



City of
Peterborough

To: **Members of the Committee of the Whole**

From: **W.H. Jackson, Director of Utility Services**

Meeting Date: **September 26, 2016**

Subject: **Report USTR16-009**
Review of Handi-Van Service

Purpose

To report on the recent review of Handi-Van service and to recommend implementation of service improvements, including associated budget.

Recommendations

That Council approve the recommendations outlined in Report USTR16-009 dated September 26, 2016, of the Director of Utility Services, as follows:

- a) That the following administrative recommendations be approved, as follows;
 - i. That one new part time Handi-van reservationist position be included in the 2017 budget, at an estimated cost of \$34,900 including salary and benefits to provide additional customer service support to the Handi-van reservation program;
 - ii. That an education campaign be undertaken with Handi-van users regarding the late cancellation / no show policy prior;
 - iii. That effective January 1, 2017 the late cancellation/ no show policy for Handi-van users who do not call ahead to cancel their appointments or fail to show up for reserved trips be reinstated; and

- iv. That staff investigate options to allow online Handi-van trip requests to be made either through email, on the transit website, or through a new online application within the current reservation system.
- b) That the following recommendations to pilot a new Community Bus service in 2017 be approved:
 - i. That \$175,000 in 2017 capital funding be pre-approved to allow for the purchase of 1 new low floor specialized transit vehicle to implement Phase 1 of the Community Bus Service;
 - ii. That funding be included in the 2017 operating budget to pilot a new Community Bus service featuring one route operating Monday to Sunday between 9:20 am and 5:20 pm, including Statutory holidays, at an estimated net cost of \$86,400 in 2017 (\$210,700 annually), with implementation to commence in August 2017 subject to confirmation of vehicle delivery schedules; and
 - iii. That Transit staff hold a public meeting to consult with riders to finalize the route and schedule for the pilot Community Bus Route, prior to implementation in the summer of 2017.
- c) That funding be included in the 2017 operating budget to continue and expand the operation of Van 8 to provide additional Handi-van service Monday to Friday between 8:00 am and 4:00 pm at an estimated net cost of \$162,000.

Budget and Financial Implications

Approving the recommendations in this report will have a combination of one time costs (capital and operating) along with ongoing operating costs which would be reflected in the 2017 budget. The total net cost of the recommendations is estimated at \$464,800.

The costs for each recommendation are summarized in Table 1 and are based on Service Option 4, with costs adjusted to reflect the phased implementation outlined in the recommendations. Recommendation a iii) has no cost. Recommendations a iv) and b iii) will involve a one time cost of approximately \$5,000 which can be accommodated within the existing Transit Operations Budget.

Recommendations a i), a ii), b ii), and c) will result in \$284,800 in new net operating costs that would be included in the 2017 operating budget for Transit Operations, which includes staff salaries and benefits for 3 new transit operators, maintenance costs for new vehicles, additional fuel costs and anticipated revenues from fares.

Recommendation b i) requires pre-approval of \$175,000 in costs in the 2017 Capital Budget for transit.

Table 1 – Cost of Recommendations

Recommendation	One Time Cost	2017 Net Operating Cost¹	2017 Capital Cost	Total
a i)		\$ 34,900		\$ 34,900
a ii)		\$ 1,500		\$ 1,500
a iii)				\$ 0.00
a iv)	\$2,500			\$ 2,500
b i)			\$175,000	\$ 75,000
b ii)		\$86,400		\$ 86,400
b iii)	\$2,500			\$ 2,500
c)		\$162,000		\$162,000
Total	\$5,000	\$284,800	\$175,000	\$464,800

1) Based on Service Option 4 adjusted to reflect phased implementation noted in recommendations

Proposed funding sources for the recommendations in this report are summarized in Table 2. Details regarding the proposed capital funding sources and respective amounts from each source will be included in the 2017 capital budget, following confirmation of the eligibility and availability of federal transit infrastructure funding.

With the introduction of the Federal Transit Infrastructure fund in the 2016 budget, an estimated \$5.4 Million in new federal transit funding for capital projects is anticipated to be available to the City covering the 2016/2017 and 2017/2018 federal/provincial fiscal years. The Federal funding program requires 50% matching contribution from municipalities, and while staff are confident that the purchase of new and replacement transit vehicles would qualify, each municipality will be required to submit an application for funding in October of 2016, with announcements of successful project submissions expected by December of 2016.

In the event that our application for funding is not approved the service would be introduced using a spare Handi-van vehicle from the fleet, with a subsequent budget request in 2018 to purchase the new vehicle.

The uncommitted balance in the Transit Reserve, after the recommended \$50,000 draw, will be \$523,773. The uncommitted balance in the Development Charge Transit Reserve Fund, after the \$37,500 draw, will be \$33,641.

Table 2 – Proposed Funding Sources

Funding Source	One Time Cost	2017 Net Operating Cost	2017 Capital Cost	Total
Total Cost	\$5,000	\$284,800	\$175,000	\$464,800
2016 Approved Transit Operating Budget	\$5,000			\$5,000
Public Transit Infrastructure Fund*			\$87,500	\$87,500
Transit Reserve Fund			\$50,000	\$50,000
Development Charge Reserve - Transit			\$37,500	\$37,500
2017 Net Requirement	\$0	\$284,800	\$0	\$284,800

* Subject to approval of the application

Background

The Handi-van service is a door-to-door, shared ride specialized public transit service designed for persons with disabilities who are unable to use the accessible, fixed route conventional transit system. The City operates a fleet of 11 Handi-vans, with 7 vehicles typically in service during peak periods. Service is provided between 6:00 am and 11:20 pm, Monday to Friday, 6:40 am to 11:20 pm on Saturdays, and 8:00am to 7:20 pm on Sundays and most Statutory Holidays, operating during the same hours as the Conventional Transit Service as required under the Accessibility for Ontarians with Disabilities Act (AODA). Eligibility to use the Handi-van service is based on an assessment of a customer's ability to use the conventional transit service and customers must apply to register for this service.

Public Transit Operations Review Recommendations

Council, at its meeting of November 13, 2012 approved the November 5, 2012 Report USDIR12-016, "Peterborough Public Transit Operations Review-Final Report and Implementation Plan"

The Public Transit Operations Review (Transit Review) was initiated in September 2011 and concluded with the adoption of the Final Report in November 2012. The Project undertook a comprehensive review of Peterborough's transit services and developed a service plan covering the period 2012-2017 including assessment and recommendations on Conventional Route Transit, TransCab and Handi-Van services.

The Report contains a total of eighty-seven recommendations and action items for all facets of the services delivered.

The Transit Review noted that ridership on the Handi-van system had been declining over the previous 10 year period up to 2011, largely due to improvements in the accessibility of the conventional transit fleet, but the review also noted the difficulties passengers often experienced with system capacity and in booking trips. Despite the historical trend of declining ridership, the review projected an increase in demand for the Handi-van service due to city-wide growth and the aging of the population.

The Transit Review recommended a “family of services approach” to the delivery of transit services for customers with disabilities. The family of services approach includes the continuation of efforts to improve the accessibility of the conventional transit fleet and the bus stops, the use of contracted taxis for some door-to-door service, a taxi-scrip program to improve mobility options and allow for more spontaneous travel for registered Handi-van customers, and a new Community Bus service to provide a hybrid service targeted to serve destinations frequented by seniors and Handi-van customers.

Following approval of the Transit Review, Council at their meeting of December 10, 2012 approved Report USDIR12-019 outlining a series of recommendations to implement the initial recommendations of the Transit Review, including the purchase of 6 new Handi-vans to replace aging vehicles in the fleet and improve service reliability, and the purchase of a new low floor specialized accessible bus to implement one of the two recommended Community Bus Routes.

Over the 5-year life of the Transit Review plan, annual net operating costs for the Handi-van system were forecast to increase by \$156,000.00 to keep pace with population growth while maintaining service levels. Operational funding for the new Community Bus service was intended to come from anticipated savings due to other route and service level changes recommended in the Transit Review. Implementation of the Community Bus service enhancement was delayed in 2014 due to budget pressures identified in Report USTR14-013, resulting from lower ridership and the lack of cost savings from the other route and service level changes recommended in the Transit Review.

Implementation of New Handi-van Scheduling Software

Council at its meeting of July 2, 2014, approved Report USTR14-006 which awarded a contract for implementation of new Handi-van scheduling software. This new system replaced older software which was no longer being supported by the vendor and did not work on newer computers in use at the City. The new system also addressed some of the concerns raised during the Transit Review with respect to the capacity of the Handi-van services.

The new reservation system was implemented in May 2015, and by October 2015 was in full operational mode. The four key operational benefits that the new software was expected to achieve include:

- improved capacity of the system (passengers / Revenue Hr)
- increased ridership and the number of trip requests we are able to serve
- reduced cancellations and “no shows”
- improved efficiency and reliability

Table 3, summarizes the performance of the new scheduling software for the May to December period of 2015.

Table 3 – Performance of New Scheduling Software

Measure	Performance of New System
Improve efficiency (passengers / Revenue Hr)	2015 = 2.41 passengers / revenue hour 2014 = 2.37 passengers / revenue hour - 1.7% increase
Increase the number of trips	2015 = 44,900 passenger trips 2014 = 39,100 passenger trips - 15% increase
Reduce cancellations and “no shows”	May – Dec 2015 = 2,961 (11% of completed trips) - 22 % reduction May – Dec 2014 = 3,776 (16% of completed trips)
Improve efficiency and reliability	2015 Performance 76% of pick ups on time (within +/- 10 min) 18 % early (>10 min) 6 % late (>10 min) - previous reservation system did not allow for tracking of on time performance in 2014

The new scheduling system has provided a 15% increase in passenger trips without any new vehicles or hours of service. This increase in the number of trips was achieved through the improved optimization of vehicle routing which resulted in a reduction in non-revenue service hours (i.e. driving time with no passengers on board), combined with a 1.7% increase in productivity in terms of passengers served per revenue hour of service (i.e. more passengers on each vehicle).

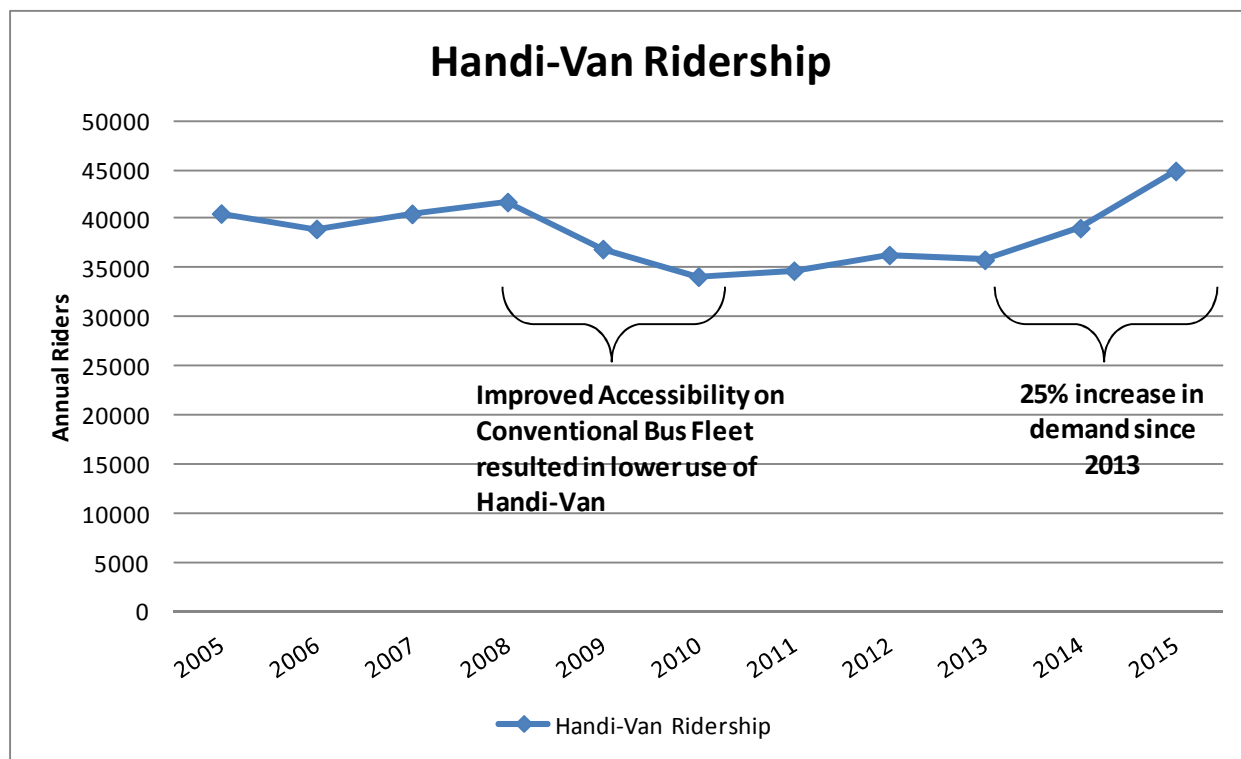
Despite the improvement in performance, late cancellations and no show trips are still a serious issue that needs to be addressed as both situations can represent lost opportunities to fill trip requests for users who actually need to book a ride. Late cancellations are defined as a cancellation with less than 24 hours notice, and while in some cases these trips can be filled with same day booking requests, the closer these cancellations are to the actual booking time the harder it is to match a rider into that time slot.

Handi-van Ridership Growth and Capacity

Since 2013 Handi-van ridership has grown by about 25% with no increase in hours of service. At the same time new riders are being added to the system each week, and in 2015 alone 330 new riders were added to the service. Growth in ridership for the first quarter of 2016 is up 5% compared to the first quarter of 2015. In the longer term outlook, the Province has estimated that currently 1 in 7 people in Ontario have a disability and with the aging population this is expected to grow to 1 in 5 by 2035.

The dramatic increase in ridership since 2013, as illustrated in Figure 1, has created some significant additional capacity concerns that have re-emerged in the past year and have prompted staff to undertake the review of Handi-van service attached in Appendix A.

Figure 1- Handi-Van Ridership Growth



Feedback received from riders and from the Transportation Subcommittee of the Accessibility Advisory Committee has raised concerns with the difficulty many riders are having with booking trips, particularly during peak travel times. While some users have equated the difficulty in booking trips with the conversion to the new system, it is really the significant growth in demand which is causing the lack of available capacity for trip booking. The growth in demand has surpassed the capacity improvements realized through investments made in the new scheduling system.

The Handi-van Review found that over the course of a typical week, the demand for the Handi-van system is at about 110% of available capacity, with approximately 1020 trip requests compared to a capacity of about 920 trips per week. When the influence of late cancellations and no show appointments are taken into account, the typical weekly trips that can actually be served is reduced to about 870 or about 85% of the requested trips.

Figure 2- Handi-Van Hourly Trip Profile

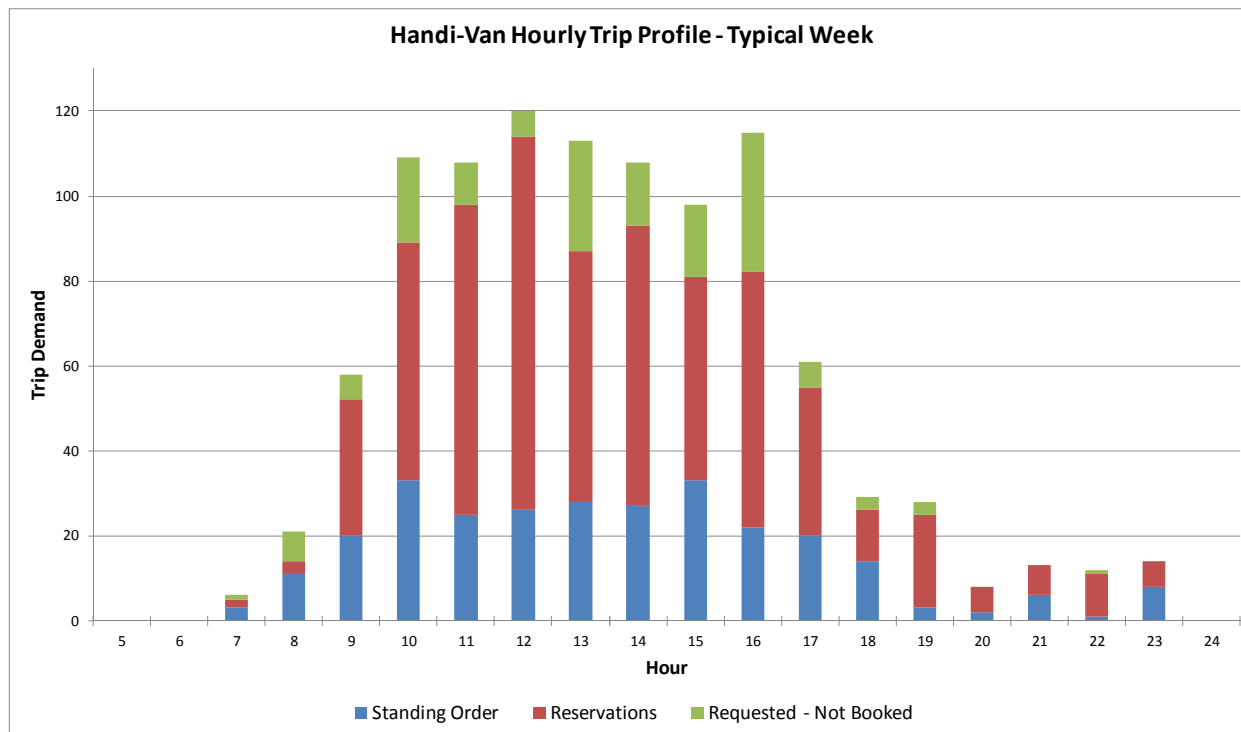


Figure 2 illustrates the typical profile of Handi-van trip demand by hour of the day over the course of a typical week. The demand profile is made up of:

- Standing Order trips (pre-booked or subscription trips that travel at the same time and to the same place on a regular schedule – i.e. from home to work each day);
- On Demand Reservations – trips that are booked by customers on a first come first served basis up to two weeks in advance; and
- Trip Requests Not Booked – trips that have been requested by customers but could not be booked due to lack of capacity

The heaviest demands occur during the mid day periods between 10:00 am and 4:00 pm, where the average demand within a given hour can exceed capacity by 10-20% as illustrated in Figure 2 by the increase in trip requests not booked. The hourly trip profile illustrated in Figure 2 also shows that outside of the mid day period the average capacity of the Handi-van system generally follows the demand profile with fewer trip requests not booked.

In February 2016 an additional van was added into service between 1:00 pm and 4:00 pm on weekdays to partially address the number of unserved trip requests during this period. This service increase was accommodated within the existing transit budget using savings from managing overtime costs in other areas of the operation and using one of the existing vans from our spare vehicles. With 8 vehicles in service during peak periods our spare ratio is currently reduced to 27% compared to the industry standard of about 30%. This temporary measure is not sustainable without sustained funding for these additional service hours and additional investment in new and/or replacement Handi-van vehicles, given the age of the spare vehicles in the fleet and the resulting increase in maintenance and breakdowns that can be expected to occur as the vehicles age. The pre-commitment of 2017 capital funds to facilitate replacement of the 5 oldest Handi-van vehicles in the fleet will be addressed in a separate report to Council.

No Shows and Late Cancellations

Late cancellations and no show trips represent 11 - 13% of the total completed trips during the month. The Handi-van review, attached in Appendix A, provides a summary of some of the factors that may contribute to the high rate of late cancellations and no show trips during the initial implementation period. As users and staff continue to become more familiar with the new features in the reservation system, continued improvement in this area can be expected.

Peterborough Transit had a policy in place for users who frequently failed to cancel their appointments or show up for scheduled trips, which included warning letters and progressed up to and including temporary suspensions of service privileges for a period of time for repeat occurrences. The policy has not been strictly enforced in the past 5 years, in part due to the inability to properly track and record when Handi-van vehicles would actually arrive to pick passengers up and the length of time the driver would wait for the passenger to show. This inability to properly track and record these events made it difficult to manage and enforce the no show policy effectively and resulted in a number of disputes between customers and staff.

With the new tablets installed in the Handi-vans, the vehicle location is tracked in real time, and the location is available to the dispatchers and is recorded in the vehicle log, along with the arrival time at the pick up location and the time when the driver leaves when a "no show" occurs. Given the enhanced technology afforded by the new scheduling system, the ability to manage the late cancellation and no show policy is greatly enhanced, and it is proposed to re-introduce the late cancellation and no show policy to reduce the high rate of late cancellations and no shows still being experienced.

Many other jurisdictions (Barrie, Timmins, St. Catharines, and Guelph) have financial penalties for customers who do not follow the cancellation / no show policies. Although this approach is not being proposed for Peterborough at this time, a similar approach may need to be considered in the future if restoring the existing warning letter / suspension of service approach does not improve late cancellation / no show performance.

Handi-Van Eligibility and Passenger Profile

Eligibility for use of the Handi-Van system is currently based on the customer's functional ability to climb or descend steps used on some conventional transit vehicles or the ability of the customer to walk a distance of 175m. Both the applicant and applicant's physician is required to assess the customer's functional ability taking into account the specific needs of each customer. With the use of fully accessible buses on all of the regular transit routes in the City during most periods, the first criteria is largely redundant today and industry best practices has recognized the need to update the criteria with respect to walking distances as some passengers who are unable to walk a certain distance are able to fully use the conventional transit system with mobility devices.

The transportation standards under the Accessibility for Ontarians with Disabilities Act (AODA) has established a new framework for assessing and categorizing the eligibility of customers to use specialized transit services that focuses on the customers ability to use the conventional transit system, for any number of reasons, not just physical abilities.

The City has been working with the Transportation Sub-Committee of the Accessibility Advisory Committee to update the Handi-van Eligibility categories to implement the new requirements prior to the January 1, 2017 deadline established in the AODA.

Based on 2014 statistics approximately 51% of the Handi-van customers are categorized as ambulatory and have some ability to walk on their own or with the use of mobility devices while 49% use a wheelchair or scooter at all times.

One possible approach to lessen the impact of the aforementioned capacity issues would be to reassess the eligibility of all Handi-van customers using the new eligibility criteria to determine if some current users should be shifted back to use the conventional transit system. Given the administrative burden this would create within transit administration, plus the potential trauma this may invoke with many of our Handi-van customers, staff are not recommending this option to deal with the capacity issues on the system. Alternatively, an educational campaign aimed at Handi-van users who may now be able to use the accessible conventional transit system may be a more effective approach to encouraging this shift.

In terms of the trip reservation activity of Handi-van users, during January 2016 a total of 281 passengers completed a total of 3,460 one way trips on the service, for an average of 12.3 trips per customer. While the average customer made 12.3 trips per month, 118 customers (or 42%) made 5 or fewer trips in a month while 25 customers (9%) made over 40 trips per month.

The rider profile plays a role in understanding the nature of the capacity issues being experienced on the Handi-van system today, as the top 50% of most frequent riders are using 87% of the available bookings, making an average of 21.5 reservations per month. The top 25% of frequent riders booked about 65% of the available reservations and about 34% of the monthly system capacity was used by 10% of the customers.

Many of the most frequent users of the system also had difficulty booking trips that they wanted to make, which is indicative of the latent demand for trip making. Based on a sample week in March 2016 approximately 25% of the unscheduled trip requests (trips where a booking could not be scheduled at the time of the initial call) were made by the top 10% of most frequent riders. These unscheduled trip requests are placed on a call back list in case the customer's trip requests can be filled when a cancellation occurs, and about 10-20% are typically able to be filled in a given week.

The demand for trip making by the most frequent Handi-van riders suggests that simply adding an extra van or two into service during peak times may not completely solve the capacity issues in the longer term, as the added capacity will quickly get used up given the latent demand already in the system.

The Role of Community Bus Service

The concept of a new Community Bus service was first recommended in the 2012 Transit Operations Review, with implementation of two Community Bus routes over the life of the plan (2012-2017). The Community Bus service would work in concert with the Handi-Van services and the accessible conventional bus system to provide a "family of service" options for people with disabilities. The Community Bus would be designed as a fixed route scheduled service primarily oriented to serving older adults and people with disabilities, but would also be open to all potential users.

The Community Bus has the potential to play an important role in delivering transit services geared to older adults and customers with disabilities who currently use the Handi-van service but have the ability to use a fixed route specialized service for some or many of their trips. With approximately 51% of the current Handi-van customers having some ability to walk on their own or with the assistance of mobility devices, fixed routes that are designed to access key activity areas (such as malls, medical clinics, seniors homes, the hospital, etc) could attract a number of existing Handi-van riders and free up capacity to accommodate more trip requests for customers that must use the Handi-van for all of their trips. This shift in riders will take time to be realized as customers will need to become familiar with the Community Bus routes, schedules, and stops to be comfortable that this new service can meet their mobility needs.

The original Transit Operations Review suggested that this service could be funded from re-allocation of existing Handi-Van operating hours and resources. The current Handi-van system is running with 8 vehicles during peak periods leaving 3 spare vehicles in the fleet. As noted above, the Community Bus service will only be a viable option for some Handi-van customers, and that encouraging current users to shift to the new Community Bus make take some time. Given the current capacity constraints being experienced on the Handi-van system, taking an existing Handi-Van vehicle and driver out of dedicated service to use for the Community Bus may simply exacerbate the problems customers are having with booking rides.

Using one the remaining 3 spare vehicles to operate the Community Bus would reduce our spare vehicle ratio to 2 vehicles (18%), leaving little flexibility to maintain service in the event of a breakdown, collision, or for times when a vehicle is removed from service for routine maintenance. The current fleet of Handi-van vehicles are high floor vans equipped with lift devices to facilitate loading of passengers with mobility aids. The loading process takes a fair bit of time, which would make it difficult to reliably operate this type of vehicle on a fixed route, scheduled service.

There are only a limited number of seats on the current vehicles for passengers which may also limit the effectiveness of using an existing Handi-van vehicle to run the Community Bus service. Using a specially built small vehicle would provide more seating than a standard Handi-van and the low floor design would allow for faster loading times for customers using mobility aids (similar to a conventional low floor bus) allowing for a more efficient service and improved schedule reliability. Based on these operational factors, staff do not feel it is prudent to move forward with a Community Bus service without an appropriate vehicle and additional staff resources to operate the service.

Another benefit of the Community Bus service is the ability to take advantage of the smaller vehicles to access locations which may not be well suited for 40 foot conventional buses to access efficiently. Currently, conventional bus routes serve locations such as Hedonics Road, the Wellness Centre, St. Joseph's at Fleming, Fairhaven, and the main doors at Peterborough Regional Health Center (PRHC). All of these stop locations are constrained in terms of road / driveway widths and conventional buses are often delayed by parked cars or snow banks that make turning difficult. It is difficult to efficiently serve these locations while maintaining schedule adherence for the conventional bus routes, and some routes, such as the Jackson Park route (which serves Hedonics Road and PRHC), are often late arriving back at the terminal due to delays experienced on route. Implementing Community Bus service into these locations would allow accessible conventional bus routes to concentrate on providing service on the major corridors and would improve on their time schedule performance.

Recognizing the numerous potential benefits of introducing a Community Bus in the City for both the users of the conventional bus service and the Handi-van service, Council, at its meeting of September 8, 2015 adopted the following resolution:

That staff report back to Committee of the Whole on the costs and feasibility of introducing a new Community Bus Service, as recommended in the 2012 Transit Operations Review, to provide enhanced service to senior's residences, medical facilities, shopping and other activity centres.

Four of the options presented in the following section assess the costs associated with introducing a Community Bus service as part of the solution to address the Handi-van capacity issues noted above.

Options

Based on the findings of the Handi-van review (Appendix A) and the discussion above, the following service options were developed to address the capacity issues identified:

- Option 1 – Providing Additional Handi-van Capacity to Meet Current Demand
- Option 2 – Providing Additional Handi-van Capacity Plus Two Community Bus Routes
- Option 3 – Phased Implementation of Community Bus Plus Additional Handi-van Capacity
- Option 4 – Phased Implementation of Community Bus Plus Additional Handi-van Service Hours

Service Option 1 – Providing Additional Handi-van Capacity to Meet Current Demand

To address the capacity issues noted in the Handi-van review, Option 1 provides additional hours of Handi-van service during the periods of higher trip requests. As summarized in Table 4, this service plan would provide additional van capacity between the hours of 7:00 am and 7:00 pm, Monday to Friday plus and additional van capacity between 9:00 am and 4:00 pm on Sundays. There are already up to 3 vans in service during peak periods on Saturdays and as a result there are typically fewer unserved trip requests during these days.

Table 4 – Option 1 – Additional Van Capacity to Meet Service Demand

Hours	Additional Vans in Service	
	Weekdays (Mon-Fri)	Sunday
7:00 am – 8:00 am	1	
8:00 am – 9:00 am	1	
9:00 am – 10:00 am	2	1
10:00 am – 11:00 am	2	1
11:00 am – 12:00 pm	2	1
12:00 pm – 1:00 pm	4	1
1:00 pm – 2:00 pm	4	1
2:00 pm – 3:00 pm	4	1
3:00 pm – 4:00 pm	3	1
4:00 pm – 5:00 pm	1	
5:00 pm – 6:00 pm	1	
6:00 pm – 7:00 pm	1	

Implementation of Option 1 would require the purchase of 4 new Handi-van vehicles and the addition of 5 new drivers to provide an additional 6,864 hours of service. The new vehicles would cost approximately \$400,000 to purchase, which when amortized over their 7 year service life, amounts to an annual cost of \$57,200 per year. This would be in addition to the capital cost to replace the 4 oldest vans currently in service as they have reached the end of their service life.

The new service could be expected to increase Handi-van ridership by 16,270 trips per year and generate up to \$32,600 in additional revenue based on current rates of ridership per service hour. It should be noted that many of the regular Handi-van users are monthly pass holders and receive unlimited rides with their pass. These additional trips on an existing monthly pass are included in the forecasts. As summarized in Table 5, Option 1 would result in a Net Annual Cost of approximately \$544,000 or \$601,200 when the capital costs of the vehicles are factored in.

Table 5 – Annual Cost Estimate Option 1 – Adding Van Capacity

Item	New Vehicles / Drivers	Capital Cost	Annual Hours	Annual Cost ^{1,2}	Annual Riders ³	Annual Revenue	Annual Net Cost
Weekday Service	4 drivers		6,500	\$546,000	15,400	\$30,850	\$515,150
Sunday Service	1 driver		364	\$30,600	870	\$ 1,750	\$ 28,850
New Vans	4 vehicles	\$400,000		\$57,200			\$ 57,200
Total	5/4	\$400,000	6,864	\$633,800	16,270	\$32,600	\$601,200

Notes

- 1) Operating Costs based on \$84 / hr - includes drivers salaries and benefits / fuel / maintenance etc
- 2) Annual Cost for new vehicles based on 7 year life expectancy
- 3) Ridership based on current van usage of 2.37 rides per service hour

Service Option 2 – Providing Additional Handi-van Capacity Plus Two Community Bus Routes

To address the capacity issues noted in the Handi-van review, Option 2 provides 2 Community Bus Routes operating between 9:20 am and 5:20 pm, Monday to Sunday, including Statutory Holidays. In addition, new Handi-vans would provide additional hours of service on weekdays between 7:00 am and 7:00 pm during the periods of higher unserved trip requests, as summarized in Table 6. With the Community Bus providing service on Saturday and Sundays, the need for additional Handi-van service during these periods should be eliminated as riders who can use the Community Bus routes shift to this new service.

Implementation of Option 2 would ultimately require the purchase of 3 new low floor special purpose vehicles to implement the two Community Bus Routes identified in the Transit Operations Review (including one spare vehicle) plus 1 new Handi-van vehicle to provide additional service, assuming the second Handi-van vehicle for enhanced service during peak times could come from spare vehicles. This option would require the addition of 8 new drivers to provide up to 9,570 hours of new service annually. The new vehicles would cost approximately \$625,000 to purchase, which when amortized over their 7 year service life, amounts to an annual cost of \$89,300 per year. This would be in addition to the capital cost to replace the 4 oldest vans currently in service as they have reached the end of their service life.

Table 6 – Option 2 – Two Community Bus Routes Plus Additional Van Capacity

Hours	Community Bus Service Routes	Additional Handi-Vans in Service
	Monday - Sunday	Weekdays (Mon-Fri)
8:00 am – 9:00 am		1
9:20 am – 10:00 am	2	1
10:00 am – 11:00 am	2	1
11:00 am – 12:00 pm	2	1
12:00 pm – 1:00 pm	2	2
1:00 pm – 2:00 pm	2	2
2:00 pm – 3:00 pm	2	2
3:00 pm – 4:00 pm	2	2
4:00 pm – 5:00 pm	2	1
5:00 pm – 5:20 pm	2	1
6:00 pm – 7:00 pm		1

The new service could be expected to generate ridership of up to 35,000 annual trips on the new Community Bus Service plus up to 9,000 new trips on the Handi-van service, and generate up to \$88,000 in additional revenue per year. The Transit Operations Review assumed the Community Bus Service could generate an average of 8 riders per hour of service based on experience in other communities; however for the purpose of this estimate an assumed average rate of 6 riders per hour of service has been used recognizing that it will take time to grow ridership on this new service.

As summarized in Table 7, Option 2 would result in a Net Annual Cost of approximately \$728,000 or \$817,300 when the annualized capital costs of the vehicles are factored in.

Table 7 – Annual Cost Estimate Option 2 – Two Community Bus Routes Plus Additional Van Capacity

Item	New Vehicles / Drivers	Capital Cost	Annual Hours	Annual Cost ^{1,2}	Annual Riders ³	Annual Revenue	Annual Net Cost
Weekday Handi-van Service	3 drivers		3,750	\$315,000	9,000	\$18,000	\$297,000
New Handi-Vans	1 van	\$100,000		\$ 14,300			\$ 14,300
Community Bus Service (Monday – Sunday)	5 drivers		5,824	\$501,000	35,000	\$70,000	\$431,000
New Community Buses	3 vans	\$525,000		\$75,000			\$ 75,000
Total	8/4	\$625,000	9,574	\$905,300	44,000	\$88,000	\$817,300

Notes

- 1) Operating Costs based on \$84 / hr - includes drivers salaries and benefits / fuel / maintenance etc
- 2) Annual Cost for new vehicles based on 7 year life expectancy
- 3) Ridership based on current van use of 2.37 rides per service hour, 6 riders per service hour for Community Bus

Service Option 3 – Phased Implementation of Community Bus Plus Additional Handi-van Capacity

Option 3 is modeled after Option 2, which provides a combination of additional Handi-van capacity plus the new Community Bus service to address current capacity issues. The primary difference in Option 3 is the phased approach to pilot the implementation of the Community Bus service and determine the feasibility as a long term service enhancement.

In Option 3, the same increase in Handi-van service would be implemented to provide additional hours of service on weekdays between 7:00 am and 7:00 pm, as summarized in Table 6 above. Option 3 would provide 1 Community Bus Route operating in the Central area of the City, between 9:20 am and 5:20 pm, Monday to Sunday, including

Statutory Holidays. If the initial trial is successful, the second Community Bus Route would be targeted for implementation in late 2018 or early 2019.

Implementation of Option 3 would require the purchase of 1 new low floor special purpose vehicle, 1 new Handi-van vehicle and would utilize one of the current spare vehicles to provide additional Handi-van service during peak times. This option would require the addition of 5 new drivers and would provide up to 6,660 hours of new service annually. The new vehicles would cost approximately \$275,000 to purchase, which when amortized over the 7 year service life of the Handi-vans, amounts to an annual cost of \$34,300 per year. With only one new bus to operate the Community Bus route, this would not provide a spare vehicle for planned maintenance activities; therefore one of the spare accessible conventional buses would need to be used for this during the pilot period. In the event the Community Bus route is not continued beyond the pilot period, the new vehicle purchased would be deployed into regular Handi-van service.

The new service could be expected to generate new ridership with up to 17,500 annual trips on the new Community Bus service plus up to 9,000 new trips on the Handi-van service, generating up to \$60,000 in additional revenue per year.

As summarized in Table 8, Option 3 would result in a Net Annual Cost of approximately \$512,700, or \$552,000 when the annualized capital costs of the vehicles are factored in.

Table 8 – Annual Cost Estimate Option 3 – Phase 1 Community Bus Route Plus Additional Van Capacity

Item	New Vehicles / Drivers	Capital Cost	Annual Hours	Annual Cost ^{1,2}	Annual Riders ³	Annual Revenue	Annual Net Cost
Weekday Handi-van Service	3 drivers		3,750	\$315,000	9,000	\$18,000	\$297,000
New Handi-Vans	1 van	\$100,000		\$ 14,300			\$ 14,300
1 Community Bus Route (Monday – Sunday)	2 drivers		2,910	\$250,700	17,500	\$35,000	\$215,700
New Community Bus	1 vans	\$175,000		\$25,000			\$ 25,000
Total	5/2	\$275,000	6,660	\$605,000	26,500	\$53,000	\$552,000

Notes

- 1) Operating Costs based on \$84 / hr - includes drivers salaries and benefits / fuel / maintenance etc
- 2) Annual Cost for new vehicles based on 7 year life expectancy
- 3) Ridership based on current van capacity of 2.37 rides per service hour, 6 riders per service hour for Community Bus

Service Option 4 – Phased Implementation of Community Bus

Option 4 is modelled after the original recommendations from the Transit Operations Review, where the new Community Bus service would be implemented to address current capacity issues. As noted previously, in February 2016 an additional Handi-van was added into service between 1:00pm and 4:00pm on weekdays using one of the spare vehicles in the fleet. Option 4 includes additional operational funding to formalize the additional service hours implemented in February 2016 and provide additional hours of service on weekdays between 8:00 am and 1:00 pm to create a full 8 hour shift, operating Monday to Friday between 8:00 am and 4:00pm.

As summarized in Table 9, Option 4 would also provide 1 Community Bus Route operating in the Central area of the City, between 9:20 am and 5:20 pm, Monday to Sunday, including Statutory Holidays. If the initial trial is successful, the second Community Bus Route could be targeted for implementation in late 2018 or early 2019.

Table 9 – Option 4 – Trial Community Bus Route Plus Additional Van Capacity

Hours	Community Bus Service Routes	Additional Handi-Vans in Service
	Monday - Sunday	Weekdays (Mon-Fri)
8:00 am – 9:00 am		1
9:20 am – 10:00 am	1	1
10:00 am – 11:00 am	1	1
11:00 am – 12:00 pm	1	1
12:00 pm – 1:00 pm	1	1
1:00 pm – 2:00 pm	1	1*
2:00 pm – 3:00 pm	1	1*
3:00 pm – 4:00 pm	1	1*
4:00 pm – 5:00 pm	1	
5:00 pm – 5:20 pm	1	

* Hours currently served by Van #8

Implementation of Option 4 would require the purchase of 1 new low floor special purpose vehicle. The additional hours of Handi-van service could be provided using one of the current spare vehicles. This option would require the addition of 3 new drivers and would provide up to 4,160 hours of new service annually. The new Community Bus vehicle would cost approximately \$175,000 to purchase, which when amortized over its 7 year service life, amounts to an annual cost of \$25,000 per year. With only one new bus to operate the Community Bus route, this would not provide a spare vehicle for planned maintenance activities; therefore one of the spare accessible conventional buses would need to be used for this during the pilot period. In the event the Community Bus route is not continued beyond the pilot period, the new vehicle purchased would be deployed into regular Handi-van service.

The new service could be expected to generate new ridership with up to 17,500 annual trips on the new Community Bus service plus up to 3,000 new trips on the Handi-van service, generating up to \$41,000 in additional revenue per year. Ridership on the new Community Bus route is estimated based on an assumed average rate of 6 riders per hour of service.

As summarized in Table 10, Option 4 would result in a Net Annual Cost of approximately \$377,700, or \$402,700 when the annualized capital costs of the vehicles are factored in. Option 4 is recommended for implementation in 2017, with subsequent phases subject to an evaluation of performance and future budget allocations.

Table 10 – Annual Cost Estimate Option 4 – Phase 1 Community Bus Route Plus Additional Van Capacity

Item	New Vehicles / Drivers	Capital Cost	Annual Hours	Annual Cost ^{1,2}	Annual Riders ³	Annual Revenue	Annual Net Cost
Weekday Handi-van Service ⁴	1 driver		1,250	\$168,000	3,000	\$6,000	\$162,000
1 Community Bus Route (Monday – Sunday)	2 drivers		2,910	\$250,700	17,500	\$35,000	\$215,700
New Community Bus	1 van	\$175,000		\$25,000			\$ 25,000
Total	3/1	\$175,000	4,160	\$443,700	20,500	\$41,000	\$402,700

Notes

- 1) Operating Costs based on \$84/hr - includes drivers salaries and benefits / fuel / maintenance etc
- 2) Annual Cost for new vehicles based on 7 year life expectancy
- 3) Ridership based on current van capacity of 2.37 rides per service hour, 6 riders per service hour for Community Bus
- 4) Option 4 costing based on 2,000 annual hours of service, of which 1,250 hours are new due to the additional hours for van 8 (8:00am to 1:00pm Mon-Fri). Estimated ridership is new riders due to the expanded hours of service

Discussion of Service Options

Each of the four service options provide various levels of enhancements that will create additional capacity to serve current Handi-van users and some position the City to accommodate future growth. Table 11 provides a summary and comparison of the four service options.

Table 11 – Summary of Service Options

	Option 1	Option 2	Option 3	Option 4
Total Annual Net Operating Costs	\$544,000	\$728,000	\$512,000	\$377,700
Total Capital Cost	\$400,000	\$625,000	\$275,000	\$175,000
Total New Annual Service Hours	6,864	9,574	6,660	4,160
Total New Annual Ridership	16,270	44,000	26,500	20,500
Ability to Accommodate Growth	No	Yes	Yes	Limited

Option 1, while addressing the most pressing capacity issues identified in the review, would not provide for future longer term growth in the system, and additional van capacity or other measures would still need to be considered in the future as ridership demand grows. It is expected that the additional capacity provided would be used up by latent demand for trip making within 12-16 months.

Option 2, while costing an additional \$216,100 per year compared to Option 1, provides significantly more service (about 40% more hours) and has the potential to generate 44,000 new riders compared to 16,270 in Option 1, an increase of 170%.

The ridership increase forecast for the new Community Bus service would not only attract existing Handi-van users who can transition to this new service, but it would also serve the growing older adult demographic with a new service that is better aligned to efficiently serve key destinations they may want to access. Of the forecast 35,000 trips on the Community Bus service, it is anticipated that up to 11,650 of these trips would normally use the Handi-van system. When combined with the 9,000 trips estimated to use the additional van service in Option 2, this could provide capacity to accommodate 20,650 new trips per year for Handi-van customers (27% higher than Option 1).

As a result, Option 2 would address the most pressing capacity issues identified in the review, and would also provide capacity for future longer term growth in the system as the number of residents eligible for Handi-van service continues to grow. Option 2 would be also be able to attract new riders to the transit system by better serving the growing older adult demographic and would allow for efficiency improvements on the conventional bus system by eliminating the need to service difficult stop locations that take valuable time out of the schedules.

Option 3 is essentially a phased implementation of Option 2, reducing cost and service hours for the initial implementation while allowing for the new Community Bus concept to be tested in the community. Option 3 reduces capital costs from Option 1 and 2 by making greater use of the current spare vehicles in the Handi-van fleet to provide additional service and not providing any spare vehicles for the Community Bus, meaning that a conventional bus would need to be put into service to cover periods of planned maintenance. With comparable levels of new service hours, Option 3 has the potential to serve more customers than Option 1 at a lower cost.

Option 4 is the lowest cost option but also provides the lowest amount of new service of the four options assessed. Option 4 provides a minor increase in service hours for traditional Handi-van service, and relies on the Community Bus to attract existing Handi-van customers that can use this service - freeing up capacity for those who will still rely on traditional van service. This strategy is consistent with the recommendations of the Transit Operations Review, but there is increased risk that the Handi-van capacity issues may not be fully addressed if this shift in riders does not occur. To make this option as attractive as possible to current Handi-van customers, the route design will need to target the top locations that current customers are travelling to and therefore may not be able to provide as much benefit to conventional transit routes as some of the other options. Despite these risks and the limited ability to accommodate longer

term demand for those who cannot make use of the Community Bus service, Option 4 does present an opportunity to increase travel options for current Handi-van customers who are having difficulty obtaining reservations and provides additional capacity for ridership growth beyond Option 1, at almost half the cost. Option 4 is a reasonable cost option to gauge the interest in the Community Bus service and, Option 4 is therefore recommended for implementation in 2017 as a first phase of implementation.

Handi-Van System Administration

The second aspect of the Handi-van review looked at the administration of the Handi-van service, including management oversight, management of the trip reservations and scheduling, and customer service.

Within the current Transit Administration area, the equivalent of one full time Operations Supervisor plus 20% of the time allocated to the Manager of Transit Operations (for a total of 1.2 FTE) provides administrative management and oversight of the Handi-van system. In addition to the management oversight, there is one staff position in the administration group that splits their time between the Handi-van scheduling and reservation system and providing payroll entry support for the entire Transit operation. The payroll component of this position currently represents 20% of the time allocated.

The Handi-van reservation hours are currently open between 9:00 am and 8:20 pm. During the daytime, other administrative support staff typically assist in answering calls and booking reservations when they are not busy serving customers at the front counter in the terminal or answering other enquiries. In the evening hours there is only one staff member on duty to provide front line service in the transit terminal and to serve any calls for Handi-van reservations.

Many Handi-van users have indicated that they often have difficulty reaching the reservation staff by telephone at certain periods of the day and this also makes it difficult for them to book trips or make changes to reservations. Given the system capacity issues, many of the frequent riders have been booking trips up to two weeks in advance of their travel date and often book a number of trips all within one phone call. At times, these bookings can take 15 to 20 minutes per call as the reservationist works with the customer to try to find available pick up and drop off times that work with the customer's schedule. During these situations other customers may have difficulty getting through; particularly when the front counter staff are busy with customers at the service desk.

One option that may assist with improving customer service would be to allow customers to book trip requests online or via email. The new reservation software contains an option that would allow for online booking of trip requests however, this functionality has not yet been implemented in our system, in part due to the complexity in providing automated confirmation of a reservation request.

Unlike a hotel reservation or buying tickets online, where the space is either free or occupied, there are many more variables that make reserving a trip on the Handi-van

more complicated and hard to automate. For example, there must be sufficient space on the vehicle for the type of mobility device the client uses; the requested pick up location must be relatively close to the previous stop made by the van; the drop off location must also be relatively close to the next stop the van is making; the travel time between pick-up and drop-off must fit within the scheduled times for the previous and next trips; and the availability of booking a trip may change based on the degree of flexibility the customer has with either the pick or drop off time they desire. Essentially staff would still need to contact the customer to finalize the booking for a trip request made online, and given the current staff constraints in the office it was determined that this may place additional demands on office staff that could not be met with staffing at its current level.

The TTC WheelTrans system is one of the few specialized transit services that is able to offer an online trip reservation system during certain periods of the day (during call centre operating hours), but this still requires customer service staff to search and confirm that the trip request can be accommodated before a trip reservation is booked and a confirmation is sent back to the customer. Given the size of their call centre, they have dedicated resources that provide this service for online trip booking requests. Durham Region Transit also offers an online service for making trip requests or cancellations and Kingston Access Bus also receives trip requests by email. Requests are processed within 24-48 hours and the customer is notified by email when their trip has been booked. In some cases, staff will need to contact the customer to discuss alternative trip times if the requested trip is not available.

The Handi-van Review (Appendix A) has identified some opportunities to improve efficiency and enhance customer service with the Handi-van trip reservation and booking process. The following administrative changes are recommended as part of this review irrespective of which service enhancement option is implemented:

- a) One new part time Handi-van reservationist position be included in the 2017 budget, at an estimated cost of \$34,900 including salary and benefits to provide additional customer service support to the Handi-van reservation program.
- b) Peterborough Transit undertake an education campaign with Handi-van users regarding the late cancellation / no show policy
- c) That Peterborough Transit re-instate the late cancellation / no show policy for customers who do not call ahead to cancel their appointments or fail to show up for reserved trips. Under the policy, Transit staff would issue warning letters for initial offences and would progress up to and including temporary suspensions of service privileges for a period of time for repeat occurrences.
- d) Staff investigate options to allow online Handi-van trip requests to be made either through email, on the transit website, or through a new online application within the current reservation system.

Summary

The Public Transit Operations Review contains eighty-seven recommendations to guide public transit service delivery over the five year life of the Plan.

Initiation of individual recommendations in the Plan had mixed success with some operational changes being well received, others eliminated following trial, and others deferred to ensure adequate review has been completed. As with any plan, changes are often required during implementation to adjust to current conditions.

The growth in demand for the Handi-van system since 2013 has outpaced the efficiency improvements that were initially realized through the implementation of a new reservation and scheduling system in 2015. As a result, capacity issues have emerged and additional investment in the system is required to keep pace with growth and provide capacity to support continued growth in the future.

The recommended option requires an additional investment in annual funding for transit that combines some investment in staff resources to improve customer service, increased capacity in the delivery of Handi-van services, and the introduction of a pilot Community Bus service. Combined, these measures will offer more trips to more riders, as a means to address capacity issues with the Handi-van service and provide enhanced transit options for older adults and people with disabilities who are not able to use the accessible conventional transit service.

This “family of services approach” is the service strategy recommended in the 2012 Transit Operations Review to position the City for continued growth in demand for specialized transit services.

Submitted by,

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Attachments
Appendix A – 2015 Handi-Van Review

2015 Handi-Van Review

The Public Transit Operations Review (Transit Review) was initiated in September 2011 and concluded with the adoption of the Final Report in November 2012. The Project undertook a comprehensive review of Peterborough's transit services and developed a service plan covering the period 2012-2017 including assessment and recommendations on Conventional Route Transit, TransCab and Handi-Van services. The Report contains a total of eighty-seven recommendations and action items for all facets of the services delivered.

The Transit Review noted that ridership on the Handi-van system had been declining over the previous 10 year period up to 2011, largely due to improvements in the accessibility of the conventional transit fleet, but the review also noted the difficulties passengers often experienced with system capacity and in booking trips. Despite the historical trend of declining ridership, the review projected an increase in demand for the Handi-van service due to city-wide growth and the aging of the population.

In July of 2014 the City awarded a contract for implementation of new Handi-van scheduling software. This new system was intended to replace the older software which was no longer being supported by the vendor, but it also presented the opportunity to address some of the concerns raised during the Transit Review with respect to the capacity of the Handi-van services.

The new reservation system was implemented in May 2015, and by October 2015 was in full operational mode. At the same time, the system has seen a dramatic increase in ridership since 2013, which has created some significant additional capacity concerns that have re-emerged in the past year. Feedback from customers has identified a worsening trend with customers experiencing difficulty booking trips on the Handi-van system, which has prompted staff to undertake this review.

Handi-van Service Levels

The operational mandate and legislative requirements of the Accessibility for Ontarians with Disabilities Act (AODA) require the Handi-van system to provide a similar level of transit service to the conventional transit system, which means that the service must be provided during the same hours and days that the conventional service is provided, and the fares must be the same as well. Where the conventional transit system provides bus stop to bus stop service for passengers, the Handi-van service provides door to door service for registered customers, with drivers assisting passengers as required with boarding and disembarking the vehicles. Some specialized transit systems in Ontario only provide curb to curb service, where customers must be able to get to the curb or have attendants assist them with getting to the curb to board the vehicles. This additional service provided on the Peterborough system is well received by customers but it does require longer boarding procedures than some other systems and this does impact the capacity of the service.

Providing a similar level of service to the conventional transit system is the service level standard being delivered by the Handi-van service, but due to the nature of this type of service, with trip reservations and scheduled pick up and drop off times, it is sometimes difficult to relate the two types of services. There are three key operational performance measures used to make this comparison:

- The conventional transit system and the Handi-van service both operate on a “first come, first served” policy basis. Handi-van users can book Standing Order trips (pre-booked or subscription trips that travel at the same time and to the same place on a regular schedule – i.e. from home to work each day) or On-Demand Reservations which cover all other trips booked by customers. All bookings are subject to availability and are treated as “first come, first served”. Capacity constraints on either system may involve riders whose trip cannot be accommodated. For example in 2015, 244 passengers on the conventional system could not be accommodated due to capacity issues on various bus routes, down from 330 in 2014. In 2014, 550 trip requests on the Handi-van system were not accommodated, up from 329 in 2013. Given the mid-year change over in reservation systems, a reliable estimate of unaccommodated trips for 2015 is not available.
- The conventional transit system operates on 40 minute service frequency for most routes (20 minute service frequency is offered on 4 routes during morning and afternoon peak periods). For the Handi-van system a similar service level would provide a trip booking within a 40 minute window of the customer’s desired pick up or drop off time.
- Trips on the conventional transit system involving a transfer at the downtown terminal can take upwards of 40 minutes to 60 minutes depending on the origin and destination locations. For the Handi-van system, a comparable level of service could require users to ride in a vehicle for 40-60 minutes depending on the number of passengers on board and the pick up and drop off locations for these passengers. A review of trips from January 2016 showed that the average Handi-van trip took 13.8 minutes, 98% of all trips were completed within 40 minutes, and the maximum recorded travel time was 58.7 minutes.

Many of the other specialized transit service providers adopt similar service parameters to gauge the service levels they are delivering.

Implementation of New Handi-van Scheduling Software

Council at their meeting of July 2, 2014, approved Report USTR14-006 which awarded a contract for implementation of new Handi-van scheduling software. This new system was intended to replace the older software which was no longer being supported by the vendor and did not work on newer computers in use at the City, but it also presented the opportunity to address some of the concerns raised during the Transit Review with respect to the capacity of the Handi-van services.

The new scheduling and reservation system includes real time automatic vehicle location technology and advanced systems for optimizing vehicle routing, maximizing the number of passengers assigned to vehicles, and optimizing pick up and drop off times to meet customers appointment requirements while optimizing the capacity and efficiency of the system. The enhanced on-board GPS systems and communications technology allow for better optimization and deployment of Handi-van vehicles and improved ability to accommodate same day booking requests, where capacity is available. The new reservation system was implemented in May 2015, and by October 2015 was in full operational mode.

The four key operational benefits that the new software was expected to achieve include:

- improved capacity of the system (passengers / Revenue Hr)
- increased ridership and the number of trip requests we are able to serve
- reduced cancellations and “no shows”
- improved efficiency and reliability

Table A1, summarizes the performance of the new scheduling software for the May to December period of 2015.

Table A1 – Performance of New Scheduling Software

Measure	Performance of New System
Improve efficiency (passengers / Revenue Hr)	2015 = 2.41 passengers / revenue hour 2014 = 2.37 passengers / revenue hour - 1.7% increase
Increase the number of trips	2015 = 44,900 passenger trips 2014 = 39,100 passenger trips - 15% increase
Reduce cancellations and “no shows”	May – Dec 2015 = 2,961 (11% of completed trips) - 22 % reduction May – Dec 2014 = 3,776 (16% of completed trips)
Improve efficiency and reliability	2015 Performance 76% of pick ups on time (within +/- 10 min) 18 % early (>10 min) 6 % late (>10 min) - previous reservation system did not allow for tracking of on time performance in 2014

The new scheduling system has allowed staff to provide a 15% increase in passenger trips without adding any new vehicles or hours of service. This increase in the number of trip requests served was achieved through the improved optimization of vehicle

routing which resulted in a reduction in non-revenue service hours (i.e. driving time with no passengers on board), combined with a 1.7% increase in productivity in terms of passengers served per revenue hour of service (i.e. more passengers on each vehicle).

For the 7 months between May and December of 2015, the number of late trip cancellations and no shows reduced by 22% compared to the same period in 2014, with these trips now representing 11% of total trips completed, down from 16% in the previous year. The new reservation software includes an automated appointment reminder system that phones the customer prior to their appointment to remind them of the pick up time. This service also allows the customer to cancel their trip as well if it is no longer needed and they have forgotten to call the office to cancel in advance.

Despite the improvement in performance, late cancellations and no show trips are still a serious issue that needs to be addressed as both situations can represent lost opportunities to fill trip requests for users who actually need to book a ride. Late cancellations are defined as a cancellation with less than 24 hours notice, and while in some cases these trips can be filled with same day booking requests, the closer these cancellations are to the actual booking time the harder it is to match a rider into that time slot.

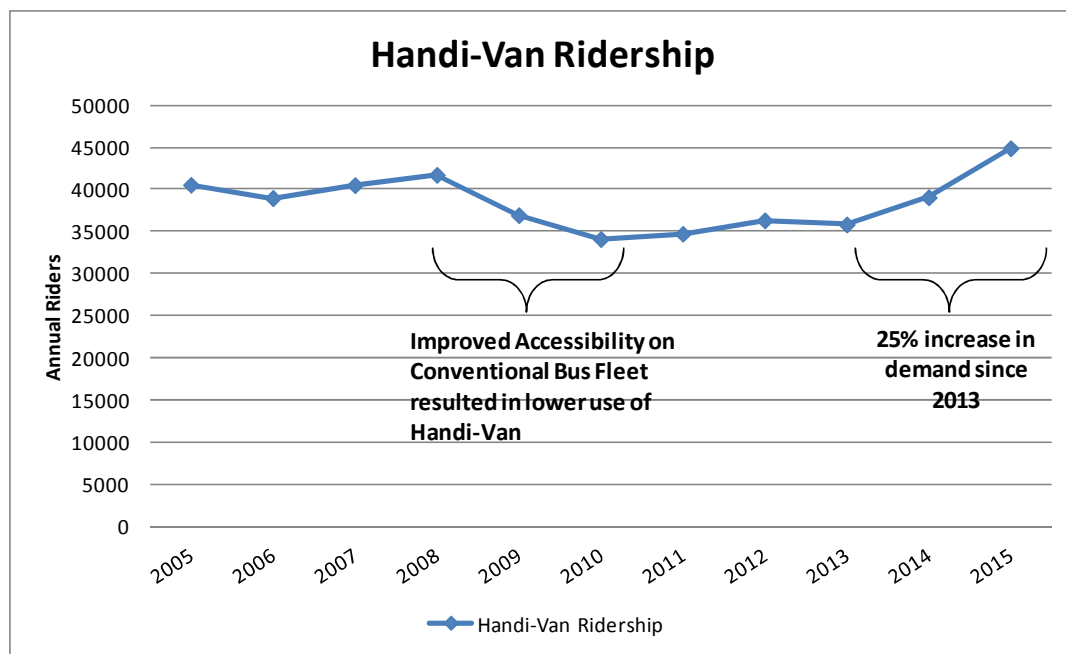
On time performance is good at 76% of trips arriving within +/- 10 min of the scheduled pick up time. The Handi-van system policy is for customers to be ready for their trip within 15 min before or after their scheduled time, allowing for traffic, construction and other delays that may occur. With 18% of the trips arriving early to the pick up or drop off location, strict adherence to on time performance can improve these results appreciably, and it is expected that the on time performance should improve over time.

Handi-van Ridership Growth and Capacity

Since 2013 Handi-van ridership has grown by about 25% with no increase in hours of service. At the same time new riders are being added to the system each week, and in 2015 alone 330 new riders were added to the service. Growth in ridership for the first quarter of 2016 is up 5% compared to the first quarter of 2015. It is estimated by the Province that 1 in 7 people in Ontario have a disability and with the aging population this is expected to grow to 1 in 5 by 2035.

Feedback received from riders and from the Transportation Subcommittee of the Accessibility Advisory Committee has raised concerns with the difficulty many riders are having with booking trips, particularly during peak travel times. While some users have equated the difficulty in booking trips with the conversion to the new system, it is primarily the significant growth in demand which is causing the lack of available capacity for trip booking. The growth in demand has surpassed the capacity improvements realized through investments made in the new scheduling system.

Figure A1- Handi-Van Ridership Growth



The dramatic increase in ridership since 2013, as illustrated in Figure A1, has created some significant additional capacity concerns that have re-emerged in the past year and have prompted staff to undertake this review.

The capacity to accommodate increased trip demand on any given day is influenced by a number of factors including the relative periods of the day with the highest travel demands, and the number of vans in service by hour of day. Figure A2 illustrates the actual trip demand profile for a typical week in the month of Jan 2016 by hour of day.

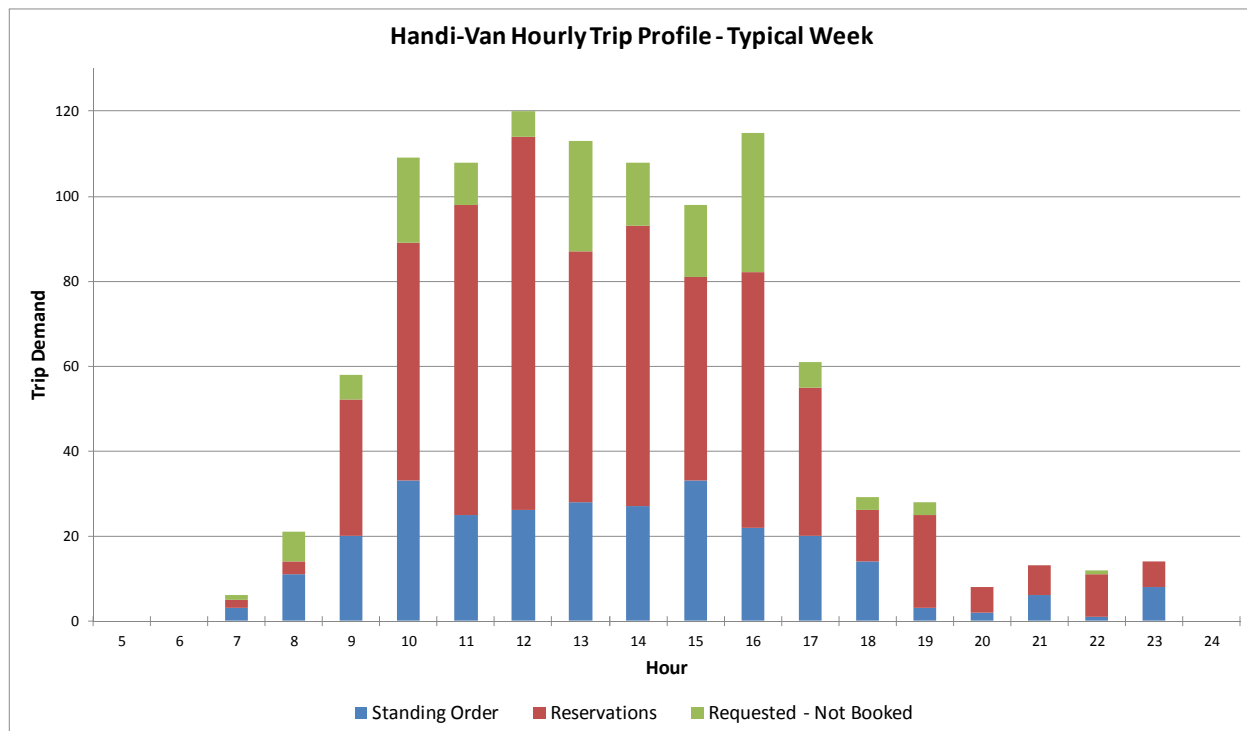
The demand profile is made up of:

- Standing Order trips (pre-booked or subscription trips that travel at the same time and to the same place on a regular schedule – i.e. from home to work each day);
- On Demand Reservations – trips that are booked by customers on a first come first served basis up to two weeks in advance; and
- Trip Requests Not Booked – trips that have been requested by customers but could not be booked due to lack of capacity

Standing order requests (subscription trips) represent approximately 33% of the typical trip bookings within a given week, and On Demand Reservations make up the remaining 67% of bookings. Depending on the number of cancellations, the timing of these cancellations, and the workload of reservation staff, some of the unbooked trip requests can be served with same day bookings.

Over the course of a typical week, the demand for the Handi-van system is at about 110% of available capacity, with approximately 1020 trip requests compared to a capacity of about 920 trips per week. When the influence of late cancellations and no show appointments are taken into account, the typical weekly trips that can actually be served is reduced to about 870 or about 85% of the requested trips.

Figure A2- Handi-Van Hourly Trip Profile



The heaviest demands occur during the peak periods between 10:00 am and 4:00 pm, where the average demand within a given hour can exceed capacity by 10-20%. As illustrated in Figure A2, outside of the peak periods the average capacity of the Handi-van system generally follows the demand profile for trip requests.

In February 2016 an additional van was added into service between 1:00 pm and 4:00 pm on weekdays to partially address the number of unserved trip requests during this period. This service increase was accommodated within the existing transit budget using savings from managing overtime costs in other areas of the operation and using one of the existing vans from our spare vehicles. With 8 vehicles in service during peak periods our spare ratio is currently reduced to 27% compared to the industry standard of about 30%. This temporary measure is not sustainable without sustained funding for these additional service hours and additional investment in new and/or replacement Handi-van vehicles, given the age of the spare vehicles in the fleet and the resulting increase in maintenance and breakdowns that can be expected to occur as the vehicles age.

Table A2 provides a summary of the trips made on the Handi-van service for a sample month in January 2016. Of the 2,927 completed trips, the majority were for recreation (24%) or social (31%) trip purposes. Medical, education and work related trip purposes represent a combined total of 31% of total trips, with the remaining 14% of trips being for shopping, entertainment or other undefined purposes. Under current legislation, transit staff are not permitted to prioritize trip bookings based on the purpose of trip and therefore the system operates on a first come- first served basis.

Table A2 – Handi-Van Trips, Cancelations / No Show by Trip Purpose – Jan 2016

Trip Purpose	Monthly Trips Completed	Share of Total Trips	Cancel / No Show	Share of Total Cancellations*	Cancel / No Show Share by Purpose
Education	257	9%	40	10%	16%
Entertainment	121	4%	4	1%	3%
Medical	509	17%	60	15%	12%
Recreation	710	24%	83	21%	12%
Shopping	276	9%	33	8%	12%
Social	909	31%	136	35%	15%
Work	136	5%	9	2%	7%
Other	9	>1%	28	7%	311%
Total	2,927		393		13%

*May not add to 100% due to rounding

The distribution of trip cancellations and no shows also follow a similar distribution by trip purpose, with a slightly higher share of cancelations and no shows for social trips and other trips. In January 2016, the late cancelations and no show trips represented 13% of the total completed trips for the month, higher than the 11% reported during the initial May – December evaluation period for the new scheduling system. This increase does not necessarily indicate a worsening problem, since some Handi-van customers who are able to use the conventional bus system under favourable weather conditions may book trips during the winter and subsequently cancel or fail to show up if the weather allows them the opportunity for more flexible travel on the conventional bus system. Entertainment trips and work trips tend to have the lowest rate of late cancelations and no shows, followed by medical, recreation and shopping trips.

User feedback received during the transition to the new booking system noted some inconsistencies between pick up times in the booking system versus the times requested over the phone, and some instances where the automated telephone reminders for reservations were not received by the user or indicated different pick up times than originally requested. Many of these issues were related to changes in the booking process itself, which lead to some “growing pains” with the new system as

customers and reservation staff became accustomed to the new system and the advanced booking features available. The higher than average rate of no shows during the first year of implementation may have been partially due to this transition.

Another factor contributing to the high rate of cancellations and no shows is related to the strategies some customers use to work around the capacity issues within the reservation system. Some users will over-book trip requests even if they are not sure they will need the trip, just to ensure they have flexibility to travel on a given day in the event they need to. Others customers will book a trip one way, even if they cannot book the return trip to home, in the hope that someone will cancel before their travel day and allow their return trip to be booked. When customers forget to cancel these “tentative” trip bookings they can often result in a late cancellation or a no show.

Peterborough Transit had a policy in place for users who frequently failed to cancel their appointments or show up for scheduled trips, which included warning letters and progressed up to and including temporary suspensions of service privileges for a period of time for repeat occurrences. The policy has not been strictly enforced in the past 5 years, in part due to the inability to properly track and record when Handi-van vehicles would actually arrive to pick passengers up and the length of time the driver would wait for the passenger to show. This inability to properly track and record these events made it difficult to manage and enforce the no show policy effectively and resulted in a number of disputes between customers and staff.

With the new tablets installed in the Handi-vans, the vehicle location is tracked in real time, and the location is available to the dispatchers and is recorded in the vehicle log, along with the arrival time at the pick up location and the time when the driver leaves when a “no show” occurs. Given the enhanced technology afforded by the new scheduling system, the ability to manage the late cancellation and no show policy is greatly enhanced, and it is proposed to re-introduce the late cancellation and no show policy to reduce the high rates of late cancellations and no shows still being experienced.

Many other jurisdictions (Barrie, Timmins, St. Catharines, and Guelph) have financial penalties for customers who do not follow the cancellation / no show policies. Although this approach is not being proposed for Peterborough at this time, a similar approach may need to be considered in the future if restoring the existing warning letter / suspension of service approach does not improve late cancellation / no show performance.

Handi-Van Eligibility and Passenger Profile

Eligibility for use of the Handi-Van system is currently based on the customer’s functional ability to climb or descend steps used on some conventional transit vehicles or the ability of the customer to walk a distance of 175m. Both the applicant and applicant’s physician is required to assess the customer’s functional ability taking into account the specific needs of each customer. With the use of fully accessible buses on all of the regular transit routes in the City during most periods, the first criteria is largely

redundant today and industry best practices has recognized the need to update the criteria with respect to walking distances as some passengers who are unable to walk a certain distance are able to fully use the conventional transit system with mobility devices.

The transportation standards under the Accessibility for Ontarians with Disabilities Act (AODA) has established a new framework for assessing and categorizing the eligibility of customers to use specialized transit services that focuses on the customers ability to use the conventional transit system, for any number of reasons, not just physical abilities. The AODA specifies three categories of eligibility:

- Unconditional – [eligible for all trips] - Applies to a person with a disability that prevents them from using conventional transit for all trips, regardless of weather, distance to the stop, time of day, etc;
- Conditional – [eligible for some trips with barriers that limit ability to use conventional transit] - Applies to person with a disability that prevents them from consistently using conventional transit due to certain conditions, such as physical or environmental barriers. The individual is reasonably expected to make some trips on the conventional service. On some days accessible conventional transit is possible and on other days it is not; and
- Temporary – [eligible for unconditional or conditional categories, for a limited time] - Applies to person with a disability that prevents them from using conventional transit for a limited time (example: surgery recovery). This person will be assessed every 6 months, to ensure the Handi-van service is still required.

The City has been working with the Transportation Sub-Committee of the Accessibility Advisory Committee to update the Handi-van Eligibility categories to implement the new requirements prior to the January 1, 2017 deadline established in the AODA.

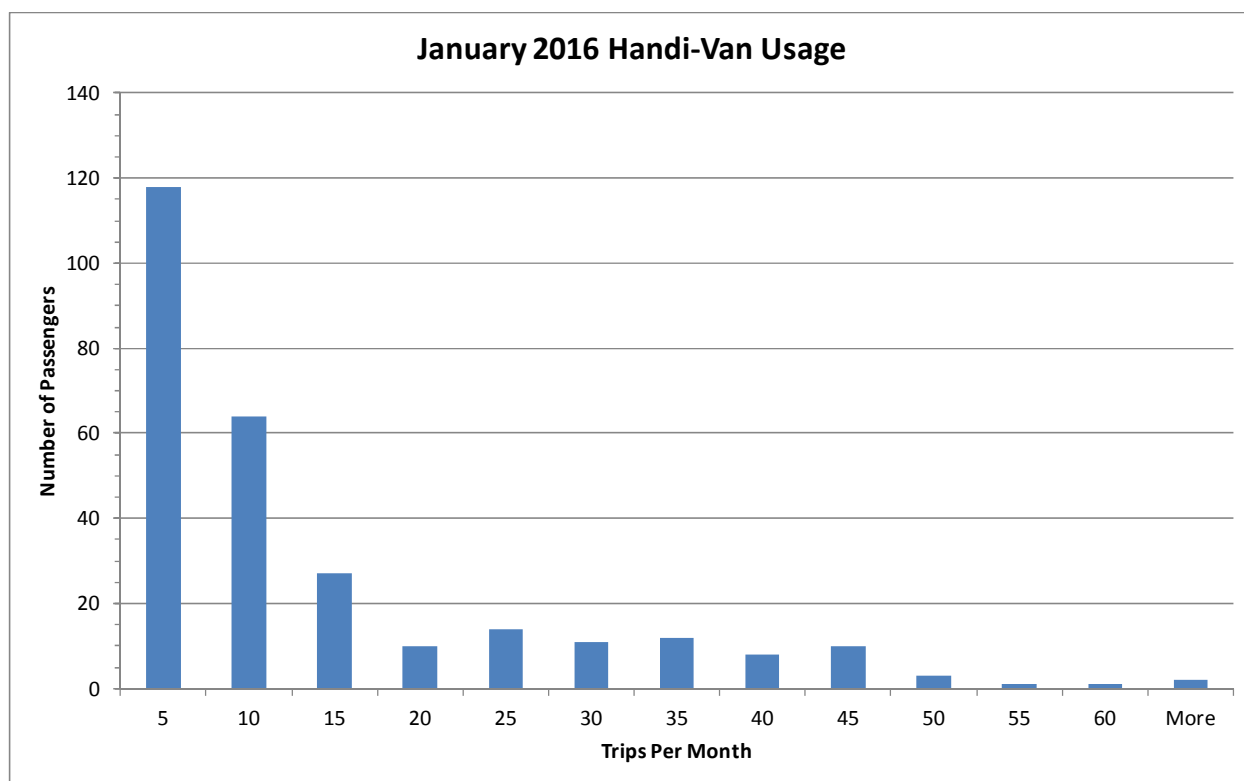
Based on 2014 statistics approximately 51% of the Handi-van customers are categorized as ambulatory and have some ability to walk on their own or with the use of mobility devices while 49% use a wheelchair or scooter at all times. Based on a sample of trips in January 2016 approximately 62% of the Handi-van customer trips were made by ambulatory customers, although it is recognized that this may be higher than normal as many of the ambulatory customers will use the Handi-van service during the winter months when weather conditions make use of the conventional transit system problematic.

One possible approach to lessen the impact of the aforementioned capacity issues would be to reassess the eligibility of all Handi-van customers using the new eligibility criteria to determine if some current users should be shifted back to use the conventional transit system. Given the administrative burden this would create within transit administration, plus the potential trauma this may invoke with many of our Handi-van customers, staff are not recommending this option to deal with the capacity issues

on the system. Alternatively, an educational campaign aimed at Handi-van users who may now be able to use the accessible conventional transit system may be a more effective approach to encouraging this shift.

In terms of the trip reservation activity of Handi-van users, during January 2016 a total of 281 passengers reserved a total of 3,460 one way trips on the service, for an average of 12.3 trip requests per customer. Figure A3, illustrates the trip making patterns of Handi-van customers for the month of January 2016. While the average customer made 12.3 trips, approximately 118 customers (or 42%) made 5 or fewer trips while 25 customers (9%) made over 40 trips that month.

Figure A3- Monthly Handi-Van Passenger Bookings



The rider profile plays a role in understanding the nature of the capacity issues being experienced on the Handi-van system today, as the top 50% of most frequent riders are using 87% of the available bookings, making an average of 21.5 reservations per month. The top 25% of frequent riders booked about 65% of the available reservations and about 34% of the monthly system capacity was used by 10% of the customers.

Many of the most frequent users of the system also had difficulty booking trips that they wanted to make, which is indicative of the latent demand for trip making. Based on a sample week in March 2016 approximately 25% of the unscheduled trip requests (trips where a booking could not be scheduled at the time of the initial call) were made by the top 10% of most frequent riders. These unscheduled trip requests are placed on a call back list in case the customer's trip requests can be filled when a cancellation occurs.

On average, the Handi-van reservation staff are typically able to find bookings for 10-20% of these unscheduled trip requests within a typical week, however this is dependent on receiving the cancellation in time to find a matching appointment time and notify the customer of the trip availability. Given the current staff workload in the reservation area combined with the number of late cancellations that occur this process is not optimal and a number of trip requests can go unserved each week.

The demand for trip making by the most frequent Handi-van riders suggests that simply adding an extra van or two into service during peak times may not completely solve the capacity issues in the longer term, as the added capacity will quickly get used up given the latent demand already in the system. As illustrated in Table A3, almost 50% of the unscheduled trip requests for a one week period were recorded by the top 25% most frequent riders of the system, who already made an average of close to 33 rides per month or more.

Table A3 – Usage of Handi-Van Booking Capacity

Most Frequent Users	Percentage of Capacity Used	Average Rides / Month	Percentage of Unscheduled Trip Requests
50%	87%	21.5	75%
40%	81%	24.8	67%
30%	72%	29.5	58%
25%	65%	32.6	49%
20%	57%	35.7	41%
10%	34%	43.5	25%
5%	19%	48.9	12%
2.5%	10%	53.9	6%

In February 2016 an eighth van was put into service on weekday afternoons between 1:00pm and 4:00pm. Despite this added capacity, a review of the unserved trip demand for a one week period in March 2016 showed that there were still 62 trip requests during this same 3 hour period that could not be booked due to lack of capacity. Adding sufficient capacity to accommodate all of these additional trip requests would have required using an average of 4 additional Handi-vans and drivers in service each weekday during these same hours.

Handi-Van System Administration

The second aspect of the Handi-van review looked at the administration of the Handi-van service, including management oversight, management of the trip reservations and scheduling, and customer service.

Within the current Transit Administration area the equivalent of one full time Operations Supervisor plus 20% of the time allocated to the Manager of Transit Operations (for a total of 1.2 FTE) is in place to provide administrative management and oversight of the Handi-van system. This function has traditionally been covered by each of the transit supervisors, representing a portion of their daily work activities on an as required basis.

Since the new reservation system has been put into place, significantly more time has been spent by operations supervisors in learning the new system, working with customers to resolve concerns, training drivers and staff on the use of the new software and equipment, and working with the vendor to resolve technical issues or customize elements of the software to optimize it for use in our operation. This has become essentially a dedicated position within the supervisory group during normal business hours, although due to the hours of service (6:00 am – 11:20 pm on weekdays; 6:40 am – 11:20 pm on Saturdays; and 8:00 am to 7:20 pm on Sundays) there is a need to also provide supervisory support during early morning, evening hours and on weekends. As a result, supervisory time has been taken away from other duties within the transit administration group to provide the necessary coverage for the Handi-van system. Much of this has come at the expense of delays to other initiatives recommended in the Transit Operations Review.

In addition to the management oversight, there is one staff position in the administration group that splits their time between the Handi-van scheduling and reservation system and providing payroll entry support for the entire Transit operation. The payroll component of this position currently represents 20% of the time allocated. The Handi-van reservation hours are currently open between 9:00 am and 8:20 pm. AODA requirements require transit agencies to allow same day service to the extent that this is available; and where same day service is not available, accept booking requests up to three hours before the published end of the service period on the day before the intended day of travel. The hours of operation for reservations comply with the AODA requirements. During the daytime, there are other administrative support staff that can assist in answering calls and booking reservations when they are not busy serving customers at the front counter in the terminal or answering other enquiries. In the evening hours there is only one staff member on duty to provide front line service in the transit terminal and to serve any calls for Handi-van reservations.

Many Handi-van users have indicated that they often have difficulty reaching the reservation staff by telephone at certain periods of the day and this also makes it difficult for them to book trips or make changes to reservations. Given the system capacity issues, many of the frequent riders have been booking trips up to two weeks in advance of their travel date and often book a number of trips all within one phone call. At times, these bookings can take 15 to 20 minutes per call as the reservationist works with the customer to try to find available pick up and drop off times that work with the customer's schedule. During these situations other customers may have difficulty getting through; particularly when the front counter staff are busy with customers at the service desk.

One option that may assist with improving customer service would be to allow customers to book trip requests online or via email. With the introduction of the new reservation software, there is an option in the software that would allow for online booking of trip requests. This functionality has not yet been implemented in our system, in part due to the complexity in providing automated confirmation of a reservation request. Unlike a hotel reservation or buying tickets online, where the space is either free or occupied, there are many more variables that make reserving a trip on the Handi-van much more complicated and hard to automate. For example, there must be sufficient space on the vehicle for the type of mobility device the client uses; the requested pick up location must be relatively close to the previous stop made by the van; the drop off location must also be relatively close to the next stop the van is making; the travel time between pick-up and drop-off must fit within the scheduled times for the previous and next trips; and the availability of booking a trip may change based on the degree of flexibility the customer has with either the pick or drop off time.

The TTC WheelTrans system is one of the few specialized transit services that is able to offer an online trip reservation system during certain periods of the day (during call centre operating hours), but this still requires customer service staff to search and confirm that the trip request can be accommodated before a trip reservation is booked and a confirmation is sent back to the customer. Given the size of their call centre, they have dedicated resources that provide this service for online trip booking requests. Durham Region Transit also offers an online service for making trip requests or cancellations and Kingston Access Bus also receives trip requests by email. Requests are processed within 24-48 hours and the customer is notified by email when their trip has been booked. In some cases, staff will need to contact the customer to discuss alternative trip times if the requested trip is not available.

The operational challenges with online trip reservations are the same in Peterborough as in other jurisdictions; what is different is the size of the back office administration group that is available to provide and support this type of service. Similar to other jurisdictions that provide online trip request services, staff would still need to contact the customer to finalize the booking for a trip request made online. Given the current staff constraints in the office it was determined that this may place additional demands on office staff that could not be met with staffing at its current level. Allowing the initial request to be made via email or through an online web form may relieve some of the call volume and delays experienced by users trying to reach a reservationist, but additional staff resources would be required to acknowledge the request and allow time to contact the customer to complete and confirm a booking in a timely fashion.

Given the hours of service and ridership increases experienced in the system, there is a capacity deficiency from a customer service perspective, which can often translate into frustrated customers and to some extent frustrated staff. Providing additional staff support to take over the payroll function and to assist with Handi-van reservations will improve customer service and relieve other customer service staff in the office.

As noted previously in the Handi-van review, staff have been logging trip requests that cannot be initially booked due to lack of capacity, and using this list to call customers

back to book trips if capacity opens up due to trip cancellations. At this time only about 10-20% of these trip requests are being filled, in part because reservation staff only have so much time to search appointment openings, match them with cancellations, and contact the customer to advise them that their trip request can be scheduled. Adding additional staff resources in reservations would also allow more time to be spent matching cancellations with unbooked trip requests to improve this aspect of the service as well.

The Handi-van review has identified some opportunities to improve efficiency and enhance customer service with the Handi-van trip reservation and booking process. The following administrative changes are recommended as part of this review irrespective of which service enhancement option is implemented:

- a) One new part time Handi-van reservationist position be included in the 2017 budget, at an estimated cost of \$34,900 including salary and benefits to provide additional customer service support to the Handi-van reservation program.
- b) Peterborough Transit undertake an education campaign with Handi-van users regarding the late cancellation / no show policy
- c) Peterborough Transit re-instate the late cancellation / no show policy for customers who do not call ahead to cancel their appointments or fail to show up for reserved trips. Under the policy, Transit staff would issue warning letters for initial offences and would progress up to and including temporary suspensions of service privileges for a period of time for repeat occurrences.
- d) Staff investigate options to allow online Handi-van trip requests to be made either through email, on the transit website, or through a new online application within the current reservation system.