



Hamilton

INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	May 17, 2021
SUBJECT/REPORT NO:	Waterdown Transit Service On Demand Pilot (PW21032) (City Wide)
WARD(S) AFFECTED:	City Wide
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SIGNATURE:	

COUNCIL DIRECTION

N/A

INFORMATION

This information report is to provide Committee with, and build upon, information presented at the January 22, 2021 Transit Budget, General Issues Committee respecting the on-demand service pilot for Waterdown.

The one-year pilot, which is scheduled to begin in September 2021, is on track and at the time this report was written was in the RFP stage. The goals of the pilot are quite simple; to test the feasibility of on-demand service software technology for potential continued use in Waterdown and/or expansion of the use of similar technologies for other areas within the City, to improve upon meeting the Council approved service standards inclusive of extending the route coverage to meet the needs of the community, growing transit ridership to meet the objective of improved productivity, and lastly to improve the customer experience for those using transit services. A list of criteria that the pilot will be assessed against is attached to Report PW21032 as Appendix "A" Transit staff will report back to Council prior to the conclusion of the pilot with recommendations based on its outcomes which could include the continuation of the pilot, discontinuation of the pilot, expansion of the pilot to other areas, permanent implementation of technology use inclusive of budget adjustments in future years transit operating budgets, or other policy recommendations related to this type of service

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delivery model and/or the service standards. A timeline of the pilot project is attached to Report PW21032 as Appendix “B”.

In order to provide Committee a complete understanding of the need for the pilot planned for implementation in Fall 2021, and how it has the potential to overcome existing and anticipated transit challenges in Waterdown, a brief overview of the evolution of service operating in this community and the policy framework that guides service changes is necessary.

Prior to 1993, transit service to Waterdown was delivered by Canada Coach Lines which operated limited service between Hamilton and Guelph by way of Hwy 6, with a stop at Clappison’s Corner.

In 1993, the HSR introduced route #18 Waterdown service, providing a limited number of trips connecting downtown Hamilton with Aldershot GO Station, via Clappison’s Corner and Dundas Street. This route was phased out in 1994.

In 2008, the HSR re-introduced weekday peak service that connected the urban area of Waterdown with the Aldershot GO Station via Waterdown Road. The route operated on an inconsistent frequency ranging from one bus every 18 to 30 minutes, travelling in a one-way directional loop during the morning peak and in the opposite direction during the afternoon peak period. At the time the route extended as far west as Hwy 6 and as far east as Evans Road. The route continued to operate in this manner and on this footprint until Fall 2015. A map of the route footprint operating from 2008 to 2015 is attached to Report PW21032 as Appendix “C”.

In 2014, the Transportation Demand Section of the Transportation Division conducted a resident survey within the Waterdown Urban Area with an objective of determining the level of support for changes to the HSR bus service operating in Waterdown. The survey provided residents an opportunity to receive information related to proposed transit travel pattern options and staff to obtain feedback from residents on potential HSR service changes. The surveys, of which 6,400 were mailed, returned a 13% response rate and those who responded indicated that there was a growing demand for transit service in the community as well as their preferred travel pattern for which they would like transit to operate.

On March 6, 2015, the Transit Division presented to the General Issues Committee the Ten-Year Local Transit Strategy Report (PW14015a) inclusive of several recommendations, one of which was the recommendation to approve a set of new Service Standards which would set a policy to objectively and transparently guide the process of service design going forward. The approved Service Standards set the minimum standards for coverage, frequency and productivity, as well as the maximum standards for service span and loading, which would be used as criteria for service

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design. The Service Standards were to be used along with stakeholder input to shape the system and in Appendix “G” (PW14015a) it outlined how they would be applied to service design decisions. The Council approved Service Standards can be found as attached to Report PW21032 as Appendix “D”.

The service standard for coverage would enable the HSR to address the accessibility of transit by targeting a maximum walking distance that a customer would have to travel to reach a transit route. Decisions about where HSR bus services would operate at the time, and in the future, would be guided by a policy of 90% of residents and workplaces within the Hamilton Urban Transit Area being within 400m of an HSR bus route on weekdays during peak periods. Coverage at non-peak times could be scaled to customer demand and service productivity expectations. Locations that were beyond the distance threshold would be considered for new or restructured service in the context of short-range planning objectives and available budget.

The service standards for span and frequency dictate the level of service being provided. The service standard for span defines the operating hours for services. The days and hours during which HSR services are operated is guided by a policy that provides for a maximum service span for any route of 21 hours on weekdays and Saturdays, and 18 hours on Sundays. Minimum service span thresholds were not specified in the policy; however, all routes were expected to attain the minimum productivity thresholds for specific day and time periods. The service standard for frequency defines how often HSR routes operate. Decisions related to service frequency were to be guided by a policy that set minimum frequency (time between buses) thresholds to ensure that customer wait times at bus stops were within reasonable limits. Separate thresholds were set for weekday peak and non-peak periods as well as for Saturday and Sunday schedules. Changes in frequency were to be evaluated in conjunction with loading and productivity service standards, and in cases where productivity standards were exceeded on high frequency routes, higher order transit options could be considered.

The service standards for productivity and loading provide the quantitative data thresholds needed to trigger changes in service levels from a capacity supply and demand perspective. The objective of the service standard for productivity is to identify routes that are underperforming as well as evaluating existing and new routes. HSR routes are expected to operate within a range of defined minimum productivity thresholds based on time periods and day types. Routes that fall below the minimum productivity thresholds would be subject to monitoring, route reconfiguration, span and frequency reductions, consolidation into other routes, or discontinuation. The service standard for loading sets a maximum load for a bus based on average seated capacity during the busiest hour and direction within defined time periods. The objective of the service standard for loading was to ensure a standard of customer comfort and to trigger routes that should be reviewed for added capacity. A variety of methods were to

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be considered to add capacity to a route including increasing route frequency, increasing route span or introducing alternative vehicle sizes.

At the time of the introduction of the Ten-Year Local Transit Strategy in 2015, transit service operating in Waterdown was assessed as being deficient when compared to the service standards for frequency, productivity and loading, and in compliance with span and coverage standards. Year 3 of Ten-Year Local Transit Strategy, originally slated for 2017, was identified as the year in which staff were to begin applying expansion hours to address service standards gaps not just in Waterdown but across the transit system. However, with expansion hours within years 1 and 2 of the Ten-Year Local Transit also being identified to address deficiencies within the system, and based on previous assessments of the transit service levels in Waterdown, how they compared to both the newly introduced service standards and services throughout the rest of the City, and the 2014 resident survey, transit service improvements in Waterdown were expedited and introduced in Fall 2015 instead of delaying until 2017.

In Fall 2015, transit service in Waterdown was improved to include bi-directional service operating at a 30-minute frequency in peak and midday periods as well as on Saturdays. At the same time the route footprint (coverage area) was reduced to operate as far west as the commercial retail center just west of Hollybush Drive and to Spring Creek Drive in the east. The adjustment to the service footprint allowed for improved reach into the residential communities between Parkside Drive and Dundas Street on either side of town rather than continuing the previous travel patterns which required the buses to operate further east and west and along service corridors with less density and built form. A map of the route footprint operating from 2015 to 2021 is attached to Report PW21032 as Appendix "E".

While the change to the routing and service levels in Fall 2015 addressed the service standard for frequency and improved upon the service span within the service standard, the service standards for productivity and loading would still need to be quantified to see if the improvements incorporated would result in meeting the defined performance targets. At the time the service standard for coverage was not impacted, however, with the recent and proposed development around the interchange of Highway 5 and Highway 6 as well as residential development in other parts of the community, the service standard for coverage is no longer being achieved within Waterdown.

In late 2017, as part of the transit PTIF projects, Automated Passenger Counters (APCs) were added to the HSR fleet allowing transit staff to properly analyze the quantitative data necessary to assess how HSR routes were performing against the service standards for productivity and loading. By spring 2018 most of the fleet was outfitted, however, the small Arboc buses operating in Waterdown were not equipped with APCs. It wasn't until the introduction of the 30-foot Vicinity transit buses that currently operate in Waterdown began operating in Fall 2018 that data was collected for

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this route to be assessed against the productivity and load targets. Based on the limited period of data available to staff, a determination can be made that the service targets for productivity and loading in Waterdown were not being met prior to the pandemic and like other routes the pandemic has produced a decline in transit use on this route. A comparison of Fall 2018 to Fall 2019 APC productivity data compared to service standards targets is attached to Report PW21032 as Appendix "F".

In addition to the policy application of service standards to inform service decision making, Transit staff also look at other requirements and measures to assess how the service is performing and impacts of service changes, inclusive of service reliability (past and present on time performance), upcoming impacts to service reliability (long term changes or impacts due to short term or sustained construction activity), the Collective Agreement between the City of Hamilton and the Amalgamated Transit Union (ATU), and scheduling or routing changes of adjacent or connected transit services (e.g. Burlington Transit and GO Transit). One such change to the connection between service with Burlington Transit came to Transit staff's attention in Spring of 2019 when a planned change to the Burlington Transit route 1 was to be introduced in Fall 2019 effectively cutting off the connection from Hamilton Transit's route 18 Waterdown to Burlington Transit's route 1 for customers travelling to and from Hamilton to Aldershot GO station.

In Summer 2019 Transit staff began to fully assess the future of transit service in Waterdown, inclusive of considering customer feedback from the (re)envision survey, the impacts to customers that changes to Burlington Transit would present, the completion a risk and benefits assessment conducted to determine whether to maintain service as is, replace the missing link to Burlington Transit service by lengthening the route #18 through use of expansion hours within the Ten-Year Local Transit Strategy, or by looking at other alternative innovative solutions. At the time staff determined that lengthening the route to replace the missing link to Burlington Transit was the most appropriate solution. While this solution was chosen to overcome the impact to customers of the impending changes to service in the near term, staff also recognized several potential benefits associated with looking to innovating and providing service in the form of a different delivery model in the future. On-demand or demand responsive transit service was being researched and tracked, and as an alternative delivery option had seen a recent resurgence through the broadened use of technology. As such it was being introduced and piloted in other communities.

In February 2020, Transit staff in collaboration with the Ward 15 Councillor and staff from Economic Development met with the business community located in the west end of Waterdown. The meeting provided staff a great opportunity to connect and listen to this community describe why transit service and connectivity to jobs for their employees was important to the success of their businesses, what their common frustrations were related to taxation for transit service while not having access to it, and to have the

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conversation about how we might improve transit service in the area to serve their needs as well as the needs of potential new employers wishing commit to developing their businesses in the same area. At the time of the meeting Transit staff had already planned and presented to Council the service enhancements proposed to be implemented in Fall 2020 as part of year 5 of the Ten-Year Local Transit Strategy. Staff believed there would be an opportunity to incorporate service enhancements to address the concerns and needs for Waterdown in year 6 of the Ten-Year Local Transit Strategy and that these enhancements could occur as early as Fall 2021.

In March 2020, the COVID-19 pandemic began and as has been widely recognized, it had an immediate impact on transit service. Like other routes, the route #18 Waterdown service saw a large reduction in customer use throughout the remainder of 2020 which was expected to continue into 2021. At the lowest point, early in the pandemic customer usage in Waterdown dropped to 27% compared to pre-pandemic weekday demand, by Fall 2020 customer usage on the route had returned to 56% compared to pre-pandemic demand, however, ongoing changes to Public Health and Provincial pandemic responses has seen the demand fluctuate. In addition to the immediate impacts the pandemic has had on transit use, it also impacted the logistical requirements necessary to implement year 5 service enhancements planned for Fall 2020. This delay in the Ten-Year Local Transit Strategy implementation timeline resulted in any other potential service enhancements requiring funding for additional service hours, fleet, and FTE, to be pushed out by a minimum of one year, as the year 5 enhancements are now being implemented in Fall 2021.

The last policy that Transit staff takes into consideration when considering changes to service, along with the Council approved Service Standards, service performance metrics, and customer feedback, is the Area Rating Tax Policy. Specifically, transit service is only planned for and operates with the Urban Transit Boundary as defined by the policy. The only exception is where HSR service operates outside of the defined boundary in order to cross our municipal boundary to provide transit service connecting customers travelling to and from Burlington. Specifically those travelling to and from downtown Burlington via the route #11 Parkdale bus, to Woodland and Holy Sepulchre Cemeteries via the route #9 Rock Gardens bus, and the Aldershot GO Station via the route #18 Waterdown bus. Prior to 1998, transit service was provided on a fee-for-service basis by the former Region based on each of the former local area municipality's desired level of service. In 1998, a new cost allocation formula for transit service was approved based on 50% service distance operated and 50% weighted urban assessment of each former municipal area. This resulted in some urban areas paying for but not receiving transit service (e.g. urban areas of Flamborough). When the City amalgamated in 2001, Council approved the area rating of several services, including Transit. The rationale for area rating specific services was that, unlike other programs, these services were not available in all areas of the new City. In 2009, Council redefined the Urban Transit Boundary in recognition that properties, primarily in

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rural areas of the City that did not receive transit service, should not pay for Transit. The Urban Transit Boundary was developed using the urban boundary with some exceptions, excluding some areas that did not receive transit services but including areas that received TransCab services. The total net cost of conventional transit is allocated based exclusively on transit service distance operated in each of the former municipal areas. This results in six different tax rates for transit and in the case of Waterdown, means only the kilometers driven within the Urban Transit Boundary within Waterdown are allocated to properties within this same area of Waterdown. Properties outside of the current defined Urban Transit Boundary do not receive transit service and are not taxed for conventional transit, while areas within the Urban Transit Boundary may receive varying levels of service. The methodology for calculating the division of distance amongst each of the former municipal areas did not take into consideration where customers start or finish their transit trip as the revenue received from customers has already been deducted from the overall cost of conventional transit before the methodology is applied to the remaining cost. A map of the defined Urban Transit Boundary is attached to Report PW21032 as Appendix "G"

By Fall 2020 transit staff, having taken into consideration how transit service has measured up in the past and present against meeting expectations related to the service standards, how service has performed for customers in the past and might perform in the future based on planned capital construction programs over the next 5 years, the voice of the community and the feedback received particularly from the business community concerning their needs, and how the pandemic has impacted service and service implementation in the immediate, near and future terms, knew that an alternative solution provided an opportunity to potentially address most, if not all of the issues. However, while alternative types of transit service delivery have been tried or used in the past in our City, capitalizing on new technologies has not been.

The Pilot of a Software as a Service (SaaS) provides an excellent opportunity for the City to assess the feasibility of the new technologies and how it might at present, and in the future, be able to transform how transit service is delivered in specific use cases for individual communities throughout the City. Unlike a Mobility as a Service (MaaS), which constitutes a full scale contracting out of services and a larger commitment, the SaaS pilot provides an entry point into testing the same technology while maintaining the use of the fleet already owned by the City, employees already employed by the City, and service hours already being budgeted for. This provides a balance between the ability to test the technology, the benefits and efficiencies it could produce, meeting the obligations of our Collective Agreement with the ATU, and meeting policy requirements related to Council approved Service Standards and the Area Rating Tax Policy.

In the context of Council approved Service Standards, a pilot of a SaaS would be considered to align with the prescribed guidance under the coverage standard in which a short-range objective to reach locations that are beyond the distance threshold could

be considered for new or restructured service provided it was within the available operating budget. Reaching locations outside of the coverage standard threshold is one of the main goals of the pilot. The Service Standards for productivity and loading are not being met by the existing service in Waterdown and a SaaS aligns with meeting the objective guidance prescribed in these policy standards wherein routes that fall below the minimum productivity thresholds would be subject to monitoring, route reconfiguration, span and frequency reductions, consolidation into other routes, or discontinuation. Of all the possible prescriptive solutions available to staff, only monitoring and route reconfiguration are within scope for service in Waterdown as span and frequency reductions would result in failure to meet those standards, discontinuation of the route would result in the failure to meet the coverage standard, and consolidation into other routes could not be achieved as the route #18 is the only route servicing the area. While traditional route reconfiguration is achieved by extension, contraction, or altering a fixed route, a SaaS provides dynamic routing of service which can also be considered to meet the definition of a re-configured route.

Respecting the Area Rating Policy, areas within the Urban Transit Boundary in Waterdown are being taxed for transit services that they are not receiving due to their locations being in excess of the distance thresholds considered under the coverage standard, and in some cases these locations previously were within the distance threshold prior to changes made in 2015. The SaaS pilot does not require a Council approved adjustment to the Urban Transit Boundary as the existing boundary extends beyond the area of the business and residential communities in question and current transit service falls well short of the boundary. Through operating improvements provided by the SaaS more efficient use of travel patterns operated in the community should provide at the very least a net neutral outcome for distance travelled, inclusive of the extension of service, or at the very best a reduction in the overall kms operated both in the Waterdown portion of the route and the Burlington portion of the route.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PW21032 – Pilot Assessment Criteria

Appendix “B” to Report PW21032 – Pilot Timeline

Appendix “C” to Report PW21032 – Map of Waterdown Transit Route (2008 to 2015)

Appendix “D” to Report PW21032 – Council Approved Service Standards

Appendix “E” to Report PW21032 – Map of Waterdown Transit Route (2015 to 2021)

Appendix “F” to Report PW21032 – APC data for Route 18; Fall 2018 and Fall 2019

Appendix “G” to Report PW21032 – Urban Transit Boundary Map