



The Town of Niagara-On-The-Lake

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Report: OPS-20-023

Committee Date:

Due in Council:

August 24, 2020

Report To: Lord Mayor & Council

Subject: On-Demand Transit - Pilot Program Authorization

1. RECOMMENDATION

It is respectfully recommended that:

- 1.1 Council approve Option 1 (Two (2) vehicles) for consideration by the Region of Niagara to amend it's master terms agreement with Via Mobility LLC for the deployment of a turnkey, on-demand transit service to include the service area of Niagara-on-the-Lake and the integration and alignment of the Niagara-on-the-Lake service into the Niagara Regional Transit (NRT) OnDemand mobile application for a period of up to one (1) year with an option to extend for an additional one (1) year based on the Region of Niagara's agreement and preferred pricing at an estimated total cost of \$564,791.
- 1.2 That the Town of Niagara-on-the-Lake request the Region of Niagara to submit a service order to Via Mobility LLC to amend it's master terms agreement for the deployment of a turnkey, on-demand transit service to include the service area of Niagara-on-the-Lake and the integration and alignment of the Niagara-on-the-Lake service into the Niagara Regional Transit (NRT) OnDemand mobile application.
- 1.3 That the Lord Mayor and Town Clerk be authorized to execute an agreement and/or a memorandum of understanding with the Region of Niagara for the services of contract administration by the Region of Niagara to include Niagara-on-the-Lake as part of the Niagara Regional Transit (NRT) on-demand transit service.

2. PURPOSE / PROPOSAL

The purpose of this report is to receive Council approval to formally request from the Region of Niagara to amend it's master terms of agreement with Via Mobility LLC for the deployment of a turnkey, on-demand transit service to also include the service area of Niagara-on-the-Lake that will replace the current conventional fixed route transit model that the Town currently employs.

3. BACKGROUND

Niagara-on-the-Lake is a small urban/rural community wedged between two larger urban centres. A Transit Needs Study conducted in 2010 determined that the mobility of those persons living and working in Niagara-on-the-Lake, especially seniors and students was not adequately being served.

Where there is an identified public need that is not being met or adequately served by private enterprise, it may be appropriate for government to step in and provide the service or gap in service. In the case of public transportation, the Province, by way of the Public Transportation and Highway Improvement Act, RSO 1990, has vested lower tier municipalities such as Niagara-on-the-Lake with the authority to create a public transit system within its boundaries.

As a result, Council instructed staff to engage a transportation consultant (IBI Group) to assist in the preparation and evaluation process for a request for proposal for Transit services. The Terms of Reference and request for proposal for Public Transportation Services was submitted to Council on November 21, 2011 and approved as contained in report PW-11-045.

Subsequently on January 16, 2012, Council accepted the bid proposal submission from Niagara-on-the-Lake Transit Ltd., dated December 19, 2011, for the provision of contracted public transportation services for the amounts as set out in staff Report PW-12-002, for a minimum of three years commencing on April, 1, 2012.

On February 13, 2012 the Town formally entered into an agreement for the provision of Public Transportation services with Niagara-on-the-Lake Transit Ltd. (subsequently known as Niagara Ground Transportation Ltd.). The initial agreement was a 3-year term commencing April 1, 2012 and terminating March 31, 2015 with two optional renewal periods; April 1, 2015 to December 31, 2018 and January 1, 2019 to December 31, 2020.

On September 16, 2013 the Public Transportation agreement was assigned to a new Operator, Niagara Patient Transfer Inc., with no change in the renewal provisions.

Prior to the expiration of the first term of the contract Town staff met with the Operator, Niagara Patient Transfer Inc., and negotiated new terms to the existing agreement providing conventional public transit and Heritage shuttle service to the Town in which amongst other items the length of the renewal periods was changed to address errors in the original agreement and better align with the Town's fiscal year.

In 2015 Town staff submitted report OPS-15-16 to authorize the Lord Mayor and Town Clerk to execute a renewal agreement with the existing operator from April 1, 2015 to December 31, 2017 and a further optional renewal from January 1, 2018 to December 31, 2020. At or about the time of the first renewal period ending discussions were beginning to take place at a Regional level about the possibility of amalgamation of

transit services throughout the Niagara Region. As a result of the uncertainty of which direction Regional Transit was headed and how that could impact the Town's transit system Town staff decided to not activate the final renewal of the agreement and proceeded under Clause 6.23.4 of the agreement which permitted the existing terms and conditions to remain applicable on a month to month basis until a new agreement is signed or until Service is terminated on thirty (30) days notice by either party.

Subsequently in 2018 Regional staff brought forward three related reports regarding an IMT Service Implementation Strategy which identified the need for inter-municipal transit services to be developed to connect various municipalities some of which already operated local transit services. As part of the initial strategy Regional staff developed fixed-route options for consideration but soon discovered the operational and financial limitations of providing this type of fixed-route service in large geographical areas with low population density. As a result further investigations began to find alternative deployment strategies to make transit more sustainable and accessible in these areas.

In early 2019 (May), Niagara Region retained Via Mobility to conduct a micro-transit feasibility study to consider the practicality and optimal service design of an on-demand micro-transit service for the Niagara West area. Similar to conventional transit, on-demand solutions include wheelchair accessible vehicles. Through further investigation and consideration it was concluded that a dynamic on-demand system could be deployed to operate in the Niagara West area with an average 30 minute wait time and a maximum wait time of an hour.

In the fall of 2019 (November) the Region of Niagara Council approved recommendations (Appendix C - PW 60-2019) for staff to engage the municipalities of Grimsby, Lincoln, West Lincoln, Pelham and Wainfleet regarding an on demand transit pilot program for Niagara West. Subsequently the councils of Lincoln, Pelham and Grimsby approved recommendations to deploy on-demand intra-municipal service in early 2020 but was subsequently impacted by the COVID-19 pandemic that pushed back the service launch date to August 2020.

Shortly after Regional Council approved recommendations for staff to engage the Niagara West municipalities Town staff engaged Regional staff to discuss the possibility of the Niagara West model being expanded to include Niagara-on-the-Lake and potentially other municipalities that had subsequently shown interest in the Niagara West Pilot.

With the sudden onset of the COVID-19 pandemic in early March 2020 the Town's fixed-route system began to see plummeting ridership as a result of the stay at home orders being issued throughout the Region and Province and with subsequent social distancing measures being put in place saw the Town make the decision to suspend transit services indefinitely as of April 9, 2020.

As such, during the pandemic and suspension of services it has been an opportune time for Town staff to review the existing transit system and work with the Region and

Via to discuss the possibility of a stand alone on-demand system to replace the existing conventional fixed-route system.

4. DISCUSSION / ANALYSIS

The Region of Niagara as part of their investigations into an on-demand transit system has completed an extensive analysis in which it has been determined that a full service "turn key" provider is required to operate such a system due to lack of staff, maintenance facilities and transit fleet. These are similar constraints that the Town must also contend with in regards to operating a transit system. A full turnkey solution is often referred to as a Transportation-as-a-Service (T-a-a-S) and is preferred alternative to companies who provide software capable of dynamically routing vehicles which in turn they lease to transit providers (often referred to as Software-as-a-Service, S-a-a-S) for an annual fee.

Via Mobility LLC. is the only company that the Region and IMTWG (Inter-Municipal Transit Working Group) that is known to offer a full turn-key deployment that includes the following -

- Custom Branded Vans (Eliminates capital acquisition costs)
- Professional, background checked drivers
- iOS and Android apps as well as dial-in capability for those without smartphones
- Customer service and training
- Marketing support prior to and after launch

Via has partners in over 20 countries to deliver transit solutions and in Canada has previously launched services in Sault Ste. Marie, Ontario and Longueuil, Quebec.

Initiating a pilot on-demand solution to coincide within the timeframe of the Regional Niagara West pilot will better position the Town going forward with the upcoming completion of the Transit Governance Study being completed by the Region and their consultants. Initiating a pilot program will avoid a long term service contract and will allow for any potential new transit entity that could be recommended from the Transit Governance Study to have the flexibility to pursue revised deployment strategies or engage with Via to formalize the pilot into a permanent service. As such, it was not recommended by the Region to procure any company which only offers S-a-a-S for deploying pilot services at this time.

Another benefit to be derived from initiating a pilot with Via Mobility would address the Town's need to provide specialized transit service cost effectively.

In the aforementioned discussions with Regional and Via staff, it was decided to provide various options to be presented to council for consideration including leveraging the master contract terms and conditions with Niagara Region for the Niagara West Pilot Program. Leveraging the Niagara Region's master contract, conditions and pricing is only possible if Niagara-on-the-Lake is also included in the Niagara Regional Transit (NRT) OnDemand application which will provide uniform branding, alignment of fare

structures and potential additional inter-municipal connections to users.

Option 1 (2 vehicles): Provides service to the same areas (Glendale, Virgil, Old Town) that the current transit system provides; (Attachment - Appendix A)

Option 1 (3 vehicles): Provides service to the same areas (Glendale, Virgil, Old Town) that the current transit system provides, but with the additional vehicle the service times will be greatly enhanced; (Attachment - Appendix A)

Option 2 (4 vehicles): Provides service to all areas of the Town and will include additional inter-connections with the Regional systems in Port Weller (St. Catharines) and NiagaraFalls (north end). (Attachment - Appendix B)

Benefits and/or improvements over the current conventional fixed-route transit style of system;

- expanded service area, coverage and availability
- improved service quality and reliability
- scalability flexibility
- vehicle utilization responds to demand in real time
- dynamic adjustable routing
- integration with the Niagara West Rider App while maintaining two distinct services
- end to end technology platform and operational management
- wheelchair accessible vehicles (WAVs)
- robust customer service centre
- significant data analytic potential
- environmentally friendly, no driving unless required, does not travel conventional route on an hourly basis;
- wider area of pick up and drop off points within the defined areas, not current fixed points;

5. STRATEGIC PLAN

The recommendation being presented falls under the Towns approved strategic plan within **"Strategy #1 - Deliver smart balanced growth"** as it touches on the following items within the eight strategic pillars of the community vision;

- 2) strong environmental stewardship;
- 3) an inclusive, integrated, healthy Town;
- 5) mobility choices;
- 8) well managed municipal finances.

6. OPTIONS

The following options are available for councils consideration;

- 1.1 Council approve Option 1 (Two (2) vehicles) for consideration by the Region of Niagara to amend it's master terms agreement with Via Mobility LLC for the

deployment of a turnkey, on-demand transit service to include the service area of Niagara-on-the-Lake and the integration of the Niagara-on-the-Lake service into the Niagara Regional Transit (NRT) OnDemand mobile application for a period of up to one (1) year with an option to extend for an additional one (1) year based on the Region of Niagara's agreement and preferred pricing at an estimated total cost of \$564,791 **(as recommended above);**

or alternatively;

- 1.4 Council approve Option 1 (Three (3) vehicles) for consideration by the Region of Niagara to amend it's master terms agreement with Via Mobility LLC for the deployment of a turnkey, on-demand transit service to include the service area of Niagara-on-the-Lake and the integration of the Niagara-on-the-Lake service into the Niagara Regional Transit (NRT) OnDemand mobile application for a period of up to one (1) year with an option to extend for an additional one (1) year based on the Region of Niagara's agreement and preferred pricing at an estimated total cost of \$678,869

or alternatively;

- 1.5 Council approve Option 2 (Four (4) vehicles) for consideration by the Region of Niagara to amend it's master terms agreement with Via Mobility LLC for the deployment of a turnkey, on-demand transit service to include the service area of Niagara-on-the-Lake and the integration of the Niagara-on-the-Lake service into the Niagara Regional Transit (NRT) OnDemand mobile application for a period of up to one (1) year with an option to extend for an additional one (1) year based on the Region of Niagara's agreement and preferred pricing at an estimated total cost of \$799,799 and formally request the Region to fund the difference between option 1 (3 vehicles) and option 2 (4 vehicles);

or alternatively;

- 1.6 Council defer any of the above noted recommendations and have Town staff continue with the current transit model and provider at the continued negotiated price;

or alternatively;

- 1.7 Council defer any of the above noted recommendations and have Town staff create a new RFP and go out for public tender.

7. FINANCIAL IMPLICATIONS

The financial impact of transitioning from the current fixed-route transit system to a turn-key on-demand transit service to be administered by the Region of Niagara under the master terms agreement with Via Mobility are shown in the comparison breakdown below.

2020 Transit Operating Budget (Approved)

Revenue	- Provincial Gas Tax	- \$130,000
	- Group Fares	- \$300,000
	- Bus Fares	- \$ 40,000
	- Transfer from Parking Revenue	- <u>\$295,650</u>
	Total	\$765,650

Expenditures - Contracts *	- \$675,000
- Misc. & Other	- \$ 47,000
- Legal & Memberships	- \$ 3,650
- Salaries, Grounds Services, Equip.	<u>- \$ 40,000</u>
Total	\$765,650

* The contracts portion of the expenditures also includes the running of the Heritage Shuttle between April 1 - October 31 each year. The cost to operate the Heritage Shuttle in 2019 was \$178,000 approximately. It should be noted that due to the pandemic there are short falls in the areas of revenue shown above which may need to be funded from the operational levy moving forward.

Proposed On-Demand Transit System Administered by the Region of Niagara

Option #1 (Two (2) Vehicles)	- \$564,791
Option #1 (Three (3) Vehicles)	- \$678,869
Option #2 (Four (4) Vehicles)	- \$799,799

The proposed On-Demand options noted above are based on service being provided six (6) days a week (Monday-Saturday) with an average 12 hour service day (7:00 am - 7:00 pm). This is comparable to the Town's existing fixed route system which operates six (6) days a week with an average 11 hour service day. Included in the the total costs noted above is a installation fee and annual customer support fee.

The Niagara Region Transit (NRT) on-demand system deployed in the West Niagara pilot is based on service being provided six (6) days a week (Monday-Saturday) with an average 15 hour service day (7:00 am - 10:00 pm). A similar service day option is also available to the Town but an increased costs.

The current fare structure of \$3.00 one-way will continue to remain if an on-demand system is adopted and deployed in Niagara-on-the-Lake. The Town's fare structure is already aligned with the Regional fare structure.

Based on the above, the current transit operating budget can support Option 1 with two (2) vehicles with an average service hours per day of 12 hours with no expected additional expenditure or increase to the operating budget.

Choosing Option 1 with three (3) vehicles would require an increase of \$114,078 (approximately) for consideration as part of the 2021 operating budget deliberations. A three vehicle option would provide increased availability and reduced wait times.

In the event that Council prefers Option 2 (4 vehicles), it would be prudent to request that Niagara Region fund the difference between Option 1 (3 vehicles) and Option 2 (4 vehicles) as this would enable inter-municipal connections to neighbouring municipalities as is the purview of Niagara Region.

On August 12, 2020 the Ontario Provincial government in partnership with the Federal government announced it was providing Ontario's municipalities in urgently needed one-time assistance as part of the first round of emergency funding under the Safe Restart Agreement. The funding is intended to help municipalities continue to deliver critical public services such as public transit. The Phase 1 Transit Funding for the Town of Niagara-on-the-Lake is \$36,009 which can be put toward the re-start of transit operations.

8. COMMUNICATIONS

If either of recommendation 1.1, 1.4 or 1.5 as outlined per section 6 - Options is approved by Town Council a formal request will be made by the Town of Niagara-on-the-Lake to the Region of Niagara to amend it's contract with Via Mobility LLC. to include the proposed Niagara-on-the-Lake service area into the Niagara Regional Transit (NRT) on demand service with a subsequent Memorandum of Understanding (MOU) established between the Town and the Region for services provided by the Region of Niagara to the Town of Niagara-on-the-Lake for those said services.

If recommendation 1.6 as outlined per section of 6 - Options is selected Town staff will engage our current Transit provider to discuss the resumption of Transit services in late 2020 under the current terms of the existing agreement.

If recommendation 1.7 as outlined per section of 6 - Options is selected Town staff will report back to Council with a separate report of engaging a consultant to assist with the preparation of a request for proposal (RFP) for Transit services.

9. CONCLUSION

With the advent of the current pandemic, it has been an opportune time for the Town to explore an alternative solution to the existing conventional fixed route transit service with a view toward building upon and improving the existing service the Town offers. Expected immediate benefits would see an expanded service area reaching additional residents with the potential to attract more users when tourists visit the Town. In addition to expected improved service there will also be an environmental benefit in the way the service operates over the current fixed route transit system deployed by the Town.

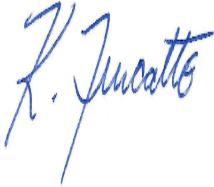
It should be noted that implementing an on-demand transit service without the participation of the Region of Niagara would not likely be economically feasible from a Town only perspective.

If Council chooses to proceed with one of the recommendations noted above for implementing an on-demand transit service through the Region an anticipated start date would likely take place later this fall (November).

Respectfully Submitted,



Michael Komljenovic
Engineering Supervisor



Kevin Turcotte
Director of Operations (A)



Jeffrey Vyse, C.S.T.
Manager of Public Works



Sheldon Randall
Chief Administrative Officer (I)

ATTACHMENTS



Appendix A - Option 1 Service Area.pdf



Appendix B - Option 2 Service Area.pdf



Appendix C - PW 60-2019 On-Demand Transit - Pilot Authorization.pdf

WEB ATTACHMENTS

ATTACHMENTS FOR LINK

First Capital of Upper Canada - 1792

Option 1

NOTL Old Town, Virgil, Outlet Mall, Niagara College

Summary

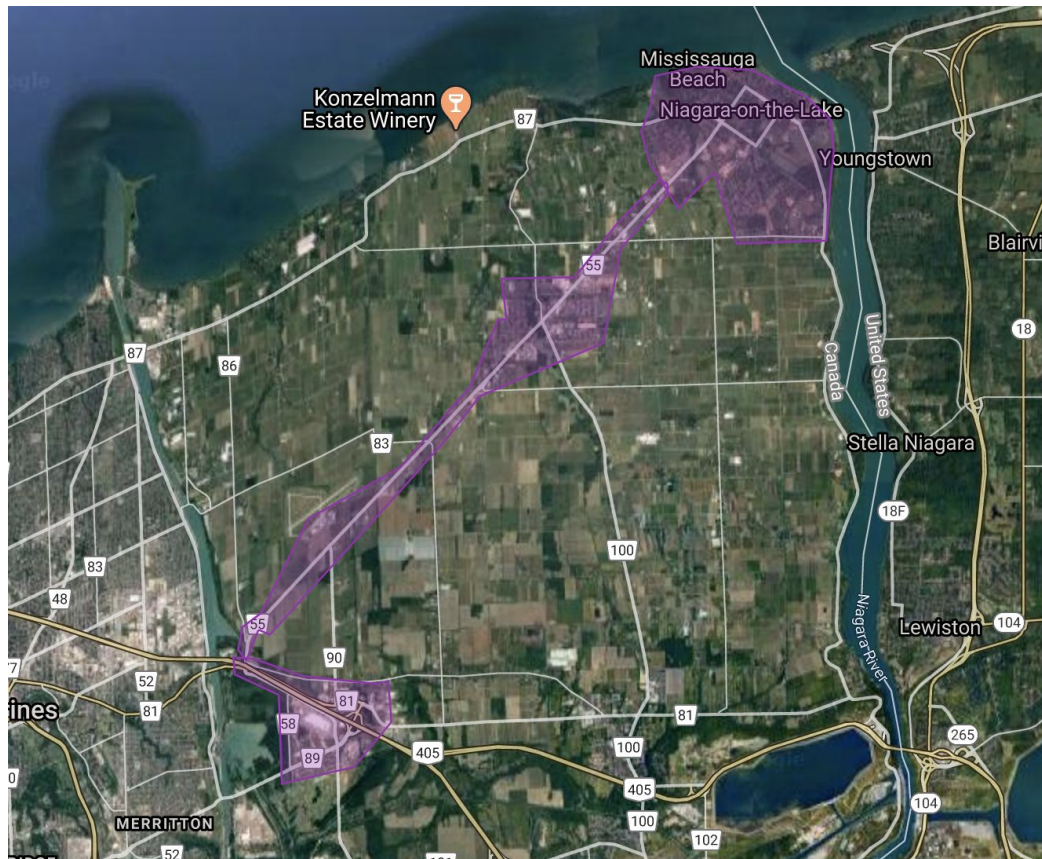
Option 1 somewhat replicates NOTL's existing service design

The areas shaded in **purple** are rough sketches of the on-demand zones where Riders' could request rides to/from

Main Service Areas include:

- NOTL Old Town
- Virgil Centre
- Outlet Mall
- Niagara College

Minimum 2 vehicles, 3 preferred



Option 2

All of Niagara-on-the-Lake

Summary

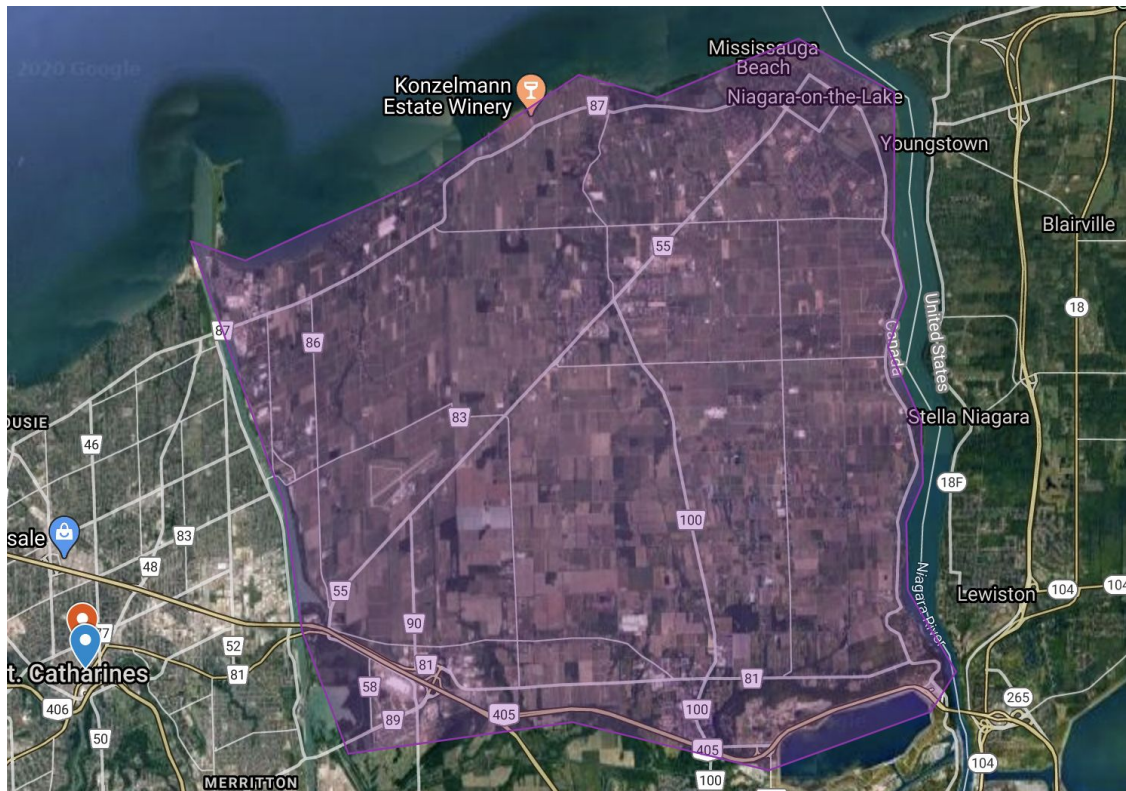
Option 2 provides service to NOTL's entire municipal area

Riders would be able to request rides to/from anyway within the **purple** area

Main Service Areas include:

- NOTL Old Town
- Virgil Centre
- Outlet Mall
- Niagara College
- Wineries
- Rural areas

Likely 4 vehicles minimum



Subject: On-Demand Transit – Pilot Authorization (Simulation Results)

Report to: Public Works Committee

Report date: Tuesday, November 5, 2019

Recommendations

1. That Regional Council **APPROVE** the on-demand transit concept for NRT service expansion pilots outlined in this report, subject to 2020 budget approval.
2. That the Chief Administrative Officer **BE AUTHORIZED** to execute an Agreement with Via Mobility LLC. for the deployment of turnkey, on-demand transit service pilots such that the Agreement meets the approval of the Commissioner of Corporate Services, and subject to 2020 budget approval.
3. That all pilot periods **BE DEFINED** in the Agreement as 1 year with an option to extend for a period of up to an additional 12 months at the discretion of the Chief Administrative Officer.
4. That pending approval of recommendations 1, 2 and 3, that staff **BE DIRECTED** to engage with the local municipalities to confirm partnership and service parameters of the pilot services.
5. That this report **BE CIRCULATED** to area municipalities.

Key Facts

- The purpose of this report is to seek authorization to deploy on-demand transit solutions for NRT pilot projects after confirming local participation.
- LNTC-C 21-22-23 2018 identified the need for inter-municipal transit services in Niagara West, as well as establishing connections for Lincoln and Pelham.
- CAO 8-2017 included recommendations for providing connectivity to the communities of Sherkston and Crystal Beach.
- The 2019 Operating Budget included provisions for the deployment of transit services in these aforementioned communities. Jurisdictional definitions combined with the desire for service integration and potential for partnership delayed the original deployment timeline, now tentatively set for April 2020.
- The 2019 approved transit operating budget included a one-time transfer from Reserve of \$3.0 million and therefore did not provide sufficient ongoing base level funding in 2020 to deploy the on-demand expansions into Niagara West, Crystal Beach and Pelham without the need for subsequent budget approval in 2020.

- Via Mobility, LLC (Via) was retained to conduct modeling and microsimulation work to identify preferred on-demand transit models, coverage and deployment options to enable Niagara Region to fulfill its planned expansions. The final recommendation for Niagara West was an integrated service model with an initial fleet size of approximately 7 to 10 vehicles. Secondary deployment opportunities in Port Colborne and Fort Erie require additional consultation with the respective local municipalities to confirm service design parameters.

Financial Considerations

The approved 2019 budget provided \$7.9 million towards a strategic two-year IMT investment strategy. The 2019 funding included a 1.4% separate transit levy of \$4.9 million plus a one-time transfer from Reserve of \$3.0 million (0.9% of the 2018 levy).

The proposed 2019 Budget strategy was to utilize \$2.2 million of the \$7.9 million as a one-time reserve transfer in 2019 to support the \$13.9 million of capital assets and reduce the annual debt over the next 10 years. According to the aforementioned strategy, \$2.2 million would be allocated to transit expansions connecting Niagara West, Crystal Beach and Pelham to existing transit services in 2020. The 2019 direction to use a one-time transfer from Reserve therefore did not include sufficient sustainable base funds to deploy the on-demand expansions into Niagara West, Crystal Beach and Pelham without subsequent base level budget approval in 2020.

To secure funding for the on-demand Pilot project and all previously implemented service enhancements, a separate general levy of 1.3%, will be considered along with the following budget items:

	Council Report	Levy Amount (M\$)	Levy Increase %
Previously identified reports			
Suicide Prevention Initiative	PHD 8-2019	0.200	0.05%
Waterfront Investment Program – Base funding	CSD 40-2019	1.000	0.27%
Smarter Niagara Incentive Program – Base funding	CSD 40-2019	0.600	0.16%
Brock LINC request for funding	ED 9-2019	1.500	0.41%
Niagara Regional Transit - phase in cost	PW 56-2019	4.754	1.30%
NRPS 2019 position hiring deferral	BRC-C 7-2019	0.706	0.19%
Long-Term Care Home Redevelopment capital funding	CSD 53-2019	5.620	1.54%
GO Project - Station Operations	CSD 17-2019	1.410	0.39%
Canadian Coalition for Municipalities Against Racism and Discrimination	CAO 14-2019	0.142	0.04%
EMS Central Hub capital funding	CSD 40-2019	0.390	0.11%
Potential request to-date		\$16.323	4.46%

Unlike the ‘per-trip’ pricing models of Niagara Specialized Transit and Innisfil’s partnership with Uber, the on-demand model proposed in this report operates on a fixed hourly rate within a fixed budget. This pricing structure provides significantly more certainty in terms of budget containment. Should the demand increase to the point where it outpaces the capacity of the service, two options are available. The first would be to decrease the quality of the service by altering the parameters of the service, thus increasing its capacity. For example, increasing the maximum wait time from 1 hour to 1.5 hours. The second option would be to seek additional funding approval and deploy additional vehicles to maintain the existing level of service.

Analysis

In September 2018, staff brought forward 3 related reports (LNTC-C 21-22-23-2018) jointly identified as the IMT Service Implementation Strategy. This strategy identified the need for inter-municipal transit services to be developed to connect the municipalities in Niagara West, including Pelham and Lincoln which already operated local transit services, to the NRT network. Thus for the purposes of this report, Niagara West refers to the geographic area of Grimsby, Lincoln, West Lincoln, Pelham and Wainfleet. In addition, CAO 8-2017 identified opportunities for IMT services to be piloted which would connect Crystal Beach and Sherkston with the larger transit network in Niagara.

After the initial IMT expansion Service Plan strategies were approved in late 2018, staff developed fixed-route options for consideration; however the operational and financial limitations of providing this type of fixed-route service in large geographical areas with low population density quickly became apparent. As such, staff began to research

alternative deployment strategies in an effort to make transit more sustainable and accessible in these areas.

In May 2019, Niagara Region retained Via to conduct a microtransit feasibility study to consider the practicality and optimal service design of an on-demand microtransit service covering the entire western area of Niagara. In addition to Niagara West, additional service areas were evaluated in Fort Erie and Port Colborne. The travel patterns defined in the simulation were modeled using data from the Niagara Specialized Transit (NST) database and the MTO's Transportation Tomorrow Survey. A presentation of the preliminary results of the microsimulation were shared with the IMTWG at its meeting on September 19, 2019. The final report was provided to the IMTWG for their reference in late October. Through the IMTWG, staff have completed preliminary engagements with the affected municipalities in order to gauge support from local staff. At the request its respective local staff, presentations were given to the Councils of Pelham and Lincoln which provided an overall update on the status of inter-municipal transit and a high level primer of on-demand transit.

Similar to conventional transit, on-demand solutions include wheelchair accessible vehicles (WAV's). It is worth noting that because trip planning software is capable of prioritizing and dynamically routing vehicles and when combined with unique user profiles, an entire fleet of WAVs is not required to ensure that all riders receive the same level of service.

Niagara West

Two main operating systems were considered when developing the service parameters. The first was a pre-scheduled, on-demand system that would require riders to pre-book their trips a day in advance. The second was a dynamic, on-demand system that would operate with a 30 minute average wait time with a maximum wait time of 1 hour. Although both were feasible options, staff determined that pursuing the dynamic, on-demand service would provide a significant boost to the quality of service by allowing riders to request a ride when they require it as opposed to planning 24 hours in advance.

The dynamic, on-demand system allowed for three potential deployment models to be developed. However, further evaluation resulted in the dismissal of two of the models due to the potential for rider confusion stemming from the jurisdictional realities which resulted from the triple majority process in 2017 granting the Region non-exclusive authority to operate IMT routes only. While staff from Via and Niagara Region both agree that an integrated deployment model is preferred (integrated includes both local and IMT routes within and outside of a municipality), this model requires partnership from local municipalities from both a financial and jurisdictional perspective. One additional note is that when the graphic below was developed, a connection to Port

Colborne had not been included however, this has been corrected from a service design perspective.

Integrated Services Model (Preferred)

In this preferred simulation, by removing the jurisdictional barriers, the integrated services model (Figure 2) eliminates many of the challenges that riders face when using an intra-municipal service. While this service continues to permit inter-municipal trips (trips between municipalities), it also permits intra-municipal trips (trips within municipalities). For the sake of clarity, this model would permit trips from any origin to any destination within Niagara West. It would also permit trips between Niagara West and the St. Catharines Bus Terminal, the Welland Bus Terminal, or Port Colborne City Hall where riders would then gain access to the NRT and other local transit networks.

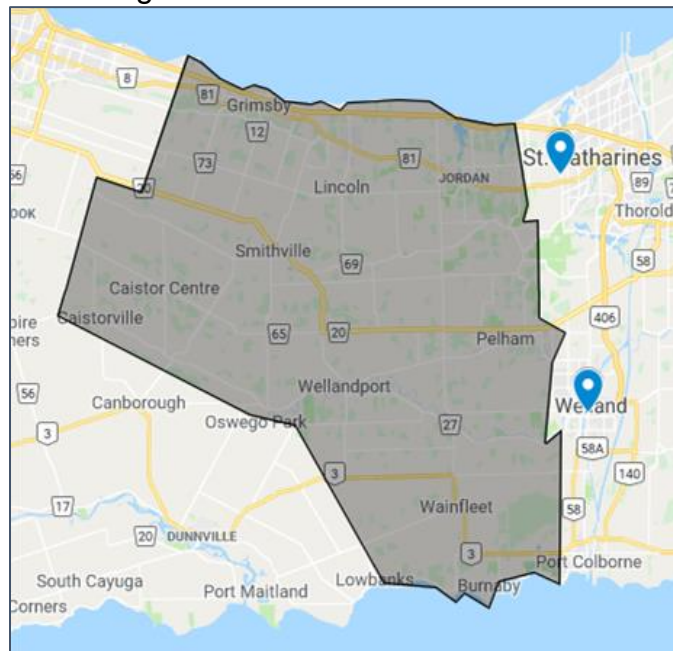


Figure 2 – Integrated Services Model

Niagara Region does not have the jurisdictional authority or adequate budget to independently operate the integrated services model and thus requires support from the local municipalities. That said, the benefits of this scenario are substantial from both a rider experience perspective and a cost-benefit perspective. Local municipalities would require significantly more funds to develop an independent localized on-demand service which would still require inter-municipal connections. More simply, by pooling resources, a higher level of service can be delivered for the riders without the need of coordinating travel across multiple systems. As previously stated, separate municipal transit services are not required under this integrated approach. This means that municipalities with small fixed route transit systems (i.e. Pelham and Lincoln), which only service a small portion of their geographical area, could feasibly choose to reallocate those transit

dollars into this integrated services model and significantly increase their ridership, coverage area, and level of service without an additional impact to their levy.

For those municipalities without existing transit dollars, full participation in the integrated model would require a net new impact on their levy. Should those municipalities not be able to commit new levy dollars to an integrated model, they would only be serviced by the on-demand system for inter-municipal trips. For example, residents in Grimsby, West Lincoln and Wainfleet would only be able to travel to a destination outside of their municipality.

For the various operating models, the trip demand was simulated at multiple levels to account for elements such as rider uptake, initiation of hourly GO rail service and continued population growth. Table 1 below provides some of the key indicators resulting from the microsimulation of the integrated services model where the maximum wait time was set at 1 hour.

Table 1 – Integrated Services Model Microsimulation Results

Trip Demand	Maximum Hourly Ridership	Recommended Fleet Size	Passengers per Vehicle Hour	Average Wait Times (Minutes)
Low	10 – 22	7 – 10	1.5 – 2.2	25 – 35
Medium	20 – 35	10 – 13	2.0 – 2.7	22 – 32
High	40 – 70	15 – 19	2.7 – 3.7	20 – 30

In an area where limited transit options exist such as Niagara West, a new deployment would expect to see a low initial trip demand. However, over the course of a 12 month pilot it is unlikely that a medium trip demand would be reached. That being said, factors such as initiation of hourly GO Train service would certainly affect that assessment.

Implementation

In order to implement the Integrated Services Model, a full service ‘turn key’ provider is required due to Niagara Region’s lack of staff, maintenance facilities and transit fleet. Staff is seeking authorization to formally procure Via for the deployment of the preferred option for the following reasons:

- Via is the only company known to the IMTWG which offers a full turnkey deployment. This includes:
 - Custom branded Mercedes vans (eliminates capital acquisition costs for Niagara Region)
 - Professional, background checked drivers
 - iOS and Android apps as well as dial-in capability for those without smartphones
 - Customer service and training
 - Marketing support prior to and after launch

- Via is willing to deploy a pilot for 1 year with an option to extend for up to an additional 12 months.
- Via values shared data – deployment includes a custom built dashboard and reports. All data collected is shared possession and access with Niagara Region.
- Via has over 80 deployments worldwide from North America to Europe and Asia
- Via integrates with major fare payment systems
- Via's software specializes in superior dynamic trip planning and dispatching which considers the following:
 - Combining trips by channeling ride requests to be accommodated by a nearby vehicle rather than dispatching a new car to the same area
 - Prioritizing the passenger per vehicle hour metric where feasible, allowing for a small fleet size relative to the service area
 - Encouraging 'corner-to-corner' service delivery, which means that the software directs the rider to a pickup location closer to a main intersection (roughly 100 – 200m average walk) except in cases where walking is unsafe like roads with a rural cross-section or where the rider requires wheelchair accessibility
 - Accessibility of service through user profiles to ensure that riders requiring a wheelchair can be serviced with the same average frequency as those who do not require one

Port Colborne and Fort Erie

Due to the recommendation included in the *Niagara Region Transit Service Delivery and Governance Strategy* by Dillon Consulting (CAO 8-2017), combined with interest from members of the IMTWG, staff elected to request Via assist in the design of potential solutions to connect the communities of Crystal Beach and Sherkston with the existing NRT network as part of the demand simulation exercise. The opportunities for these communities were developed with the same considerations and criteria as that of Niagara West. In similar fashion, the element of jurisdictional authority plays a major factor and creates significant barriers to providing a seamless, convenient rider experience. Without local involvement, Niagara Region would only have jurisdiction to deliver trips from Sherkston to Fort Erie or from Crystal Beach to Port Colborne, albeit counterintuitively. Therefore, it is imperative that any on-demand solution for these communities must involve the local municipalities of Port Colborne and/or Fort Erie.

Another component of the IMT Service Implementation Strategy was the upload of the Port Colborne Link and Fort Erie Link IMT routes to Niagara Region with the intent that the local municipalities would reinvest those savings into their local transit systems. These uploads are now complete and both Port Colborne and Fort Erie have both been paid retroactively to January 1, 2019.

Staff is seeking authorization to formally engage with the municipalities referenced in this report in an effort to improve connectivity for those residents who would benefit from

an on-demand model in rural or underserved areas. If in discussion, not all of the municipalities are interested or capable in partnering with Niagara Region, a smaller solution may be pursued which relies on connections to existing NRT service in the respective municipality to deliver the inter-municipal portion of the trip.

Alternatives Reviewed

Staff originally developed a fixed-route service plan for Niagara West that included routes which connected the municipalities of West Lincoln (Smithville), Grimsby (GO station and downtown), and Lincoln (Beamsville and Jordan) to the St. Catharines hospital. Completing this exercise helped to develop a scope and budget. However, this option is not recommended due to the high operating and capital costs and low level of service. This became especially evident when compared against on-demand solutions which found that for a similar budget commitment, a much higher level of service can be achieved through on-demand solutions. Two of the most prominent service parameters determining the level of service are coverage area (population served) and service frequency (average wait time).

Having no staff or transit vehicles of its own, Niagara Region sought to leverage its relationships with its local transit partners to determine if they could operate an on-demand system in Niagara West if provided with adequate software. Unfortunately, those partners also lacked the available staff, vehicles and training resources necessary to accommodate this request. As such, this option was deemed not viable.

Staff also considered utilizing its existing service provider of Niagara Specialized Transit to provide the service if Niagara Region provided the software. However, an operational review of the service provider conducted in 2019 concluded that significant elements of the contract and service were deficient (PW 39-2019 & PW 40-2019). These elements included inefficient trip scheduling software, poor on-time performance, not meeting the data reporting requirements, and vehicle branding. This lead senior staff to determine that expanding the service contract with the existing service provider was not a practical option at this time. In addition, PW 39-2019 recommended not restructuring the contract with service provider in light of the Specialized Transit Study recommendations coming in late 2019.

There are a number of companies with software capable of dynamically routing vehicles which they in turn lease to transit providers (often referred to as Software-as-a-Service, S-a-a-S) for an annual fee. Given the consideration of the two aforementioned options, Niagara Region requires a full service operator which can provide demand modeling, service design, as well as a fully turnkey solution by providing vehicles, drivers, and customer support – in addition to the dynamic routing technology. This full turnkey solution is often referred to as Transportation-as-a-Service (T-a-a-S). Via is the only company known to the IMTWG which offers this type of service. Having a T-a-a-S deployment model is an ideal solution for two additional reasons. One, Niagara Region

desires to pilot on-demand solutions for entirely new service expansions and this gives flexibility to test on-demand strategies without a corresponding capital commitment. Two, the LNTC and IMTWG have recently initiated the Transit Governance Study with recommendations due by the end of Q1 2020. By initiating services in the pilot areas while simultaneously avoiding a long-term service contract, any potential new future transit entity will have the flexibility to pursue revised deployment strategies or engage with Via to formalize the pilot into permanent service. Thus procurement of any company which only offers S-a-a-S is not recommended for deploying pilot services at this time.

While implementing a solution that solely delivers inter-municipal trips is possible, local transit services would still be required in each municipality to provide support and connectivity. This type of model also has a number of shortcomings which would be likely to limit demand and negatively impact rider experience. For example, when daily GO rail service becomes available in Grimsby (and potentially Lincoln), an 'inter-municipal trips only' model would require riders in these municipalities to counterintuitively travel to adjacent municipalities rather than traveling to their nearest station in order to meet the criteria of making an inter-municipal trip. By leveraging the relationships built through the IMTWG, an integrated deployment model allows for municipalities to benefit from the pooled resources and streamlines the rider experience by eliminating the confusion and challenges of coordinating travel between multiple systems in Niagara West. For this reason, staff supports pursuing partnerships with those interesting local municipalities to provide enhanced levels of service in an integrated model rather than an inter-municipal model built along municipal jurisdiction.

Staff also considered the option of integrating its existing specialized transit service with a dynamic, on-demand transit service. While simulation results indicate this option makes the most sense from both rider experience and financial efficiency perspectives, staff feels that it would be premature to make any substantive changes to its existing specialized transit service until the dynamic, on-demand model could be validated given the vulnerable segment of the population it serves.

Relationship to Council Strategic Priorities

The IMT Service Implementation Strategy directly aligns with the Council Strategic Priority: Responsible Growth and Infrastructure Planning (Objective 3.1) through advancing regional transit and GO rail services and facilitating the movement of people and goods.

Other Pertinent Reports

- LNTC-C 21-2018 Inter-Municipal Transit (IMT) Service Implementation Strategy
- LNTC-C 22-2018 Inter-Municipal Transit Financial Impact Analysis
- LNTC-C 23-2018 Inter-Municipal Transit Capital Plan, 2019
- CAO 8-2017 Niagara Region's Transit Service Delivery and Governance Strategy

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