Transit Smart Fare System - Faring Approach

Recommendation

That the February 21, 2018, City Operations report CR_5411, be received for information.

Executive Summary

In June 2017, a contract for the design, build, implementation and operation of the Regional Smart Fare System was awarded to Vix Technology. This report provides a brief description of the overall project, a status of project activities, and outlines next steps.

The Regional Smart Fare System provides opportunities to implement faring approaches that are not possible at this time. These approaches include fare capping, Pay-As-You-Go and Distance-Based fares. Administration is investigating incorporating these approaches into the design of the Regional Smart Fare System.

Administration will undertake market research to determine public perception of challenges and opportunities related to the faring approach in order to develop a robust public education program to aid in the implementation of Smart Fare. In addition, the project team is modelling fare payment and revenues region-wide to assess the impacts of the different approaches being considered.

Report

Project Description

In June 2017, the City of Edmonton entered into an agreement with Vix Technology to design, build, implement and operate a regional electronic fare payment system. This project also includes extending Edmonton's Smart Bus system to St. Albert Transit and Strathcona County Transit. Smart Bus provides the on-board communications and data infrastructure required to operate the Smart Fare system. Rolling out the Smart Bus system to neighbouring transit systems will provide a consistent, proven application that reduces overall complexity and cost for regional travel.

The Regional Smart Fare System incorporates fare payment technologies that are becoming more common throughout the world. This includes "open payment" functionality which allows transit trips to be paid for with credit or debit cards and compatible mobile devices. The system is also "account-based," which allows for easier integration with employer and educational programs and allows customers to purchase

transit fares and ride immediately. With an "account-based" system, all transit fare transactions and value are held in a centralized back office, as opposed to card-based systems (an earlier generation of Smart Fare systems). Customers will be able to manage their accounts using self service applications (Regional Smart Fare website), through a customer call centre, at Smart Fare Vending Machines and hundreds of regional retailers, where they can choose fare products that best suit their needs or for which they are eligible. Management of fare programs, such as U-PASS, will also be streamlined.

Project Status

Smart Fare activities underway include:

- Preliminary Design Review, which is the second of three steps in the design review process.
- Development of necessary process and procedure changes such as cash handling and fare enforcement.
- Initiating discussions on terms for a regional operating agreement.
- Development of branding for the Regional Smart Fare System.
- Investigation of potential expansion of the Regional Smart Fare System to other neighbouring transit systems with the initial system implementation.

Key milestones for this project include:

- Contract Award to Vix Technology - June 2017
- Fare Policy Principles - April 2018*
- Final System Design - June 2018
- Regional Smart Fare Pilot - Late 2019
- System Launch - Mid 2020

*Fare Policy is pillar 2 in the Transit Strategy. While a separate project from Smart Fare, it can impact the final system design.

The timing of the implementation of the new electronic fare payment system will be closely aligned with the introduction of a revised transit network (based on results of the next phase of the Transit Strategy) and the opening of Valley Line Southeast, representing a significant modernization of services.

Next Steps - Fare Policy Direction

The Regional Smart Fare System provides municipalities with the flexibility to consider fare payment options that were previously not available nor practical to implement. It also allows participating municipalities the ability to set their own approach to fares within the shared regional Smart Fare system.

The Transit Strategy, developed with extensive stakeholder input, suggested that different approaches to fare strategy should be considered, and includes the following guiding principles:

Guiding Principle 2.2. Develop a fare structure that is:

- Easy to implement, comprehend and operate.
- Equitable in its offering of discounts.
- Sensitive to the urban travel market.
- Encourages ridership.

Guiding Principle 2.3. Explore the potential for new fare structure opportunities made possible by the Smart Fare initiative. Actions:

- Prepare a regional transit fare integration plan with neighbouring municipalities in the Edmonton region.
- Consider a regional fare structure that relates fares for inter-municipal transit travel to the operating costs to supply the inter-municipal service.
- Develop fare payment procedures that reduce the time required to board and alight passengers.

Regional integration means that transit customers will be able to use a single "smart card" or compatible mobile device when boarding any transit vehicle operated by the participating transit agencies. The regional smart fare agencies have been evaluating potential regional integration options and have agreed to the following:

- Customers perceive and experience transit in the region as a seamless network.
- Transfer rules are consistent and scalable to include other agencies in the future.
- Each municipality receives revenue from passengers that use their transit system.
- Each municipality will have the autonomy to establish fares for travel on their system, which allows the municipalities to set fares and subsidies that meet the needs of the individual communities.

The functionality that the Regional Smart Fare System will deliver includes:

- Fare capping - Maximum payment limits could be placed on daily, weekly and/or monthly periods. This benefits frequent transit users. Different fare caps can be set for seniors, youths, and low income individuals in support of the City's inclusivity and affordability goals. This approach provides transit riders price certainty.
- "Pay-As-You-Go" (PAYG) - With this approach, customers will pay one trip at a time. If applied in conjunction with fare capping, the customer would pay for each trip when it is made, up to the fare cap for the daily, weekly or monthly period. For example, customers who are using a monthly fare product would not have to load the full value of that fare product at the beginning of the period, but could

load value in their account as needed. This could benefit all passengers, in particular people with lower incomes who might not be able to afford the price of a monthly pass up-front.

- Best Fare - Customers could automatically be charged whichever fare provides the best value to them based on their travel patterns/options. This would be of particular benefit to occasional riders and visitors.
- Distance-Based fares - Distance-Based fares represent a form of equity-based pricing and is aligned with guiding principles outlined in the Transit Strategy (Guiding Principle 2.2). With this approach, the fare paid for each trip could be charged based on the distance travelled. To ensure passengers only pay for the distance of their trip, the distance could be calculated based on the straight line distance between the start and end points of the passenger's transit trip. Minimum and maximum fares could be applied for very short and long trips, respectively. Implemented in conjunction with fare capping, the fare paid for each transit trip would count toward the daily, weekly or monthly caps and passengers would not pay more than the applicable cap amounts. Customers that regularly travel longer distances would reach the cap amounts sooner compared to those travelling shorter distances. Trips made after a cap is reached would be free.

Any fare system has its benefits and challenges. For example, it is anticipated that a distance-based fare policy, used in conjunction with fare capping and the Pay-As-You-Go approach, could significantly improve the transit experience for many Edmonton customers. Smart Fare will also allow regional commuters to be charged one fare for the portion of their travel in St. Albert or Strathcona County and another fare for the portion of their trip within Edmonton. However, fare capping would likely not apply between municipalities, so regional commuters may experience future fare adjustments. Administration will be working on various regional transit fare scenarios.

With implementation of these approaches, in order to maintain farebox revenues at current levels, there may be impacts on the overall fares paid by customers. For example, with fare capping, passengers who now pay a fixed amount for a monthly pass could see their total outlay reduced in months where they use the transit system less or presently purchase the monthly pass for convenience reasons. This represents one of the benefits of a pay-as-you-go approach. To offset the revenue reduction to the transit system that would result, monthly fare "caps" that are slightly higher than existing pass rates could be adopted. Similarly, with distance-based fares, which can promote an increase to the number of shorter trips made on the system, the farebox revenue change could be offset with a higher fare cap than existing monthly pass rates or maximum fare on an individual trip. Based on preliminary projections, revenue shortfalls resulting from providing customers with better value could be offset by across-the-board fare increases of 10 percent or less. Administration will be undertaking further assessments to identify the number of passengers and market segments that would see either reductions or increases in the amount paid for transit fares.

These approaches represent significant departures from existing fare structure or pricing methods. As a result, Administration will undertake further market research in the upcoming months to determine the public's perception of challenges and opportunities related to the faring approach in order to develop a robust public education program to aid in the implementation of Smart Fare. In addition, the project team is modelling fare payment and revenues region-wide, using the results of the Household Travel Survey and other available system data to develop the fare model, and, subsequently, the impacts of different scenarios will be assessed.

Public Engagement

Public engagement was undertaken via the broader engagement effort on the Transit Strategy, which recommends that different approaches to fare strategy and structure be considered. The next phase of engagement involves moving into market research to better understand the challenges related to new faring approaches. This information will be used to develop a robust education program to aid in the implementation of Smart Fare.

Corporate Outcomes and Performance Management

Corporate Outcome: Edmontonians use public transit and active modes of transportation			
Outcome(s)	**Measure(s)**	**Result(s)**	**Target(s)**
Increased transit accessibility and convenience throughout the greater metro region	Overall customer satisfaction	81% satisfied in Q2 2016	Increase overall customer satisfaction
Reliable operation of the Regional Smart Fare System	Critical and Key Service Levels related to Customer Experience and Device and System Performance		Performance targets identified in contract with vendor
System Launch	Project schedule adhered to Project implemented within allocated capital budget		System launch in mid-2020. Project implemented within capital budget of $51,616,000
Maintain or improve Edmonton Transit Service farebox revenue compared to current levels	Farebox revenue	2017 Farebox Revenue – $117,405,000	Maintain or increase farebox revenues following system launch

Risk Assessment

Risk Element	Risk Description	Likeli-hood	Impact	Risk Score (with current mitigations)	Current Mitigations	Potential Future Mitigations
Governance	Faring approaches are not supported	3 - possible	3 - major	9 - medium	Provide flexibility in the design of the Regional Smart Fare System to accommodate existing fare structures	Provide flexibility in the design of the Regional Smart Fare System to implement progressive fare approaches in the future
Financial	Edmonton Transit Service farebox revenues decrease	3 - possible	3 - major	9- medium	• Procure an electronic fare payment system that reduces the potential for production and use of fraudulent fare media, resulting in increased revenue potential • Fare Model developed to assist in projection of impacts of changing fare approaches, and establish fares that produce fare revenues consistent with budget directions. • Updating of fare model with more current fare information (ie. 2017, 2018 fares) prior to system launch to ensure fare prices are configured for revenue neutrality.	

Public perception	Transit customers experience difficulty understanding the new fare system	3 - possible	3 - major	9 - medium	Undertake market research to gauge public perception and develop education and awareness campaigns	Undertake awareness campaigns that clearly explain the new Regional Smart Fare System
Public Perception	Specific market segments experience increased fares with implementation of new faring approaches	4 - likely	2 - moderate	8 - medium	Undertake market research to gauge public perception and develop education and awareness campaigns	Undertake awareness campaigns, identifying and recognizing both the benefits and impacts of new faring approaches
Legal/Regulatory	Fare enforcement - ability of Transit Security Officers to ascertain whether valid proof of payment is provided to a standard acceptable to the courts	4 - likely	2 - moderate	8 - medium		Develop new procedures for checking fares utilizing Smart Fare technology. Develop fare enforcement reporting to the required standard. Update Transit Bylaw.
Commercial	Elements of Open Payment cannot be implemented at system launch due to industry development (eg. Interac not having a developed transit fare payment model)	3 - possible	2 - minor	6 – low	Regional Smart Fare project team is working directly with Interac to identify business needs	Interac development of a transit fare payment model that allows it to compete with other payment card providers that have developed processes

Public Perception	Participating municipalities adopt different faring approaches (eg, distance- based fares not adopted across the region), resulting in customer confusion related to fares for intermunicipal trips	3 - possible	1 - low	3 - low	Administration from participating municipalities developing a consistent set of fare principles that can be applied with an electronic fare payment system.	Public education and awareness program of the features and fare approaches in advance of Regional Smart Fare System rollout.

Others Reviewing this Report

- T. Burge, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- C. Campbell, Deputy City Manager, Communications and Engagement
- R. G. Klassen, Deputy City Manager, Regional and Economic Development
- L. McCarthy, Deputy City Manager, Urban Form and Corporate Strategic Development