily regional transit trips has increased by almost 9,000 between 2005-2015[1]. During this same period however, the number of car trips increased by about 236,000.

While individual travel demand patterns are not bound to jurisdictional boundaries, transit services in the Edmonton area have evolved separately in various municipalities and has become a critical service requiring regional coordination. Integrated regional transit services are critical to minimize the negative impacts of growth – sprawl, congestion, emissions, and quality of life – and ensuring a region that is livable, efficient, and globally competitive. A coordinated, region-wide transit system is necessary.

There are currently seven municipalities in the region that separately provide scheduled transit service: City of Edmonton, City of Leduc / Leduc County (Joint Venture), City of Beaumont, Strathcona County, City of Fort Saskatchewan, City of St. Albert, and City of Spruce Grove. Since 2008 these municipal transit agencies have been exploring ways to coordinate regional transit resources for greater efficiencies in anticipation of future travel needs. The culmination of these efforts was the signing of a Memorandum of Understanding (MOU) to further investigate the formation of a Regional Transit Services Commission (RTSC). As an organization with a regional mandate, the goal of an RTSC is to provide a realistic transport alternative to the current private automobile-dominated network, support regional development, expand and improve transit services to communities, streamline investment in transit infrastructure, and provide a regional transit backbone to connect people and places in a more efficient manner.

Identifying the opportunity for greater collaboration across the region, and based on review of effective governance structures across Canada and the United States, a commission was selected a the desired approach for implementing regional transit and funding was received from the Government of Alberta to further develop and implement a regional transit commission. This closely aligns with the approach outlined in the *Modernized Municipal Government Act* (MGA) and leverages previous efforts of the Edmonton Metropolitan Region Board (EMRB) and previously Capital Region Board (CRB). By working together, the regional approach to public transit has the

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[1] 2015 Edmonton and Region Household Travel Survey (HTS)

ability to create an integrated system that delivers:

- More convenient and extensive service across municipalities
- A better customer experience through improved community connections
- Reduced barriers for municipalities to establish transit services in the region

The 13 municipalities who have signed the MOU represent a wide range of system sizes and maturity levels as well as expectations regarding the level of investment in public transit. The City of Edmonton and City of St. Albert Councils approved an agreement in September 2017; the other 11 EMR communities and counties joined in October 2018:

1. City of Edmonton
2. Town of Morinville
3. Parkland County
4. City of St. Albert
5. Leduc County
6. Town of Stony Plain
7. City of Beaumont
8. City of Spruce Grove
9. Strathcona County
10. City of Fort Saskatchewan
11. Town of Devon
12. City of Leduc
13. Sturgeon County

To achieve the benefits of a regional transit system, stakeholders have agreed that its effective, long-term governance requires well-developed service level expectations and guidelines. These expectations need to clearly state the agreed upon transit service levels and should reflect best practices to achieve results for citizens across the region.

The transit service guidelines outlined in this document are the combined product of best practice research and collective expertise of the technical representatives from the signatory municipalities. These guidelines are intended to guide and support the development, implementation, and performance monitoring of the various types of transit services to eventually be delivered by an agency or agencies across the region. They will also support the new RTSC to meet its public commitment to deliver of services in an efficient and effective way.

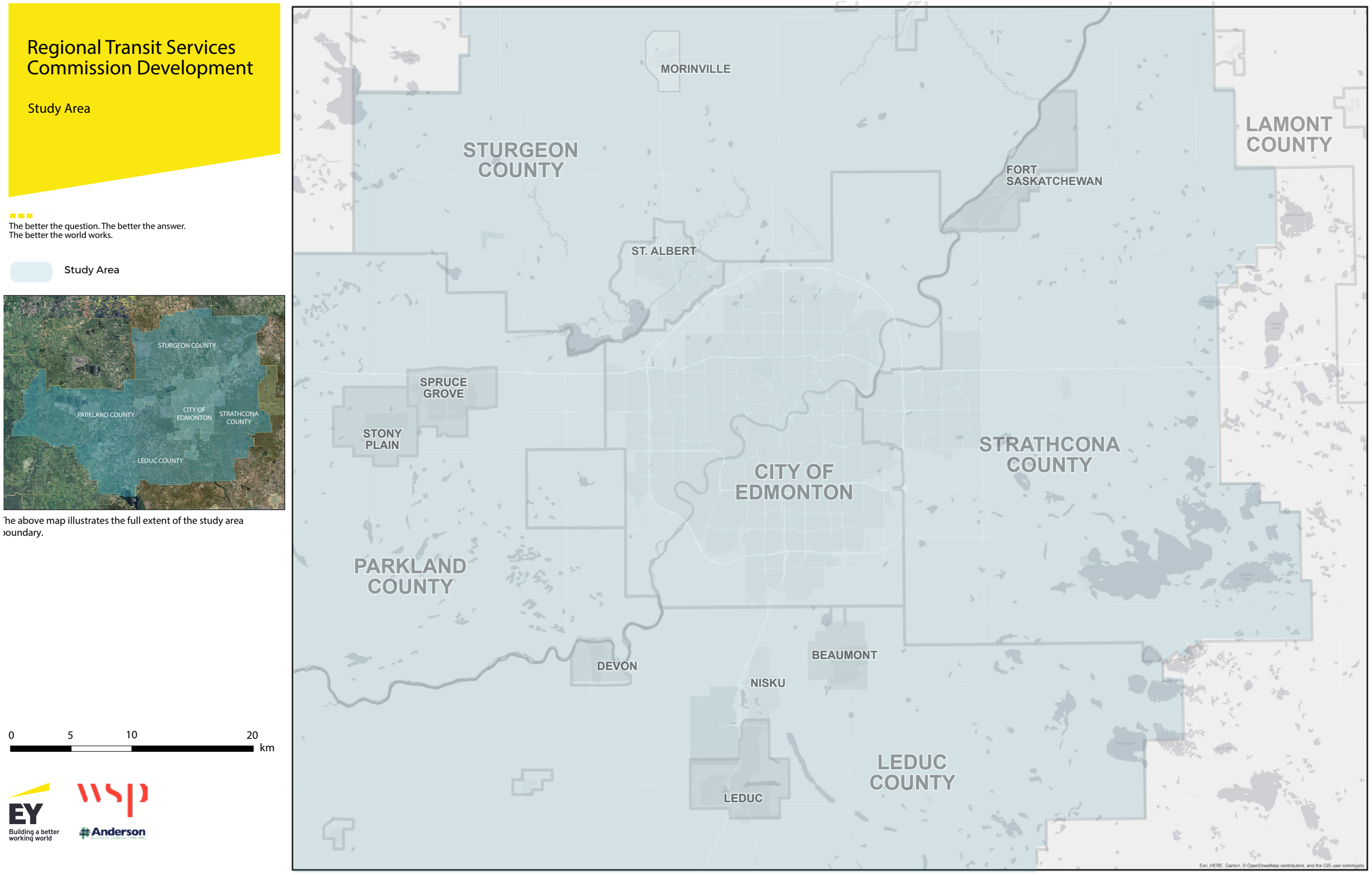
For the Edmonton RTSC, the development of transit service levels and guidelines will deliver the following outcomes for the regional transit service:

- **Relevancy:** Ensure that services being provided are consistent with participating municipalities' priorities and allow for variation of local services.
- **Collaboration:** Development of these guidelines has involved extensive collaboration with municipal governors, administrators, staff, and other key partners in service delivery.
- **Quantifiable expectations:** Results linked to ongoing performance management.
- **Consistency:** Service levels may vary but will use an overall framework and have a consistent set of guidelines for service delivery. For inter-city services, a consistent approach to level of service will provide a basic level of mobility across the network that meets travel demands. A consistent approach will also support the sharing of best practices and adopt common approaches across transit delivery agencies within the region.
- **Ambitious but realistic outcomes:** Founded on analysis and sufficiently challenging to ensure a high performing transit agency.
- **Transparency:** Clear and transparent approach to planning for transit services within the region, now and in the future.
- **Guidelines treated as a living document:** Service standards are regularly reviewed and updated as appropriate.

1.2 RTSC Service Area

The 13 municipalities and counties in the RTSC represent the majority of the Edmonton Metropolitan Region, as shown in the study area map below. As of 2016, the service area is home to just over 1.3 million people, up from 1.14 million people in 2011.

Figure 1: Service Area Map


Regional Transit Services Commission Development
Study Area
The better the question. The better the answer. The better the world works.
Study Area
STURGEON COUNTY
PARKLAND COUNTY
CITY OF EDMONTON
STRATHCONA COUNTY
LEDUC COUNTY
he above map illustrates the full extent of the study area oundary.
0
5
10
20
km
EY Building a better working world
wsp
Anderson
MORINVILLE
STURGEON COUNTY
LAMONT COUNTY
FORT SASKATCHEWAN
ST. ALBERT
SPRUCE GROVE
STONY PLAIN
CITY OF EDMONTON
STRATHCONA COUNTY
PARKLAND COUNTY
DEVON
BEAUMONT
NISKU
LEDUC COUNTY
LEDUC
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Edmonton is at the core of the RTSC service area and contains 72% of the total service area population. Two main regional centres with well-established transit systems, Strathcona County and the City of St. Albert, represent an additional 13% of the area's population. Ten municipalities and counties make up the 15% of the service area population and have recently started to invest in public transit as they face rapidly growing urban population. **Table 1** shows the municipalities and counties listed in order of population size, and includes a set of statistics from the 2016 Statistics Canada Census Community Profiles that describe the communities in more detail.

- **Population Density:** average population per square km, useful as an aggregate comparison of population density across communities, which can provide some insight into transit-ready development patterns and land use density. Beaumont has the highest population density in the service area, followed by Edmonton and St. Albert. Leduc County, Sturgeon County, and Parkland County have the lowest population densities, as would be expected with a large proportion of rural areas.
- **5-year Population Growth Rate:** the rate of population growth between 2011 and 2016, indicating that some communities may be densifying or changing more rapidly than others. Beaumont and Spruce Grove, for example, saw the biggest gains in population, while the Counties tended to see the lowest gains.
- **Internal Commuting:** the number of workers in a community who work within the community. It is a proxy for local travel demand, and support for locally-oriented commuter transit services. Edmonton has the largest percentage of local workers at 86%, with City of Leduc and City of Fort Saskatchewan ranked second and third at 43% and 39%. Edmonton is the only community in the service area where the majority of its residents work within its municipal boundaries.
- **External Commuting:** the percentage of workers in a community who work outside the community, but within the Edmonton Metropolitan Region. This is a proxy for regional travel demand and support for regionally-oriented commuter transit services. The City of Beaumont, Parkland County, Sturgeon County, and Leduc County each have more than 75% of their local workers commuting outside their municipal boundaries.
- **Commuters / Total Population:** the percentage of individuals who travel to a location of work / school in a community. This indicates the percentage of people who travel to work and/or to school and post-secondary school, and inversely, the percentage of people who do not need a commute-oriented transit service. The maximum percentage of commuters in the region is 43%, and minimum is 34%. In Leduc County 66% of the population does not commute for work, demonstrating potential demand for transit services that are not commuter-oriented.

Table 1: Service Area Population

	Population 2011	Population 2016	Population Density / Sq.Km.	5 Year Population Growth Rate	Internal Commuting (2016)	Regional Commuting (2016)	Commuters / Total Population (2016)
City of Edmonton	812,201	932,546	1361	15%	86%	11%	43%
Strathcona County	92,490	98,044	1183	6%	39%	58%	43%
City of St. Albert	61,466	65,589	1354	7%	32%	65%	43%
City of Spruce Grove	26,171	34,066	1058	30%	30%	66%	41%
Parkland County	30,568	32,097	13	5%	16%	78%	35%
City of Leduc	24,304	29,993	707	23%	43%	53%	41%
City of Fort Saskatchewan	19,051	24,149	501	27%	39%	56%	43%
Sturgeon County	19,578	20,495	10	5%	18%	77%	35%
City of Beaumont	13,284	17,396	1661	31%	16%	78%	42%
Town of Stony Plain	15,051	17,189	481	14%	27%	68%	37%
Leduc County	13,494	13,780	5	2%	22%	75%	34%
Town of Morinville	8,569	9,848	883	15%	25%	70%	42%
Town of Devon	6,515	6,578	460	1%	28%	70%	41%

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CHAPTER

02

TRANSIT SERVICE
Level Guidelines

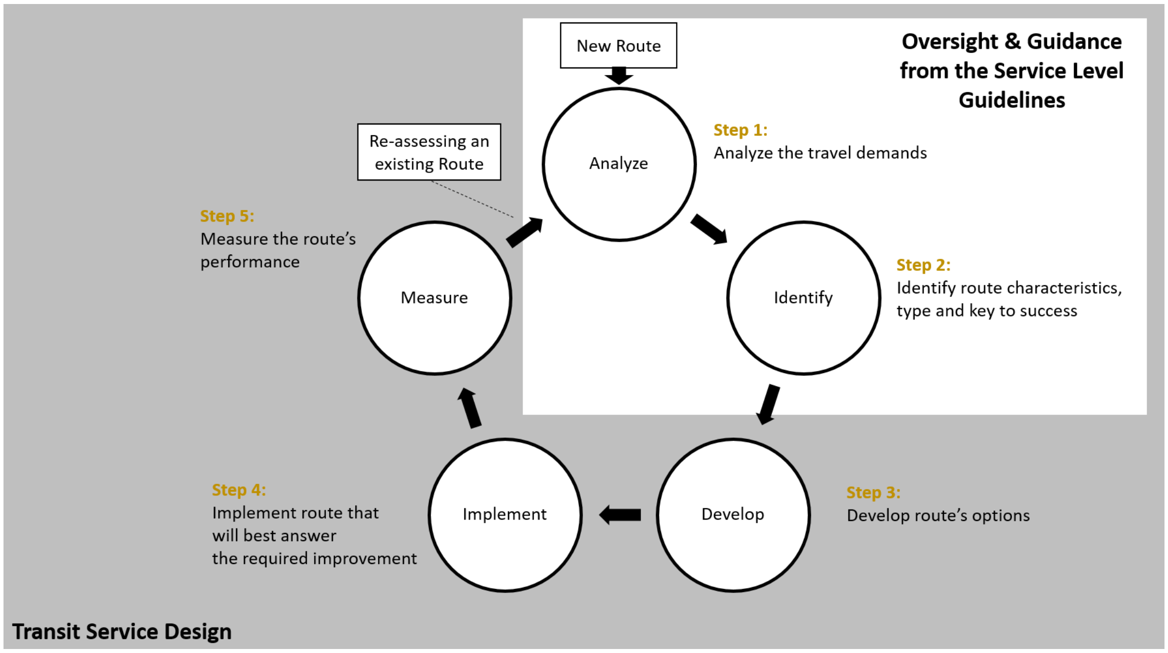
02 TRANSIT SERVICE LEVEL GUIDELINES

2.1 What are the Transit Service Level Guidelines?

Transit service level guidelines are a tool to help decision-makers create, evaluate, and improve a transit network service. The guidelines provide an overall framework on where transit will be effective, how it should operate, and what key measures of success should be used to evaluate the service and make ongoing adjustments.

Service level guidelines establish the benchmarks for service targets and define how successful a transit service is in meeting those targets. They provide transparency in the process of creating or adjusting a transit service based on specific and defined metrics. This approach provides clarity for transit administrators to focus their efforts on proactive development and implementation of transit services that meets the overall parameters established by decision makers. Ultimately, service guidelines enable a process of continual improvement where services are being regularly measured and evaluated in order to look for opportunities for improvements and build the trust of the community at large.

Figure 2: Relation between Service Level Guideline and Transit Service Design


New Route
Oversight & Guidance from the Service Level Guidelines
Re-assessing an existing Route
Analyze
Step 1:
Analyze the travel demands
Step 5:
Measure the route's performance
Measure
Identify
Step 2:
Identify route characteristics, type and key to success
Step 4:
Implement route that will best answer the required improvement
Implement
Develop
Step 3:
Develop route's options
Transit Service Design

This transit service level and guidelines provide flexibility and allow planners to adjust transit service as demand grows or changes. They typically address items such as those shown in **Table 2**, and are being discussed in Chapters 3 and 5. While they do not represent the full spectrum of potential metrics and service types, they are the one retained for the purpose of these guidelines.

Planning a service for the entire region with a common set will achieve significant benefits as compared to the current fragmented state of service delivery. Without a common set of standards for planning and monitoring transit services, each community has set their own parameters which resulted in uneven service that has needless duplication and as a result is more costly for the region as a whole. Standardized service

Table 2: Services Characteristics and Service Type

Service Characteristics (Metrics) & Performance Expectation				Service Type		
Chapter 3				Chapter 5		
Where?	**How?**	**Success?**	**Comfort?**	**Regional**	**Customized**	**Local**
Land Use Density	Frequency	Ridership	Type of Vehicle	Rapid Transit	On Demand	Frequent
Transit Hub	Service Span	Vehicle Load	Cleanliness	Regional Express – Peak & All Day	Specialized*	Local
Coverage	Directness	Boarding / Revenue Hours	Technology	Major Trip Attractions – Employment & Leisure	Special Events	Community
	Stop Spacing	Reliability				
	Priority Measures					
	First Kilometer / Last Kilometer					

* Specialized services are also known as paratransit services.

2.2 Benefits of having a common set of guidelines for the whole region

characteristics and service types creates the framework for an integrated service that serves all of the constituent members of the regional commission.

The Transit Service Guidelines focus on the first two steps of continuous improvement process for transit services (Figure 2). **Figure 3** focusses on the two first steps and outlines exactly how to use these service guidelines. Additional information on these steps is provided in chapters 3 and 5 of this document.

Process when evaluating:
— a new route

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2.3 How to use the Transit Service Level Guidelines

- an existing route that needs to be adjusted due to new urban context
- an existing route that could improve performance level (following Step 5)

The Transit Service Guidelines focus on the first two steps of Continuous Improvement Process for Transit Services (Figure 2). **Figure 3** focusses on the two first steps and outlines exactly how to use these service guidelines.

Additional information on these steps is provided in chapters 3 and 5 of this document.

Figure 3: How to use this Service Level and Guidelines

Process when evaluating

- a new route
- an existing route that needs to be adjusted due to new urban context
- an existing route that could improve performance level (following Step 5)

STEP 1 - Analyze

1A Establish if a Transit Service is required or in need of improvement

- Could current and future land use density support a transit service? (Chapter 3.1.1)
- Could nearby transit hubs attract additional riders? (Chapter 3.1.2)
- Are there gaps in the network existing service? (Chapter 3.1.3)
- Is the service fair? (Chapter 3.1.4)

If yes...

1B Analyze which nodes should be connected together

- What are the underserved origin-destination patterns? (Chapter 3.1.1)
- Where are the key travel demand generators? (Chapter 3.1.1)

STEP 2 - Identify route characteristics, type, and key to success

2A Identify the required level of service

- What is the expected level of demand for this service?
  - Which level of frequency is required? (Chapter 3.2.1)
  - Which service span will be required? (Chapter 3.2.2)
  - How direct the service need to be? (Chapter 3.2.3)
  - What is the distance customers will accept to walk? (Chapter 3.2.4)
  - Should priority measures be implemented? (Chapter 3.2.5)
  - How well should this service be connected to other transit services or other modes? (Chapter 3.2.6)

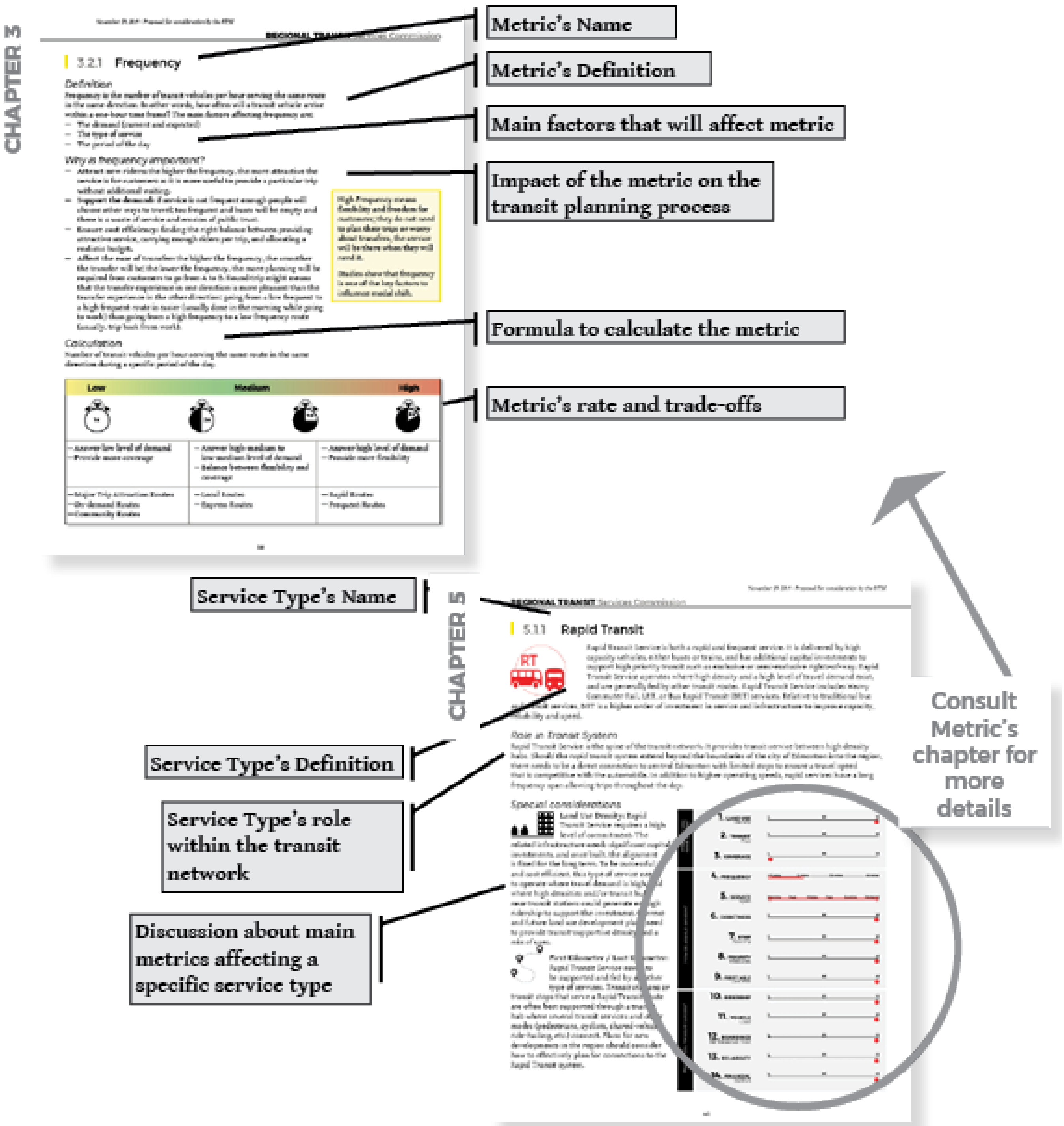
STEP 2B Establish the key to success for the service type

- Which service type fall under the level of service identified in previous steps (Chapter 5)
- To be considered a successful service:
  - Which level of ridership is required? (Chapter 3.3.1)
  - How full will the vehicle need to be? (Chapter 3.3.2)
  - What should be the level of boarding per revenue hours? (Chapter 3.3.3)
  - How reliable should the service should be? (Chapter 3.3.4)
  - What is the targeted cost per rider? (Chapter 3.3.5)

- STEP 3: Develop route's option
- STEP 4: Implement route
- STEP 5: Measure route's performance

- STEP 1 (if and when required)

2.4 How to read this Transit Service Level Guideline?



Metric's Name

Metric's Definition

Main factors that will affect metric

Impact of the metric on the transit planning process

Formula to calculate the metric

Metric's rate and trade-offs

Service Type's Name

Service Type's Definition

Service Type's role within the transit network

Discussion about main metrics affecting a specific service type

Consult Metric's chapter for more details

CHAPTER

03

TRANSIT

Performance Metrics

03

TRANSIT PERFORMANCE METRICS

Transit Performance Metrics are primary benchmarks to guide transit planning analysis.

Public transit represents a significant investment of public funds. Providing a useful system that will serve a range of customers is important to maintaining public trust in the transit system and will support a consistent level of investment. To build and maintain trust, it is important to regularly measure performance objectives to evaluate the service and ensure it is relevant to the community and region as a whole.

Transit Performance Metrics provide the fundamental measurements required when creating a new transit service or reviewing performance of an existing one. They address a transit planner's most fundamental questions:

Is transit service needed in an area? If so, exactly where? How much service should one provide? How many buses? What frequency? Between which hours of service? How should the service be tracked? What performance indicators should be used to know if it's working?

Performance Metrics also provide a way of measuring success of the service. Service success will depend on the expectations for this specific service, and will be related to the service types described in Chapter 5.

When a new service is implemented, its performance needs to be measured to ensure the right solution has been implemented and to evaluate if adjustments are required. The performance of transit service also needs to be evaluated regularly as context changes overtime. When the expected results are not reached, a review of the service might be required to understand why the service is not as successful as expected, and what could be changed to make it successful again.

331 Chappelle
360 Orchards
747 Edm. Int. Airport
BusLink 496-1600 4216
School Special Sept. to June
DATS
LRT Replacement Service
BusLink 780 496-1600 4216
ETS
Edmonton Transit System
EIA express
ROUTE 747 BUS STOP
Edmonton Transit System
THE EVERY DAY WAY TO CANCUN BEACHES
flyeia.com | takeETS.com
ENDS
kiss'n ride zone
FREE
ETS

3.1 Where is the service needed?

“Where do you need service?” provides detailed information about the two first steps identified in Chapter 2.

By analyzing:
- The existing or potential Land Use Density, Origin-Destination patterns and Key Generators
- The location of current or potential **Transit Hubs**
- The existing or desired Level of **Coverage**
- How **Equity** can be achieved

The question where the service need to be implemented will be answered.

1A Establish if a Transit Service is required or in need of improvement

- Could current and future land use density support a transit service? (Chapter 3.1.1)
- Could nearby transit hubs attract additional riders? (Chapter 3.1.2)
- Are there gaps in the network existing service? (Chapter 3.1.3)
- Is the service fair? (Chapter 3.1.4)

If yes...

1B Analyze which nodes should be connected together

- What are the underserved origin-destination patterns? (Chapter 3.1.1)
- Where are the key travel demand generators? (Chapter 3.1.1)

3.1.1 Land Use Density

Definition / Purpose

Land use density refers to the number of residents and jobs per unit area within some measured distance to a transit service. The density surrounding a transit station or stop demonstrates how effective and productive a route can be by illustrating the number of prospective customers. Beyond density, an area's land use is closely tied to transit service planning because it defines the access to key destinations and necessary service frequencies. The main factors influencing land use density include:

- Zoning / land use classification
- Population
- Employment
- Design of local streets and adjacent transportation facilities

Why is Land Use Density Important?

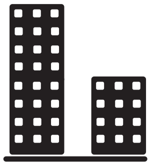
Relationship between land use density and transit effectiveness: land use density is a key factor to understanding the potential demand for transit in an area and designing routes that compliment travel demand patterns. Areas of higher density and mixed use should be prioritized by higher orders of transit and increased frequencies because transit demand needs are more diverse and continuous. Areas of lower density and single use should be served by transit according to their needs (e.g. peak period travel only) or characteristics (e.g. retirement residences or schools).

Calculation

- Number of residents / area (km^2) and,
- Number of jobs / area (km^2)

Note: Sometimes, information about density, especially employment density, could be difficult to obtain at a sufficient granular level for the purpose of this exercise. In those cases, qualitative evaluation might be added in the equation to establish the level of land use density; available density data could they be used, combined with a qualitative evaluation based on local knowledge and satellite view of the area.

Land-use impacts the effectiveness and productivity of transit. Understanding the interactions between land use and transit developments is critical for mutual success.

Very Low	**Low**	**Moderate**	**High**	**Very High**
				
— <10 residents and jobs/km2	— 10-20 residents and jobs/km2	— 20-30 residents and jobs/km2	— 30-60 residents and jobs/km2	— >60 residents and jobs/km2
— Single use, very low density	— Single use, low density	— Small variety of land uses, medium density	— Mixed-use with multiple trip attractors, high density	— Mixed-use, very high density
	— Major Trip Attractions routes — On-Demand routes — Community Routes	— Local Routes	— Rapid Routes — Express Routes — Frequent Network Routes	— Rapid Routes

Understanding key origins and destinations across the region will inform how transit can effectively connect points of interest and be a productive, useful service.

Land use density indicates where people will be most attracted to and where key trip generators are most likely to be located. Each regional area, city or community will house a myriad of land uses that cater to the needs of their residents. Be it work, school, or discretionary trips, the origins and destinations of individual trips are closely related to land use density. Despite efforts to intensify or cluster land uses, there are still key generators that for many reasons locate outside of built-up areas. Since these isolated generators generate a fair amount of travel, transit services should still cater to these cases using the origin data that is available.

Knowing the origin and destination of people trips, and what is the more direct connection between the two, helps create a better transit service.

3.1.2 Transit Hub

Transit hubs are places of connectivity, where several transportation modes converge and where infrastructure is implemented to ease the transfer between modes. Transit hubs can take different forms and sizes, but will generally be a place where a combination or all of the following are present:

- Stops for several local routes, regional routes and/or rail modes;
- Park & rides;
- Bike racks;
- Convergence of pedestrian and cyclist pathways;
- Allocated space for bike-share, e-scooters, car-share vehicles, taxis and transportation network companies; and
- Concentration of residents and employment density.

Where land use density is not sufficient to warrant a high level of transit service, transit hubs are placed where enough travel demand converges to justify the implementation of transit service. Hubs function as gathering places for a broader catchment area where trips start, end, or transfers are made. The main factors influencing the location and the level of importance of a transit hub include:

- Route network
- Transit, cycling, and pedestrian facilities
- Car, car-share, transportation network companies, taxi infrastructure

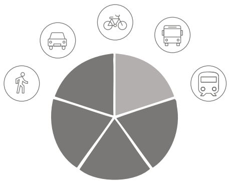
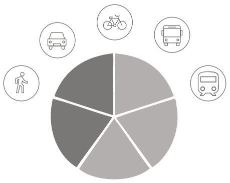
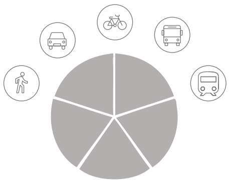
A transit hub could connect only transit routes together, or could connect one transit route with other modes only, and still provide a significant amount of travel activity. As future regional hubs are planned however, more travel options will be available to customers resulting in a higher level of connectivity.

Why Transit Hub is important?

- **Provide a concentration of customers:** At the local level, customers use the most appropriate modes available to them (foot, bike, bus, car) before converging at a transit hub where they will transfer to regional transit routes. Transit operators can then provide a higher level of service to accommodate the increased demand.
- **Consolidate the need for infrastructure:** Connecting two or more modes or two or more routes requires a certain level of infrastructure. By creating a transit hub, the need for infrastructure could be consolidated and an urban environment could be fostered: bus and passenger drop-off bays, parking spaces, washroom for drivers and/or customers, and other amenities. The space availability to implement various mode specific infrastructure will have an impact of the location of the transit hub and a balance is needed between space availability and ideal location for an efficient transit service.
- **Ease transfer:** with several modes heading to the same point, coordinating transfer time is easier to manage, both for operators and customers.

Calculation

Number of different modes and/or transit route available at the same location

Low	**Moderate**	**High**
		
Only 1 mode (other than transit) and 1 transit route, or 2 transit routes	2-3 modes (other than transit) and/or 2-3 transit routes	Several modes and transit routes
— Low level of connectivity, do not warrant for a high level of transit service, unless land-use density or key generators could justify it	— Moderate level of connectivity, warrant for moderate level of transit service, unless land-use density or key generators could justify more transit service	— High level of connectivity, warrant for high level of transit service
— Examples: — Small termini — Park & Ride	— Examples: — Transit hub, mix-density concentration — Active modes facilities	— Examples: — Major termini — Car and bike share facilities — Active modes facilities
— Major Trip Attractions routes — On-Demand routes — Community Routes	— Local Routes	— Rapid Routes — Express Routes — Frequent Network Routes

3.1.3 Coverage

Definition / Purpose

Coverage is the area served by the transit service, and can be measured by the population and employment within the defined coverage area[1]. Land use density has a significant impact on the ability of a transit service to cover the majority of residential and employment hubs. The main factors affecting coverage are:

- Service Type
- Roadway network
- Route alignment and stop spacing
- Land use development and street and pedestrian connectivity
- Route directness

Why is Coverage important?

- **Ensure that transit service will be provided to most residential and employment locations:** the more residents that have access to a transit service results in more residents that have the ability to choose this mode to travel within the region. The more employment locations covered by transit service, the more employees will be able to use transit travel for work.
- **Identify gaps in the service:** people living in an area not covered by a service do not have a transit option to travel. If they live in a low-density area, providing transit service might be too expensive; if they live in moderate-to-high density area, existing transit service could be adjustment to cover those gaps.
- **Accessibility:** for individuals with mobility challenges, travelling a long distance to a transit service can be challenging. Providing a reasonable amount of coverage will ensure that people of all ages and abilities are able to access the transit system. This includes ensuring that adequate connections, such as sidewalks and accessible trails, are in place to access the transit stop.

Calculation

Total population and employment within a certain walking distance from a transit stop divided by the total population and employment within the whole urban area. The walking distance will differ based of service type and frequency. It should be noted that the urban context could also impact the walking distance, but will need to be evaluated on a case-by-case basis.

- “Low Frequency” (60 to 30 minute frequency): 400-meter walking distance
- “High frequency” (15 minutes or less): 800-metre walking distance

Note: if population and employment data are not available, ensuring that a sufficient percentage of urban area is covered (based on the roadway network) could provide an indication of the overall coverage.

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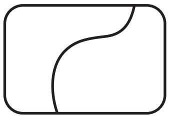
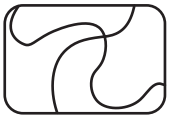
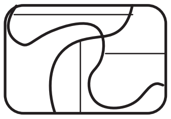
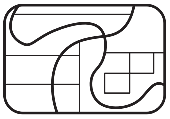
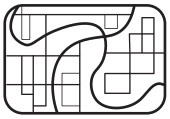
[1] Defined coverage area: the defined coverage area will, usually, be at the level of the whole regional area or will be focussing on a whole municipality or a whole neighbourhood.

Low	**Moderate**	**High**
 	 	
< 40% covered	40-80% covered	> 80% covered
— Lowest coverage means that not everyone has access to transit service. — In low density area, the cost of providing a transit service might be too expensive to offer a significant level of coverage		— Highest coverage means that transit is a travel option for most residents and most employees — Several transit options are usually available for most customers
— Major Trip Attractions routes — On-Demand routes — Community Routes (400 m walking distance)	— Local Routes (400 m walking distance) — Express Routes (400 m walking distance)	— Rapid Routes (800 m walking distance) — Frequent Network Routes (800 m walking distance)

Positive impacts of analyzing coverage:

01

Identify transit options: Do residents only have one transit option? For example, do riders have only one route going to downtown Edmonton, or are there multiple options? What about other destinations from their home or place of employment?

02

Identify route duplication: Are there two or more routes servicing the same corridor or destination? Are they answering different needs? Could resources be allocated for greater coverage or frequency?

03

Depending on service type, the roadway network, the presence or lack of pedestrian amenities such as sidewalk or pathway, the expected level of coverage will be different. To give a few examples:

- The catchment area of a high frequent service will be higher as customers will be inclined to walk more to access the service.
- Area with a lack of pedestrian amenities, the catchment area will be lower as customers' safety will have to be considered.

3.1.4 Equity

Definition / Purpose

Equity is the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically[1]. When related to public transit, equity involves ensuring reasonable access to the system for all residents within the service area and that services are distributed in a fair manner. This involves understanding structural barriers that result in transportation disadvantaged status such as: low income, non-driver, non-car owner, disability, communication barriers, social isolation, caregiver responsibilities, or family obligations[2].

Public transit service must achieve equity of access, opportunity and affordability for all. This may require looking at interventions to addressing inequity especially for those in our communities who are disadvantaged. There are two general approaches to addressing transportation inequity. Program based solutions provide targeted interventions for particular disadvantaged groups, such as a small amount of specialized transit services to a particular community. Overall policies can also be implemented to increase transport system accessibility, for example a fare policy that improves transit system affordability by providing low cost access passes.

Why Equity is important?

- **Ensure that transit service is provided to transit dependent areas:** people who do not have the ability to use another mode, such as not having the financial capacity to own a car or the ability to drive, bike or walk, will not be able to travel if no transit services are provided.
- **Ensure that transit service is accessible:** people with mobility issues rely on transit services being accessible across the entire network.
- **Ensure that transit service in transit-dependent areas is convenient:** low income households value reliable service and routes that require limited transfers, despite typically having longer trips as affordable housing is often located further away from built-up urban centres that offer employment opportunities.

Balance is needed when considering trade-offs related to equity and system cost effectiveness and efficiency.

Calculation

There is no single manner to evaluate transportation equity. The recommended approach is for the RTSC to consider a range of perspectives and impacts including number of low-income households, density of low income jobs per unit area (km^2), concentrations of seniors, youth, minority population, low level of car ownership or no-car households, access to institutions and community centres for people of all ethnic and social backgrounds. Consideration of equity impacts will be an important aspect of stakeholder and public engagement through the transit planning process.

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[1] World Health Organization, Equity in Health Systems https://www.who.int/healthsystems/topics/equity/en/

[2] Evaluating Transportation Equity, Guidance For Incorporating Distributional Impacts in Transportation Planning 18 March 2019, Todd Litman, Victoria Transport Policy Institute

Low	**Moderate**	**High**
— High level prevalence of indicators of transportation disadvantaged status (low-income status, zero-car household, seniors, youth, minority population, etc.) — Few or no travel option alternative (to car) to access key social and economic destinations — Transit service might be required even if the travel demand is low	— Moderate level of prevalence of indicators of transportation disadvantaged status — Transit service is probably not required for equity reason, but additional analysis could prove otherwise	— Low level of prevalence of indicators of transportation disadvantaged status — Additional transit services are not required for equity reasons
— On-Demand Routes — Community Routes	— Major Trip Attractions Routes — Local Routes	— Rapid Routes — Express Routes — Frequent Network Routes

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3.2 How is the service run?

“How do you operate this service?” provides detailed information about the Step 3 identified in Chapter 2.

By analyzing:
- The required level of **Frequency** and **Service Span**
- The desired level of **Directness** and **Stop Spacing**
- The needs for Priority Measures and/or First and Last Kilometer options

This analysis specifies the required level of transit service to address transportation demands.

2A Identify the required level of service

- What is the expected level of demand for this service?
  - Which level of frequency is required? (Chapter 3.2.1)
  - Which service span will be required? (Chapter 3.2.2)
  - How direct the service need to be? (Chapter 3.2.3)
  - What is the distance customers will accept to walk? (Chapter 3.2.4)
  - Should priority measures be implemented? (Chapter 3.2.5)
  - How well should this service be connected to other transit services or other modes? (Chapter 3.2.6)

3.2.1 Frequency

Definition

Frequency is the number of transit vehicles per hour serving the same route in the same direction. In other words, how often will a transit vehicle arrive within a one-hour time frame? The main factors affecting frequency are:

- The demand (current and expected)
- The type of service
- The period of the day

Why is frequency important?

- **Attract new riders:** the higher the frequency, the more attractive the service is for customers as it is more useful to provide a particular trip without additional waiting.
- **Support the demand:** if service is not frequent enough people will choose other ways to travel; too frequent and buses will be empty and there is a waste of service and erosion of public trust.
- **Ensure cost efficiency:** finding the right balance between providing attractive service, carrying enough riders per trip, and allocating a realistic budget.
- **Affect the ease of transfer:** the higher the frequency, the smoother the transfer will be; the lower the frequency, the more planning will be required from customers to go from A to B. Round-trip might means that the transfer experience in one direction is more pleasant than the transfer experience in the other direction: going from a low frequent to a high frequent route is easier (usually done in the morning while going to work) than going from a high frequency to a low frequency route (usually, trip back from work).

> High Frequency means flexibility and freedom for customers; they do not need to plan their trips or worry about transfers, the service will be there when they will need it.
>
> Studies show that frequency is one of the key factors to influence modal shift.

Calculation

Number of transit vehicles per hour serving the same route in the same direction during a specific period of the day.

Low	Medium	High
1x	2x 4x	6x
— Answer low level of demand — Provide more coverage	— Answer high-medium to low-medium level of demand — Balance between flexibility and coverage	— Answer high level of demand — Provide more flexibility
— Major Trip Attraction Routes — On-demand Routes — Community Routes	— Local Routes — Express Routes	— Rapid Routes — Frequent Routes

3.2.2 Service Span

Definition

Service span is the period of time when a specific service is operated, from time of the day of the first departure to time of the day of the last arrival. The main factors affecting service span are:

- The travel demand (current and expected) and how it is spread out during the day
- The type of service
- The hours of operation at desired origins and destinations

Why is Service Span important?

- **Answer the demand:** if service span is too short, customers will not be able to reach their destination on time; if it is too long, transit vehicles will be empty and costly during some periods of the day.
- **Influence service attractiveness:** service span provides service to and from destinations at the desired times during relevant travel periods. If there is no service during times when customers need it (i.e., during rush hour), the service is not useful and will not be able to attract new customers.

Calculation

Time period(s) between the last arrival time of the day minus the first departure time of the day.

If there is a significant gap in the service, such as for peak period routes, the calculation need to consider this gap. For this example, the calculation is the time period between the last arrival time in the morning minus the first departure time of the morning plus the time period between the last arrival time in the afternoon minus the first departure time of the afternoon.

	Period of the day						Day(s) of the week			
	Early Morning	AM Peak	Midday	PM Peak	Evening	Night	Weekdays	Saturday	Sunday	Holidays
Rapid Routes	X	X	X	X	X	X	X	X	X	X
Express All Day	X	X	X	X			X	X	X	X
Express Peak		X		X						
Major Trip Attraction	Demand Dependant (DD)						DD			
On-Demand	DD						DD			
Specialized	X	X	X	X	X	X	X	X	X	X
Special Events	DD						DD			
Frequent Routes	X	X	X	X	X	X	X	X	X	X
Local Routes	X	X	X	X	X	X	X	DD		
Community Routes		X	DD	X	DD		X	DD		

Finding the right balance between 1) providing services when the travel demand is sufficient to support transit; 2) operating during enough hours to make the service attractive; 3) being mindful of resources availability. Other travel modes could supplement non-transit-operating hours: car-hailing, bike-sharing, etc.

3.2.3 Directness

Definition / Purpose

Directness measures the route deviation compared to a more direct path for travel. It provides a comparison between the path that a person has to use as a transit user versus the path the same person will have taken by using another mode, such as a personal vehicle. When applied to route design, there is a trade-off between route directness and coverage (Chapter 3.1.3). The main factors affecting Directness are:

- Level of coverage
- Roadway network
- Walking distance
- Pedestrian network connectivity

Circuitous route: Customers do not have to walk far to reach their transit stop, but they might have the perception of travelling indirectly through their neighbourhood (“a milk run”), or even going in the wrong direction for a few blocks, before reaching their destination.

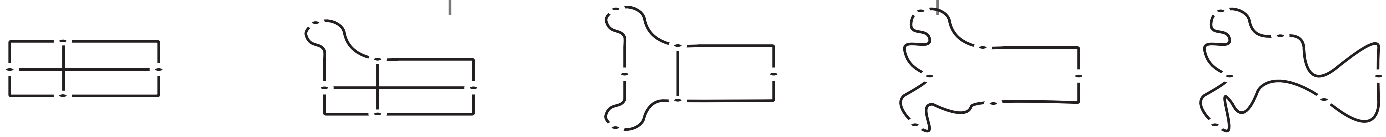
Direct route: Most customers will have to walk further to reach their transit stop, but once there, their travel path will be fast and straight; they will not have the perception of going through areas that are of no interest or unproductive for them.

Why Directness is important?

- **Impact service coverage:** the more direct a route is, the less coverage is offered.
- **Attract and retain customers:** the more direct the route, the faster and the more competitive the transit service will be compared to other modes, (i.e. personal vehicles) and therefore, the more attractive the service.
- **Measure pedestrian network connectivity:** a route with a poor level of directness usually indicates a sign that the pedestrian network connectivity is deficient and needs to be improved. While for coverage purpose a route might require a certain level of indirectness, the higher the pedestrian network connectivity is, the more direct a route could be.
- **Give an indication on the roadway network design:** a grid roadway network design is easier to serves by direct or semi-direct route while a curvilinear roadway network design could make it impossible to do for coverage reason (chapter 3.1.3)

Calculation

Ratio between bus travel time and car travel time to make the same trip, from the starting point to ending point of the bus route.



Low	Moderate	High
Ratio: 0.7-1	Ratio: 0.5-0.7	Ratio: <0.5
— Answer the need to provide coverage — Slowest and more circuitous route — Highest level of accessibility as bus stop should not be far from origin and destination points	— Balance between rapidity and coverage	— Answer the need to provide rapid way of travelling — Lowest level of accessibility as bus stop could be further away might be too expensive to offer a significant level of coverage
— Community Routes	— Major Trip Attraction Routes — Local Routes — On-Demand Routes	— Rapid Routes — Express Routes — Frequent Routes

3.2.4 Stop Spacing

Definition / Purpose

Stop Spacing is the distance between two stops or two transit stations served by the same route. Similarly to the coverage metric (Chapter 3.1.3), the Service Type (and the Frequency) plays a role in the expected distance between bus stop. The urban and the local context need to be taken into consideration. To give only one example, the location of a senior residence or a school could affect the general stop spacing "rule".

It should be noted that stop spacing might be different along the same route if the urban context and the type of roadway change. For example, a regional route that will cross urban areas and uses the highway to connect municipalities won't see a similar stop spacing along its route. However, the stop spacing along routes in urban areas will stay similar to provide an efficient service.

The main factors affecting stop spacing are:
- Service Type
- Land-use density and pedestrian network connectivity
- Key generators locations and transfer points
- Travel time and travel speed
- Desired level of walking distance

Why Stop Spacing is important?

- **Impact travel speed:** vehicle deceleration / acceleration time in addition to time for customers to board and alight results in reduced travel speed. The greater the stop spacing is, the fewer stops are required on a route and the faster the travel speed will be.
- **Impact accessibility and coverage:** not everyone is able or willing to walk 800 metres to reach a transit stop. Keeping stop spacing at a reasonable distance for the majority of pedestrians provides better coverage and increases accessibility for people with limited mobility.

Calculation

Average Distance between each transit stop or transit station of the same route. The average distance will differ based of service type and frequency as shown in the graph below. It should be noted that the urban context could also impact stop spacing, but will need to be evaluated on a case-by-case basis.

Low	**Moderate**	**High**
200m	**400m**	**>= 800m**
For low frequency route (60 minutes)	For moderate frequency route (15-60 minutes)	For high frequency route (15 minutes or less)
— Offer a high level of coverage — Minimal walking distance required — Good option for customers with limited mobility — Good for First / Last Kilometer options	— Balance between rapidity and coverage of stops with high level of ridership, key generators, and transit point	— Offer faster trip from origin to destination — Requires greater walking distance — Faster and more competitive with car travel — Good for long distance travel trips
— On-Demand Routes — Community Routes	— Major Trip Attractions Routes — Local Routes	— Rapid Routes — Express Routes — Frequent Routes

01

Stop spacing and the urban context

Stop locations are closely related to the urban context. Stop spacing guidelines are used to provide the distance between stop locations. However, the urban context needs to be understood before locating transit stops. The following questions could provide additional guidance:

- Does the pedestrian network provide enough accessibility to transit stops, or should transit stops be closer to ensure adequate accessibility?
- Does the land use density warrant a transit stop, or should the transit stops be spaced further apart to serve their demand catchment?
- Is it feasible and safe to implement a transit stop, or should the stop location be modified to increase safety?
- Does the transit stop need to be relocated to provide more convenient or safer access to the surrounding pedestrian network?
- If transit facilities are planned, would they be easier to implement if the transit stop location is slightly modified?
- Does the type of typical customer served by this transit stop or route require the stops to be spaced closer due to mobility constraints?

The stop spacing along a route does not need to be constant as the adjustment to the urban context, the possibility to implement transit facilities, the type of customer all need to be taken into consideration.

02

Bus Stop Balancing!

Following a well-defined bus stop spacing guidelines, at the local and regional level, ensure that buses are not slowed down by too many stops while still offering a sufficient level coverage to serve customers.

3.2.5 Priority Measures

Definition / Purpose

Priority measures are steps taken to prioritize the passage of transit through a corridor. They could include a dedicated right-of-way, such as a transit or high occupancy vehicle (HOV) lane, a dedicated signal phase, or some other means of prioritizing transit vehicles over general traffic. Priority measures could be grouped into three categories:

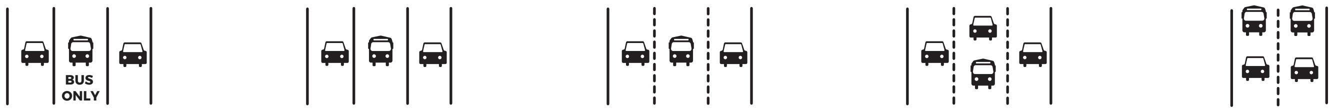
— Regulatory measures (e.g.: part-time reserved transit travel lanes, turning movement permissions, parking restrictions, all-door boardings)
— Transit Signal Priority (e.g.: green extension / red truncation, bus pre-emption)
— Physical measures (e.g.: dedicated transit way, queue jumps)

The main factors affecting the implementation of priority measures are:

— Traffic capacity
— Incidents managements
— Service type
— Level of reliability
— Infrastructure design

Why Priority Measures is important?

— **Ensure reliability:** implementing priority measures increases service speed and reliability. Travel times are more easily gauged when priority measures exist as fewer external factors affect bus travel time and progression.
— **Improve transit speed:** by implementing priority measures, transit vehicles spend less time in traffic, increasing the overall transit speed.
— **Promote Transit over other modes:** by giving transit service a priority over regular traffic, Cities make it clear that transit is a preferred mode of transportation.
— **Reduce operating cost:** by removing external factors that impact the fluctuations of traffic for a transit vehicle, priority measures reduce travel time and operating costs.



Low	**Moderate**	**High**
— No or minimal transit priorities are required when there is no or minimal traffic — The lack of transit priorities should not impact the customer experience and route's cost effectiveness	— Balance improved reliability and travel speed with minimizing capital costs for the priority measures themselves	— Improve reliability and travel speed where traffic routinely affects transit vehicle progression — Improve customer's experience, cost effectiveness and transit branding
— Local Routes — Major Trip Attractions Routes — On-Demand Routes — Community Routes	— Express Routes	— Rapid Routes — Frequent Routes

3.2.6 First Kilometer / Last Kilometer

Definition / Purpose

First kilometer / last kilometer1 performance refers to the presence and number of mode choice options connecting directly from a single origin point (i.e. a rider's home) to a transit service. These could include active transportation facilities, local transit service routes, transportation network companies, car share vehicles, and taxis. This suite of options is particularly important for potential transit customers who wish to access transit facilities but do not live or work near them. First kilometer / Last kilometer options are particularly important to feed regional routes and provide options to access the regional transit network if it is not within a walking distance for the customers' origin and/or destination.

The main factors influencing first kilometer / last kilometer options are:

- Coordination between municipal road agencies and transit service for active transportation infrastructure
- Bylaw permission for transportation network company and car share operations
- Communication of first kilometer / last kilometer options to transit customers through awareness campaign and integration into trip planning applications

Why is First Kilometer / Last Kilometer important?

First kilometer / last kilometer options increase the viability of transit usage and enable more sustainable mode decisions: the presence of active transportation facilities or alternative passenger services (i.e. short-trip private car services) should be prioritized where local transit does not offer direct coverage; higher occupancy vehicle trips through pooled ride share or car share is the preferred substitute for first kilometer / last kilometer trips.

The greater number of first kilometer / last kilometer options at a transit station, the greater likelihood that personal vehicle trips can be avoided altogether.

Calculation

Number of first kilometer / last kilometer options at transit station or stop.

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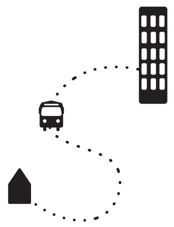
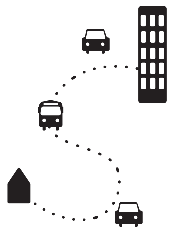
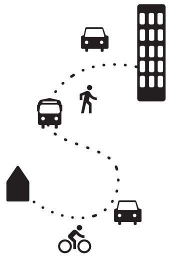
[1] First kilometer/ last kilometer does not literally refer to the travel required with one kilometer and is a generalized term of measurement.

Limited	**Moderate**	**High**
		
0 to 1 options for first kilometer / last kilometer (excluding park and ride lot)	2 to 3 options for first kilometer / last kilometer (excluding park and ride lot)	More than 3 first kilometer / last kilometer options, must include adequate active transportation infrastructure
— On-Demand Routes — Community Routes	— Major Trip Attraction Routes — Local Routes	— Rapid Routes — Express Routes — Frequent Routes

3.3 How is success measured?

“How do you measure success?” provides detailed information about the Step 4 identified in Chapter 2.

By evaluating:
- The **Daily Ridership** for each route
- The **Vehicle Load** for each route
- The Boardings per Revenue Hours for each route
- The **Reliability** for each route

Through a process of continuous improvement routes will undergo measurement and review on a regular basis, at least annually. Looking at each route will provide individual information that could be combined to have an overview of the whole network.

STEP 2B

Establish the key to success for the service type

- Which service type fall under the level of service identified in previous steps (Chapter 5)
- To be considered a successful service:
  - Which level of ridership is required? (Chapter 3.3.1)
  - How full will the vehicle need to be? (Chapter 3.3.2)
  - What should be the level of boarding per revenue hours? (Chapter 3.3.3)
  - How reliable should the service should be? (Chapter 3.3.4)
  - What is the targeted cost per rider? (Chapter 3.3.5)

3.3.1 Daily Ridership

Definition / Purpose

Daily ridership is the average number of boardings along a specific route during an entire day. Fare systems, passenger counters or surveys will provide information about how many passengers board each route during the day. The main factors affecting ridership are:

- Demand
- Route success
- Travel mode alternatives
- Service quality and competitiveness

Why Ridership is important?

- **Evaluate success:** the routes with the higher ridership could be the most successful ones. It confirms if the route's service level and alignment meet customers' travel demands and achieve cost-effectiveness.
- **Establish required level of service:** the level of ridership is one of the inputs used to establish the adequacy of its level of service: frequency, service span, type of vehicle, etc.
- **Benchmark routes against each other, against other transit systems, against other modes:** comparing the ridership of one route with another will answer which one attracts more customers. The same applies when comparing different transit systems with each other, or with other transportation modes. Ridership comparison could also help understand which level of service other transit agencies offer for a similar range of ridership.

Fare systems and/or surveys could provide additional information such as who uses the service:

- Children?
- Teenagers?
- Commuting Adults?
- Seniors?
- Post-Secondary Students?

This information could help better plan the service as it helps develop a better understanding of customers: when are they most likely to travel? To which destinations? Should extra seating or stroller spaces be considered when assessing vehicle type?

Calculation

Total number of passenger boardings on a route per day. Data should be collected and analyzed for a typical day within the desired time period.

Low		**Moderate**		**High**
LOW	MODERATE LOW	MEDIUM	MODERATE HIGH	HIGH
<100 passenger boardings / day	100-500 passenger boardings / day	500-1000 passenger boardings / day	1000-5000 passenger boardings / day	5000 passenger boardings / day
— Answer low level of demand, all day — Service is maintained to ensure coverage		Several combinations could create a moderate level of ridership: Demand is high during peak hour and low during off peak; demand is moderate all day; etc.		— Answer high demand — Service is successful all day
— On-Demand Routes — Community Routes		— Major Trip Attraction Routes — Local Routes		— Rapid Routes — Express Routes — Frequent Routes
Service level should reflect the level of ridership				

3.3.2 Vehicle Load

Definition / Purpose

Vehicle load measures the number of passengers inside a transit vehicle at the same time. It is related to the vehicle capacity and gives an indication of the level of comfort for passengers (e.g. can all passengers be seated or must passengers stand) and the utilization of the transit vehicle (e.g. are vehicles empty or full). The main factors affecting vehicle load are:

- Travel demands
- Type of vehicle and its capacity
- Service frequency
- Vehicle bunching

Why is Vehicle Load important?

- **Provide level of vehicle utilization:** the more passengers will be inside the same vehicle, the less expensive this vehicle will be per passenger and, the less costly it is for the transit agency to provide this service.
- **Indicate level of comfort:** if vehicles are too full too often, they are uncomfortable for passengers; some of whom will need to stand in cramped proximity or will need to wait for the next bus.
- **Indicate if the level of service is correct:** if transit vehicles are too heavily loaded, it might indicate that level of service is insufficient; if too empty, it could indicate that level of service is set too high. Further analysis may be required to understand the reason behind the level of vehicle utilization.

Calculation

Total number of accumulated riders (boardings minus alightings) at the peak point along a particular length of trip divided by the capacity (seated and standees) of the vehicle. The calculation could be done for the entire route, or for a segment of a route if a micro-analysis of the route is required.

Low	**Moderate**	**High**	**Very High**
<10 passengers / bus Shuttles are usually the most appropriated type of vehicles	10-30 passengers / bus Standard buses are usually the most appropriated type of vehicles	30-50 passengers / bus Standard buses are usually the most appropriated type of vehicles	>60 passengers / bus Articulated buses or Double Deckers are usually the most appropriated type of vehicles
— Type of vehicle adjusted to demand — Low level of vehicle capacity utilization if standard buses are used — High level of comfort for passengers	— Balance between good utilization of vehicle capacity and level of comfort	— Good vehicle capacity utilization — Could feel uncomfortable to passengers	— Type of vehicle adjusted to demand — Good vehicle capacity utilization — Could feel uncomfortable to passengers
— On-Demand Routes — Community Routes	— Local Routes — Major Trip Attraction (MTA) Routes	— Express Routes — MTA Routes — Frequent Routes	— Rapid Routes — Express Routes — Frequent Routes

3.3.3 Boardings per Revenue Hours

Definition / Purpose

Boardings per revenue hour measures the volume of passengers compared to the number of revenue or in-service hours required to provide the service. This metric provides information about how well a transit vehicle is utilized for each hour of service provided to operate a route. The main factors affecting boarding per revenue hours are:

- Transit demand
- Service area size
- Productivity

Why Boarding per Revenue Hours is important?

- **Evaluate productivity:** the more passengers transported during an hour, the less expensive it is to transport people for each hour in-service, the more efficient the service.
- **Evaluation effectiveness:** the more passengers travel within the in-service hour, the more successful that service is.

Calculation

Average number of passenger boardings divided by the in-service hours, or revenue hours.

Low	**Moderate**	**High**
<15 boardings per revenue hour	15-30 boardings per revenue hour	>30 boardings per revenue hour
Measure low level of productivity	Measure moderate level of productivity	Measure high level of productivity
— On-Demand Routes — Community Routes	— Local Routes — Major Trip Attraction Routes	— Rapid Routes — Express Routes — Frequent Routes

3.3.4 Reliability

Definition / Purpose

Reliability measures the consistency of a service relative to its posted time table or expected frequency. This usually measures adhereance to the schedule on less frequent routes, and evenly spaced service on more frequent ones. A service is normally considered reliable if transit vehicles do not leave later than a five-minute time frame of the scheduled time at a specific time point. If customers and operators are confident that transit vehicles will be at the specific location within a specific time, the service is reliable. Reliability is a good metric to estimate how trusted a service can be. It should be noted that:

- No buses should leave earlier than their scheduled time at timing point as this will cause customers to miss their scheduled bus
- Extreme events happen when all trips, all mode considered, are delayed for a short period of time (e.g. winter storm, major incidents). Those events should not be accounted for when evaluating a route reliability. Extreme events do not include major traffic congestion that affect the road network on a regular basis.

The main factors affecting Reliability are:

- Traffic congestion or incidents
- Roadway construction and detour planning
- Priority measures
- Stop spacing and passenger demand variation during the day

Why Reliability is important?

- **Customer level of confidence in the service provided:** if customers are confident that a transit vehicle will be at their stop and arrive at their destination on time, they will trust the service. If there is little trust, their level of confidence will be low.
- **Consistency in operating cost:** it is easier to forecast operating costs when the service is reliable and travel times are reliably consistent.
- **Ease transfer coordination:** if service is reliable, it is easier to guarantee transfer opportunities at posted transfer points.

Calculation

Percentage of trips that leave time points no later than a five-minute time frame of scheduled time at specific time points.

Low	**Moderate**	**High**
Less than 70% of trips are on-time	70 to 90% of trips are on-time	More than 90% of trips are on-time
— Service is not reliable and will attract only customers that are transit dependent	— Service is generally reliable but the level of confidence in the service is moderate. — Bad experiences could make customers switch to another mode	— Service is reliable and attractive for all. On a few occasions only will the service be late. — Transit could be a realistic travel mode choice
		— On-Demand Routes — Community Routes — Local Routes — Express Routes — Major Trip Attraction Routes — Rapid Routes — Frequent Routes

Time Point

Time points are transit stops or stations where the scheduled time is explicitly planned. It is not possible to plan the exact time of arrival and departure at each transit stop location; too many variables can impact the travel time: level of traffic, construction detours, traffic signals, number of boardings / alightings, etc. Time points are used to calibrate each route: by regularly making sure the transit vehicle is on-time at time points, the overall route will be on-time and reliable.

3.3.5 Financial Metrics

Definition / Purpose

For transit operations to be viable, transit authorities must obtain funding equal or greater to the cost of providing the service. This can be achieved through farebox revenue, operating subsidies, capital grants, advertising, etc. Often, sustainable funding is achieved through a combination of two or more of the sources above. Most agencies rely at least partially on government subsidy. Generally, subsidy decreases with population increase. The financial metrics help transit authorities to establish the performance of each route and ensure the success of their network is enough to be financial sustainable. Financial metric could be used to flag route that might not be successful. However, the reason below the implementation of a route need to be taken into account, as some routes could be implemented for equity reason more than for financial reason.

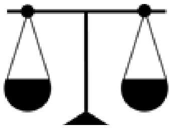
Why Financial Metrics are important?

— Evaluates self-sufficiency: By measuring financials of a transit agency, it can be determined how self-sufficient the service is, and how much reliance is put on government subsidy to provide the service.

— Flag routes that might be unsuccessful: If the financial metric of a route does not rate high, a review of the route might be required to understand the reason for this lack of success. Equity reason, or a poor level of accessibility, could explain retaining a route even if the financial metric is not high. If no other reasons could explain the maintain of the route, reducing the level of service, or even cancelling the route, could be seen as an option.

Calculation

The financial metric is established by calculating the ratio of the revenue collected by the total costs for operating a system, otherwise named Recovery ratio ("R/C"). The R/C is most often shown as a percentage. A R/C ratio of 0% means that revenue covers no costs and a government subsidy is required to deliver any service, while a R/C ratio of 100% means that revenue covers all costs to operate a system and no subsidy is required to operate.

Low	**Moderate**	**High**
		
< 20% (Low cost recovery ratio)	20-60% (partial cost recovery ratio)	> 60% (High cost recovery ratio)
— Poor level of success — Low revenue through fare collection and increased dependence on subsidy. This may be supportive of low income groups, but level of service may be low.	— Reasonable level of success — Most routes fall within this category and collect a portion of their revenue from user fees and a portion from government subsidies.	— Good level of success — Revenue is able to cover most of the operating cost for providing transit service and there is low reliance on government subsidy.
— On-Demand Routes — Community Routes	— Local Routes — Major Trip Attraction Routes — Express Routes	— Rapid Routes — Frequent Routes

3.4 Comfort & Safety Metrics

Comfort metrics are different from other metrics as they do not differentiate between different types of services. They provide a broad baseline of factors that makes the transit service more attractive by increasing customer comfort. The level of comfort provided by a transit agency could make someone decide to take transit or, on the contrary, decide to use another mode.

Although comfort metrics are not easily calculated, a standardized across the region for vehicle type, vehicle cleanliness, and use of technology contribute to a more positive user experience and overall comfort.

3.4.1 Type of vehicle

There are several types of vehicles available to provide transit service. Choosing the right one for the level of service provided and the anticipated ridership will impact capital cost and user comfort.

Type of Vehicle	Average Seated Capacity	Average Practical Capacity	Length
LRT	232[1]	160	80 ft
Standard bus	30-40	50-60	40 ft
Articulated bus	45-60	80-90	60 ft
Mini bus	15-30	25-45	30 ft
Coach bus	40-60	40-60	40 ft
Double Decker	70-80	80-90	40 ft

---

[1] Maximum capacity is based on crush loading of AW4, driver + seated passengers + 8 people / sq.m. standees for SD160 fleet

How is comfort related to the type of vehicle?

When a vehicle is right-sized for a service or route, customers can comfortably and reliably use the service. For example, a vehicle with too little capacity experiences overcrowding and could degrade the reliability of the service.

The type of transit vehicle addresses the needs of a given route in a fiscally-responsible manner, while ensuring the user has a comfortable and positive transit experience.

The minimal required level of comfort will depend on the type of trips:

- Long trips running mainly along highways require a high level of comfort and all passengers should have a seat.
- Short, peak periods, trips could be more crowded as passengers will not stay for a long period of time in the transit vehicle.
- Promoting the use of transit time to start the working day or to engage in other activities require enough space to make those paralleled activities comfortable to do.

While the type of vehicle may change between routes, some characteristics such as accessibility features are often standardized across a fleet to align with an agency's mandate.

3.4.2 Cleanliness

The cleanliness of a vehicle is defined by the internal and external condition of the vehicle. Cleanliness is degraded with the presence of litter or spills, forgotten baggage, and poor sanitation of the seats, windows, and floor. The winter season is a major challenge when trying to keep vehicles clean. Despite the minimal effort required to maintain a desirable level of cleanliness, it is highly influential on the overall user experience and the perceived success of a service.

Why is cleanliness important?

Cleanliness impacts the attractiveness of a service and impacts the likelihood of a subsequent transit trip. If a transit service is known for poor maintenance of vehicles and undesirable onboard conditions (e.g. garbage, stains, spills, etc.), a user will likely feel unsafe and uncomfortable. Furthermore, the health concerns associated with this metric are significant as the transmission of germs and sickness would be perceived to be higher by the user if the cleanliness of a vehicle is sub-standard.

3.4.3 Supplemental Rider Amenities

Additional rider amenities provide part of the transit experience that is difficult to quantify but contributes to the overall provision of customer satisfaction, comfort, and loyalty. These could include improvements to the transit waiting experience (i.e. real-time arrival and departure information) or use of relatively inexpensive technology (i.e. subsidized Wi-Fi) to enhance the transit experience.

Technology integrated into transit service delivery enables a more seamless customer experience from start to finish. Reliable, timely, and relevant traveller information is important to inform trip-making decisions and expectations of how a trip is completed. Unforeseen delays or route detours trigger traveller confusion and discomfort. Transit traveller information includes real-time arrival information stops and terminals, track-my-bus capabilities for web-based or mobile app interfaces, on-board automated stop announcements, and pertinent information regarding the accessibility of a vehicle, station, or transfer to enable a family-of-services approach for accessible trip planning. Transit traveller information must be enabled by fleet-wide adoption of smart buses which would include on-board and central software (e.g. Computer Aided Dispatch (CAD), Automatic Vehicle Location (AVL), Global Positioning System (GPS), etc.) and stop enhancements (e.g. dynamic message boards (DMBs)) across a network.

Why is technology important?

Technology applications in transit operations strive to enhance the efficiency, safety, quality, and intelligence of the service for their customers. As a transit system expands and interactions with traffic, construction detours and weather become more complex, a region-wide traveller information standard will work to provide transit customers with reliable, timely, and relevant information uniformly across the regional network that will enable more seamless trips and route / mode transfers. Smartphone use is widespread and allows for the communication of transit traveller information to be catered to specific user needs and travel interests through a mobile phone application-based trip planner or mobile browser-supported web pages. Across a regional network, necessary integration with mapping platforms like Google Maps or local trip planners should be prioritized and maintained to offer customers a convenient method for access to reliable and correct transit information. Technology applications also offer vital services that enhance accessibility, including interactive voice recognition (IVR) or possible integration with assistive devices (e.g. hearing aids), and meet accessibility and barrier-free environment requirements.

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CHAPTER

04

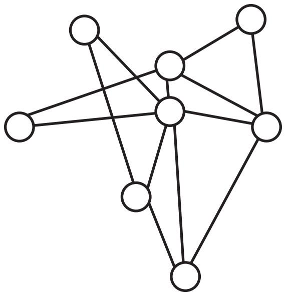
TRANSIT

Service Network

04 TRANSIT SERVICE NETWORK

4.1 Transit Service Models

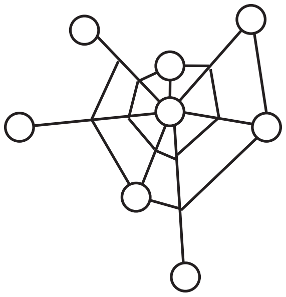
The basic structure of the network is an important consideration for the development of a regional transit service. There are three basic transit network typologies to consider:



Point to point

The most basic level of network is a point-to-point service. With routes that follow demonstrated community demands, this type of service connects directly between major centres. This service is helpful to serve specific community needs, such as trips to the Downtown or University. However, as a network it has limited ability to generate positive network effects. For a transit service in a satellite community, it is challenging to provide more than two or three direct connections to destinations within the region, and therefore, it is difficult to provide service across a broad area.

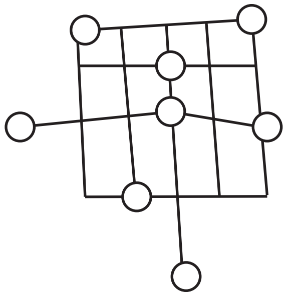
Application: Regional Express service (Chapter 5.1.2), Major Trip Attractions (Chapters 5.1.3), Special Events (Chapter 5.2.3)



Radial (Hub and Spoke)

Radial network, also known as Hub and Spoke, is a transit network that provides economies of scale and generates network effects by focusing travel patterns around a central hub. Circulator routes and transfers to main lines provide good network connectivity across the overall network. By combining multiple services along a corridor, there is a net increase in usefulness of the transit service for a comparable overall investment. The service is oriented around a centre from which radial connections follow major demand lines. Radial patterns are best served by a high capacity trunk line service, such as an LRT.

Application: Rapid Transit (Chapter 5.1.1), Regional Express (Chapters 5.1.2)



Grid

The highest level of network connectivity for a transit network is the grid type. By providing a range of connections and routing options there is opportunity for multiple trips across all directions. The higher level of investment in a grid transit network allows for freedom of motion, and can also provide a redundant and flexible system. This network structure is best paired with a high frequency service that allows multiple transfer locations and enables truly spontaneous travel. The main challenge of this type of network is that it is expensive to provide for lower density areas, and requires supportive roadway networks that are not often present in outer communities.

Application: Frequent Transit Network (Chapter 5.3.1)

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4.2 Relation Between Transit Service Types

Three levels of service are envisioned for the Greater Edmonton area:

- Regional Services
- Local Services
- Customized Services

Regional services connect major urban hubs. They provide service between municipalities, offering a service at the level of the region. The following service types are included in the regional services:

				Level of Service	Capital Investment	Ridership
REGIONAL	Long travel distance & Fast travel speed	Rapid Transit		High	High	High
		Regional Express	Peak	High	Moderate	Moderate-High
			All Day	Moderate-High	Moderate	Low-Moderate
		Major Trip Attractions	Employment	High	Low	Moderate
			Leisure	Moderate-High	Low	Low-Moderate

Local services stay within a municipality's boundaries. The following service types are included in the local services:

			Level of Service	Capital Investment	Ridership
LOCAL	Low to Moderate travel distance & travel speed	Frequent Network/LRT	High	Moderate	High
		Local	Moderate	Low-Moderate	Moderate
		Community	Low	Low	Low

Customized services are customized to the specific demand. The following service types are included in the Customized Service type. These services are often at the boundary between Local and Regional service.

			Level of Service	Capital Investment	Ridership
LOCAL & REGIONAL	Travel distance and travel speed will vary	On Demand	As required	Low	Low
		Specialized	As required	Low	Low

To be effective these services need to be planned as an integrated network. They need to be linked together to ensure efficiency as shown in the figure below.

- Regional services connect major hubs, travelling as much as possible in a straight lane to be able to cover long distances within a reasonable period of time.
- Local services connect residents to key generators within their community. While overall service efficiency is necessary, offering a sufficient level of coverage is still required. Local services operate as feeders for the regional services.
- To connect residents to their regional destinations, local services and regional services need to be connected physically and temporally to allow customers to transfer from one service to the other and provide regional travel options.

At the regional level, several service types could be implemented depending on the level of travel demand and transit maturity. All areas of the Greater Edmonton Region have specific needs in terms of service level and type. Over time, the level of transit service required will grow as the region and its travel demand grow. Not all areas will start at with On-Demand Service and not all areas will require the level of investment needed for Rapid Service; it all depends on the demand for a specific level of service.

- On-demand service could be the first step to implement a transit service for developing low-density areas. Once successful, it could be upgraded into a fixed-route service.
- Peak-only service offers a first level of fixed route service, providing a minimal level of service that can be supplemented by on-demand service during off-peaks. Once successful, it could be upgraded into an all-day service.
- Regional Express is an all-day service that could progress from a moderate level of frequency to a high level of frequency as demand develops, and adjusted to answer specific on- and off-peak period demand.
- Rapid Transit is the final step, when demand and adjacent land use density is high, origin-destination patterns and key generators warrant this level of service.

Figure 5: Relation between Local and Regional Services

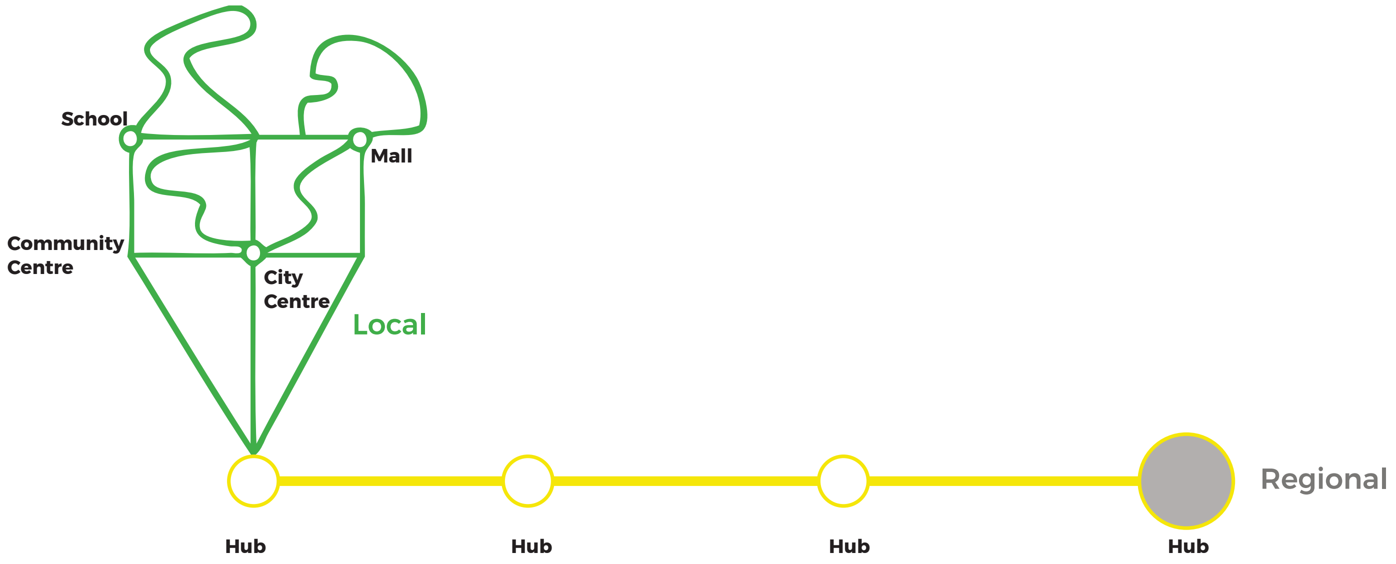
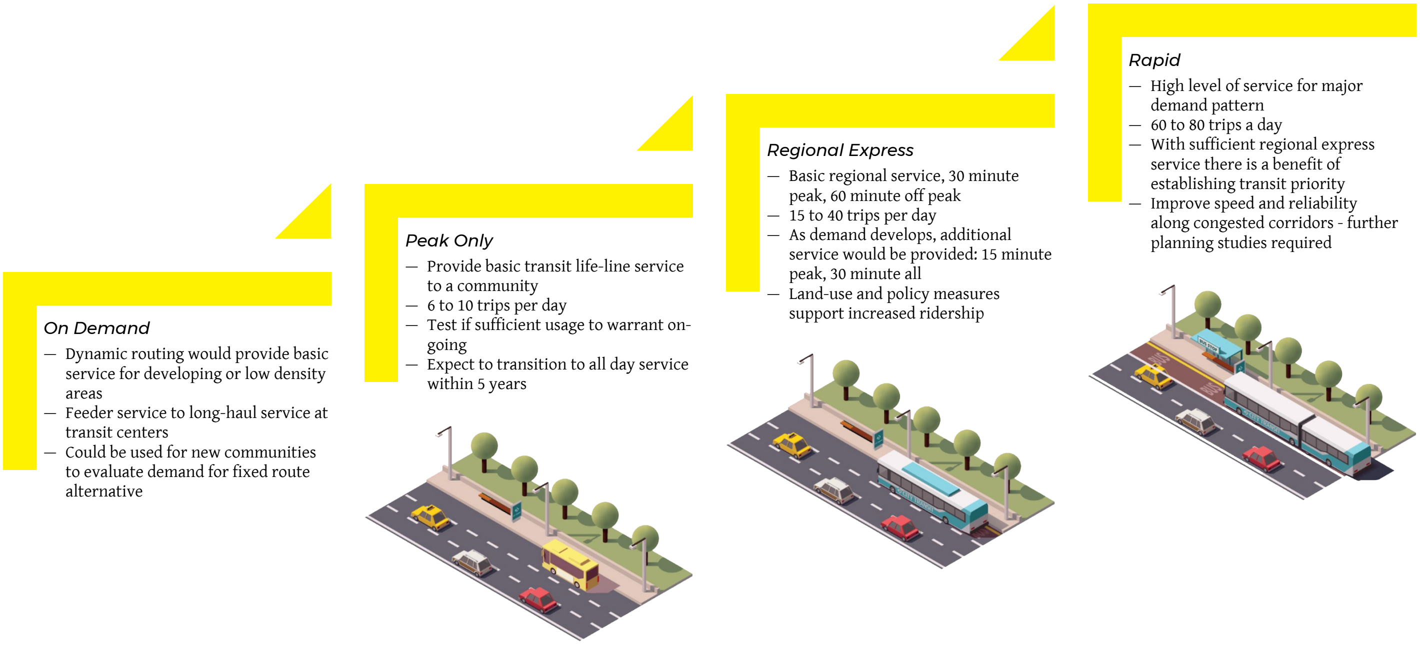


Figure 6: From On-Demand to Rapid Service



On Demand

- Dynamic routing would provide basic service for developing or low density areas
- Feeder service to long-haul service at transit centers
- Could be used for new communities to evaluate demand for fixed route alternative

Peak Only

- Provide basic transit life-line service to a community
- 6 to 10 trips per day
- Test if sufficient usage to warrant on-going
- Expect to transition to all day service within 5 years

Regional Express

- Basic regional service, 30 minute peak, 60 minute off peak
- 15 to 40 trips per day
- As demand develops, additional service would be provided: 15 minute peak, 30 minute all
- Land-use and policy measures support increased ridership

Rapid

- High level of service for major demand pattern
- 60 to 80 trips a day
- With sufficient regional express service there is a benefit of establishing transit priority
- Improve speed and reliability along congested corridors - further planning studies required

CHAPTER

05

TRANSIT
Service Types

5.1 Regional Services

5.1.1 Rapid Transit

Rapid Transit Service is both a rapid and frequent service. It is delivered by high capacity vehicles, either buses or trains, and has additional capital investments to support high priority transit such as exclusive or semi-exclusive rights-of-way. Rapid Transit Service operates where high density and a high level of travel demand exist, and are generally fed by other transit routes. Rapid Transit Service includes Heavy Commuter Rail, LRT, or Bus Rapid Transit (BRT) services. Relative to traditional bus and transit services, BRT is a higher order of investment in service and infrastructure to improve capacity, reliability and speed.

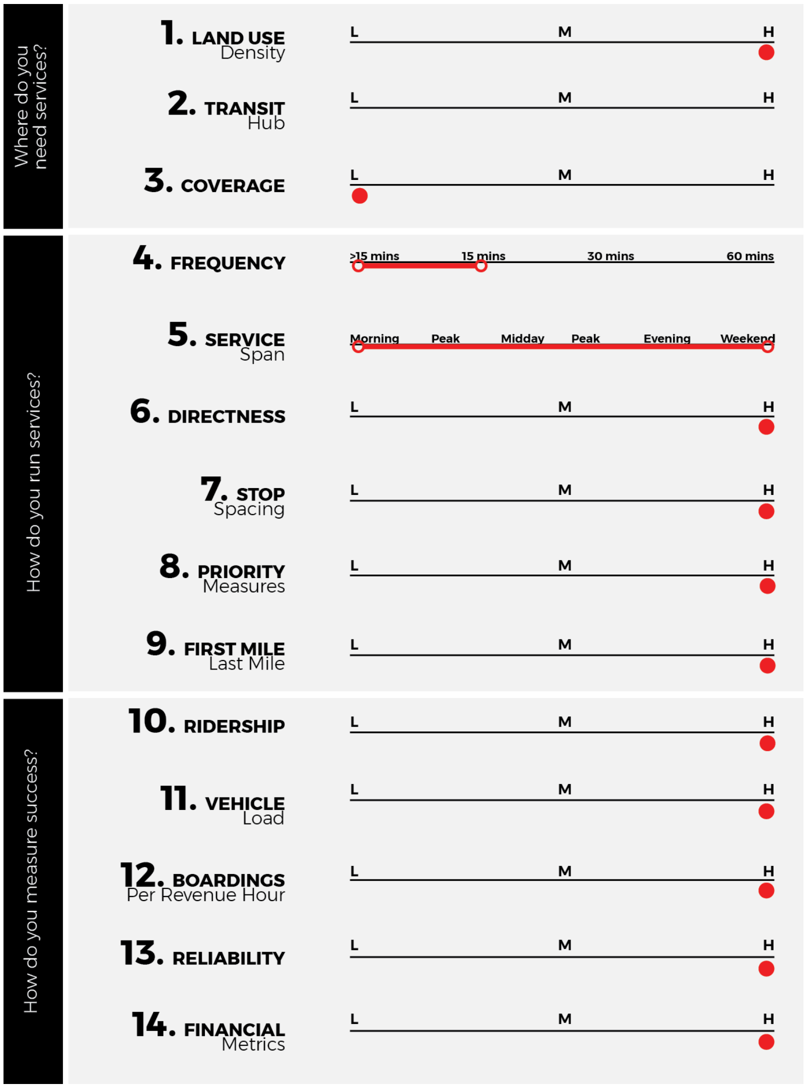
Role in Transit System

Rapid Transit Service is the spine of the transit network. It provides transit service between high density hubs. Should the rapid transit system extend beyond the boundaries of the city of Edmonton into the region, there needs to be a direct connection to central Edmonton with limited stops to ensure a travel speed that is competitive with the automobile. In addition to higher operating speeds, rapid services have a long frequency span allowing trips throughout the day.

Special considerations

Land Use Density: Rapid Transit Service requires a high level of commitment. The related infrastructure needs significant capital investments, and once built, the alignment is fixed for the long term. To be successful and cost efficient, this type of service needs to operate where travel demand is high, and where high densities and/or transit hub near transit stations could generate enough ridership to support the investment. Current and future land use development plans need to provide transit-supportive density and a mix of uses.

First Kilometer / Last Kilometer: Rapid Transit Service needs to be supported and fed by all other type of services. Transit stations or transit stops that serve a Rapid Transit route are often best supported through a transit hub where several transit services and other modes (pedestrians, cyclists, shared-vehicle, ride-hailing, etc.) connect. Plans for new developments in the region should consider how to effectively plan for connections to the Rapid Transit system.



5.1.2 Regional Express

Definition / Purpose

Regional Express Service will provide fast and convenient connections for people and jobs across the region. This service will connect major transit centres and will service both residential areas and areas of high job density, with fast, efficient, and direct service. A Hub and Spoke network model often suits this type of transit service by allowing a variety of trips in and out of central Edmonton as well as circulatory movement around the region. Two sub-service types are included in the Regional Express Service:

— The Peak Service

— The All-Day Service

Peak Service

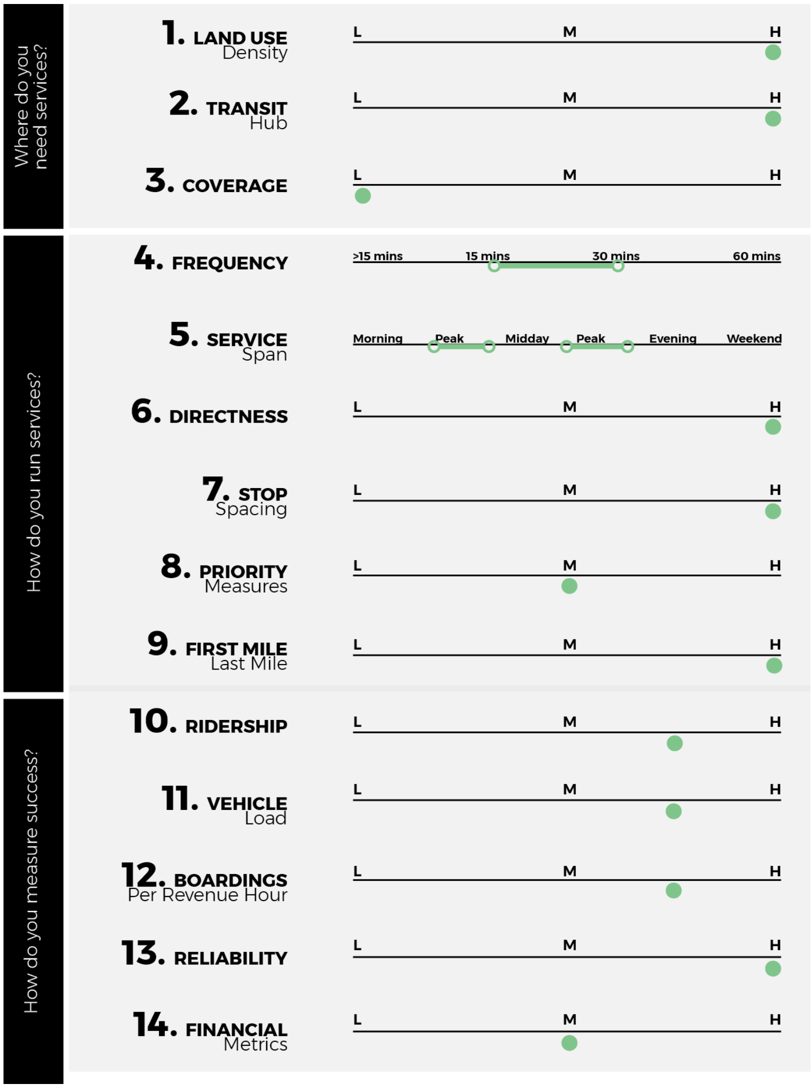
The Peak service could be a first step in providing a regional service, to provide a minimal level of service for residents who start and end they journey during peak hours. The minimum peak hour service frequency is 30 minutes with additional trips added depending on the service demand, and the service span will be of 2 to 4 hours during each peak period (AM and PM). Higher capacity vehicles may be required as a cost-effective alternative to increase service frequency and coordinated with the schedules of local services.

Role in Transit System

Peak services provide a high level of commuter ridership that results in a relatively lower level of subsidy per rider. However, a peak-only service has limitations, including the psychological barrier of not being able to access the community or return home outside traditional commuting peak times. Peak-only service can be a predecessor to all-day regional service, particularly for communities with new transit service. With the ultimate expansion to all-day service, the regional express allows for true regional mobility and supports effective mode shift in the long term.

Special considerations

Transit Centres: Transit Centres are an important element of the Regional Express transit service. As the regional service will focus on a high-speed service at a frequency of 30 or 60 minutes, it is critical to ensure there is a suitable environment for passenger waiting,



information or network wayfinding, and efficient flow of customers to other rapid and regional services. At terminal stations, communities may choose to allocate space for park- and-ride as well as other key local transport options, such as connections to local transit, bicycle parking, and pick-up / drop-off areas for private and shared vehicles. Land use planning for effective leveraging of higher density land uses in the vicinity of transit centres will also be important to ensure a return on investment for regional transit services.

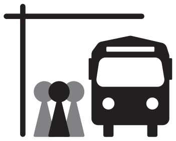
REall day

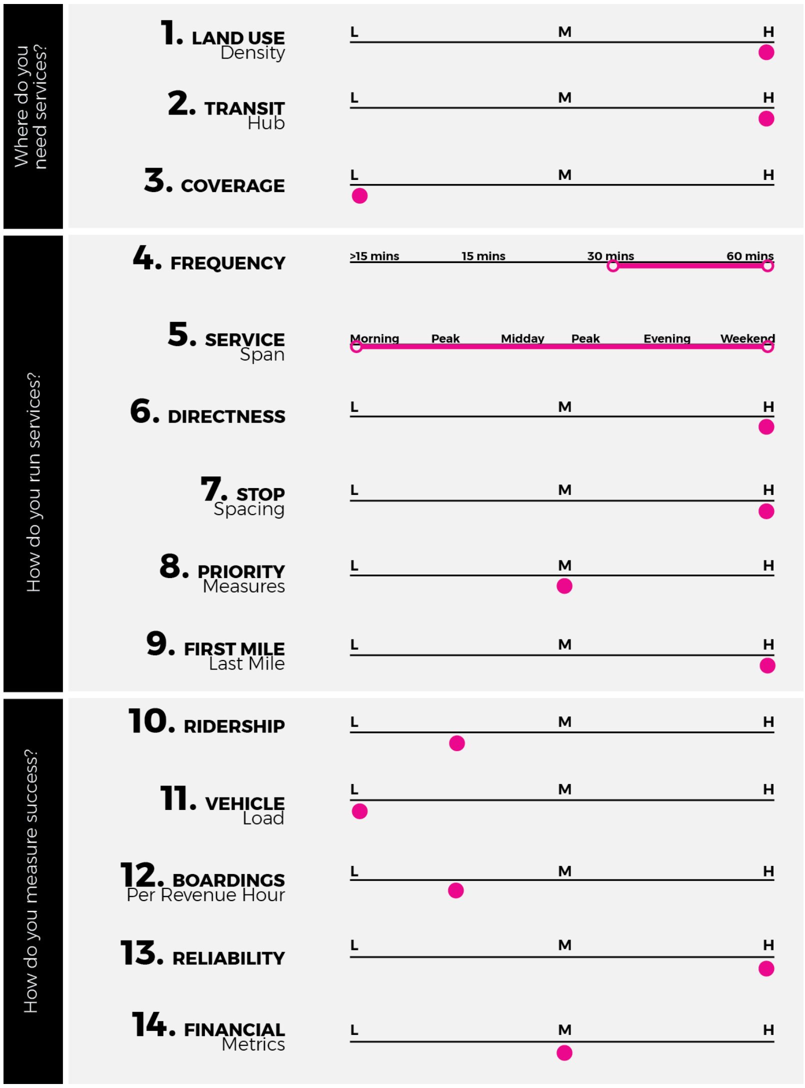
All Day Service

All-day services are implemented to provide at least a minimum of service all day and accommodate travel that are or could be done outside peak periods. All-day services will have a higher level of service during peak hours to accommodate higher levels of demand during those times while peak-only services will not operate outside of those higher demand transit periods. Off-peak service would be at a minimum of 60 minutes with additional service to be added as demand warrants.

Role in Transit System

All-day Regional Express Service is an enhanced level of transit service that connects key destinations, including transit hubs, across a large geographic area. By establishing a base level of service to be provided all day, transit can better serve non-peak trip generators including commercial centres, post-secondary institutions, and major hospitals. The express nature of the service throughout the day allows the focus to remain on hub-to-hub travel that efficiently crosses regional boundaries. By servicing the transit hubs with a higher operating speed, customers are more likely to wait or adjust their schedule to accommodate the lower frequency off peak service.





Special considerations

Transit Centres: Transit Centres are an important element of the Regional Express transit service. As the regional service will focus on a high-speed service at a frequency of 30 or 60 minutes, it is critical to ensure there is a suitable environment for passenger waiting, information on network to board and alight. Transit centres along the length of the route will allow important connections to other rapid and regional services. At terminal stations, communities may choose to allocate space for park-and-ride as well as other key local transport options, such as connections to local transit, bicycle parking, and pick-up / drop-off areas for private and shared vehicles.

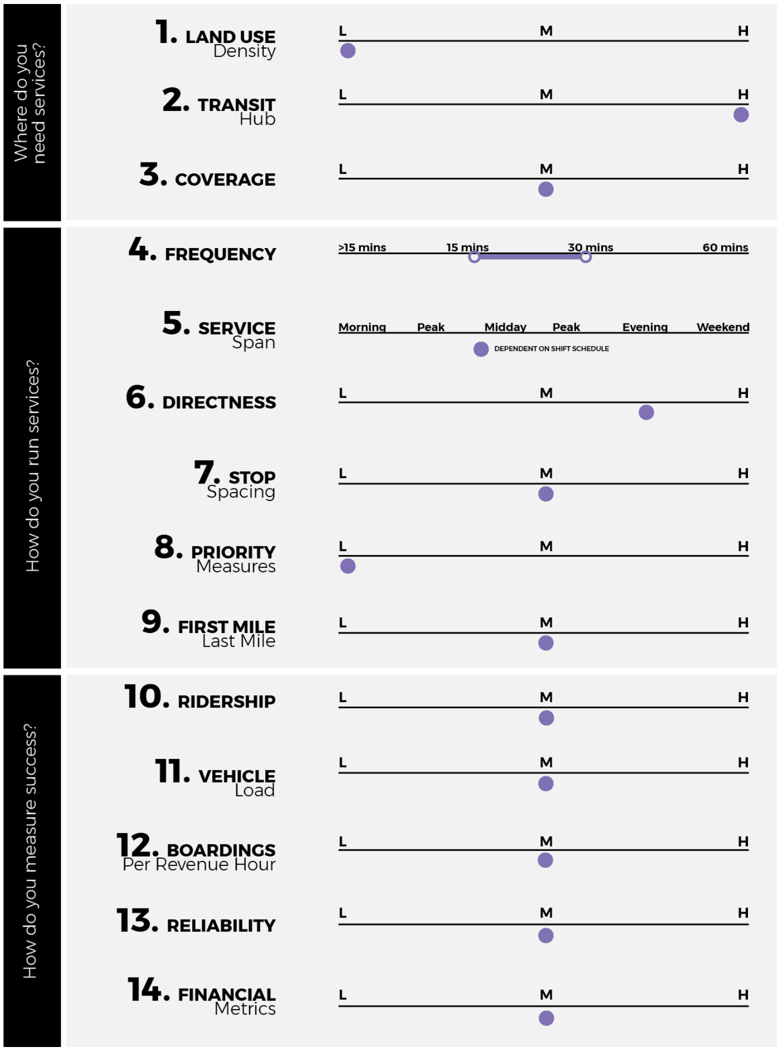
5.1.3 Major Trip Attractions

Major Trip Attractions Service provides a customized service to cover origin-destination that are not covered by the regional services either because their location is on the outskirts of main destinations or because the required schedule has its own special requirements . They imply a certain level of collaboration with a third party, either major facility operators, business associations, major employer and/or operators of recreational and leisure activity centres, to identify a customized schedule to accommodate the travel need of their own employees or customers. Two sub-service types are included in the Regional Express Service:

— Major Trip Attractions - Employment
— Major Trip Attractions - Leisure

Major Trip Attractions - Employment

A Regional Employer Service is a customized service that connects a transit service or hub with an employment destination. Through consultation with major facility operators or business associations, schedules are customized to employers' shift schedules to the greatest extent practicable. The schedule and routing will provide a front door coverage-type service, and an integrated transfer with more rapid services at a nearby transit service or hub. Vehicle type and configuration could vary based on the capacity needs of the employer, distance to travel from the nearest transit centre, and access to the business area. While arrangement could be made to accommodate temporary employment location, such as for a construction site, the major trip attractions – employment should focus on long-term partnerships.



Role in Transit System

Major employers attract travelers from across the region, but often the last leg of the transit journey is unserved or poorly-serviced by conventional transit routes. Transit customers to these locations typically have a two-stage trip; accessing a nearby transit hub and then transferring to a customized route to their specific location of employment. This service provides the critical link from a transit centre, which is serviced by rapid and regional express services to places of employment. As an integrated system, these services provide a cost-effective and competitive service for employers and the region.

Special considerations

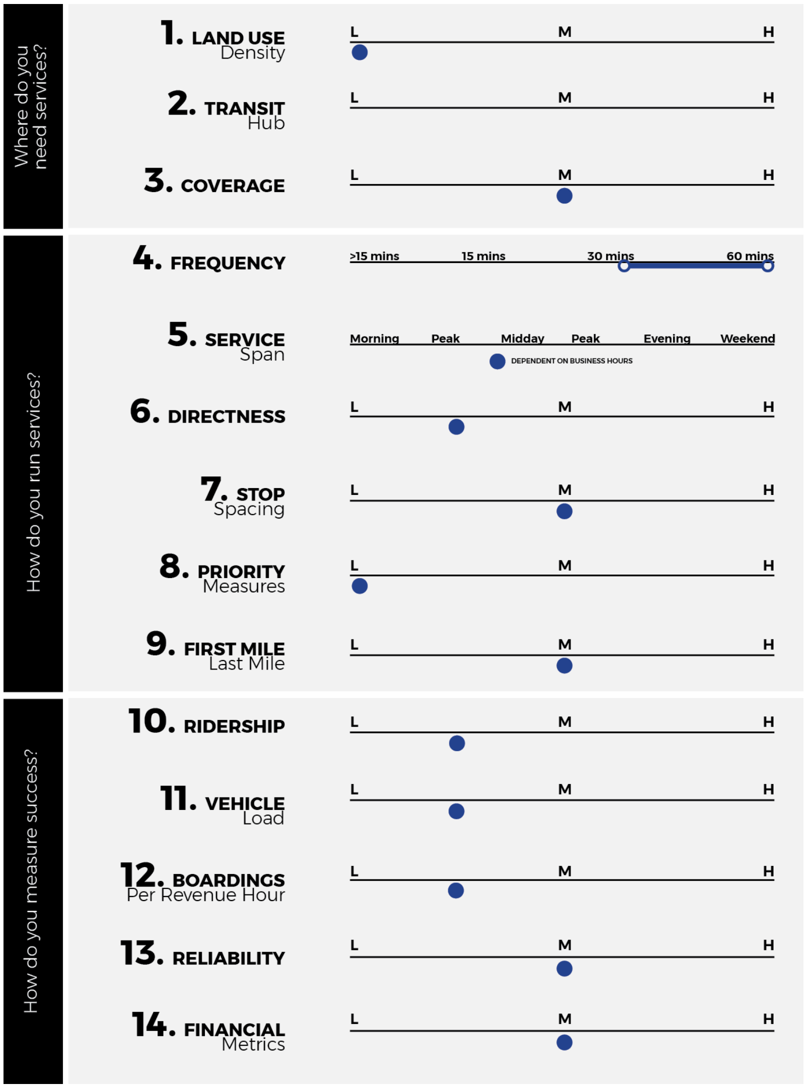
Service Partnerships: This type of service benefits the customers as well as their employers. By improving access to employment hubs across the region, employers are able to better attract and retain talent. This often requires some cost sharing with the businesses to realize this benefit. These cost sharing arrangements could take a number of mutually beneficial employer-provided direct services to a transit centre, employee pass programs, and stop and access infrastructure improvements. These types of programs should be well planned and implemented to ensure that businesses remain competitive and are attracted to locate within the region.

Major Trip Attractions - Leisure

A regional activity centre service is a location-specific service that connects major regional activity centres to a nearby transit service or hub. Regional activity centres would include major recreation centres, natural areas, or other locations with recreation, tourism, or leisure opportunities significant enough to attract riders from across the region. Schedules may be customized to the attraction's business hours or be seasonal to the nature of activities provided. These services would typically focus on off-peak service, including weekends. Services introduced to new activity centres would run on a pilot basis to ensure sufficient demand to provide a cost-effective service and would be supported by effective regional marketing efforts.

Role in Transit System

Regional activity centres provide recreation and leisure opportunities that attract travelers from across the region, but are often unserved by regular transit routes. Regional tourism is an important economic generator and visitors to the Edmonton area will seek recreational options that do not require a personal or rental vehicle to access. Customers for recreation and leisure trips currently have a two-stage journey; accessing a nearby transit hub and then transferring to a customized route. Given the off-peak schedule, this type of service can take advantage of times when there are additional fleet available to provide these service needs. While this journey is typically less urgent than the journey to work or school, a cost-effective service with a reasonable travel time will enable a greater proportion of the population to access important regional recreation and leisure sites.



5.2 Customized Services

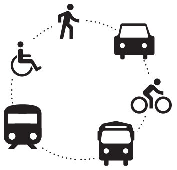
5.2.1 On-Demand

On-Demand services operate upon request and can have flexible routing to accommodate trips to low density locations where fixed route transit is not provided. Various vehicle sizes and configurations can be adapted to this type of service. Transit agencies have traditionally offered 'dial-a-ride' services where an operator on stand by provides the service when there are requests. With the maturation of mobile technologies for customers to request and track the arrival of transit vehicles, numerous variations of on-demand service exist and communities can customize their levels of investment to suit. These types of services are often provided in low density residential areas and support feeder services to transit centres and connections to regional services.

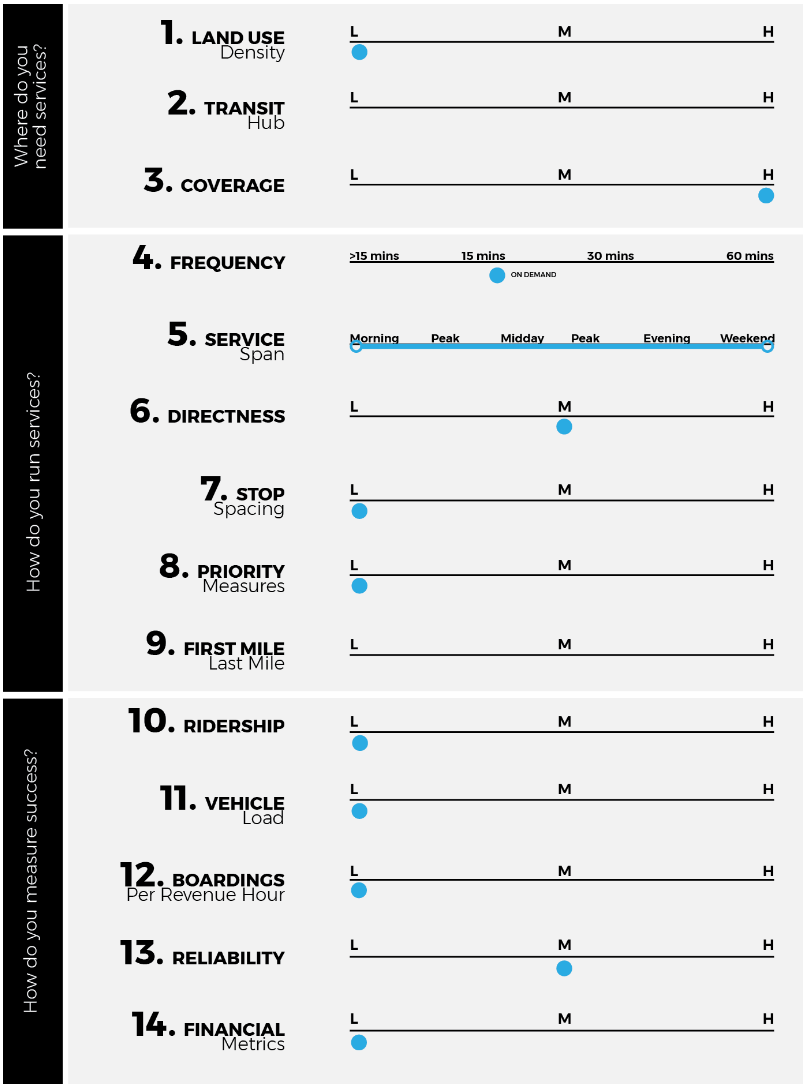
Role in Transit System

For communities that are reluctant to commit the investment required for fixed-route transit service, on-demand service provides a low cost entry point and a reasonable alternative to fixed route transit service. In addition, lower density areas that do not have enough sustained ridership to support a regularly scheduled fixed-route transit service can benefit from an on-demand service as a more cost-effective option. There are many variations of service models for on-demand transit. Based on local preferences, these may have fixed stop locations where trips are scheduled by customers or may be oriented as a catchment area around a transit hub. Mobile phone technology allows for dynamic routing and improves a system's effectiveness compared to older 'dial-a-bus' models. The vehicles and service themselves may also be provided by an established transit agency, local sub-contractors or other third-party providers.

Special considerations



Mobility as a Service (MaaS): Technology shifts, including mobile technology and the emergencue of automated vehicles, have resulted in the emergence of a new personal mobility eco-system. MaaS applications can aggregate the multiple options for a customer to travel on a particular journey, evaluate real time conditions, analyze fares and incentives, incorporate users' preferences, and facilitate payment. These tools incorporate a wide range of ride sharing, car sharing, bike sharing, and transit options. For the RTSC, integration of MaaS applications and the various on-demand and regional services may be critical for successful mobility across the region.

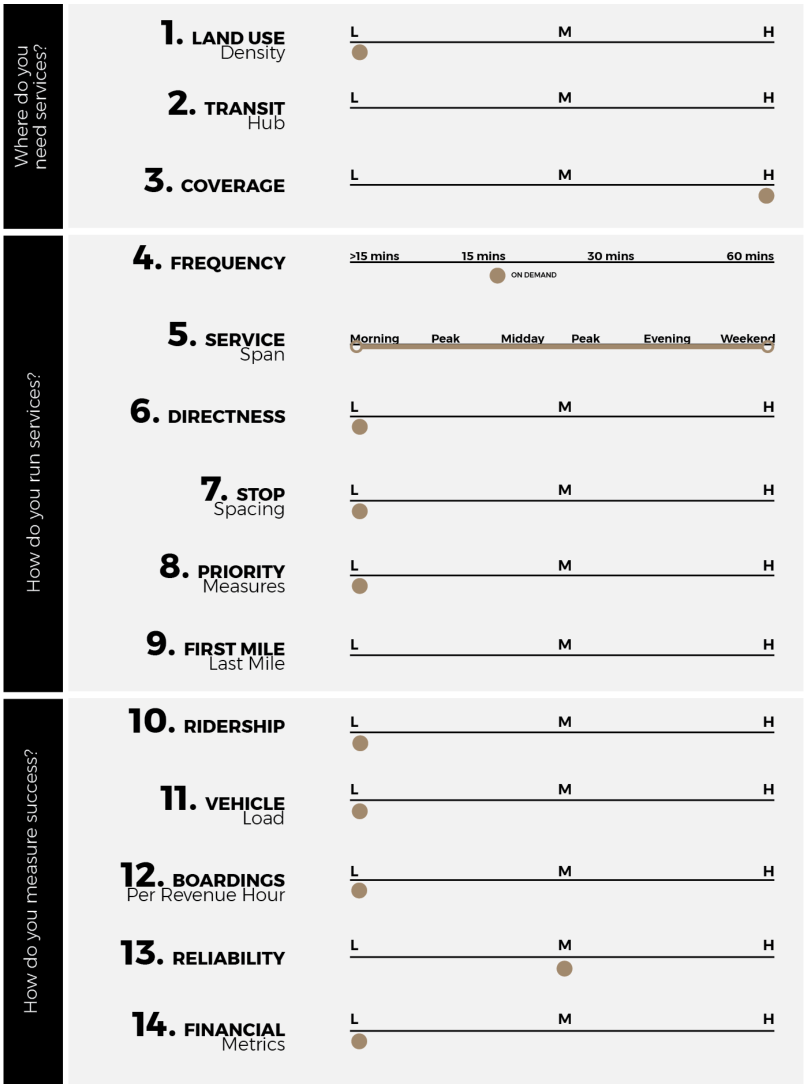


5.2.2 Specialized

Specialized transit services provide a door-to-door service for customers who are not otherwise able to access the transit service due to physical or cognitive challenges. Customers must be registered with the agency to establish eligibility prior to booking a trip in advance. Trips could usually be booked within a 2-hour window and customers must be able to wait for the service and receive assistance from the operator to board and alight the vehicle. Service is provided 24 hours a day, based on needs, using accessible vehicles. Similarly to the on-demand service, and with the maturation of mobile technologies for customers to request and track the arrival of transit vehicles, new ways of requesting a specialized service are being implemented in North America in order to improve the customer's experience and simplify the operation of these type of services. Specialized services operate at both the regional and the local scale.

Role in Transit System

Specialized transit support effective community building by connecting people and resources in a compassionate and dignified way. Individuals who are registered with specialized transit services rely on this service as a life-line to connect to health care, recreation and social trips which would not otherwise be possible. This type of transit service seeks to break the vicious cycle of isolation and neglect that can occur for individuals with severe physical or cognitive challenges that limits their ability to travel independently. Specialized services also provide a human rights accommodation for individuals who are not able to access the conventional transit system due to permanent or temporary barriers such as infrastructure repair or construction.



Special considerations

Integration with Conventional or On-demand Transit: Agencies across North America have pushed for fully accessible conventional transit systems to provide a reasonable option for individuals and reduce the demands on specialized services. Travel training programs for aging seniors are also used to reduce the cognitive barriers and fear of using conventional transit for individuals that may otherwise require specialized transit services. In areas with low population density there is very disparate travel demand for specialized transit services. Integration of conventional and on-demand services for customers of all ages and abilities will result in a more financially sustainable transit system and better community and transportation outcomes.

5.2.3 Special Events Route

In addition to regularly scheduled transit services, there are a number of special community events that may have transit services provided. This includes:

- Festivals
- Sporting Events
- Concerts
- Public Holidays

These events involve the gathering of a large population, possibly 20,000 to 100,000 or more, in a specific location for a period of time. These events are an important part of community identity and special transit service is an opportunity for the Regional Transit agency to attract customers who are trying the service to avoid more costly options that may be limited; the high cost and logistical hassle of parking, or time required in traffic to arrive at and leave the major event. These types of services are designed in close collaboration with the venue needs and specific event requirements.

Thresholds are usually identified to regulate the requirements for a special events route and ensure that the transit authority is not overloaded by a full amount of demands for this type of service. The expected level of ridership, the effort made by the organizer's association to encourage the use of transit or active mode, the impact of the events at the regional level, or even the vision, mission and values of the event could all be part of the evaluation to deliver or not a special events route. It should also be noted that these special events should, in any case, be prioritized to the regular transit service. Special events route could only be offered when resources are available.

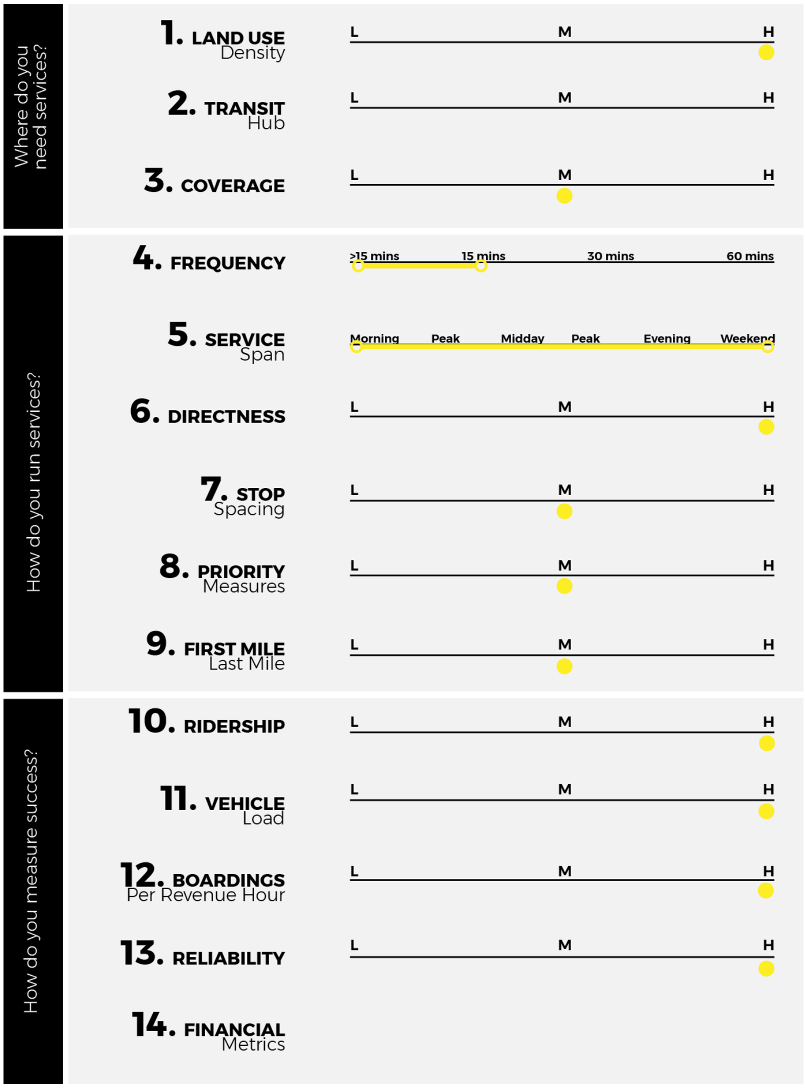
5.3 Local Services

5.3.1 Frequent Transit Network & LRT

Frequent Transit Networks offer a high level of service; 15 minutes or less during weekdays and weekends. This type of service will have multiple stops along an established transit corridor and is focused on shorter transit trips within areas of mixed, dense land uses.

Role in Transit System

Frequent transit provides a high level of service allowing customers to travel spontaneously without spending much effort to specifically plan their route. This is an important part of providing a mobility solution in dense urban areas where transit is the main mode of travel for a larger proportion of the population. Due to the high cost of this frequency and span of service, this type of service is normally only feasible within established urban areas.

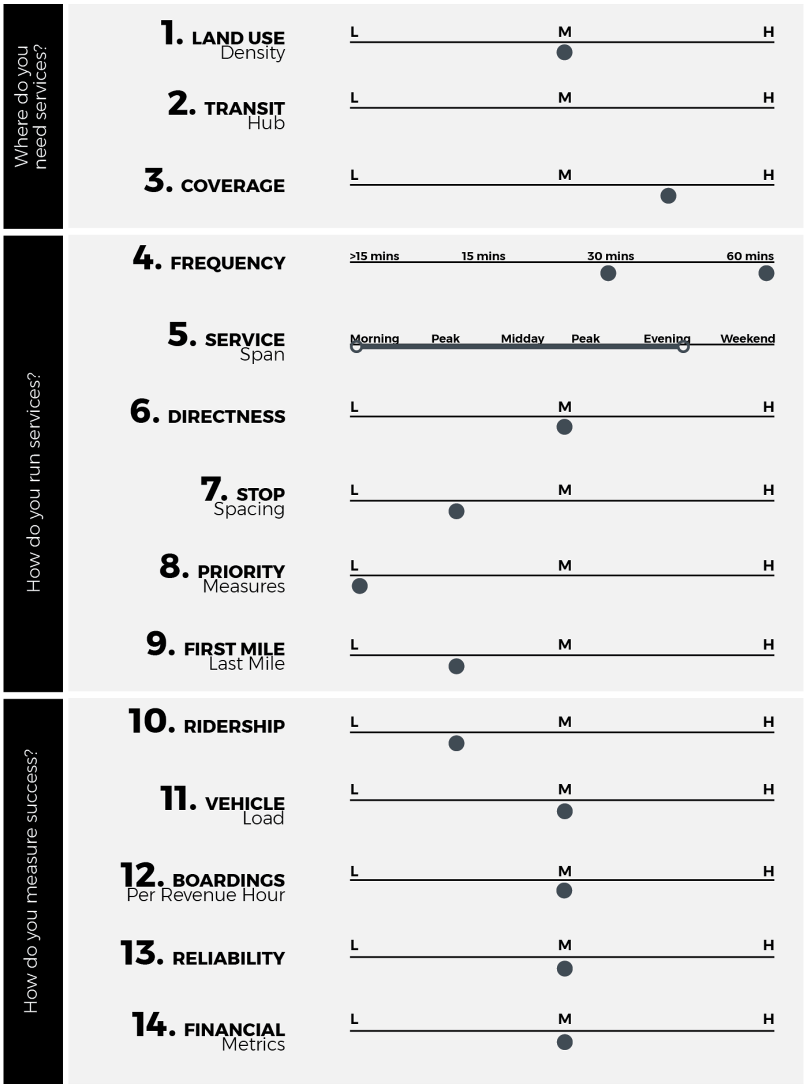


5.3.2 Local Route

Local transit is the basic public transit service provided by a municipality within its administrative boundaries. As a public service, local transit provides access to all residents of a particular area while not prioritizing speed. Local services are less direct in order to cover a wider geographic area and as a result have slower overall travel times than other transit service options. Different community needs, roadway networks, and levels of funding will result in a wide variety of local transit services include, frequencies, and service spans.

Integration with Regional Transit Services

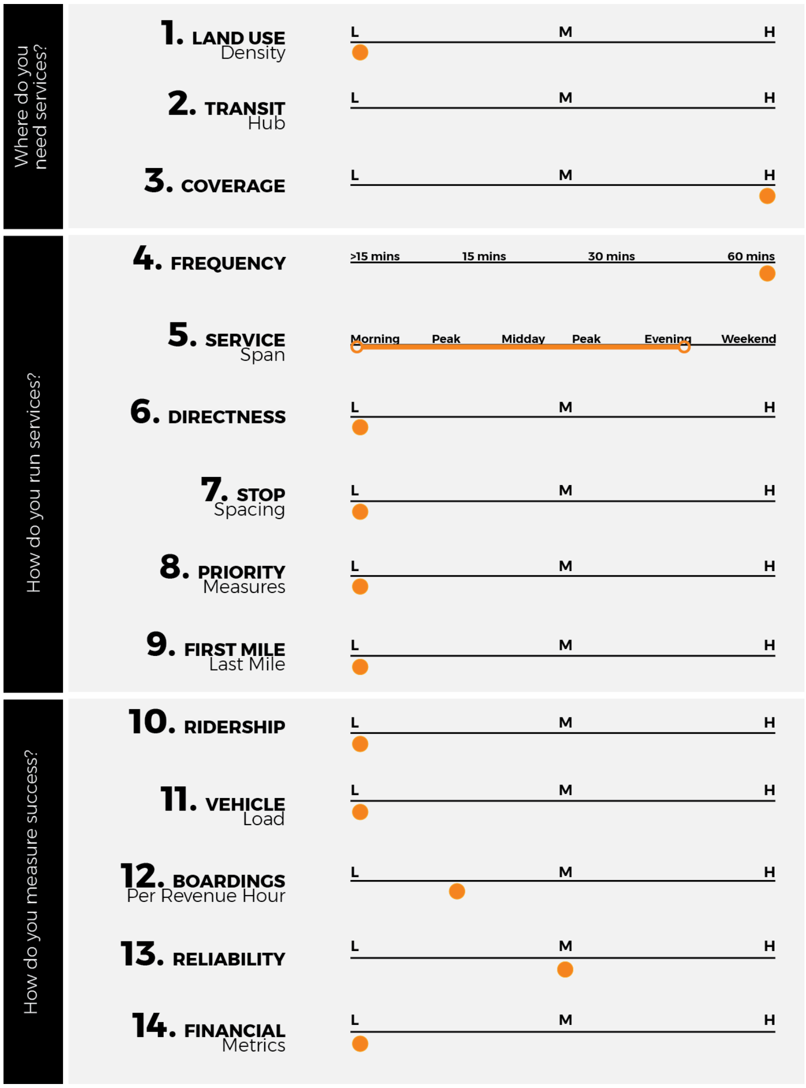
The integration of local and regional services is critical to ensuring the overall success of the transit system. The rapid and regional express services provide the long-distance travel between major activity centres and generate trip demand at local transit hubs. It is critical to provide suitable feeder services for the regional system for cost effective performance.



5.3.3 Community Route

Community routes are a further customized form of local transit that provide a high coverage service for small scale activity centres or sub-segments of the population, for example senior's residences, local activity centres or low density neighbourhoods. These routes are an important community service that ensures reasonable mobility options for the population as a whole, as well as a first kilometer / last kilometer option for residents that could have mobility challenges without being eligible to the specialized service. These services should be focused on a particular local travel demand and would be adapted to customer needs.

Community route could be fixed or could operate as an on-demand service.



CHAPTER

06

TRANSIT

Service Matrix

Figure 7: Transit Service Matrix

			A	B	C	D	E	F	G	H	I
		Transit Service Type	Frequency	Service Span	Directness	Land Use Density	Ridership (daily)	Vehicle Load	Boarding per Revenue Hours (of the route)	Recovery Ratio	Priority
Long Distance Trips	1	Rapid Transit	15 or less	All day + Evening / Weekend	High	High	High	High	High	High	High
	2	Regional Express Peak	15 - 30	Peak	High	High / Major Transit Hub	Moderate - High	Moderate - High	Moderate - High	Moderate	Moderate
			30 - 60	All day + Evening / Weekend			Low – Moderate	Low	Low - Moderate		
	3	Major Trip Attractions - Employment	15 - 30	Depend on shift schedule or business hours	Moderate – High	Low / Major Transit Hub	Moderate	Moderate	Moderate	Moderate	Low
			30 - 60		Low – Moderate		Low - Moderate	Low - Moderate	Low - Moderate		
Short Distance Trips	4	On-Demand	On-Demand	All day + Evening / Weekend	Moderate	Low / Major Transit Hub	Low	Low	Low	Low	Low
	5	Specialized	On-Demand	All day + Evening / Weekend	Low	Low	Low	Low	Low	Low	Low
	6	Special Events	On-Demand	On-Demand	Varies	Varies	Low-High	Low-High	Low-High	Varies	Low
	7	Frequent Transit Network	15 or less	All day + Evening / Weekend	High	High	High	High	High	High	Moderate
	8	Local*	30 / 60	All day	Moderate	Moderate	Low-Moderate	Moderate	Moderate	Moderate	Low
	9	Community Route*	60	All day	Low	Low	Low	Low	Low - Moderate	Low	Low

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CHAPTER

07

PARTNERSHIP

Services

07 PARTNERSHIP SERVICES

Public transit is a service provided in the Edmonton Metropolitan Region for the benefit of all residents. While the goal of the system is to provide a comprehensive mobility solution, there are certain types of trips and travel demands that are best provided by the private sector. For example, a private operator may provide service to their employees or customers to a remote industrial area which does not have an adequate service transit to meet their specific needs. The goal of a regional approach is to ensure a distribution of services that balances the needs of various stakeholders and provides a consistent level of service across the region. It is counterproductive for public transit to expressly compete with viable private services.

Though a partnership model, the regional transit service planning will look for opportunities to work with major employers and facility operators to continually develop a more integrated transit service where possible. Agreements would also be developed with private operators to ensure cost recovery for access to public facilities and identify and mitigate negative impacts to residents or public transit customers. Having a regional perspective over the whole transit service, both public and private, could ensure that all opportunities are used as well as ensure that a complete understanding of the transit service is available.

Some of benefits that could come from a partnership with the region’s private transit operators are:

- Better understand the transit needs for some of the key employers or key generators in areas that do not feel sufficiently covered by the public transit service.
- A private bus route alignment that complements public services. While a private service might mainly serve a specific employer, it could still accommodate trips not related to this specific employer if an agreement is made with the transit operator. Having the possibility to share operating cost could make a route viable from the transit operator perspective, while being less expensive than expected for the private operator.
- Avoid route duplication between the public and private operators. By ensuring better coordination, the public transit service could increase its service to accommodate key employers while the private transit service could take care of the first and last kilometers.

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CHAPTER

08

SECURITY

& Safety

08 SECURITY & SAFETY

Safety and security are foundational requirements for all transit services. If the service does not provide an environment where customers feel safe and secure, only transit-dependant customers will choose to use the service. If an individual is presented with a choice between options of varying perceived levels of safety, he or she will likely choose the option that is perceived to be the safest. While safety and security are major priorities for transit service operators, it is the perception of safety and security that influences the choice of an individual traveler.

There are different ways to improve the safety and security within a transit service.

- **See and be seen.** Designing infrastructure and facilities to offer a high level of transparency and sufficient lighting inside the transit vehicle or at transit stops will allow people to be aware of their surroundings and to be seen by others. This visibility will increase the perception of being secure and safe. If customers notice a circumstance that does not seem safe, increased visibility allows them to react sooner and call for help if needed. At the same time, a customer in this situation will have the comfort knowing that if something happens to them, someone will see it and will be able to react accordingly.
- **Use technology by implementing security cameras and emergency buttons.** Vandalizing vehicles and transit infrastructure, or harassing others are activities typically carried out in concealed areas not covered by security cameras. Installing cameras in strategic locations could reduce the risk of illegal activities. Installing emergency buttons increases the level of security and perception of safety as a quick response would be available, in the case of an emergency.
- **Staff a security team.** Having a security personnel travelling randomly within the network or on a schedule will increase the security of the entire system. With a dedicated security team, undesirable acts could be prevented or responded to quickly as the team could be easily and rapidly deployed in the case of an event.
- **Keep vehicles and infrastructure well maintained and clean.** Keeping all infrastructure and vehicles well maintained and clean will reduce the risk of vandalism and will increase customers' perceived safety.
- **Safety for Drivers.** Installing shields in the driver's area protects transit drivers from abuse or assault. Any driver-customer interactions should be prescribed by the driver in a manner that gives them the control to assess the safety and appropriateness of these interactions.

The transit service needs to ensure that customers, and also drivers, are safe from harassment and feel secure while using the service. While there is no guarantee, it should be sufficiently the norm to make transit services attractive in this regard.

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CHAPTER

09

FUTURE of Transit

09 FUTURE OF TRANSIT

The transportation sector has experienced significant changes in recent years, leading to the emergence of new mobility options, many of which are privately-owned and operated. Among the most notable are ride-hailing or vehicle-for-hire services by Private Transportation Providers (PTPs) or Transportation Network Companies (TNCs) such as Uber and TappCar. By enabling travellers to source a ride with the touch of a button on their smartphones, these services bring the convenience of private mobility to travellers without the need for private vehicle ownership or the ability to operate a vehicle.

While there are situations where these services can help to complement transit by filling in geographical and temporal gaps where transit service may be lacking, there are also situations where these services compete directly with transit services. Aside from taking away ridership and reducing revenues, this competition also compromises the ability for operators to maintain cost-effective services for population sectors that need public transit services most, and have been shown to exacerbate congestion in some cities by adding more vehicles onto the road.

There are likely to be other changes that have the potential to further disrupt the transportation sector, but also others that can be leveraged to enhance the ability for public transit to meet traveller needs. A significant focus in the transportation sector has been placed on technological advancements in the realm of automated, connected, electric, and shared systems (ACES) and their ability to revolutionize the transportation system.

Advancements to electric and shared systems already make a difference today, with growing shares of electric vehicles on the roads, and shared mobility services such as car share and bike share. Connected and automated mobility systems are also being explored around the world, including in the Edmonton Region. However, it is not just technology driving change, but also evolving socio-economic and environmental factors such as new business models and changing consumer behaviours.

The following are several emerging trends that could potentially impact on the transportation system in the Edmonton Region over the coming years.

Increasing popularity and pervasiveness of ride-hailing / vehicle-for-hire services

Since ride-hailing services became legal across Alberta in 2016, travellers in the region have had an opportunity to become more familiar and comfortable with the use of such services. While the data surrounding ride-hailing behaviour is limited, there is a consensus among policy makers that ridership for such services is on the rise, and other players like Lyft are also looking to enter the Alberta market.

However, for all the convenience that ride-hailing services bring, a growing number of studies have expressed widely held concerns, including its impact on overall driving (in vehicle kilometres travelled (VKT)) possibly from the amount of non-passenger dead-heading that has to be done for each trip[1]. Studies also suggest that users of ride-hailing services tend to be younger and more affluent, and while TNCs often market ride-hail services to be complementary to transit services and supportive of multi-modality, it has been found that this varies depending on the type of transit service in question, and that under some conditions it actually draws ridership away from transit[2,3].

Expansion of car share availability

Car share has seen marked growth in North America over the past decade, and is anticipated to continue growing, particularly as free-floating or point-to-point models of car share become more common[4]. Unlike more traditional round-trip forms of car share, which require vehicles to be picked-up and dropped-off at the same point, free-floating models allow users to pick-up and drop-off vehicles at any point within a specific area at a different destination location from the origin.

While studies generally suggest that car share can help to enable reduced private vehicle ownership, its impact on transit use is mixed and varies depending on context[5]. Similar to ride-hailing, car share has both the potential to complement and substitute transit usage. While more convenient, in some jurisdictions free-floating models of car share has been found to motivate a general in shift mode choice towards lower impact options when walking, cycling, and transit are considered together[6].

POGO car share is currently the only car share operator in the Edmonton Region and operates on a free-floating model. Towards the end of 2018, POGO car share announced a partnership with Communauto (Canada’s oldest and largest car sharing organization) as a step in the direction of expanding the service across the Edmonton Region[7].

Arrival of shared active and micro-mobility options

Shared active and micro-mobility options encompass a range of low impact modes from human-powered scooters and bikes to their electrified counterparts (e-scooters and e-bikes). While bike-share programs have long existed in many parts of the world, there has been a surge in interest around dockless or free-floating programs that allow for scooters and bikes to be picked-up and dropped-off from any location, similar to free-floating car share.

Shared active transportation options, such as more traditional models of bike-share, have had the effect of both substituting and supplementing transit in urban areas by reducing demand where there is crowding, and extending the network reach in less dense areas by filling in access gaps in the “first and last kilometer”[8,9].

Electrified micro-mobility options build on this effect by allowing people to travel longer distances with greater speed and less time and exertion. While the research in this area is still developing, there are studies that suggest that micro mobility options like e-bikes have the potential to complement public

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[1] http://www.schallerconsult.com/rideservices/automobility.pdf

[2] https://itspubs.ucdavis.edu/wp-content/themes/ucdavis/pubs/download_pdf.php?id=2752

[3] https://www150.statcan.gc.ca/n1/en/daily-quotidien/170228/dq170228b-eng.pdf?st=IaiPFh0u

[4] https://www.epa.gov/sites/production/files/2017-06/documents/05312017-shaheen.pdf

[5] https://www.mdpi.com/1996-1073/4/11/2094/htm

[6] http://www.reginaclewlow.com/pubs/Clewlow_CS_2015.pdf

[7] https://www.newswire.ca/news-releases/pogo-carshare-joins-communauto-group-693756331.html

[8] https://cloudfront.escholarship.org/dist/prd/content/qt7010k9p3/qt7010k9p3.pdf

[9] https://cloudfront.escholarship.org/dist/prd/content/qt3cd802js/qt3cd802js.pdf

transportation, particularly in areas with spatially dispersed transportation demand, micro-mobility options. The Edmonton Region has yet to see a substantial program for any type of shared and active micro-mobility, though there are developing plans to introduce a bike sharing program to the City of Edmonton by the end of 2019.

Growing reliability of electric vehicles

Electric vehicle technologies are becoming increasingly reliable, allowing for greater distances to be travelled between charges, and improved performance even in adverse weather conditions. The technology has also seen growing use in heavy duty applications such as public transit. Electric buses are not new to the Edmonton Region – St. Albert already has several electric buses in operation – but improvements to the technology could help to enable expanded use in the Region. The City of Edmonton already has plans to add electric buses to their fleet with the purchase of 50 electric buses. Changes toward electric may help to decrease operating costs and produce environmental benefits, but may also require adjustments to operations and the maintenance facilities that house the vehicles.

Developing capabilities for connected and automated vehicle technologies

Connected and automated vehicle technologies are being tested in many parts of the world, including in the Edmonton Region. While the full impacts of these emerging vehicle technologies will not be completely clear until the technology reaches maturity and adoption becomes more pervasive, there are a number of anticipated opportunities and challenges that could come about.

Improved roadway safety and efficiency are among the most anticipated benefits of connected and automated vehicle technologies. There is also common thinking that the far end of the automation will help to enable the emergence of self-driving “robo-taxi” services. While this could bring about greater convenience to travellers, it may also draw ridership away transit in a similar way to ride-hailing, and possibly at a much greater magnitude if the service can be provided without the cost of labour. There is worry that this shift could create spatial inefficiencies within the transportation system, and lead to greater levels of congestion on the roadways.

Evolving transit with new mobility

A common theme is that the context and scale at which these options are allowed to operate can determine whether they are complementary, supplementary, or substitutive to transit. Transit gaps exist geographically and temporally on many scales (peak and off-peak, weekday and weekend, and seasonal), and new mobility options can help to fill those gaps by complementing and extending the reach of the mobility system, and by supplementing the system to create a more robust network.

However, the potential for new mobility options to substitute or replace transit is not only a concern for the survival of transit services, but more importantly for the potential spatial inefficiencies and user inequities that could result in more congestion and less access and choice in mobility options for parts of the population. While there is a risk that some parts of the transit system could be made redundant by new mobility options, it is important to note that there are also parts of the transportation system that could fall to gridlock and disarray if core transit services are not maintained as the backbone of the transportation system.

This highlights the need for careful consideration into the role that new mobility options should play within the mobility system, and how transit operators, cities, and regions can best manage it against other existing transportation options. While planning for each situation will be different, the following potential strategies can be considered:

- Focus conventional transit in high-demand corridors where it functions best, and direct new mobility offerings to where it can help to extend the mobility system’s reach across existing transit gaps (geographic, temporal, and seasonal).
- Learn from new mobility services and adapt transit services to be more dynamic and responsive to traveller needs, particularly in dispersed markets.

- Price mobility options – including new mobility options – effectively and leverage revenues to enhance the capacity of transit to meet travel needs in the region.
- Be prepared to re-imagine the bus of the future, as it could look and function differently from what it is today (beyond electric, consider the potential that connected and automated could bring).

A Role for Regional Coordination in Managing Emerging Mobility Options

Demand for travel is not bound to municipal boundaries, and neither are the mobility options emerging to meet these demands. There is a role for regional coordination in ensuring that there are common rules and practices in place to manage emerging mobility options.

While transit remains a critical part of the transit system, there are certainly circumstances where other emerging mobility services may be better suited to meet traveller needs. By improving integration between transit services and emerging mobility options, the region can build opportunities that enable easier multi-modal trips that rely on a combination of transit and other mobility options, creating a shift away from reliance on the personal automobile.

A consistent framework for how various emerging mobility options should relate to regional transit services under different conditions can help to ensure that these services are complementary to the broader transit system. How should these services connect with transit in different environments? How does the pricing of these options compare to transit for different types of ride markets? Are there ways that the pricing of these mobility options could be integrated with the pricing of transit fares? These are some of the questions that will need to be tackled in coordination across the region in order to ensure a seamless and legible system of integrated transit and emerging mobility services.

CHAPTER

10

DESIGN PRINCIPLES for Regional Services

10 DESIGN PRINCIPLES FOR REGIONAL SERVICE

The following design principles will be used to create a regional network for the RTSC business case:

General Design Principles

The proposed network:
- is feasible for RTSC business case comparison purposes:
  - It connects all four quadrants of the region with higher-speed, long distance transit service;
  - It integrates transit services across jurisdictional boundaries;
  - It consolidates multiple overlapping routes to a single more rapid service;
  - It aligns transit service with transit demand and existing travel flows.
- aligns with adjacent routes to create stronger transit priority corridors;
- does not compete with the LRT;
- establishes spacing from LRT lines in a radial pattern;
- proposes new service to outlying communities based on modelled travel demand;
- proposes peak only services that are only developmental service.

Some of the design principles are specific to each service type.

For Rapid Transit routes, the specific design principles are as followed:

- The entry level rapid transit is “premium bus” or BRT “light”. Once it is fully developed and the demand justifies the need for a more structural mode, LRT could be implemented.
- The Rapid Transit service:
  - is attractive to riders and competitive with private vehicle travel;
  - connects meaningful destinations;
  - stops at high ridership (destinations or key transfers) locations only;
  - supplements the LRT network, and does not compete with it.

Over time, dedicated right of way are implemented, which increased capital investment in corridors

For Regional Express routes, the specific design principles are as follows.

The regional express service will:
- leverage services integration opportunities from all current operators;
- provide rapid service from existing and new transit centres;
- follow patterns of established demand in the region;
- provide reasonable mobility network throughout the region;

Two type of service type are regrouped into the

Regional Express Service, and have their own specific design principles in addition to the ones mentioned above:

- Regional Express All-Day routes:
  - circulate to support and feed Rapid Transit and LRT;
  - do not compete with LRT;
  - have limited stops to key nodes and hubs only.
- Regional Express Peak routes:
  - Are extension of the Regional Express Routes in peak periods, to connect lower demand destinations.

For Major Trips Attraction routes, the specific design principles are as followed:

- The Major Trips Attraction routes provide service to activity centres that draw travelers from across the region that currently do not have transit service.
- Are developed on case-by-case basis with partners, depending on demands and willingness to participate into a transit service to their destination.
- RTSC would need strong rationale for taking over service from private contractors who are currently operating services.

Glossary

Glossary

Accessibility (to destinations): the ability and ease of obtaining goods, services, and activities from a location; accessibility is usually related to the time and distance required to access destinations.

Alight: to get off or out of a transportation or transit vehicle.

Board: to get on or in a transportation or transit vehicle.

Boardings per revenue hour: a standard key performance indicator measuring the volume of customers in comparison to the supply of transit services.

Capacity: the amount of space on a transit vehicle that can carry passengers expressed in persons per vehicle. Available space not occupied by passengers is called unused capacity.

Capacity Utilization: measures the percentage of delivered capacity (seats and spaces) utilized by customers along an entire route.

Coverage: the area served by the transit service, and can be measured by the population and employment within the defined area.

Daily Ridership: the average number of trips taken by passengers using a specific route during an entire day.

Delay: the amount of time that a transit vehicle in service is delayed from its scheduled time for arrivals and departures.

Demand: the quantity of travel consumed at various levels of service of a transportation system.

Directness: a measurement of the route deviation compared to a more direct path for travel. This provides a comparison between the path that a person has to use as a transit user versus the path the same person will have taken by using another mode, such as a personal vehicle.

Effectiveness: the degree to which the optimal desired outcome is produced to successfully achieve predetermined goals and objectives; for example, the percentage of a given service area population that is within a certain radius of a transit stop.

Efficiency: maximizing total output while minimizing excess waste. Efficient transit service means an adequate level of service is being provided.

Equity: a metric that defines the provision of equal services to different user groups and areas; this metric may identify transit-dependent areas that might require transit service regardless of low density.

First Kilometer / Last Kilometer: the component of a trip that links the origin point (i.e. rider's home) to the nearest transit service stop or station; the first kilometer / last kilometer performance is based on the presence and number of mode choice options connecting directly from a single origin point to a transit service. These could include active transportation facilities, local transit service routes, transportation network companies, car share vehicles, and taxis.

Fixed Route: transit service provided along a specific route on a repetitive, fixed-schedule basis with vehicles stopping to pick-up and drop-off passengers at specific locations; each fixed-route trip serves the same origins and destinations, unlike demand response.

Frequency: the number of vehicles per hour serving the same route in the same direction.

Frequent Transit Network: a high frequency of transit service within a corridor, which may be provided by a single route or by a combination of routes and/or technologies within the same corridor.

Land Use Density: the number of people, housing units, and jobs per unit area within some measured distance to a transit service. The density surrounding a transit station or stop demonstrates how effective and productive a route can be by illustrating the number of prospective customers (see Effectiveness).

Mobility: the movement of people or goods from one place to another.

Mobility as a Service (MaaS): transportation as a flexible, personalized on-demand service that integrates all types of mobility opportunities and presents them to the user in an integrated manner to enable them to get from one place to another as easily as possible.

On-demand: services that operate upon request and can have flexible routing to accommodate trips to low density locations where fixed route transit is not provided.

Park and Ride: an access mode to transit in which people drive private vehicles or ride bicycles to a transit station or stop, and park their vehicle in a park-and-ride lot, commuter parking lot, or bicycle rack or locker, and then proceed to ride the transit system to their destinations.

Passenger Demand: the level of consumer demand for transit services in a city, community, or area. It can be considered an output of land use and built environment characteristics, as well as demographic factors that determine passenger responses to varying levels of transit service.

Peak: refers to times of day when the demand for transit services are considered to be the highest. These peak periods may vary, although the morning peak is generally 6:00 – 9:00 am and the afternoon peak is generally 3:00 – 6:00 pm.

Priority Measures: steps taken to prioritize the passage of transit through a corridor, including a dedicated right-of-way (transit or HOV lane), a dedicated signal phase, or other means of prioritizing transit vehicles over general purpose traffic.

Rapid Transit: an urban transit service typically separated from other modes of travel, with high carrying capacity and speed, frequency, and reliability; this service is usually provided by transit technologies including rail rapid transit, light rail transit, and bus rapid transit.

Regional Express Service: transit service that provides fast and convenient connections for people across the region by connecting major transit centres that service both residential areas and areas of high job density, providing fast, efficient, and direct trips.

Reliability: the frequency that transit service is provided at the promised level of service; this affects waiting time, consistency of passenger arrivals from day-to-day, total trip time, and loading levels.

Route Design: how long and direct a service is, and whether the service uses a consistent path or adjusts its path, depending on demand. A direct route follows a straight, logical path.

Safety: the condition of being protected against any type of harm.

Service Frequency: how often a transit vehicle (in time) picks-up passengers at a designated transit stop or station.

Service Span / Span of Service: the period of time when a specific transit service is operated, from the time of the day for departure of the first trip to the time of the arrival of the last trip of the day at the last stop. Some services run only during weekday commute times, others operate all day, and a few run all day and late into the night.

Service Types: transit services designed to meet a range of different purposes, markets, travel demand levels, and objectives. The service types are organized into three main categories: Regional Services, Customized Services, and Local Services.

Station: passenger facilities serving high-capacity and rapid transit services.

Stop: an intermediate transit passenger facility along a route; traditionally, stops are serviced by bus-based transit or other on-street transit services (i.e. street-cars).

Stop Spacing: the distance between stops along a route. This spacing between stops impacts the speed and reliability of a service, as well a customer's ability to access a service.

Supplemental Rider Amenities: additional services provided that contributes to the overall provision of customer satisfaction, comfort, and loyalty. These could include improvements to the transit waiting experience (i.e. real-time arrival and departure information) or use of relatively technology (i.e. WiFi) to enhance the transit experience.

Transit Hub: places of connectivity where several transportation modes converge and where infrastructure is implemented to ease the transfer between these modes. Transit hubs can take different forms and sizes, but will generally be a place with the presence of stops for several local and regional transit routes, parking facilities, bike racks, allocated space for car-share, taxis or transit network company services, and high concentration of residents and employment density.

Transit Priority: an infrastructure measure that gives priority to transit vehicles over other road users to improve the speed, efficiency, and reliability of the transit service. These measures may include dedicated lanes, traffic control measures, and regulatory measures.

Transit Signal Priority: traffic control techniques to provide priority for transit vehicles at signalized intersections. This can range from prioritizing transit movements in standard signal timing plans, actuated signalization that activates a transit signal display when a transit vehicle is physically detected, and active signalization where traffic control algorithms are dynamically invoked in response to real-time positioning data provided by transit vehicles.

Transportation Network Companies (TNC): also known as a mobility service provider – companies that match passengers with vehicle services through websites or mobile apps. TNCs for automobiles are also referred to as ride-hailing services. Examples include Uber and Lyft.

Vehicle Bunching: the formation of a platoon of transit vehicles formed in situations when passenger demand is high, and dwell times at stops are longer than scheduled, resulting in transit vehicles being caught up by the following vehicle. Bunching can become cumulative and can result in delay to passengers and unused capacity.

Vehicle Load: a measurement of the number of passengers inside a transit vehicle at the same time. It is often related to the vehicle capacity and gives an indication of the level of comfort for passengers and utilization of the transit vehicle.

Wayfinding: the design, coordination, and location of information (e.g., signs, maps, and diagrams) to aid in people orienting themselves and navigate from one place to another.

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