EXECUTIVE SUMMARY

This report explores transit behaviour in a mid-sized Canadian city context. The understanding of transportation behaviour in our communities is not simply an academic discussion; it has real world implications for policymakers and planners. Increased prevalence of subsidies for transit systems in cities are a "response to a variety of public policy concerns over worsening traffic congestion, air quality, energy consumption, mobility for those without private vehicle access, and disruptions due to street and highway expansion" (Taylor, Miller, Iseki, & Fink, 2009, p. 61). Indeed, as one of his first major actions, Prime Minister Justin Trudeau announced on August 23, 2016 that the first phase of the Investing in Canada program would be dedicated to improving public transit (Canada, 2016). This subsidy is targeted to providing more effective and efficient transit systems in primarily mid-sized cities.

Despite the increased investment in transit subsidies by policymakers, little research contributes to the understanding of transit behaviour in mid-sized Canadian cities. It is known that multiple variables influence transit ridership in municipalities such as the built form, demographics, trip characteristics, transportation demand management policies, or psychological factors (Eluru, Chakour, & El-Geneldy, 2012). However, the degree to which these various factors predict transit ridership is not clearly understood or agreed upon. To effectively plan our communities, policymakers need to understand who uses public transit and why.

The report addresses the following four research questions:
1. *How have the commute patterns of Queen's University employees changed since 2013 when express transit service was first introduced in Kingston?*
2. *How have the attitudes towards Kingston Transit among Queen's University employees changed with the redevelopment of Kingston's transit system?*
3. *Based on known determinants of transit ridership, what factors best predict who will switch to year-round transit ridership amongst the subject population?*
4. *What has the City of Kingston and Queen's University done, and what are these institutions currently doing, to address attitudinal predictors of transit ridership?*

To address these research questions, a mixed-methods case study approach was employed. Descriptive statistics and hypothesis testing were used in order to analyze survey data collected in 2013 and 2016 from staff commuting to Queen's University in Kingston, Ontario. Survey data explored the changing transportation patterns amongst the population over this period. Statistical analysis was also used to examine how attitudinal variables to transit ridership had changed since the introduction of express service in 2013. Binary logistic regression was employed to analyze how independent variables predict transit shifting amongst the population. Key informant interviews and document analysis supported the statistical research by providing greater context towards how these institutions have been addressing the identified barriers and predictors of transit shifting.

The findings of this research indicate that Queen's University employees have gradually begun to adopt Kingston Transit as a primary means to commute to work. 45 employees shifted to transit on a year round basis through the scope of this study, representing a statistically significant increase from 2013 to 2016.

Commuting by automobile still remains the primary method of commuting by the sample population in 2016, with 57.4% of all year round trips made using a private automobile.

Overall willingness to use Kingston Transit has increased over time, indicating more favourable opinions since the introduction of express service. The primary barriers and facilitators identified by respondents indicate that access to transit, specifically where one lives, is highly influential to transit ridership. Over time, access to transit significantly increased as a primary barrier for those outside of 3km from Queen's University. Other barriers and facilitators to transit use that experienced increase over time include the service being unavailable or ownership of a parking pass as a barrier. The primary barriers and facilitators identified generally remained constant over time, with few statistically significant changes and general fluctuations in response proportions.

Seven variables were found to have statistically significant influence towards predicting transit shifting amongst the sample population between 2013 and 2016. The largest degree of influence was reported walking distance to transit stops. Those in proximity to an express stop had the highest degree of influence, followed by those reporting walking distance to a bus stop, and finally those who were in proximity to multiple bus stops. Demographically, females were approximately 4.7 times more likely to shift to transit, while other characteristics such as age, income, or household composition were not found to have significant influence. Owning a parking permit in 2013 had a negative influence on shifting to transit, as those without a pass were over five times as likely to shift to riding transit by 2016. However, respondents who report sensitivity to fluctuations in parking costs were also more likely to shift over this period. Finally, those who report a maximum time willing to commute by transit between 20 and 30 minutes, were more likely to shift to transit than other reported durations.

The City of Kingston and Queen's University were found to address barriers to transit ridership through a variety of different means. The City of Kingston addresses the barriers of access, efficiency, and automobile reliance through upgrades to the transit system and supporting infrastructure, heightened parking regulations, and strategic marketing of transit. Queen's University primarily addressed the barriers of automobile dependence and access through heightened parking regulations, promotion of transit passes, and initiatives to heighten the pedestrian experience at the destination.

To conclude, this report proposes five recommendations to offer guidance to policymakers and planners:

Recommendation 1: *Increased coordination of parking initiatives.*
Parking provided by Queen's University and the City of Kingston should work to find a balance between supply and cost of parking for commuters, through increased coordination. This will appropriately allow those who wish to commute by car to campus to continue doing so, but to make transit a more appealing and realistic alternative to others who may find the changes too much of an inconvenience. A combined effort by both Queen's University and City of Kingston employees will undoubtedly provide the most comprehensive and fair balance between parking availability and cost.

Recommendation 2: *Provide better connections to express/bus routes for those within shorter and longer commute distances.*

While Kingston Transit is actively improving infrastructure and intermodal connections based in the policy directions reviewed, more should be done to reduce the perceived distance to accessing transit. Continued work to upgrade transit shelters, bicycle infrastructure, and ensuring sidewalk access throughout the trip duration should be a focus moving forward for Kingston Transit. Specifically, areas and bus stops which are not on a main artery of any of the express routes should be targeted, in order to continue to provide access to those within longer and shorter commuting distances.

Recommendation 3: *Extend the Queen's University restrictive parking Zone 3 and modify policies for Zone 2.*

Queen's University should consider revisiting the boundaries and policies which establish the three zones for allocating parking passes. Zone 3, as the most restrictive in terms of allowance, could be expanded to include a broader geographic area. Additionally, policies in Zone 2 could become more restrictive like what already exists for Zone 3, in which parking permits do not automatically renew upon expiry. Provided with a decision to re-register for a parking pass, commuters may be more encouraged to test transit as an alternative.

Recommendation 4: *Eliminate parking pass decommissioning fee and replace it with an activation deposit.*

Current policy charges the user $25 to decommission a campus parking pass (Queen's, n.d.). This fee can discourage staff from cancelling their parking pass in order to try transit, particularly for shifting mid-year. Instead of a cancellation fee, the University can consider establishing a refundable administrative deposit at the time of purchasing a parking pass. It can equal the same $25 fee currently in place, however provide more upfront cost to the user. When an employee considers cancelling their parking pass it will not appear that they have to pay more to do this, as their deposit has already been included in the cost of parking. While this will not increase the overall cost of parking on campus, it can make it appear as if it is, making the cost of a parking pass appear more appealing.

Recommendation 5: *Continue realizing directions, goals, and initiatives set out in policy.*

The City of Kingston and Queen's University were found to provide strong direction in policy which supports the promotion of alternative forms of transportation to the private automobile. Initiatives by both institutions were realizing this policy, which has coincided with a statistically significant growth in transit shifters within the extent of this study. Therefore, both institutions should continue with the initiatives that they are currently involved with. Continued improvements to transit infrastructure, specifically at major destinations and downtown, combined with parking management strategies should continue to be a primary focus for both organization moving forward.