



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Transit Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	June 17, 2020
SUBJECT/REPORT NO:	Postponement of Year 5 of the 10 Year Local Transit Strategy (PW14015(c)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Jason VanderHeide (905) 546-2424 Ext. 2390
SUBMITTED BY:	Debbie Dalle Vedove Director, Transit Public Works Department
SIGNATURE:	

RECOMMENDATION

- (a) That staff be directed to postpone the implementation of Year 5 within the Council approved 10 Year Local Transit Strategy by one year to September 2021;
- (b) That staff report back to Council during the 2021 Transit Budget with a report on the ridership, revenue and service impacts related to the COVID-19 pandemic and post-COVID-19 pandemic recovery periods;
- (c) That staff report back to Council during the 2021 Transit Budget with a report that re-evaluates the financial plan for the remaining Years of the 10 Year Local Transit Strategy.

EXECUTIVE SUMMARY

Transit service is critical to the City's economic, social, cultural and environmental activities and outcomes. Transit supports economic growth, employment and education sectors, culture and tourism, climate change, and promotes healthy and safe

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

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communities. By providing accessible and affordable mobility to all residents throughout the City of Hamilton, transit increases equity and the freedom to move.

The COVID-19 pandemic highlights the vital role transit plays during times of uncertainty. While residents avoid non-essential travel and follow orders to shelter in place, transit provides stable service that helps society function; many essential workers, such as healthcare providers, food industry workers and grocery clerks rely on transit and the rest of the community benefits from the essential services provided.

The 10 Year Local Transit Strategy, approved by Council in 2015, supports the City of Hamilton's Transportation Master Plan that seeks an appropriate balance within different transportation modes. As such, the 10 Year Local Transit Strategy set a modal split (or share) target for public transit of 12% by 2025, up from current level of 7%.

Year 5 of the 10 Year Local Transit Strategy is scheduled for implementation in September 2020. Year 5 expansion includes 13 new buses and 46,000 in additional service hours. Funding for Year 5, and the balance of the 10 Year strategy, include new fare revenues through increased ridership, increased local property taxes, and in large part, grant contributions from both the provincial and federal governments through the Investing in Canada Infrastructure Program (ICIP).

On March 11, 2020 the World Health Organization (WHO) declared the outbreak of a novel coronavirus disease, COVID-19. The declaration of the pandemic has had broad and immediate implications on travel and transit services nationally and locally and will continue to have impacts on transit and other industries.

The pandemic has impacted key aspects of the Year 5 plan on both operational and financial levels. Impacts include fleet acquisition uncertainties, recruitment and training challenges, reductions in fare collection and potential unknown risks related to Provincial gas tax, and capacity limits on buses due to physical distancing measures.

As such, there are challenges in proceeding with the implementation of Year 5 of the Local 10 Year Transit Strategy as planned. Staff require time to analyse the effects of COVID-19 on future service levels and develop a financial plan for Year 5 and the balance of Local 10 Year Transit Strategy.

Despite the challenges Hamilton and cities everywhere face, a deliberate and responsive approach that supports all aspects of the community's sustainability is key. Postponing Year 5 will allow the Hamilton Street Railway (HSR) to address uncertainties and update its plan. Ultimately, HSR will be better positioned to play a vital role in the city's overall recovery, supporting economic prosperity, social inclusion, cultural vibrancy and environmental balance.

Alternatives for Consideration – Not Applicable

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial

The net mitigated impact of postponing Year 5, (scheduled to be implemented September 2020) is approximately \$823K. Table 1 summarizes the details of the net mitigated impact.

Table 1: Net Mitigated Impact of Postponing Year 5

Mitigated Service Expenditures:	Year 5 2020 In-Year Mitigation Impact	
Employee Related Costs	1,034,980	Savings
Maintenance Costs	1,032,350	Savings
Fare Revenue	(1,077,000)	Loss
Total Net Operating Costs	990,330	Net Savings
Contribution to Reserves - Expansion Fleet	822,700	Savings
Contribution from Reserves - Tax Stabilization	(990,000)	Loss
Total Net In-Year Mitigated Impact	\$ 823,030	Net Savings

Specifically, there would be approximately \$990K of net mitigated operating costs consisting of:

- \$1.035M employee related costs for 35 FTEs from the period of September to December;
- \$1.032M savings for maintenance costs that would be otherwise associated with expanded fleet and service; and
- \$1.1M lost fare revenue due to delaying the Year 5 service and fare increase of \$0.05.

However, the \$990K of operational savings are offset by the loss of the transfer from the Tax Stabilization Reserve of \$990K that was budgeted as part of Year 5 of the 10 Year Local Transit Strategy to fund Year 5 operating costs. The reserve transfer was approved through a Councillor’s motion on February 24, 2020, Budget GIC, indicating that the operating costs for the 5th year of the 10 Year Transit Plan was to be funded from the Tax Stabilization Reserve. Therefore, the transfer is subject to the implementation of Year 5 and will be delayed until such time.

Further mitigation will be achieved by not making the contribution to reserve of \$823K that was to be made in anticipation of the fleet expanding which will be put on hold if Year 5 is postponed.

From a 2021 budget perspective, since Year 5 net operating costs of \$1,813,030 (\$990,330 plus \$822,700) are currently included in the 2020 base budget plus a transfer

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from the Tax Stabilization Reserve of \$990,000, there would be no increase to the 2021 budget related to the postponement of Year 5.

Staffing - N/A

Legal - N/A

HISTORICAL BACKGROUND

Transit service is critical to the City's economic, social, cultural and environmental activities and outcomes. Transit supports economic growth, employment and education sectors, culture and tourism, climate change, and promotes healthy and safe communities. By providing accessible and affordable mobility to all residents throughout the City of Hamilton, Transit increases equity and the freedom to move.

The COVID-19 pandemic highlights the vital role transit plays during times of uncertainty. While residents avoid non-essential travel and follow orders to shelter in place, transit provides stable service that helps society function; many essential workers, such as healthcare providers, food industry workers and grocery clerks rely on transit and the rest of the community benefits from the essential services provided.

The 10 Year Local Transit Strategy, as approved by Council in 2015, supports the City of Hamilton's Transportation Master Plan that seeks an appropriate balance within different transportation modes. As such, the 10 Year Local Transit Strategy set a modal split (or share) target for public transit of 12% by 2025, up from 7% (measured in 2016).

Transit investments to increase service capacity and meet the 12% modal split target remain critical to:

- ensure reliability of service delivery
- improve service to suburban areas of the city to harmonize service levels across the City of Hamilton
- improve infrastructure to reduce travel time
- accelerate expansion of conventional transit service
- develop existing and future BLAST network routes to be future ready (i.e.: integrate with higher order transit)
- construct a maintenance and storage facility to house an expanded conventional transit fleet.

A key component in delivering the financial plan within the 10 Year Local Transit Strategy is investment from all levels of government (municipal, provincial, and federal) through fare increases, local property taxes and grant funding.

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As of year-4 implementation in Fall 2019, local property taxes, new fare revenues through increased ridership, and grant funding through the Public Transit Infrastructure Fund (PTIF) have provided for the procurement of over 40 new buses and the introduction of 123,000 new transit service hours into the City of Hamilton's transit network.

The budget for Year 5 of the Local Transit Strategy was presented to Hamilton City Council on January 24, 2020 within Transit's 2020 operating budget.

Year 5 of the Local Transit Strategy (for September 2020) includes:

- the purchase of 13 new buses
- hiring 35 new FTEs
- the addition of 46,000 service hours
- fare increase of \$.05 to be instituted on September 1, 2020

In Year 5, route enhancements predominantly focus on the mountain, including enhancements to route 44 Rymal, route 20 A-line and route 43 Stonechurch. The enhancements centre on improving frequencies and span to existing and future BLAST line routes, in addition to closing a missing link of connectivity in the Heritage Green area.

Year 5 focuses on meeting continued growth and modal split targets. The enhancements are key to supporting the residential, commercial and educational growth occurring along these specific transit corridors, as well as capturing new transit ridership and revenues, and establishing the foundational demand to support future express services along the same corridors.

On January 28, 2020, Hamilton City Council deliberations on the 2020 Tax Operating Budget began and continued through until March 4, 2020.

On March 11, 2020 the World Health Organization (WHO) declared the outbreak of novel coronavirus disease (COVID-19) a pandemic.

On March 12, 2020 the Ontario Government announced that all publicly funded schools would remain closed for two weeks. The closures would be extended indefinitely and at the time of this report schools remain closed.

On March 13, 2020 post-secondary institutions in Ontario announced that they would close until early April. The closures would be extended indefinitely and at the time of this report Post-Secondary institutions remain closed.

On March 17, 2020 the Ontario Government declared a province-wide state of emergency, to try to rapidly slow the spread of COVID-19.

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On March 17, 2020 physical distancing measures begin to be implemented within buses, including blocking off seats closest to the bus operator and moving back the yellow line, to protect the health and safety of bus operators.

On March 19, 2020 physical distancing measures were expanded to include rear door boarding for customers, which simultaneously resulted in a pause of fare revenue collection. Both measures were consistent with measures taken by other transit agencies at the time or that have since been adopted.

On March 20, 2020 Hamilton City Council approved the 2020 Tax Operating Budget, inclusive of the 2020 Transit Operating Budget and the recommended Year 5 service enhancements.

On March 23, 2020 weekday transit service levels were reduced to an enhanced Saturday service level to ensure that service could be delivered in an effective, reliable and predictable manner. The new level of service approximates 70% of the normal weekday service; the adjustment was based on the downward customer demand on service due to COVID and also provided flexibility in the event that operator availability became a pressure in delivery of the service.

On April 3, 2020 the Ontario Government provided an updated Emergency Order reducing the list of businesses classified as essential and ordered more workplaces to close, stating that the new closures would be in place for at least 14 days with the possibility of an extension as the situation evolved.

On April 3, 2020 a third phase of physical distancing measures went into effect, providing customers with the recommended personal space by blocking off seats within buses and limiting the number of customers on board the bus to 30% of the seated capacity. On a standard bus, the customer limit was capped at 10 (full capacity is 34) and on an articulated bus, the customer limit was capped at 15 (full capacity is 46). The approach to customer physical distancing and travel is consistent with most other agencies within the transit industry.

At the same time bus types were re-allocated to routes that were still experiencing higher demand and supplementary service was added to address route specific demand and time periods. In addition, customers were advised that transit was available for essential trips only. The newly enhanced Saturday level of service represented approximately 80% of the normal weekday service. At the time of the report this service level remains in place.

On April 27, 2020 the Ontario Government released guiding principles to reopen the province which outlined the criteria Ontario's Chief Medical Officer of Health and health experts will follow to loosen emergency measures and gradually reopen businesses,

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services and public spaces. At the time of the release there was no definitive calendar on timing for the stages.

On May 1, 2020 the Ontario Government provided an updated list of businesses that can reopen effective May 4, 2020.

On May 14, 2020, the Large Urban Mayors' Caucus of Ontario (LUMCO) passed a resolution urging the federal and provincial governments to support municipalities facing unprecedented fiscal challenges as a result of the COVID-19.

On May 14, 2020, the Ontario government announced the retailers, seasonal businesses and health and community service providers that will be permitted to open or expand their services on Tuesday, May 19, 2020.

On May 19, 2020, the Ontario Government extended emergency orders to May 29, 2020 and announced that schools would remain closed for the balance of the current school year. In addition, the Province officially entered the first stage of its Framework for Reopening the Province. Some outdoor recreational amenities were re-opened.

On May 20, 2020, the Ontario Government announced that face coverings are recommended when physical distancing is a challenge, including situations such as taking public transit, returning to work or shopping.

At the time of this report, the Province remains in the early stages of recovery. The Province continues to urge everyone to maintain physical distancing from those outside of their household.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

Corporate Services, Financial Planning, Administration and Policy Division reviewed the report and the financial implications of postponing Year 5 of the 10 Year Local Transit Strategy.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The COVID-19 pandemic, resulting Provincial State of Emergency, and travel restrictions and closures that remain in place at the time of this report have had several immediate, near-term and potential long-term impacts on the transit industry and transit

services in the City of Hamilton. The impacts are both financial and operational in nature.

As such, there are challenges in proceeding with the implementation of Year 5 of the Local 10 Year Transit Strategy as planned. Staff require time to analyse the effects of COVID-19 on future service levels and develop a financial plan for Year 5 and the balance of Local 10 Year Transit Strategy.

The impacts of postponing Year 5 are outlined below along with the associated risks.

i) Fleet Acquisition and Procurement of Onboard Technologies

The acquisition of the 13 new buses required for the implementation of new service in Fall 2020 was contingent upon approval of the City of Hamilton's ICIP application for fleet expansion by the Provincial and Federal Governments.

On May 5, 2020 the MTO advised the City of Hamilton that the fleet expansion project application was approved at the Provincial level and had been forwarded to the Federal Government where it is awaiting approval. At the time of the report, there was no confirmed timeline on when or if the project would be approved.

Appreciating that funding approvals take time, transit staff retained 11 buses due for retirement to facilitate Year 5 new service implementation to remain on schedule. This strategy requires new onboard technologies, including Automatic Vehicle Location (AVL) units, Automated Passenger Counter (APC) devices, radios, fareboxes, and cameras, to be procured to allow the buses to remain operational. The timeline to procure and install the on-board technologies is two to three months under normal circumstances. Due to COVID-19, many suppliers have been closed under the essential business orders. At the time of the report, vendors advised that the products should be available for shipment and installation if orders are placed immediately.

RISKS:

Continuing with the planned implementation of Year 5 in September without installing the onboard equipment on the 11 buses puts the City of Hamilton in non-compliance with AODA standards for stop annunciation, eliminates the ability to collect fares, compromises the health and safety of the operator and customers, and eliminates the ability to collect data.

Continuing with the planned implementation of new service without the use of the 11 buses, compromises the ability to reliably provide service across the transit network due to a shortage of in-service buses.

ii) Recruitment and Training of Transit Operators

Year 5 included the recruitment and training of 29 transit operators. The City of Hamilton suspended recruitment and training activities on March 16, 2020 when City facilities closed to the public. At the time of the closure, the Transit Division had an outstanding pool of potential candidates to complete the new operator hiring process. Nine operators that were hired with a start date of March 23, 2020 have been deferred.

New operator training activities have been suspended across Canada due to physical distancing limitations that impede the ability to safely deliver in-class and on-bus training while respecting the health and safety of both the trainers and trainees. Also contributing to the suspension of new operator training is the inability of candidates and agencies to upgrade licenses through the MTO due to closures.

RISK:

Continuing with the planned implementation of Year 5 in September without the necessary trained complement of new operators will require full dependency on operator overtime. Use of overtime may not be logistically feasible, is not sustainable and will ultimately result in inconsistent service delivery and cancellation of service due to operators not being available.

iii) Fare Revenue as a Funding Source

The annualized operating expenditures related to Year 5 of the Local Transit Strategy is \$4.2M. New fare revenue as a funding source for Year 5 was projected to be \$3.5M and a resulting \$688K was expected to be the levy impact of proceeding with Year 5.

The COVID-19 pandemic has made it necessary for all open businesses, including transit agencies, to provide an environment in which appropriate physical distancing is in place for customers and employees. This requirement has temporarily eliminated the ability to collect fare revenue and impacts how transit will be funded in 2020.

In the months leading up to the pandemic, transit ridership and fare revenue in Hamilton were increasing compared to the same period in the previous year and were ahead of budgeted projections. Table 2 below shows actual to budgeted performance and the immediate impact of the pandemic which started in March 2020.

Table 2: Actual to Budgeted Ridership and Revenues

Month/Year	Ridership		Revenue	
	Budget	Actual	Budget	Actual
Aug-19	1,435,296	1,503,130	\$3,085,281	\$3,162,148
Sep-19	1,919,327	2,022,233	\$4,016,643	\$4,358,008
Oct-19	1,965,518	2,053,709	\$4,097,317	\$4,333,212
Nov-19	1,998,579	2,069,977	\$4,126,393	\$4,266,805
Dec-19	1,738,250	1,679,272	\$3,666,717	\$3,986,782
Jan-20	1,912,154	2,006,497	\$3,975,850	\$4,083,719
Feb-20	1,755,850	1,831,889	\$3,713,500	\$4,029,801
Mar-20	2,002,212	1,334,292	\$4,171,880	\$3,086,922
Apr-20	1,883,418	478,076	\$3,973,400	\$117,957

Fare collection is planned to resume on July 1, 2020 in conjunction with the completed installation of operator bio-shields to allow front door boardings. Table 3 shows the revenue shortfall of \$11.7 M for the first half of 2020.

Table 3: Revenue Shortfall

	2019 Actual	2020 Budget	2020 Actual	Variance to Actual	Variance to Budget
January	\$ 3,740,006	\$ 3,975,850	\$ 4,083,719	\$343,713	\$107,869
February	\$ 3,573,204	\$ 3,713,500	\$ 4,029,950	\$456,746	\$316,450
March	\$ 3,951,380	\$ 4,171,880	\$ 3,086,922	(\$864,458)	(\$1,084,958)
April	\$ 3,893,100	\$ 3,973,400	\$ 117,957	(\$3,775,143)	(\$3,855,443)
May	\$ 3,542,997	\$ 3,845,030	\$ 117,957	(\$3,425,040)	(\$3,727,073)
June	\$ 3,331,202	\$ 3,592,080	\$ 117,957	(\$3,213,245)	(\$3,474,123)
	\$ 22,031,889	\$ 23,271,740	\$ 11,554,463	(\$10,477,426)	(\$11,717,277)

Further revenue shortfall is anticipated and will be dictated by the number of customers who return to transit as businesses open, educational institutions resume classes, and restrictions on movement are lifted. While the re-opening of the economy will contribute to a gradual return of ridership, another important factor to consider is customer sentiment.

A recent survey by Abacus Data on transit sentiment in Canada indicates that as of mid-March, 45% of Canadians report that they do not feel comfortable riding a city bus without a vaccine or cure. That said, Table 4 reveals that certain conditions or protective measures taken by public transit agencies increase reported comfort levels among regular transit users.

Table 4: Conditions that Make Canadians More Comfortable Riding a Bus

Protective Measure	Increase in Comfort Level
Surfaces are clean	50%
Distance on bus	46%
Fewer passengers	44%
People wear masks	36%
Trusted organization	35%

Although the situation continues to evolve, the early findings help form scenarios to assess the potential impact on ridership and fare revenues. Table 5 summarizes five scenarios based on differing assumptions.

Table 5: Scenario Analysis

	Ridership and Revenue Assumptions (fare collection resumes July 1, 2020)	Ridership	Variance to Budget	Revenue	Variance to Budget
1	35% of budgeted general public ridership returns July&Aug; 50% of budgeted general public & high school ridership returns Sept-Dec; University/College remain closed. Refunds issued for April purchases and prepaid U-Pass April - August	9,578,339	-12,531,695	20,173,631	(\$27,002,459)
2	35% of budgeted general public ridership returns July&Aug; 50% of budgeted general public & high school ridership returns Sept-Dec; University/College remain closed.	9,578,339	-12,531,695	22,038,496	(\$25,137,594)
3	35% of budgeted general public ridership returns July&Aug; 50% of budgeted general public & high school ridership returns Sept-Dec; University/College open with a 23% decline in enrolment and students travel at 50% of budget frequency.	11,267,778	-10,842,257	25,369,706	(\$21,806,384)
4	35% of budgeted general public ridership returns July&Aug; 50% of budgeted general public & high school ridership returns Sept-Dec; University/College open with a 23% decline in enrolment and students travel at budget frequency.	12,090,951	-10,019,084	25,369,706	(\$21,806,384)
5	35% of budgeted general public ridership returns July&Aug; 50% of budgeted general public & high school ridership returns Sept-Oct increasing to 60% Nov-Dec; University/College open with a 23% decline in enrolment and students travel at 50% of budget frequency.	11,549,951	-10,560,083	25,998,260	(\$21,177,830)

Based on the hypothetical scenarios a fare revenue shortfall is predicted. An ongoing assessment of U-Pass, shifting customer sentiment and its implications is required.

RISK:

Continuing with the planned implementation of Year 5 in September requires a full appreciation of the COVID-19 impacts on 2020 ridership and fare revenues. There are

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too many uncertainties at this time; the full 10 Year Local Transit Strategy will need to be reviewed as the economy opens and when more information is known.

iv) Provincial Gas Tax as a funding source

Each year, the Ontario Government contributes investments to local public transit agencies through the Ontario Gas Tax program. The program generates revenues through a \$.02/litre tax on every litre of gasoline sold in the province and provides stable and predictable transit funding for Ontario municipalities.

Under the Dedicated Gas Tax Funds for the Public Transportation Program, the funding allocated is based on 70% transit ridership and 30% municipal population. Hamilton is eligible for an estimated \$11,428,352 in provincial funding relating to 2019-2020 as part of the 2019-2020 Dedicated Gas Tax Funding program.

Gas tax funds several ongoing contributions within the 2020 Transit Operating Budget including service enhancements dating back to 2005, plus several other operating expenditures and the capital shelter expansion program (shown in Table 6).

Table 6: Provincial Gas Tax Funded Programs

	Year Initiated	Amount
2020 Ongoing Operating Programs		
Gas Tax to fund operating in lieu of fare increases	2005	\$ 1,476,690
	2006	\$ 1,002,290
	2007	\$ 550,000
Gas Tax to fund service level enhancements	2005	\$ 971,360
	2008	\$ 673,210
	2009	\$ 950,000
	2011	\$ 3,012,000
Fleet operating and maintenance costs	2007	\$ 179,740
McMaster Bus Program service enhancement	2005	\$ 273,190
Gas Tax to fund accessible transit in lieu of fare increa	2006	\$ 60,000
Accessible Transportation Services enhancements	2005	\$ 1,474,220
	2008	\$ 276,300
	TOTAL	\$10,899,000
2020 Capital Program		
Transit shelter expansion	2020	\$ 150,000

The COVID-19 pandemic has had a significant impact on when and how much Ontarians travel. The near and long-term effects on gasoline purchases are unclear.

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On March 22, 2020 Forbes magazine published an article citing predictions into factors that shape the business landscape. The predictions included a potential 55% drop in the purchase of gasoline by Americans in March and April. If these predictions hold true for Ontario as well, there is likely to be a steep decline in the revenues generated through the Ontario Gas Tax program and as such, less funding for transit in the future.

In addition to the steep decline in revenues and funding, it is also unknown at this time if the municipal allocation formula will remain the same and how the loss of transit ridership in individual municipalities will be considered and allocated in the future.

RISK:

Continuing with the planned implementation of Year 5 in September requires a full appreciation of the impacts COVID-19 will have on gasoline purchases in the province and the likely reduction in overall investment funding that will be available as a result.

The continued implementation of Year 5 hours without stable gas tax funding exacerbate the overall unknown impact on levels of service. Service levels may need to be reduced, or the pressure will need to be absorbed by the general levy.

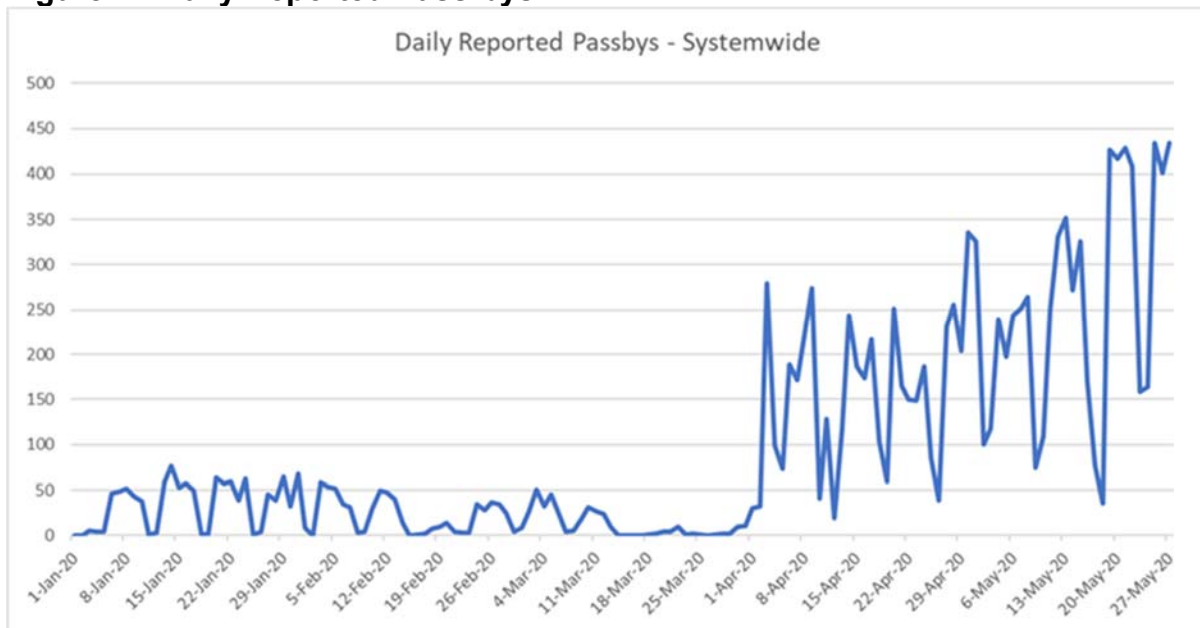
v) Physical Distancing Measures

The continuation of physical distancing measures, and the capping of customers on buses, presents severe limitations in the ability to meet transit demand with the current resources available.

On April 3, 2020 the final measure of physical distancing went into effect on Hamilton's transit system. The measure capped the number of customers on the bus to 30% which represents 10 customers on a standard-length bus and 15 customers on an articulated bus. Customers were advised that travel on transit was for essential trips only.

The reduction in customer demand from a 62-week average prior to COVID-19 has been 77%. Despite this radical drop, buses on high demand routes continue to experience full loads based on the new capacity limits during busier times of the day. In addition, the number of customers by-passed due to capacity has significantly increased (see Figure 1).

Figure 1: Daily Reported Pass-bys



Supplementary service has been added to higher demand routes to mitigate the impact of the new capacity limits and to reduce the number of pass-bys; however, with Provincial announcements of recovery and re-opening, the number of pass-bys will continue to increase if the capacity limits on buses are not adjusted.

Under normal conditions, route capacity depends on many factors (i.e.: time of day, number and type of bus being deployed to the route, and frequency of service). Using the highest demand route as an example, the route 2 Barton operates at a frequency of every 6 minutes during peak periods and uses 18 buses. The service standard on loading allows for the use of 125% of the seated capacity during these periods and as such, the route provides for a relative capacity of 594 seated customers per hour and an additional 144 standing customers per hour. During normal conditions, bus loads fluctuate across the route as customers get on and off in cycles throughout the trip from one end to the other. There isn't a hard cap on the number of customers onboard (as a limitation to either seating or standing capacity) until reaching a "crush" load which may occur at times but is unlikely to happen for the duration of the trip. When a "crush" load is reached, customer pass-bys typically take place and are reported.

Putting a hard cap on the number of customers onboard a bus at any given time generally results in the bus reaching capacity early in the trip and sustaining a full state for most of the trip length; as such customer pass-bys are generated for those who are mid to end-points along the routes. It is important to understand this when considering the impacts of continuing with physical distancing measures as businesses begin to re-

open, and travel restrictions begin to ease. A few different scenarios need to be considered.

The first scenario is one in which physical distancing measures remain in place, the limitation of capacity stays at 30%, and customer demand returns to pre-COVID levels. In this scenario the demand to supply ratio is 3.5 times greater than normal, and as such, 3.5 times as many buses are needed to provide the same level of capacity. Alternatively, the additional resources are not added and the number of customer pass-bys exceed the number of trips being delivered; ultimately, the route becomes unreliable and customers turn away from transit to a different mobility choice.

The second scenario is one in which physical distancing measures remain in place but capacity limitations are eased in concert with the return of customer usage (subject to the level of demand). A balance needs to be found between level of demand and level of service based on capacity limitations. In this scenario, it is likely that demand related to a 35% return of customer usage could be accommodated by a capacity limitation of 50%, demand related to a 50% return of customer usage could be accommodated by capacity limitations of 70%, and demand related to a 70% return of customer usage could be accommodated by capacity limitations of 100%.

Table 7 shows the increase in the number of buses (multiplier) required to meet various demand levels at corresponding capacity limitation levels.

Table 7: New Buses Required Based on Capacity Limitations

New Buses Required Multiplier				
Capacity Limitations % of seats	Demand Rate - Returning Customers			
	Pre-COVID	70%	50%	35%
125%	none	none	none	none
100%	1.1	none	none	none
70%	1.5	1.43	none	none
50%	2	1.94	1.35	none
30%	3.5	3.3	2.5	1.7

RISK:

Continuing with the planned implementation of Year 5 in September requires a full appreciation of the impacts COVID-19 has on resources and capacity limitations. Should limitations on capacity remain in place, there will not be enough resources to provide reliable service across the network. High demand routes will be particularly strained. Unreliable service may shift customers to alternative mobility choices in the short-term.

Conclusion

Despite the challenges Hamilton and cities everywhere face with the pandemic, postponing Year 5 of the 10 Year Local Transit Strategy allows the HSR to address uncertainties and update its plan.

Ultimately, HSR will be better positioned to play a vital role in the city's overall recovery, supporting economic prosperity, social inclusion, cultural vibrancy and environmental balance.

ALTERNATIVES FOR CONSIDERATION

N/A

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Culture and Diversity

Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

N/A