

First km/Last km Transit Challenge

Recommendation

That the March 19, 2019, City Operations report CR_5353, be received for information.

Previous Council/Committee Action

At the November 14, 2017, City Council meeting, the following motion was passed:

That Administration, as part of the high-level analysis report coming back in April 2018, include the following to help address the First km/Last km transit challenge:

- a. review of car sharing
- b. possible public on-demand transit solution
- c. vehicle for hire to help address the First km/Last km challenge
- d. other municipal public transit solutions

At the July 11, 2017, City Council meeting, the following motion was passed:

That Administration, using input from Edmonton Transit Service operators and the transit unions, provide a high-level analysis by April 2018 including order of magnitude costing of various options to better support the First km/Last km on our transit system.

These options would include, but are not limited to:

- An updated community bus strategy (for local routes)
- A modern-day version of dial-a-bus
- Partnerships with the vehicle for hire and car-sharing industries
- Partnerships with vehicle manufacturers to develop a fleet of connected automated vehicles/buses
- Partnerships with Edmonton Seniors Coordinating Council as well as seniors not for profit and for profit transportation companies
- Transfer of some reduced conventional local service hours to enhance DATS

Executive Summary

This report provides a high-level assessment of the opportunity to implement an alternative service delivery model in Edmonton to address walking distance challenges in the proposed bus network. In order to ensure all neighbourhoods currently served by transit continue to receive service, it will be critical to deploy First km/Last km solutions in tandem with the implementation of the new bus network in July 2020, as well as the ongoing implementation of the LRT Network Plan. An assessment of the

draft bus network identifies four opportunity areas where an on-demand transit solution would be beneficial.

An exploration of potential service delivery providers identifies opportunities and challenges with the publicly and privately operated approaches. Given the evolving nature of this topic across North America, a pilot project approach will allow flexibility to learn and adjust before implementing a longer-term solution.

Report

Background

In July 2017, City Council approved Edmonton's Transit Strategy, providing direction for transit service that is fast, frequent, safe and reliable. Administration subsequently initiated a comprehensive redesign of Edmonton's bus network, grounded in the Guiding Principles of the Transit Strategy. The Bus Network Redesign aims to use the existing level of resources more efficiently and effectively to meet Edmontonians' priorities for transit. This includes designing a network that provides more direct routing and, where appropriate, an increased level of service.

With approval of the Transit Strategy, Council also directed Administration to research innovative service delivery solutions to address the First km/Last km transit challenge. The term "First km/Last km challenge" refers to the challenge of providing transit service for the portion of travel between a person's home and a transit hub, particularly in areas that are difficult to service efficiently due to low population density, the road network and geographic barriers. As a result of the new approach to bus route design, an opportunity emerged to address some areas with a new transit service delivery model. The growing LRT Network also creates an opportunity to review the First km/Last km from a system perspective, with LRT as the backbone of the future transit network.

Cities across North America are investigating new models for delivering transit service. Effective and efficient transit, in a growing city, requires innovations that look beyond the traditional transit fleet and incorporate new technology. To explore this topic, Administration completed a First km/Last km study. The study includes a review of transit innovations, exploration of service delivery options and potential providers in Edmonton, identification of service gaps in Edmonton where a solution may be warranted and development of a tool to prioritize these areas for implementation (Attachment 1).

The first draft bus network was shared with the public, stakeholders and City staff from April through June 2018. Upon reviewing extensive citizen input and considering the service gaps identified in the First km/Last km study, Edmonton Transit Service has refined the draft network. Through this process, some service gaps have been

addressed by modifications to fixed bus routes, if they were warranted based on ridership and could be accomplished with current resources. Many community bus routes, which are designed to connect seniors' housing complexes with seniors' centres and other local destinations, were also redesigned in order to complete the regular fixed route network.

Through October to December 2018, the public is invited to provide feedback and perspectives on the final draft bus network. Administration will compile public input and the results will be brought to City Council in 2019, at which time Administration will seek Council's approval of a revised City Policy C539 (Transit Service Standards), thereby signalling approval of the new bus network.

Peer Review of Transit Innovations

A review of transit agencies exploring First km/Last km solutions highlights a diversity of new approaches across the industry. New service delivery models combine variations of fixed or flexible routes, schedules and pick-up/drop-off locations, as described in Figure 1 of Attachment 1.

A municipality's choice of service delivery model should be guided by the overarching objectives for the service and the particular characteristics of the area being served. Selecting the best-fit service requires a holistic consideration of factors that form a complete picture of the specific market for an area. In order to understand which service delivery models may be most appropriate in Edmonton, Administration developed a service selection tool that was applied to locations that represent service gaps within the new network.

The choice of service provider is another important consideration that is distinct from the delivery model. There are many different service provider options, including the vehicle for hire industry, non-profit transportation providers, car-share companies and the municipal transit agency itself. The most appropriate option in one city may be different from the option best suited for another city, or even for different areas within the same city. Furthermore, for a public organization such as the City of Edmonton, the choice of a private service provider is subject to a competitive procurement process.

The review highlighted some important learnings that should be considered when moving forward with an alternative service delivery approach in Edmonton. Most critically, the diversity of experiences demonstrates there is no one-size-fits-all model, and the appropriate solution should be tailored to suit the local context. It is also necessary for the transit agency to clearly define the business rules for the service, in order to clearly communicate the expected level of service, such as hours of operation, origins and destinations served and response times. These rules must carefully balance an attractive service with equity across different neighbourhoods. Lastly,

these models are new, and the understanding of long-term benefits and challenges continues to emerge.

The Edmonton Context

The development of the new draft bus network required a tradeoff between walking distance and designing more direct bus routes with increased service levels. In order to understand the impact of the new network on walking distances, the April 2018 draft bus network was compared with the current bus network (Figure 1 of Attachment 1). The map illustrates that walking distances are unchanged for the majority of the city, and in fact have decreased in some areas, meaning most citizens will not be required to walk further in order to access transit.

However, this exercise did highlight areas of 2-5 minute increased walking distances scattered throughout the city (shown in yellow) and clusters with a more significant increase (shown in red). Generally, the red clusters are a result of service being removed in the new network because current ridership is low, or because the area is challenging to service effectively due to geographic constraints, such as ravines and the road network. While increasing walking distance beyond 400 metres is consistent with the Transit Strategy, the areas with an increase beyond 800 metres should be considered for First km/Last km options.

These clustered areas of increased walking distance were grouped together into 24 “opportunity areas” that provide a logical grouping for First km/Last km service. A neighbourhood selection tool was developed to prioritize these areas for further exploration, considering factors such as degree of population that will be impacted, density of paratransit trips, current ridership, and changes in frequency and walking distance. The eight shortlisted areas have no nearby transit centre, a noteworthy amount of service removed and significant ridership relative to the other areas.

Concurrently with the identification of the “opportunity areas”, ETS staff reviewed public feedback on the draft bus network design. Citizen input and concerns regarding walking distances on the first draft were taken into account for the second draft (where technically possible and ensuring continued alignment with the Transit Strategy principles). As a result of this process, the number of opportunity areas was reduced through modification of fixed routes. These modifications were made where the current level of demand could not be satisfied by an alternative service delivery model, or where a simple adjustment to nearby routes was possible. The resulting final draft network has substantially reduced the opportunity areas. Administration has proposed a planning solution, either through a fixed route or alternative service delivery model, for each of the 24 opportunity areas initially identified (Attachment 2).

Based on the results of this assessment, there are four opportunity areas that are good candidates for testing an alternative service delivery model for First km/Last km. These

locations are Cameron Heights/Wedgewood, Northwest Industrial, Brander Gardens/Brookside, and Grandview/Lansdowne/Aspen Gardens. Administration recommends undertaking a pilot project as an appropriate next step to test alternative service delivery models. A pilot project could be implemented at the same time as the launch of the new bus network in mid-2020.

Potential Service Providers for Edmonton

Alternative service delivery strategies can take a variety of forms. One of the biggest variables is the decision of who will be operating the service. There are many different options, and the option most appropriate in one community may be different from the option best suited to another community.

The option that appears most viable in Edmonton is an on-demand shared vanpool, which could be operated directly by ETS or through a contract to either a private company (including taxi companies) or a Transportation Network Company (also known as rideshare companies or TNCs). An alternative option is to provide a direct subsidy to a third party provider, such as vouchers for using vehicle-for-hire services, or a per ride subsidy to non-profit transportation providers. Lastly, support for carshare and bikeshare could be used to supplement other solutions.

Attachment 3 compares these options based on a variety of factors. In addition to operating and capital costs, consideration should be given to the City's ability to control service quality, the capacity of the service provider to meet demand, accessibility to all users (inclusive of physical ability, gender, etc.), and flexibility of the option to adjust based on results of the pilot.

In comparing public and private service delivery, it is important to distinguish between transportation companies that own their fleet (and directly hire drivers as employees), versus Transportation Network Companies, which rely on independently contracted drivers operating their personal vehicles. The City would be able to exercise a satisfactory level of control over service quality and accessibility through a contract with a transportation company. This is currently demonstrated by the City's contracts for DATS service delivery, which sees approximately 50 percent of DATS service delivered by a private contractor with a high level of service quality and accessibility. This level of control may be more difficult with a Transportation Network Company, as the contracted company has less direct control over its fleet and drivers.

One important disadvantage of a public solution is that it requires the City to develop a new line of transit service, including significant capital investment in vehicles and software. Current constraints on transit garage space would likely require the City to lease vehicles and garage space to directly operate this service. A publicly operated pilot project would also require exploring short-term staffing solutions. For a pilot project, this level of investment would not offer the same degree of flexibility to adjust

beyond the pilot period. It may be more prudent to test the on-demand approach through a contract with a private transportation company. If the pilot succeeds, the City could revisit a permanent solution using public resources.

In addition to public and private service providers, non-profit transportation providers could form part of a solution. Generally, non-profit providers are focused on a particular demographic, such as seniors, rather than a distinct geographic area. For the purposes of this report, the First km/Last km challenge was defined as geographic areas beyond the proposed new walking distance standard. While non-profit providers could form part of a suite of options to service a specific demographic group, they will need to be complemented with other options that serve the general public. Specifically, the addition of Community Bus Routes to the final draft network design has addressed the most critical gaps for seniors.

Carshare and Bikeshare

Other forms of shared transportation, such as carshare and bikeshare, can help bridge trips between home and a transit hub. These shared ownership models have an added benefit of reducing car ownership and financial barriers to access. In Edmonton, the current service areas for these options are focused on the central area. The central area is generally well served by transit in the draft bus network and does not contain any opportunity areas for a First km/Last km solution. These options are also not accessible to the entire public, because users must be physically and legally capable of operating a car or bike. As such, carshare and bikeshare could provide an additional layer of service for some individuals in areas that have other First km/Last km options.

Role of New Technology

Urban Form and Corporate Strategy Development report CR_5865 - Implementation of Connected Automated Vehicle Testing - Smart Transportation Action Plan was provided as information to Urban Planning Committee on September 11, 2018. This Plan will guide the City's approach to automated, connected, electric and shared mobility solutions in the coming years. In the near term, Administration is focused on electric mobility primarily by leading by example and continuing to transition the City's fleet of vehicles towards electric and low carbon fuels. Administration will continue to research emerging transportation technologies and will continue to understand if and when technology is ready for deployment for first and last mile operations. These smart transportation options also provide an opportunity to explore application of the accompanying new technology in transit operations. The most immediate opportunity is the use of trip planning and booking software solutions. All of the First km/Last km options explored in this study have the potential to use this trip planning and booking software solutions, regardless of service provider, delivery model or service area.

Impact of Bus Network Design on DATS

The decision to increase walking distances in order to provide higher quality service on fewer corridors has raised concerns that paratransit demand will increase. This could result from increased demand for trips by existing registrants who currently use conventional transit for some trips, or from individuals who become eligible for DATS because of increased walking distance in some areas. However, to qualify for paratransit service, individuals must meet eligibility criteria. Ultimately it is difficult to accurately predict the impact of the new network on paratransit demand, and this will require careful monitoring subsequent to implementing the bus network. It should be noted that in the draft bus network, the majority of addresses are still within a five to seven minute walk of the nearest bus stop.

The First km/Last km study also identified the potential to explore co-mingling of conventional transit users with paratransit users. While this approach could provide an innovative solution, it is difficult to forecast DATS service demand post-2020. As a result, Administration recommends that Edmonton Transit Service monitor the impact of the new bus network on the demand for DATS, and continue to consider longer-term solutions.

High Level Costing

Administration developed a service selection tool to determine the most viable service delivery model for each of the shortlisted locations. For each of these locations, the most viable option is a shared vanpool with flexible (on-demand) schedule, with variations regarding the fixed/flexible nature of stops. High-level costs were developed for public and private service provider options in one pilot neighbourhood, as detailed in Attachment 4.

The costs demonstrate that an on-demand solution would result in a lower annual operating and capital cost than a fixed route solution, and therefore a lower cost per ride. As the total service hours required under each option are very similar, the costs are very sensitive to the hourly operating cost. Given this sensitivity, it will be important to further refine the costs through more detailed assessment as part of implementation planning.

Next steps

This report provides a high-level assessment of the opportunity to implement an alternative service delivery model in Edmonton to address walking distance challenges in the new bus network. To ensure all neighbourhoods currently served by transit continue to receive transit service, it will be critical to deploy First km/Last km solutions in tandem with the implementation of the new bus network in July 2020.

Given the evolving nature of this topic across North America, Administration's preferred approach is that Edmonton pursues a pilot project approach to

implementation over a period of 18-24 months. This approach will allow the City to test and learn from initial findings, before establishing a longer-term solution. To move forward with a pilot, implementation planning is required to define service parameters, refine costs, establish a procurement approach and consult with stakeholders. Administration will develop a more detailed implementation plan and costing, and return with information and a funding request to Committee by Q3 2019.

Public Engagement

Stakeholder engagement was undertaken with various transportation providers in order to understand the role their type of service could play in providing First km/Last km solutions. These initial conversations can be used as a starting point to inform more detailed implementation planning and stakeholder consultation.

A comprehensive public engagement program is currently underway to inform the Bus Network Redesign. A first phase of engagement was completed in July 2018 in order to refine the first draft network plan. Extensive citizen input from this phase was used to refine the draft network, including 4,200 survey responses and input from 2,300 workshop participants. In many cases, the citizen input and additional analysis resulted in adjustments that addressed First km/Last km opportunity areas. A final phase of public engagement is currently underway to gather citizen input to advise on the final draft network design.

Corporate Outcomes and Performance Management

Corporate Outcome: Edmontonians use public transit and active modes of transportation			
Outcome(s)	Measure(s)	Result(s)	Target(s)
Transit ridership increases	Transit Ridership (Rides per capita)	91.6 (2017)	105 (2018)
Corporate Outcome: Edmontonians are connected to the city in which they live, work and play			
Customers are satisfied with transit service	% overall satisfaction	78% (2017)	TBD by 2019

Attachments

1. Edmonton First/Last KM Review
2. Summary of Planning Response for Hot Pockets (Opportunity Areas)
3. Comparison of Service Provider Options
4. High Level Costing

Others Reviewing this Report

- T. Burge, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- C. Owen, Deputy City Manager, Communications and Engagement
- A. Laughlin, Deputy City Manager, Integrated Infrastructure Services
- P. Ross, Acting Deputy City Manager, Urban Form and Corporate Strategic Development
- R. Smyth, Deputy City Manager, Citizen Services