

Draft Report

Specialized Transit in Niagara Region



Prepared for The Regional Municipality of Niagara
by IBI Group
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Table of Contents

Executive Summary	1
1 Introduction	12
1.1 Niagara Region at a Glance	12
1.2 Organization of the Report.....	15
2 Background Reports	16
2.1 Niagara Region Official Plan.....	16
2.2 Niagara Region Transportation Master Plan – How We Go.....	17
2.3 Niagara Transit Service Delivery and Governance Strategy.....	17
3 Primer on Accessibility for Ontarians with Disabilities Act.....	19
4 Demographic Trends.....	21
4.1 Growth in Niagara Region To-Date	21
4.2 Key Regional Destinations.....	22
4.3 Aging and Disability in Niagara Region	22
4.4 Conclusions	25
5 Specialized Transit Service in Niagara Region	26
5.1 Niagara Specialized Transit.....	26
5.1.1 Operating Data Trends	26
5.2 Municipal Services.....	28
5.2.1 Niagara Falls Chair-A-Van	28
5.2.2 St. Catharines Paratransit Service.....	28
5.2.3 WellTrans	28
5.2.4 Fort Erie Accessible Specialized Transit	29
5.2.5 Pelham Specialized Transit	29
5.2.6 Niagara-on-the-Lake Specialized Accessible Transit Service	29
5.3 Private Sector and Not-For-Profit Service Providers	31
6 Specialized Transit Service in Peer Regions.....	32
6.1 Durham Region.....	32
6.1.1 Service Area and Governance Structure	32
6.1.2 Eligibility Criteria and Assessment.....	33
6.1.3 Service Statistics.....	33

Table of Contents (continued)

6.2	York Region	34
6.2.1	Service Area and Governance Structure	34
6.2.2	Eligibility Criteria and Assessment.....	35
6.2.3	Service Statistics.....	35
6.3	Waterloo Region	36
6.3.1	Service Area and Governance Structure	36
6.3.2	Eligibility Criteria and Assessment.....	37
6.3.3	Service Statistics.....	38
6.4	Conclusions	38
7	Stakeholder Consultation	40
7.1	User Survey	40
7.1.1	Summary of Results.....	40
7.2	Focus Group Meetings with Healthcare Organizations	42
7.3	Public Information Centres	42
8	State of the Specialized Transit Industry	44
8.1	Introduction	44
8.2	Mobility Landscape in North America	44
8.2.1	Factors Driving Change	45
8.2.2	Mobility Solutions and Suppliers	46
8.3	Emerging Role of Transit Agencies	47
8.4	Business Models.....	48
8.4.1	Mobility on Demand	48
8.4.2	Family of Services.....	48
8.4.3	Public Private Partnerships.....	49
8.5	Specialized Transit Operations – Common Industry Practices	49
8.5.1	Operations.....	49
8.5.2	Supplemental Service delivery.....	53
8.5.3	Emerging Mobility Technologies.....	56
8.5.4	Mainstream Deployment	56
8.5.5	Limited Commercial Deployment.....	57
8.5.6	Pilot Deployments	60
8.6	Summary.....	61
9	Recommendations – <i>A Way Forward</i>.....	62
9.1	Guiding Principles	62

Table of Contents (continued)

9.1.1	Key Challenges and Opportunities	63
9.2	Recommendations	63
9.2.1	Eligibility & Certification.....	63
9.2.2	Reservations/Trip Requests and Scheduling.....	64
9.2.3	Development of Policies, Procedures, and Performance Metrics	64
9.2.4	Service Delivery (Dispatch/Trip Management)	65
9.2.5	Greater Link/Integration with Fixed-Route Transit Services	65
9.2.6	Next-Generation Mobility	65
9.3	Financial Plan	66
9.3.1	OPERATIONS FINANCIAL PLAN	66
9.3.2	CAPITAL EXPENDITURES	74

Appendices:

Appendix A: Survey Form

Appendix B: Public Meeting Presentation Material

Appendix C: Draft Specialized Transit Application Form

Executive Summary

In much of Ontario, public transportation is planned, operated, and administered by the local level of government. However, travel behaviour today is less and less likely to follow municipal boundaries, and disparate local transit systems effectively place artificial barriers that impede people's travel options. This is particularly problematic for specialized transit customers, who often do not have alternative means of travel. In recognition of this and other issues, Niagara Region obtained nonexclusive jurisdiction to upload conventional transit services in 2017 and consolidate its various municipal transit service operations. This present study is the result of a recommendation made during this process to examine the feasibility of consolidating the specialized transit system.

Specifically, this study has reviewed existing specialized transit services and developed operating scenarios, and forecasts that will help inform the Region on how to proceed with service consolidation. The findings of this study will then be used to conduct additional work on the future business case and governance for the future consolidated specialized system.

As specialized transit in Niagara operates under a two-tier system that is currently undergoing a consolidation process, this poses unique challenges as well as opportunities to the operation and future planning of the specialized transit services.

Demographic Trends: Niagara Region is home to almost half a million people and has seen steady growth as far back as 1991. The region's population was younger at that time—only 13% of residents were aged 65 years or older (Statistics Canada, 1992). By 2016, the share of seniors grew to over 21% fueled by migration from other parts of Ontario as the region's landscape and climate provide an attractive place to retire. The Ontario Ministry of Finance noted that the St. Catharines-Niagara area had among the lowest shares of working age population in the country in 2016 (Ontario Ministry of Finance, 2017).

While Niagara Region's population continues to grow today, it is doing so at a much slower rate than its neighbours in the Greater Golden Horseshoe (GGH). At the same time, its population is aging faster than its neighbours.

Niagara Region has shown consistent population and employment growth over the past two decades and has generally been resilient even in the face of a strong downturn in manufacturing jobs in Ontario. In-migration has been a significant contributor to population growth, particularly older working-aged adults over 45 and seniors 65 years and older. However, the Region has also seen a decline in younger adults between aged 30 to 44, resulting in a faster increase in the median age compared with its GGH neighbours. Today, more than one in five residents is aged 65 years or older.

The aging population has direct implications for the demand for specialized transit service. Some 16.5% of Ontarians aged 65 – 74, and 19.6% of Ontarians 75 years and older are living with a severe or very severe disability and are more likely to need specialized transit service.

As the size of Niagara Region's senior population continues to increase, the median age of the region's residents continues to increase, and the regional importance of major healthcare, educational, and social services institutions continues to increase, specialized transit services across Niagara Region will experience greater demands for service.

Specialized Transit Services in Niagara Region: In Niagara Region, several organizations offer transportation services to residents who are unable to use accessible conventional transit. Services are offered by the Region, some area municipalities, as well as several independent organizations.

East and Central Niagara Region are all served by some form of specialized transit for both local and inter-municipal trips. In West Niagara, the only government-operated service is the inter-municipal service provided by the regional operator, Niagara Specialized Transit (NST).

Details on the method of determination of eligibility, types of disabilities considered for eligibility, and other key information about the municipal and regional services are provided in Exhibit ES.1.

Specialized Transit Service in Peer Regions: Several regional municipalities in the GGH have amalgamated the specialized transit services of their area municipalities under a regional entity. Peer regions that are instructive for Niagara Region include the following:

- Durham Region – Located at the eastern end of the GTHA, Durham covers over 2,500 km², which is notably larger than Niagara Region. With a population of 646,000, it has a mix of rural and urban lands similar to Niagara. Durham Region Transit was formed in 2006 serving all eight area municipalities.
- York Region – The Region covers some 1,800 km² between Toronto and Lake Simcoe and has over 1.1 million residents. Both specialized and conventional services have been provided by York Region Transit to all nine area municipalities since amalgamation of local transit in 2001.
- Waterloo Region – With about 540,000 residents, Waterloo Region has a similar population to Niagara Region spread over almost 1,400 km². Conventional and specialized transit services were amalgamated in 2000 with the creation of Grand River Transit, a department of the Region. Service delivery is provided by two entities today—one for the urbanized communities, and another for the rural areas.

York, Waterloo, and Durham all noted the need to expand the availability of transit service as one reason for amalgamating area municipal services under a regional body. In York and Durham, particular attention was paid to the need to enhance service in less densely populated areas that had little or no service before amalgamation (Totten Sims Hubicki Associates, 2004). The rationale for amalgamating conventional services also extended to the specialized service, and all three peers uploaded both types of operations to the Regions.

Waterloo Region stands out in its decision to keep rural and urban specialized transit separate, highlighting how different the challenges of operating in a busy, dense urban environment can be compared to serving the long trips typical of rural communities. This aligns closely with the direction Niagara Region is pursuing to consolidate conventional service only in the three largest area municipalities (Dillon Consulting, 2017). Further investigation on how exactly Waterloo Region accomplished its amalgamation could be valuable to Niagara Region as it prepares more detailed plans for implementing its own service consolidation.

However, at almost \$17 in net operating costs per resident, Waterloo also operates the most expensive service among the peers, some 60% more costly than Niagara's services. Durham Region, on the other hand, spent just \$10 in net operating cost per resident even though its service area is vast and trip lengths are similar to those in Niagara Region. Further study of the details of DRTs operations could be instructive for setting operational standards for a combined regional service in Niagara Region.

Niagara Region is unique among the peers and other GGH communities—it is a vast area with almost half a million people, over one fifth of whom is aged 65 years or older compared to a less than 15% share in York, Durham, and Waterloo Regions. While the Region can learn from the specialized transit practices in peer communities, it will be tasked to come up with a tailored approach that recognizes the uniqueness of its population and geography.

Exhibit ES.1: Summary of public specialized transit services available in Niagara Region

	NST	Chair-A-Van	St. Catharines Paratransit	WellTrans	FAST	Pelham Specialized Transit	NOTL Specialized Accessible Transit
Service Area Population	447,900	88,100	151,900	52,300	30,700	17,100	17,500
Area (km²)	1,854	212	97	81	168	135	133
Eligibility Criteria							
Cognitive	✓	✓					
Sensory	✓	✓					
Environmental	✓	✓					
Physical	✓	✓	✓	✓	✓	✓	✓
Internal Assessment		✓		✓			
Paper Application	✓	✓	✓	✓	✓	✓	✓
Healthcare Provider	✓	✓	✓	✓	✓	✓	✓
Committee		✓	✓				
Other					✓		
Advanced Booking Required (hrs)	48**	1	0	2:30 pm day before**	3	48**	No Data
Fares Match Conventional	YES	YES	YES	NO – No passes**	NO – No passes**	NO – No passes**	YES
Number of Vehicles	24	8	13	5	3	No Data	No Data
Number of Active Clients	1,153	734	1,117	249	182	No Data	No Data
Number of Trips (eligible clients)	30,100	24,900	30,200	12,600	8,000	No Data	No Data
Revenue Vehicle Kilometres (dedicated service)	633,440	200,750	273,510	42,000	42,505	No Data	No Data
Total Vehicle Kilometres (dedicated service)	954,604	250,112	288,343	No Data	66,785	No Data	No Data
Staffing							
Drivers	18FT, 4PT	13FT	8FT	2FT, 3PT	3FT	No Data	No Data
Dispatchers	3FT, 2PT	1FT	2FT	1FT	2FT	No Data	No Data
Admin/Other	3FT, 1PT	5PT	1FT	3PT	0	No Data	No Data
Revenue-to-Cost Ratio	4.6	2.8	12.5	6.8	3.9	No Data	No Data
Net Operating Cost per Passenger	\$78.96	\$30.67	\$46.76	\$32.08	\$37.83	No Data	No Data
Net Operating Cost per Capita	\$5.30	\$8.66	\$9.30	\$7.88	\$9.87	No Data	No Data

**Inconsistent with AODA requirements.

Sources: 2018 data obtained from each organization, supplemented with data from (Ministry of Transportation for Ontario, 2017). WellTrans financials are from 2017 data.

Stakeholder Consultation/Survey Research: Engaging with a wide range of stakeholders to hear their input on the future of specialized transit in Niagara Region was an essential part of this study. Two rounds of consultation meetings were held during the study—one was completed at the start of the study to hear initial thoughts on what is working and what could be improved regarding specialized transit, and another took place later in the study process and was used to solicit input on study findings and improvements being considered.

Each of two rounds of consultation included the following four activities:

- i. An online and paper survey completed by users of specialized transit in Niagara Region;
- ii. Public Information Centres in Welland and St. Catharines (first round) and Niagara Falls and St. Catharines (second round);
- iii. Discussion groups with the Region's Accessibility Advisory Committee and with other key stakeholders from community organizations; and
- iv. Focus group sessions with representatives of healthcare organizations in Niagara Region.

Salient comments received indicate that:

- The public is supportive of the Region's initiative to conduct this study.
- The drivers and staff who interact with users are courteous and professional, and the drivers are well trained in handling mobility devices and interacting with the passengers.
- Back-office scheduling of trips does not adequately account for the long distances involved in inter-municipal travel in Niagara Region, so on-time performance is negatively impacted.
- Booking rides is too tedious, including waiting by the phone to be the first caller and be guaranteed a ride, the lack of clarity on the user's part regarding whether an upcoming trip is actually confirmed, and having to call multiple agencies when booking trips that involve an inter-municipal leg and a leg within a local municipality.
- The mobility needs of post-secondary students with disabilities who rely on specialized transit should be reviewed, both in terms of lack of an equivalent U-Pass for specialized transit, and the poor on-time performance that may cause them to miss classes and exams.
- Residents of Towns and Cities without specialized transit service, particularly in West Niagara Region, feel disadvantaged as it is sometimes easier for them to travel across municipal boundaries using NST than it is to get a ride within their communities in an accessible vehicle.
- Inconsistent eligibility criteria between specialized transit agencies forces users to complete multiple applications, which may involve multiple visits to a healthcare professional for approval.
- Accessible conventional transit is not always feasible as people do not trust that there will be barrier-free access to and from bus stops, or that the drivers will be properly trained to handle mobility devices.
- Alternative service delivery models are welcomed, be it introducing new technology for booking and vehicle tracking, including other service providers like transportation network companies (Uber and Lyft) and accessible taxis, or removing jurisdictional barriers on which agency can provide local trips and which can provide inter-municipal trips.

State of the Specialized Transit Industry: As the mobility landscape continues to evolve, connected travelers, continued advancements in transportation technologies, and private sector involvement present unprecedented opportunities for public transportation improvements in general and the delivery of specialized transit, specifically. In recent years, concepts such as microtransit and mobility-on-demand have helped agencies provide a range of mobility options for the senior and disability communities by developing and integrating unconventional modes into their services, engaging the private sector in the form of transportation network companies (TNCs), taxis, and other modes as complementary alternatives to traditional specialized transit delivery schemes. However, while transit agencies continue to experiment with new business models, suppliers, and technologies to extend service (and mobility options), challenges related to providing cost-effective, efficient, and equitable service to all people remain.

Transit agencies nation-wide have been partnering with private sector such as TNCs, private microtransit companies, and real-time routing and dispatching software providers for several years. However, transit agencies are still assessing how best to position themselves in the shifting paradigm of mobility. Throughout this time agencies have experimented with replacing existing services, complementing current services, and adding new services. Given most of the operating cost in transit industry is attributed to direct driver employment and vehicle ownership, agencies have experimented with a variety of models, where they 1) operate a service on their own; 2) use a contractor to run their services; or 3) partner with TNC or taxis and subsidize trip cost. There is no clear conclusion on the best model, and it varies largely on the type of service being provided and the ridership demography.

The transit industry is witnessing a rapidly changing world fueled by internet age technologies. The power of the internet allows agencies to plan and deploy technologies at a rapid pace even in situations when multiple service providers are involved. A number of technologies/solutions identified in this document have either been field tested as part of a pilot program or have been widely deployed.

Recommendations

A recommended approach reflects the following guiding principles:

- **Preserve the integrity** of the Region's specialized transit services for those with no alternative
- **Maximize benefits from investments** made in accessible fixed route transit and provide flexible mobility options
- **Compliance with AODA** (and principles of universal design)
- **Be fiscally responsible and accountable**

Recommendations address the following core functional areas and reflect consideration of multiple to single providers:

- Eligibility & Certification
- Trip Reservation & Scheduling
- Dispatch/Trip Management
- Service Delivery

Eligibility & Certification: In order to address the current situation of multiple specialized transit providers each having responsibility for this business process, including each having their own application form and certification process, it is recommended that:

1. The eligibility and certification process be centralized under a single entity.

2. A single application form be used by all specialized transit operators in the Region¹.
3. The application form be available on-line giving applicants the opportunity to complete and submit a digital version.
4. In-person assessments be introduced as part of the application and certification process. The applicant will have the *option* of including validation by a health care professional within the following parameters:
 - Application form has two parts: Part A - completed by all applicants. Then - one of two options:
 - o Applicant submits completed Part A; applicant will be required to attend an interview and in-person assessment; Or
 - o Applicant may choose to have a health care professional complete Part B, submit both Parts A and B for review and based on the information provided, applicant may be required to attend an interview and in-person assessment.
5. Applicants certification reflect the categories of 'unrestricted', 'conditional/trip-by-trip', and 'temporary'.
6. An every 5-year re-certification process be introduced as a standard operating procedure.

Reservations/Trip Requests and Scheduling

It is recommended that:

7. The reservations/trip request and scheduling functions be centralized under a single entity.
8. Enable registrants to make reservations/trip requests by telephone, app and/or web-portal (One-Call/One-Click capability).
9. Scheduling (route optimization, allocation of resources) to use state-of-the-art, commercially available software with a robust scheduling algorithm.

Development of Policies, Procedures, and Performance Metrics

It is recommended that:

10. The governing entity responsible for the administration and operation of the Region's specialized transit services develop a robust set of policies, procedures and performance metrics.

Policies and procedures to include but not be restricted to:

- Advance booking requirements
- Scheduling windows
- Cancellations and no-shows
- Fare policy

Performance metrics to reflect industry norms regarding key performance indicators (KPIs) including requirements for service monitoring, contract compliance and CUTA reporting.

¹ A Niagara Region Specialized Transit Application Form was prepared and distributed for consideration.

Service Delivery (Dispatch/Trip Management): The specific specialized transit delivery framework (number of operating entities, etc.) will be determined by, and as an outcome of the Regions concurrent study of consolidation of services models.

Notwithstanding the outcomes of the consolidation study, it is recommended that:

11. Core specialized transit services to be provided by, and to a level of service as currently provided by the aggregate of the municipal and regional specialized transit providers.
12. a. Existing core services to be supplemented by the use of taxis and/or transportation network companies (TNCs)² to accommodate trip requests during times of day, days of week, or areas of service, when the deployment of hourly service would not meet prescribed performance metrics or to provide 'overflow' capability.
12. b. Supplemental services, as described above, be used to accommodate future travel demand/expansion of specialized transit services.

Greater Link/Integration with Fixed-Route Transit Services: Recognizing that specialized transit is shared ride public transit for those unable to use accessible fixed route transit, and with an eye on a greater link or integration with accessible fixed-route transit, the following are recommendations:

13. Apply conditional/trip-by-trip eligibility whereby for specialized transit registrants categorized as 'conditional' and where conditions can be determined (e.g., seasonal, climate/weather, topography, accessible paths of travel, proximity of trip origin/destination to fixed-route service, etc.).
14. Develop incentives and policies to address travel/mobility demand management strategies that may include but not be restricted to: travel/mobility training, fare policy, trip discovery/planning capabilities, etc.

Next-Generation Mobility

It is recommended that the following next-generation mobility (operations, service delivery, and technology) strategies be advanced:

15. Introduce a *Specialized Transit Same-Day Pilot Program*. Through partnerships with taxi and/or transportation network companies (TNCs) provide subsidized, app-based (including trip request, tracking, and mobile payment) trips to specialized transit registrants. For those who may not have a Smart device and/or the unbanked, ensure the provision of a call-centre and ability for trip payment by alternate means.
16. Technology enhancement that include:
 - a. Real-time passenger information including the broadcast (text message or telephone call) of vehicle arrivals.
 - b. Self-service capabilities through an app and/or web portal to address registration, trip planning, reservations, confirmations and cancellations.
 - c. Mobile (cashless) payment.

² Supplemental services to be contracted on a per trip bases and hence, only paid for services consumed and may include subsidized same-day service.

Financial Plan

OPERATIONS FINANCIAL PLAN

The operations plan presents trip volumes and operating cost projections focus on the municipal specialized transit services (Niagara Falls, Fort Erie, St. Catharines (including Thorold), and Welland) and Niagara Region's NST service.

The operating costs reflect a financial analysis of two scenarios:

1. Status Quo Delivery Framework; and
2. Interventions/Alternate Delivery Framework.

Projected trips and operating costs for the smaller transit systems (Pelham, Lincoln, Niagara-on-the-Lake, and Port Colborne) and the municipalities without current transit services (West Niagara - Grimsby, West Lincoln, Wainfleet) are presented in the Status Quo Delivery Framework discussion.

Status Quo Delivery Framework assumes that the current mode of specialized transit service delivery will continue. That is, the use of core services (recognizing that there is marginal use of supplemental/taxis service).

Interventions/Alternate Delivery Framework provides for accommodating future demand without a proportionate growth in costs. This scenario reflects: (a) accommodating an increasing number of trips on accessible fixed-route transit services ; and (b) the greater use of supplemental (taxis and/or transportation network companies [TNCs]) services to accommodate trip requests during times of day, days of week, or areas of service, when the deployment of hourly service would not meet prescribed performance metrics or to provide 'overflow' capability. Further, in this scenario, future service expansion will be accommodated with the use of supplemental service providers.

For each scenario, trip volumes and operating costs are presented for the 2018 base-year and projections for years 2021, 2026, and 2031.

Table ES.1 presents a summary of the operating financial plan as discussed in Section 9.2 of this report and for each of the *business-as-usual* and *high growth* demand projections.

Operating Cost Summary														
			2021				2026				2031			
			Trips		Cost		Trips		Cost		Trips		Cost	
			Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions		
Business-as-Usual	Municipal/Regional		110,380	107,069	\$5,668,381	\$4,934,007	118,800	111,672	\$6,579,778	\$5,336,693	127,780	115,002	\$7,350,855	\$5,493,554
	Small Transit Systems		13,240	13,240	\$280,010	\$280,010	13,700	13,700	\$289,580	\$289,580	14,370	14,370	\$303,925	\$303,925
	No Transit System		6,315	6,315	\$133,560	\$133,560	6,735	6,735	\$142,440	\$142,440	7,365	7,365	\$155,770	\$155,770
	TOTAL		129,935	126,624	\$6,081,951	\$5,347,577	139,235	132,107	\$7,011,798	\$5,768,713	149,515	136,737	\$7,810,550	\$5,953,249
High Growth	Municipal/Regional		111,120	107,786	\$5,756,355	\$5,005,863	128,280	120,583	\$7,169,330	\$5,808,021	148,000	133,200	\$8,590,490	\$6,411,009
	Small Transit Systems		13,900	13,900	\$294,045	\$294,045	15,240	15,240	\$322,325	\$322,325	17,245	17,245	\$364,730	\$364,730
	No Transit System		6,655	6,655	\$140,760	\$140,760	7,525	7,525	\$159,240	\$159,240	8,840	8,840	\$186,965	\$186,965
	TOTAL		131,675	128,341	\$6,191,160	\$5,440,668	151,045	143,348	\$7,650,895	\$6,289,586	174,085	159,285	\$9,142,185	\$6,962,704

Status Quo Delivery Framework: Key takeaways from the trip volume and operating cost projections to 2031 include:

- 2018 base year: 105,800 trips, net operating cost of \$5,259,379, results in an average cost per trip of \$47.71.
- For the *business-as-usual* growth strategy, the percentage increase of travel demand and operating costs (from the 2018 base year) are as follows:

Year:	<u>2021</u>	<u>2016</u>	<u>2031</u>
% increase – <u>trips</u> :	4.30%	12.29%	20.78%
% increase – <u>costs</u> :	7.78%	25.11%	39.77%

- For the *high growth* strategy, the percentage increase of travel demand and operating costs (from the 2018 base year) are as follows:

Year:	<u>2021</u>	<u>2016</u>	<u>2031</u>
% increase – <u>trips</u> :	5.03%	21.25%	40.00%
% increase – <u>costs</u> :	9.45%	36.32%	63.34%

Interventions/Alternate Delivery Framework: The following assumptions for the percentage of trips by mode of service delivery and by year, are as follows:

As presented, the following assumptions for the percentage of trips by mode of service delivery and by year, are as follows:

Year:	<u>2021</u>	<u>2016</u>	<u>2031</u>
% trips – fixed-route:	3%	6%	10%
% trips - supplemental:	20%	25%	30%

For the *business-as-usual* growth strategy, the percentage increase of travel demand and percentage decrease of operating costs (from the 2018 base year) are as follows:

Year:	<u>2021</u>	<u>2026</u>	<u>2031</u>
% change – <u>trips</u> :	+4.33%	+12.29%	+20.77%
% change – <u>costs</u> :	-6.18%	+1.47%	+4.45%

CAPITAL EXPENDITURES

Capital expenditures, as presented in Table ES.2, are informed by projected capital expenditures as prepared by St. Catharines Transit, Niagara Falls Transit and Welland Transit. Additional capital expenditures for technology enhancements as specified in this study's recommendations are also noted with an order of magnitude cost identified in the table.

Table ES.2: Capital Expenditures

CAPITAL EXPENDITURES	Unit Price	#	2020	#	2021	#	2022	#	2023	#	2024	#	2025	#	2026	#	2027	#	2028
Niagara Falls Transit																			
Specialized Transit Buses	\$100,000	1	\$100,000	1	\$100,000	2			\$200,000	2	\$200,000	2							
St Catharines Transit																			
Specialized Transit Buses *	\$245,000	2	\$490,000	2	\$490,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000
Specialized Transit Vans *	\$190,000	1	\$190,000								\$190,000	1			\$190,000	1		1	\$190,000
* Includes conventional radio, cameras, farebox and MDT/CAD/AVL.																			
Welland Transit																			
Specialized Transit Buses	\$125,000	1	\$125,000	1	\$125,000								\$125,000	1	\$125,000				
TOTAL Specialized Transit Vehicles		5	\$905,000	4	\$715,000	1	\$245,000	3	\$445,000	4	\$635,000	2	\$370,000	3	\$560,000	1	\$245,000	2	\$435,000
Technology - Scheduling Software/Suite of Specialized Transit Modules					\$400,000														

1 Introduction

In much of Ontario, public transportation is planned, operated, and administered by the local level of government. However, travel behaviour today is less and less likely to follow municipal boundaries, and disparate local transit systems effectively place artificial barriers that impede people's travel options. This is particularly problematic for specialized transit customers, who often do not have alternative means of travel. In recognition of this and other issues, Niagara Region obtained nonexclusive jurisdiction to upload conventional transit services in 2017 and consolidate its various municipal transit service operations. This present study is the result of a recommendation made during this process to examine the feasibility of consolidating the specialized transit system.

Specifically, this study has reviewed existing specialized transit services and developed operating scenarios, and forecasts that will help inform the Region on how to proceed with service consolidation. The findings of this study will then be used to conduct additional work on the future business case and governance for the future consolidated specialized system.

Like many communities in Ontario, public transit in Niagara Region started as a service offered by local municipalities. As communities developed and key educational and healthcare facilities grew in regional significance in Niagara Region, the need for inter-municipal travel grew. Niagara Regional Transit and Niagara Specialized Transit were established to respond to this demand, and today some 20% of transit trips in the region are cross-boundary (Dillon Consulting, 2017).

As specialized transit in Niagara operates under a two-tier system that is currently undergoing a consolidation process, this poses unique challenges as well as opportunities to the operation and future planning of the specialized transit services.

1.1 Niagara Region at a Glance

Niagara Region lies to the south-east of the Greater Toronto and Hamilton Area (GTHA) and spans over 1,800 km² between the City of Hamilton to the west, New York State to the east, Lake Ontario to the north and Lake Erie and Haldimand County to the south. The Region is part of the Greater Golden Horseshoe (GGH) and is one of eight regional municipalities in Ontario.

Exhibit 1.1 presents the 12 area municipalities in Niagara Region along with the population and employment in each community in 2016. The exhibit shows that almost two-thirds of the residents and jobs are in just three communities—St. Catharines, Niagara Falls, and Welland.

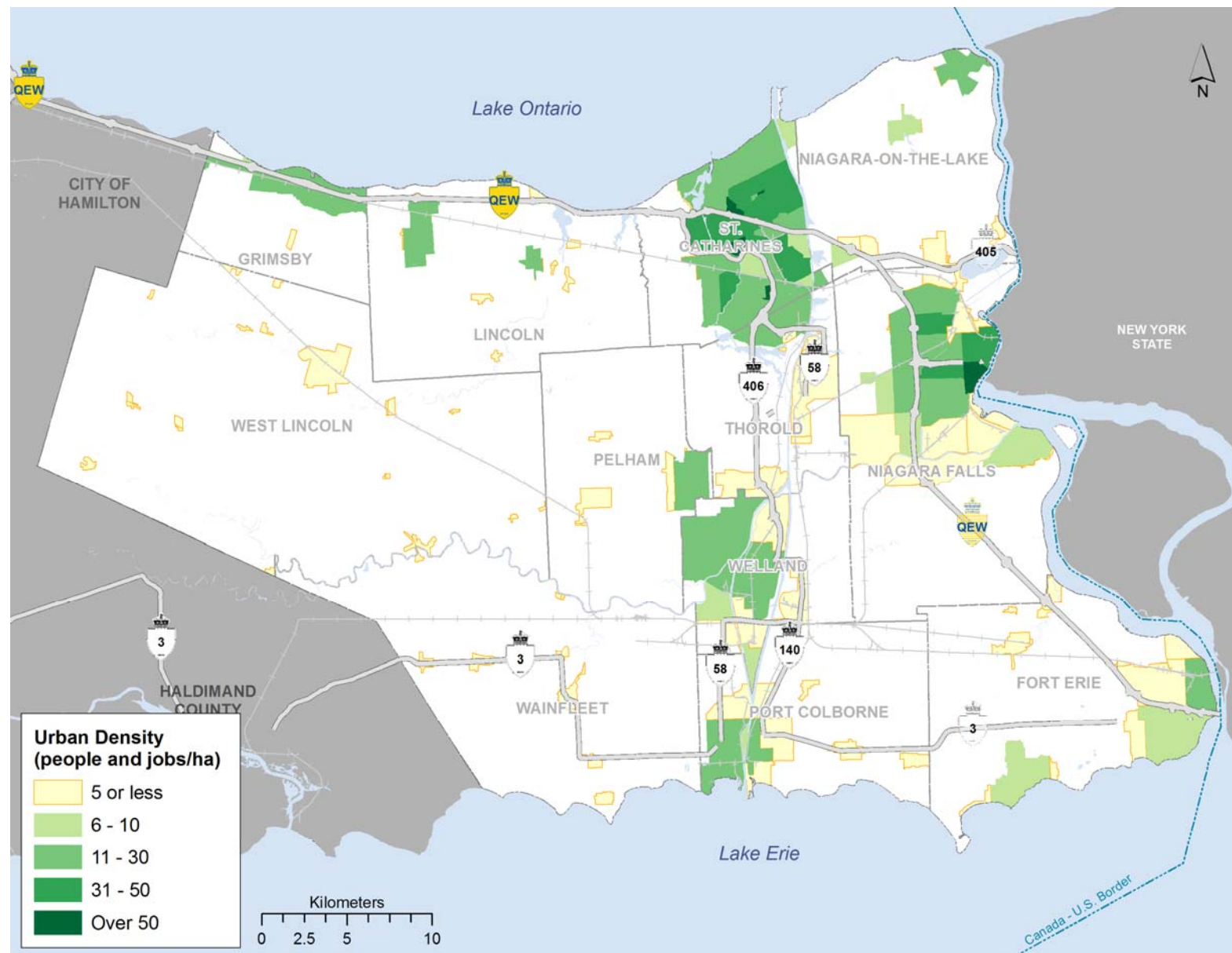
Exhibit 1.1: Number of people and jobs in each of Niagara Region's area municipalities, 2016

Municipality	Population	Employment
St. Catharines	136,700	62,100
Niagara Falls	90,400	42,000
Welland	53,500	17,700
Fort Erie	31,500	10,300
Grimsby	28,000	9,800
Lincoln	24,400	11,100
Thorold	19,300	8,400
Port Colborne	19,000	6,200
Niagara-on-the-Lake	18,000	13,000
Pelham	17,600	4,500
West Lincoln	14,900	4,400
Wainfleet	6,500	1,400
Niagara Region	459,900	190,900

Source: (Niagara Region, 2018)

Exhibit 1.2 shows a map of Niagara Region, including the local municipal boundaries and urban densities (people and jobs per ha) in the built-up areas. The exhibit highlights that while there are some urban centres along the QEW, much of the region consists of lower density rural and agricultural lands, particularly in the west and south.

Exhibit 1.2: Map of Niagara Region showing local municipal boundaries, major highways, and urban densities in built-up areas



Sources: Metrolinx Land Use Allocation System (2019) and Land Information Ontario

Over 40% of the agri-business output of the GGH comes from Niagara Region, and the region accounts for 80% of Canada's grape and wine production (Niagara Economic Development, 2017). Other major economic sectors include tourism, and manufacturing.

Public transit in Niagara Region is provided by several operators operating under the various jurisdictions of all levels of government. These include the following:

- Via Rail (federal jurisdiction), with stations in Grimsby, St. Catharines, and Niagara Falls;
- Metrolinx (provincial jurisdiction), with GO Train stations co-located with Via Rail at St. Catharines and Niagara Falls as well as GO Bus service along the QEW;
- Niagara Region Transit and Niagara Specialized Transit (regional jurisdiction);
- Conventional and specialized municipal transit in St. Catharines, Niagara Falls, Welland, Thorold, and Fort Erie, as well as accessible conventional service in Pelham, Port Colborne, and Niagara-on-the-Lake; and
- Private specialized/community transit operators including the Canadian Red Cross, Community Support Services Niagara, Greyhound Canada and Coach Canada.

All operators provide some level of accommodation for persons with disabilities.

1.2 Organization of the Report

This report comprises nine chapters, as follows:

- **Chapter 1**, this chapter, introduces the study and provides a brief overview of Niagara Region;
- **Chapter 2** summarizes key reports completed to-date, and provides context and motivation for this study;
- **Chapter 3** provides an overview of the Accessibility for Ontarians with Disabilities Act (AODA), the foundational legislation establishing accessibility standards for conventional and specialized transit service across the province;
- **Chapter 4** discusses demographic and employment trends in Niagara Region, with a focus on how demographic changes could influence demand for specialized transit service;
- **Chapter 5** gives an overview of the specialized transit services in Niagara Region;
- **Chapter 6** compares the specialized transit service provided by Niagara Region with similar services offered by peer communities;
- **Chapter 7** summarizes the findings of stakeholder consultation, including specialized transit rider surveys;
- **Chapter 8** provides a commentary on the state of the specialized transit industry; and
- **Chapter 9** presents study recommendations including guiding principles and a financial plan.

2 Background Reports

Transportation in Niagara Region, including specialized transit, has been studied extensively. Many documents have been produced by area municipalities and the Region, but a few recent documents provide overarching context for the evolution currently underway in public transit in Niagara Region. These include:

- **Regional Official Plan (2014)**, which is a long-range community planning document that laid out the land use and planning policies to guide development, including transportation policy, over the next 20-25 years;
- **Niagara Region Transportation Master Plan (2017)**, which presented the transportation trends in Niagara Region, forecast how transportation is likely to evolve through the year 2041, and provided recommendations for how the Region should invest in its transportation services and infrastructure to achieve its vision;
- **Niagara Transit Service Delivery and Governance Strategy (2017)**, which assessed existing inter-municipal transit in the region and developed recommendations for future governance of integrated inter-municipal transit in the region; and
- **Accessibility for Ontarians with Disabilities Act (2005)**, which establishes accessibility standards for conventional and specialized transit (among other services) across the province.

Area municipalities also have official plans, some have transit service plans, and others have transportation master plans that apply within their respective jurisdictions.

This chapter summarizes the key reports that will provide direction on how specialized transit service in the region should evolve in the coming years. Note that the Accessibility for Ontarians with Disabilities Act is discussed in detail in Chapter 3 on page 19.

2.1 Niagara Region Official Plan

The 2014 Regional Official Plan (ROP) provides policies for land use, growth management, and transportation planning in the region. The population and employment targets in the ROP provide context for the level of specialized transit demand that the various transit agencies must plan to accommodate in the coming years.

Niagara Region is currently undergoing a Municipal Comprehensive Review (MCR) to update the ROP's population and employment forecasts in conformance with the Province's latest *Growth Plan for the Greater Golden Horseshoe* (2019). The MCR is one part of the three-part *Niagara 2041 Growth Strategy*, which also includes the Transportation Master Plan and the Water and Wastewater Master Servicing Plan.

The most recent targets of the *Growth Plan* require the Region to plan for 610,000 residents and 265,000 jobs in Niagara Region by 2041, which represents about 33% more people and 38% more jobs compared to 2016. The forecasts from the MCR process also indicate that by 2041, about 27% of residents will be 65 years or older, up from 21% in 2016 (Niagara Region, 2018). The growth targets mean that the entire transportation system, including the specialized transit services, must make plans to accommodate significant growth in the coming years. In addition to the population growth, Niagara Region's population is also aging faster than neighbouring communities in the GGH, so demand for specialized transit service is expected to increase faster than population growth.

2.2 Niagara Region Transportation Master Plan – How We Go

How We Go, the Region's Transportation Master Plan (TMP), was approved by the Regional Council in 2017. It is a long-term strategy to guide the development of the region's multi-modal transportation system to accommodate the expected growth and overall vision laid out in the ROP and subsequent MCR discussed in Section 2.1.

The TMP adopted the following strategic transportation vision for the Region:

In 2041, Niagara Region will be supported by a transportation network that will help establish Niagara as a leader in: building, preserving and enhancing livable communities; economic development; tourism; sustainable transportation practices; and the emerging shared economy.

To achieve that vision, the TMP identified four high-level transportation themes that need to be addressed, two of which are particularly important to this study of specialized transit as follows:

- **Connecting the region:** Niagara Region needs a greater degree of transportation connectivity within its communities, between its communities, and to other neighbouring regions. Niagara Specialized Transit and the specialized transit services in area municipalities need to play a central role in providing this connectivity as the region's population surpasses half a million in the coming years.
- **Meeting the needs of residents:** The population of seniors in Niagara Region will more than double between 2016 and 2041, and older residents will need better alternatives for getting around, particularly for inter-municipal trips outside peak periods.

The other two themes are **Transportation as a catalyst for change**, which encourages the Region to use the transportation system to influence where people choose to live and work; and **Taking advantage of new technologies**, by proactively identifying, testing, and adopting emerging mobility technologies to enhance the competitiveness and attractiveness of the Region.

2.3 Niagara Transit Service Delivery and Governance Strategy

In 2017 the Region released this report, which provided an assessment of existing inter-municipal transit service along with potential options for future delivery of those services. The delivery options included fare integration, fare payment technology, and integrated trip planning.

The major recommendations of that study were:

- The elimination of duplicate services to post-secondary institutions, and the expansion of off-peak services on some inter-municipal corridors;
- Better integration with other municipal transit systems;
- A new Niagara-West inter-municipal transit link;
- New dynamic transit services for low-demand areas;
- Implementation of a Consolidated Transit Model for governance, planning, and service delivery of transit in St. Catharines, Niagara Falls, and Welland, while maintaining local control over transit in the rest of the region.

While several neighbouring regions in the GGH have completely amalgamated their local municipal transit under a regional entity (e.g. Durham Region, York Region, and Waterloo Region), the report noted that some 80% of transit trips in Niagara Region are within area municipalities, so the region would be better served by this hybrid model.

The report recommended that the various governments in the region reach a triple-majority vote to establish a permanent role for Niagara Region in planning, funding, and delivering transit service—a vote which passed in 2017

A 12-month, three-phase strategy to implement the Consolidated Transit Model was also proposed and adopted by the Region and its area municipal partners. Phase 1 of that strategy involves an investigation of the role of specialized transit services within the new model, which was the motivation for this study.

3 Primer on Accessibility for Ontarians with Disabilities Act

The Accessibility for Ontarians with Disabilities Act (AODA) was passed in 2005 to improve accessibility standards for all Ontarians. Five standards are being developed relating to information and communications, transportation, public spaces, customer service, and employment. The standards include deadlines by which various private and public-sector organizations must become compliant, and all standards are expected to be fully rolled out by 2021 (Government of Ontario, 2019).

Specialized and conventional transit service providers have specific obligations under the AODA, including requirements on fare parity between accessible and conventional users, accommodation of mobility devices, and advance booking requirements for specialized transit services, among many other requirements.

The following table presents select elements of the *Transportation Accessibility Standards* specific to fixed route and specialized transit. Legislative compliance shall inform on the development and adoption of service standards and delivery parameters and metrics.

Standard / Requirement
Training: Including safe operation of accessibility equipment; transportable mobility aid securement systems; boarding and alighting assistance procedures; etc.
On board announcements of stops and connections (fixed-route) Operator audibly announces (manual or electronic means) next major stops.
Accessibility public transportation policy and planning Preparation of an accessible public transportation plan; maintain in consultation with a local accessible public transit advisory committee; identify and report actual results against performance measures; etc.
Type of service Deliver accessible origin to destination services considering the functional limitations of passengers.
Time of service Provide the same hours and days of service as provided by fixed route public transit in the same catchment area.
Area of service Specialized public transit service area be the same catchment area as the fixed route transit catchment service area.
Reservations Accept trip bookings between the opening of the booking period the previous day and 3 hours prior to the published close of the booking period the previous day.
Pick-up times

Standard / Requirement
Where possible and practical notify eligible passengers of pick up delays.
Fares Same base fare structure for all public transit services within a jurisdiction. Same fare media options.
Personal care attendant fares Shall not charge a fare to personal care attendants, recognized by the transportation provider, accompanying a passenger with a disability.
Trip restrictions Not restrict the number of trips an eligible passenger is provided or any operational practices that limits the availability of service.
Eligibility Shall provide specialized transit services to individuals with disabilities that prevents them from using fixed route public transit temporarily or permanently. Consider eligible unconditionally (unable to used fixed route), temporarily, or conditionally (environmental or physical barriers limits ability to consistently use fixed route transit).
Eligibility process Make eligibility application information available in accessible formats. Consider an applicant provisionally eligible if an eligibility determination has not been made within 7 calendar days following submission of the completed application. Establish an independent appeal process for eligibility decisions that are unfavourable to the applicant with a final decision rendered within 14 calendar days upon receipt of an appeal. May require additional assessments of the eligibility of temporary and conditional eligible passengers at reasonable intervals. May establish an administrative process to suspend or remove the provision of specialized transit services to eligible persons who establish a pattern or practice of missing scheduled trips or no longer meet eligibility criteria.
Visitor service Make specialized transit services available to visitors. Consider as eligible, visitors who provide confirmation that they are eligible for specialized transit in the jurisdiction in which they reside or meet the eligibility requirements of the host jurisdiction.
Transportation between adjacent municipalities Where specialized transit services are provided in adjacent municipalities within a contiguous urban area, the transportation providers of both services shall facilitate connections between respective services.
Companions May allow companions to travel with an eligible passenger if space is available and will not result in the denial of service to other eligible persons.

4 Demographic Trends

Niagara Region is home to almost half a million people and has seen steady growth as far back as 1991. The region's population was younger at that time—only 13% of residents were aged 65 years or older (Statistics Canada, 1992). By 2016, the share of seniors grew to over 21% fueled by migration from other parts of Ontario as the region's landscape and climate provide an attractive place to retire. The Ontario Ministry of Finance noted that the St. Catharines-Niagara area had among the lowest shares of working age population in the country in 2016 (Ontario Ministry of Finance, 2017).

While Niagara Region's population continues to grow today, it is doing so at a much slower rate than its neighbours in the Greater Golden Horseshoe (GGH). At the same time, its population is aging faster than its neighbours.

These demographic trends, combined with the growth of regionally significant destinations such as healthcare, social services, and educational institutions, are likely to drive up the demand for specialized transit services throughout Niagara Region in the coming years.

This chapter discusses the demographic and employment trends in Niagara Region, including a discussion of the prevalence of disability in Ontario, which directly impacts specialized transit.

4.1 Growth in Niagara Region To-Date

Between 2001 and 2016, Niagara Region's population grew from 410,600 to 459,800, or about 12% (Statistics Canada, 2002), (Statistics Canada, 2017a). This rate is well below the GGH average growth rate of almost 27%. **Exhibit 4.1** shows how population and employment has changed between 2001 and 2016 in each Niagara Region municipality, and highlights that some municipalities grew much faster than the regional average:

- Niagara-on-the-Lake has grown by 30%. Many people have chosen to retire there, resulting in strong growth in the share of seniors 65 years and older from 19% to 31% in the period.
- Grimsby's population is up 32%, likely due to the availability of green field land for development and the proximity to the City of Hamilton. The median age in the Town has remained among the lowest in Niagara Region, suggesting that it is attracting young families.

In contrast, growth in Port Colborne and Wainfleet has been much slower, on the order of 2-3%.

Employment growth in Niagara Region has also been much slower than many of its neighbours. While the number of jobs has increased by 13% between 2001 and 2016 from 168,200 to 190,900, the GGH added 32% more jobs in the same period. Grimsby and West Lincoln had the fastest employment growth, at 56% and 40% respectively. In Welland, where the economy has historically been driven by manufacturing, the number of jobs fell 9%, which is consistent with, albeit notably better than, the 29% decline in manufacturing jobs in Ontario during that time (Statistics Canada).

Exhibit 4.1: Population and employment growth in Niagara Region by Area Municipality, 2001-2016

Municipality	Population				Employment			
	2001	2016	Growth 2001-2016	% Growth 2001-2016	2001	2016	Growth 2001-2016	% Growth 2001-2016
Fort Erie	28,100	31,500	3,400	12%	10,700	10,300	-400	-4%
Grimsby	21,200	28,000	6,800	32%	6,300	9,800	3,500	56%
Lincoln	20,600	24,400	3,800	18%	8,500	11,100	2,600	31%
Niagara Falls	78,800	90,400	11,600	15%	34,600	42,000	7,400	21%
Niagara-on-the-Lake	13,800	18,000	4,200	30%	9,300	13,000	3,700	40%
Pelham	15,300	17,600	2,300	15%	3,600	4,500	900	25%
Port Colborne	18,600	19,000	400	2%	6,000	6,200	200	3%
Wainfleet	129,100	136,700	7,600	6%	58,200	62,100	3,900	7%
St. Catharines	18,100	19,300	1,200	7%	7,200	8,400	1,200	17%
Wainfleet	6,300	6,500	200	3%	1,300	1,400	100	8%
Welland	48,200	53,500	5,300	11%	19,400	17,700	-1,700	-9%
West Lincoln	12,300	14,900	2,600	21%	3,100	4,400	1,300	42%
Niagara Region	410,400	459,800	49,400	12%	168,200	190,900	22,700	13%
GGH	7,464,400	9,475,800	2,011,400	27%	3,459,500	4,574,500	1,115,000	32%

Sources: (Statistics Canada, 2017a), (Statistics Canada, 2002)

4.2 Key Regional Destinations

St. Catharines is the only Urban Growth Centre in the Region designated by the Province's *Growth Plan for the Greater Golden Horseshoe*, meaning it is a target for intensification and downtown revitalization. The other major urban centres are Niagara Falls and Welland. The following nodes of interest also attract many of the specialized transit trips in the region:

- Brock University in St. Catharines and Niagara College campuses in Welland and Niagara-on-the-Lake;
- Pen Centre Mall in St. Catharines and Seaway Mall in Welland;
- Niagara Health sites in Fort Erie, Port Colborne, St. Catharines, Welland, and Niagara Falls;
- Other healthcare facilities such as Hotel Dieu Shaver Health and Rehabilitation Centre in St. Catharines; and
- Community centres and residences such as Tanguay Place in Welland and YMCAs across Niagara Region.

4.3 Aging and Disability in Niagara Region

Older Canadians are more likely to be living with a disability, and therefore have a higher likelihood of needing specialized transit. The 2017 Canadian Survey on Disability found that 22% of Canadians are living with disabilities, but for Canadians over 65 years of age that share increases to 38%.

Not only do older residents have a higher likelihood of having a disability, they are also living with disabilities that are more severe in nature compared to younger residents. It has been found that those living with severe or very severe disabilities (as defined by the Canadian Survey on Disability) are more likely to require specialized services such as specialized transit (Cloutier, Grondin, & Levesque, 2018). For the Canadian population living with disabilities, 43% of cases are categorized as severe or very severe, and this proportion increases to 51% for those over 65

years of age (Statistics Canada, 2017b). **Exhibit 4.2** shows the shares of Ontarians living with severe and very severe disabilities in 2017.

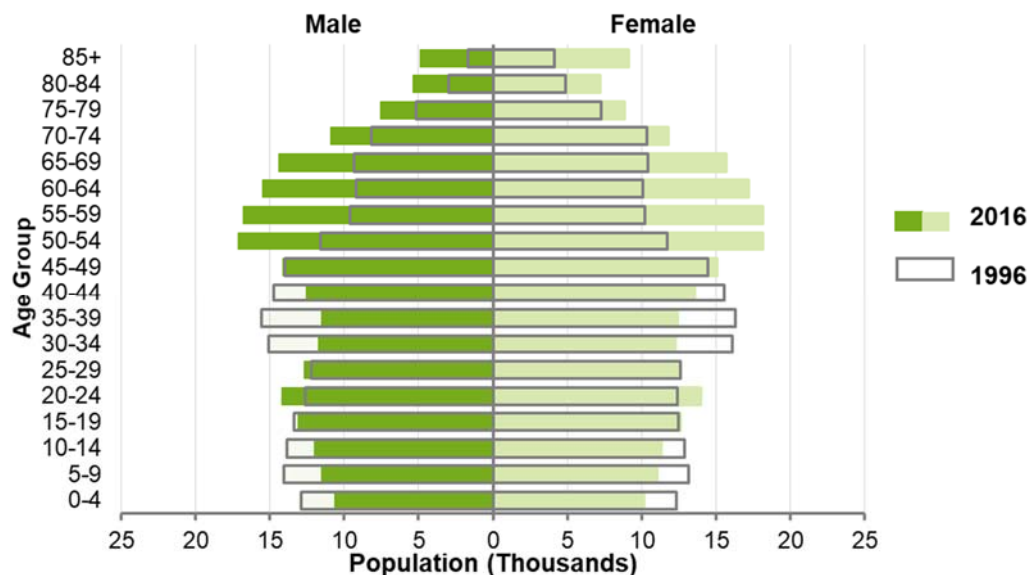
Exhibit 4.2: Share of Ontario residents aged 15 years and over living with severe or very severe disabilities, 2017

Age Group	Male	Female	Total
15 - 24	4.0%	4.2%	4.1%
25 - 44	4.1%	6.3%	5.2%
45 - 64	10.6%	14.0%	12.3%
65 - 74	12.5%	20.1%	16.5%
75+	18.8%	20.1%	19.6%
Average, All Ages	8.7%	12.2%	10.5%

Source: (Statistics Canada, 2017b)

Exhibit 4.3 illustrates how the Niagara Region's age structure has evolved between 1996 and 2016. The exhibit shows that the number of residents aged 65 and over has increased significantly in that 20-year period, growing 49% from 64,300 to 95,800. At the same time, the population of working-aged adults age 30 – 44 declined, as did the number of children under 15 years old.

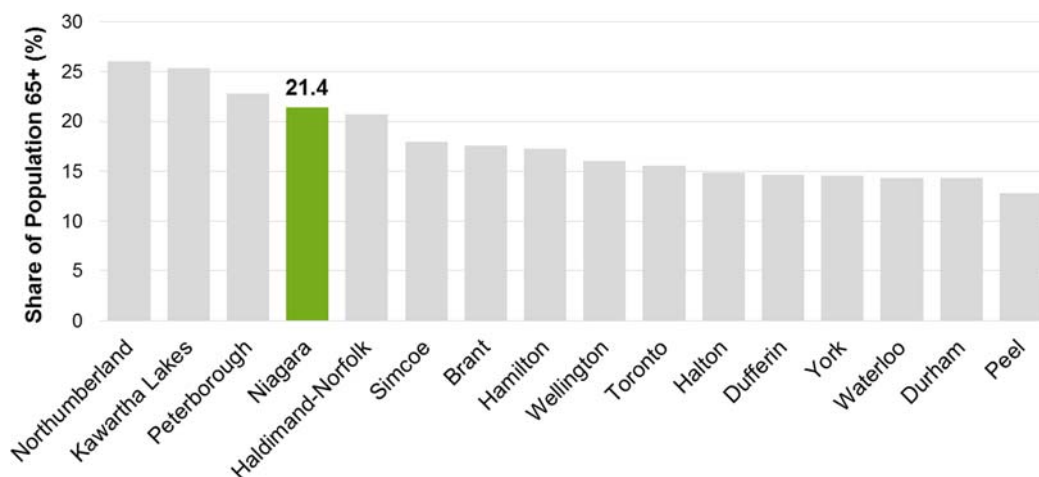
Exhibit 4.3: Population age distribution in Niagara Region, 1996 and 2016



Source: (Statistics Canada, 2017a)

Exhibit 4.4 shows the share of seniors aged 65 years and older in each of the regional and single-tier municipalities in the GGH in 2016. The exhibit highlights that the combination of increasing senior population and declining working-age adult population in Niagara Region places it fourth in the share of seniors living there.

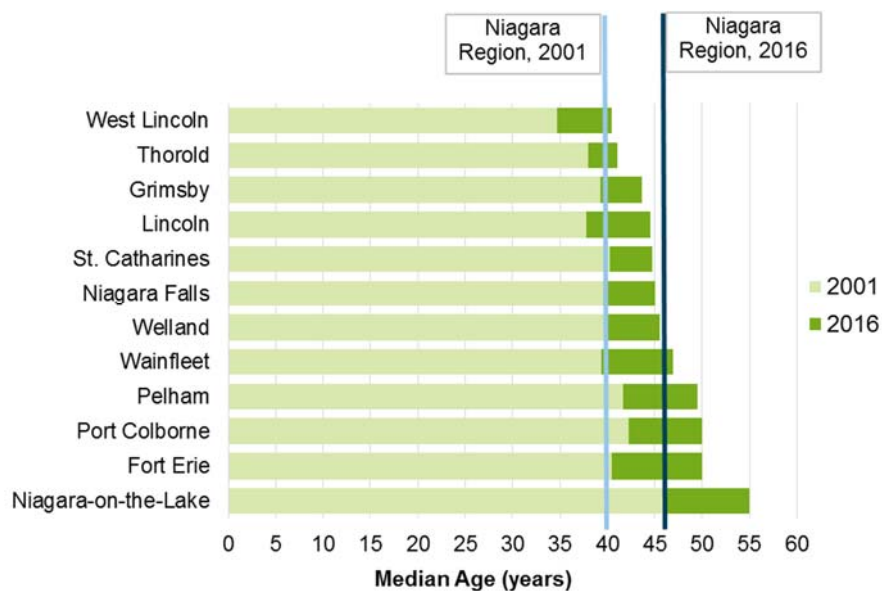
Exhibit 4.4: Share of senior citizens in each regional or single-tier municipality in the GGH, 2016



Source: (Statistics Canada, 2017a)

Aging in Niagara Region has not been uniform across the area municipalities. **Exhibit 4.5** shows the change in median age in each area municipality, as well as the regional average, between 2001 and 2016. The exhibit highlights that the median age in west Niagara, notably Grimsby, Lincoln, and West Lincoln, have remained below the regional average, while Pelham, Fort Erie, Port Colborne, and Niagara-on-the-Lake have been consistently above the regional average.

Exhibit 4.5: Median age in Niagara Region's area municipalities, 2001 and 2016



Sources: (Statistics Canada, 2017a), (Statistics Canada, 2002)

4.4 Conclusions

Niagara Region has shown consistent population and employment growth over the past two decades and has generally been resilient even in the face of a strong downturn in manufacturing jobs in Ontario. In-migration has been a significant contributor to population growth, particularly older working-aged adults over 45 and seniors 65 years and older. However, the Region has also seen a decline in younger adults between aged 30 – 44, resulting in a faster increase in the median age compared with its GGH neighbours. Today, more than one in five residents is aged 65 years or older.

The aging population has direct implications for the demand for specialized transit service. Some 16.5% of Ontarians aged 65 – 74, and 19.6% of Ontarians 75 years and older are living with a severe or very severe disability and are more likely to need specialized transit service.

As the size of Niagara Region's senior population continues to increase, the median age of the region's residents continues to increase, and the regional importance of major healthcare, educational, and social services institutions continues to increase, specialized transit services across Niagara Region will experience greater demands for service.

5 Specialized Transit Service in Niagara Region

In Niagara Region, several organizations offer transportation services to residents who are unable to use accessible conventional transit. Services are offered by the Region, some area municipalities, as well as several independent organizations.

East and Central Niagara Region are all served by some form of specialized transit for both local and inter-municipal trips. In West Niagara, the only government-operated service is the inter-municipal service provided by the regional operator, Niagara Specialized Transit (NST).

Generally, persons are eligible for these services if they fall under any of the following three categories, in line with AODA requirements:

- Unconditional Eligibility – A person has a disability that prevents them from using conventional transportation services;
- Conditional Eligibility – A person has a disability where environmental or physical barriers limit their ability to consistently use conventional transportation services; or
- Temporary Eligibility – A person with a temporary disability that prevents them from using conventional transportation service.

This chapter provides an overview of the public services that exist in Niagara Region, as well as a summary of the private specialized transit services that the region's residents can access.

5.1 Niagara Specialized Transit

NST provides shared-ride transportation between municipalities in the Niagara Region, and offers connections to Hamilton's DARTS service for trips outside the region. It operates as a department within the Region alongside Niagara Region Transit (NRT), which provides accessible conventional service for inter-municipal trips.

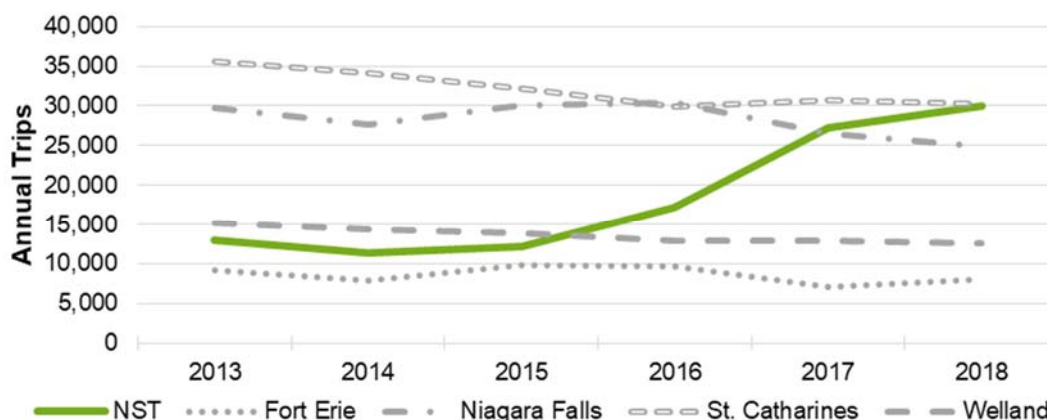
Niagara Region residents may be eligible to use NST if they have any disability that prevents them from using accessible conventional services. Only dedicated service is offered by NST, and there is no non-dedicated service available through NST although private accessible taxis are available to residents. Details on the method of determination of eligibility, types of disabilities considered for eligibility, and other key information about NST are provided in **Exhibit 5.3**.

The service delivery is contracted to a private entity—BTS Network—but oversight of the operations remains with the Region. The service employs 24 full-time staff, including 18 drivers, three dispatchers, and three administrative staff. Part-time staff includes four drivers, two dispatchers, and an admin position. Niagara Region also employs two admin staff who are shared with the Region's conventional service. Details of the arrangement between BTS Network and the Region are discussed in a separate *Operations Review* document as part of this study.

5.1.1 Operating Data Trends

Exhibit 5.1 shows the annual specialized transit trips on NST along with ridership on the area municipal services between 2013 and 2018. The exhibit shows that NST was until recently one of the smallest public operators, delivering less than 15,000 rides in 2013. By 2018, however, NST's ridership had eclipsed that on Niagara Falls' service, tying with St. Catharines to deliver over 30,000 rides.

Exhibit 5.1: Annual specialized transit ridership on Niagara Specialized Transit and municipal services, 2013-2018



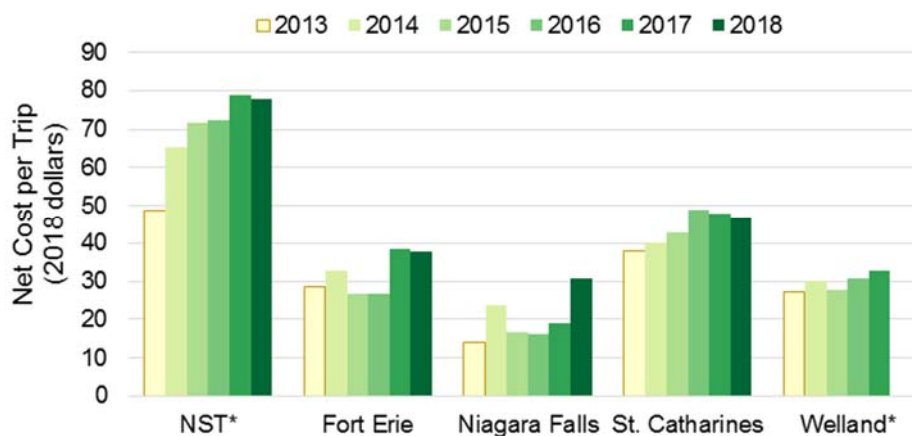
Note: Figures include both dedicated and non-dedicated service for all eligible riders, but does not include attendants and companions.

Sources: MTO Ontario Specialized Transit Operating Data, 2013-2017, supplemented with data obtained from the transit operators.

NST has done well to keep pace with this 131% ridership increase by adding service hours to match the rising demand—the number of service hours increased close to 130% in the same period.

The result is that net operating costs have grown significantly over the years, increasing by 275% to reach \$2.4M in 2018. The net cost per trip has also increased significantly—the Region now spends \$78 per trip, on average, compared to just \$49 in 2013. **Exhibit 5.2** shows the net operating expenses per trip for Niagara Region and the area municipal operators in 2018 dollars.

Exhibit 5.2: Net operating expenses per trip for NST and municipal operators in 2018 dollars, 2013-2018



*Notes: 2018 NST figure includes a \$138,000 write-off associated with ending the BTS contract. 2018 actual revenue and expenses for Welland not available at time of writing.

Sources: MTO Ontario Specialized Transit Operating Data, 2013-2017 and data obtained from agencies; Inflation rates from Bank of Canada data

This surge in operating costs led NST to come close to exceeding its 2018 budget, which could have resulted in an abrupt end of service. However, NST negotiated service changes with the operator, BTS, in September 2018 that limited service availability to balance the transportation needs of the community with the budgetary constraints of the Region. Further discussion of the negotiated service changes is presented in a separate *Operations Review* document as part of this study.

5.2 Municipal Services

Six area municipalities provide some kind of specialized transit service for trips within their communities. Only St. Catharines Paratransit provides service outside its boundaries, and it does so under contract with the City of Thorold to act as the specialized transit service provider for that neighbouring city.

The following is a brief description of each of the municipal services. Details on the method of determination of eligibility, types of disabilities considered for eligibility, and other key information about the municipal and regional services are provided in **Exhibit 5.3**.

5.2.1 Niagara Falls Chair-A-Van

Chair-A-Van provides curb-to-curb transportation service within the municipal boundaries of the City of Niagara Falls for registered users with disabilities. Persons are eligible if they have a disability of any kind that prevents them from using conventional transit. Niagara Falls Transit, which is a department of the City of Niagara Falls, oversees the service but delivery of the dedicated service is contracted to St. John's Ambulance. This service employs three full-time admin staff, three part-time admin staff, and 13 drivers as of 2018. Non-dedicated service is provided by local taxis.

5.2.2 St. Catharines Paratransit Service

St. Catharines Paratransit Service is run by the St. Catharines Transit Commission, which also operates the City's conventional transit service. It provides specialized transportation service for persons who, due to their physical disability, are unable to walk or travel by wheelchair a distance of 175 metres or cannot board an accessible conventional transit. Persons with cognitive or other disabilities are only eligible if they also have a physical disability that restricts their mobility.

Both dedicated and non-dedicated services are provided in St. Catharines. The dedicated service is delivered using the City's staff and equipment, but the non-dedicated service is operated by Coventry Connections, a private taxi service. As of 2018, the dedicated service employed eight drivers, two dispatchers, and one supervisor.

Since 1998, the St. Catharines Transit Commission has provided conventional and specialized transit services under contract to the City of Thorold. The City of Thorold therefore does not have a separate conventional or specialized transit system.

5.2.3 WellTrans

WellTrans is the specialized transit operator in Welland. The service is part of the Welland Transit department of the City of Welland, and service delivery is outsourced to a private contractor. Two full time drivers and one dispatcher were employed as of 2018, along with three part-time operators and three supervisors who are all shared with the Town's conventional service. Non-dedicated service is also provided through taxis in Welland.

To be eligible for this service, persons must have a physical disability that prevents them from using conventional transit. Persons with cognitive or other disabilities are only eligible if they also have a physical disability that restricts their mobility.

5.2.4 Fort Erie Accessible Specialized Transit

Fort Erie Accessible Specialized Transit (FAST) is the specialized transit service for residents of Fort Erie who, due to a mobility challenge, would be physically unable to board a conventional transit bus or walk or use a wheelchair for a distance of 175 metres. Priority is given to those who require the service for medical appointments or access to education/employment. FAST is part of Fort Erie Transit, which is a department of the Town of Fort Erie. Its services are delivered by a mix of Town staff and equipment as well as contracted resources from Coventry Connections. Town staff is comprised of three drivers and two dispatchers.

5.2.5 Pelham Specialized Transit

Pelham Specialized Transit is service provided by the Town of Pelham under the Pelham Transit department. The service is available for persons who, due to their disability, are unable to use conventional public transit or walk 175 metres. The service is entirely outsourced to a contractor, and residents must book their riders with the approved service provider.

5.2.6 Niagara-on-the-Lake Specialized Accessible Transit Service

This curb-to-curb service is for persons who have physical disabilities and are physically unable to board conventional transit. It is run by Niagara-on-the-Lake Transit, which is a department of the Town. Specialized Accessible Transit is provided on a fee-for-service basis by private companies approved by Niagara-on-the-Lake Transit. Transit riders pay the standard \$3.00 fee, and the balance of the fare up to \$20 is subsidized by Niagara-on-the-Lake Transit.

Exhibit 5.3: Summary of public specialized transit services available in Niagara Region

		NST	Chair-A-Van	St. Catharines Paratransit	WellTrans	FAST	Pelham Specialized Transit	NOTL Specialized Accessible Transit
Service Area Population		447,900	88,100	151,900	52,300	30,700	17,100	17,500
Area (km²)		1,854	212	97	81	168	135	133
Eligibility Criteria	Cognitive	✓	✓					
	Sensory	✓	✓					
	Environmental	✓	✓					
	Physical	✓	✓	✓	✓	✓	✓	✓
Method of Determination	Internal Assessment		✓		✓			
	Paper Application	✓	✓	✓	✓	✓	✓	✓
	Healthcare Provider	✓	✓	✓	✓	✓	✓	✓
	Committee		✓	✓				
	Other					✓		
Advanced Booking Required (hrs)		48**	1	0	2:30 pm day before**	3	48**	No Data
Fares Match Conventional		YES	YES	YES	NO – No passes**	NO – No passes**	NO – No passes**	YES
Number of Vehicles		24	8	13	5	3	No Data	No Data
Number of Active Clients		1,153	734	1,117	249	182	No Data	No Data
Number of Trips (eligible clients)		30,100	24,900	30,200	12,600	8,000	No Data	No Data
Revenue Vehicle Kilometres (dedicated service)		633,440	200,750	273,510	42,000	42,505	No Data	No Data
Total Vehicle Kilometres (dedicated service)		954,604	250,112	288,343	No Data	66,785	No Data	No Data
Staffing	Drivers	18FT, 4PT	13FT	8FT	2FT, 3PT	3FT	No Data	No Data
	Dispatchers	3FT, 2PT	1FT	2FT	1FT	2FT	No Data	No Data
	Admin/Other	3FT, 1PT	5PT	1FT	3PT	0	No Data	No Data
Revenue-to-Cost Ratio		4.6	2.8	12.5	6.8	3.9	No Data	No Data
Net Operating Cost per Passenger		\$78.96	\$30.67	\$46.76	\$32.08	\$37.83	No Data	No Data
Net Operating Cost per Capita		\$5.30	\$8.66	\$9.30	\$7.88	\$9.87	No Data	No Data

**Inconsistent with AODA requirements.

FT = Full Time, PT = Part Time

Sources: 2018 data obtained from each organization, supplemented with data from (Ministry of Transportation for Ontario, 2017). WellTrans financials are from 2017 data.

5.3 Private Sector and Not-For-Profit Service Providers

The following list summarizes the other accessible transportation services available in the region:

- **Community Support Services of Niagara (CSSN)** provides paid rides to medical appointments, banking, shopping & social activities for adults 60 years of age or older and/or living with disabilities. Both local and regional services are offered based on volunteer driver availability.
- **Canadian Red Cross (Niagara Region Branch)** provides transportations services within and out of the Niagara Region for the elderly and those with disabilities.
- **Harmony Transportation and Support Services** provides non-emergency transportation from the Niagara Region to anywhere in Ontario as a part of a larger in-home care company for older adults and adults with disabilities.
- **Transportation Network Companies (TNCs)** including Uber and Loyal Transportation offer app-based ride-sharing services in the Niagara Region. However, specialized services like UberWAV and UberAssist are not currently operating in the area.
- **Other private transportation companies** in the region, such as Central Taxi and Raham's Transportation, offer fully accessible taxi services. These services are clustered mostly in the larger urban centres

6 Specialized Transit Service in Peer Regions

Several regional municipalities in the GGH have amalgamated the specialized transit services of their area municipalities under a regional entity. Peer regions that are instructive for Niagara Region include the following:

- **Durham Region** – Located at the eastern end of the GTHA, Durham covers over 2,500 km², which is notably larger than Niagara Region. With a population of 646,000, it has a mix of rural and urban lands similar to Niagara. Durham Region Transit was formed in 2006 serving all eight area municipalities.
- **York Region** – The Region covers some 1,800 km² between Toronto and Lake Simcoe and has over 1.1 million residents. Both specialized and conventional services have been provided by York Region Transit to all nine area municipalities since amalgamation of local transit in 2001.
- **Waterloo Region** – With about 540,000 residents, Waterloo Region has a similar population to Niagara Region spread over almost 1,400 km². Conventional and specialized transit services were amalgamated in 2000 with the creation of Grand River Transit, a department of the Region. Service delivery is provided by two entities today—one for the urbanized communities, and another for the rural areas.

This chapter describes the specialized transit services offered in these peer regions and provides examples of how specialized transit spanning a vast region could work in Niagara.

Unless otherwise noted, all statistics about the peer agencies are based on (Ministry of Transportation for Ontario, 2017). Statistics for Niagara Region are aggregates of the regional and area municipal services, and statistics for Waterloo Region are aggregates of the urban and rural services.

Note that due to a reporting error in 2017, all Waterloo Region statistics are based on 2016 data.

6.1 Durham Region

Durham Region is a quickly growing area east of Toronto. Between 2001 and 2016, the region's population increased by 27% from 507,000 to almost 646,000, over twice as fast as Niagara Region (Statistics Canada, 2017c). To keep pace with this growth, the Region made specialized and conventional transit improvements a key focus of the development of its transportation network.

One major accomplishment in this period was the 2006 amalgamation of five local transit entities to form Durham Region Transit (DRT). All aspects of conventional and specialized services were consolidated during this transition. The business case analysis for the amalgamation considered an "Enhanced Status Quo" option that was similar to Niagara Region's proposed Consolidated Transit Model, where only Whitby, Oshawa, and Clarington transit services would be combined (Totten Sims Hubicki Associates, 2004). In Durham's case, the analysis found that complete amalgamation would better achieve the goals of network integration, increased ridership, and expanding service in underserved communities among others.

6.1.1 Service Area and Governance Structure

DRT provides specialized transit service across the entire 2,500 km² of Durham Region. Over 90% of the population lives in the southern municipalities along Lake Ontario (Durham Region Health Department, 2018), which cover just 47% of the region's area. While many of DRT's specialized transit trips start and end in this urbanized area, it also serves the much larger and more rural northern municipalities.

The Durham Region Transit Commission is a municipal service board that oversees the operations of DRT and is comprised of elected members of Durham Regional Council. The Transit Executive Committee manages the day-to-day planning and operations of DRT and is comprised of the Regional Chair and the mayors of each area municipality. The Transit Advisory Committee is made up residents of Durham Region, and provides input to the Transit Executive Committee on policies, plans, and operational decisions.

DRT's specialized service employs 21 full-time and 12 part-time drivers, two full-time and two part time dispatchers, and five full-time and four part-time administrative/other staff.

Dedicated and non-dedicated specialized transit service are both offered by DRT. The dedicated service is delivered by DRT using their equipment and personnel. Non-dedicated service, i.e. service provided using vehicles and staff that are not solely reserved for use in providing specialized public transit, is contracted to local taxi operators.

6.1.2 Eligibility Criteria and Assessment

To be eligible for DRT's specialized service, a person must be unable to use accessible conventional service due to a disability satisfies at least one of the following requirements based on the AODA categories:

- Unconditional Eligibility – A person has a disability that prevents them from using conventional transportation services;
- Conditional Eligibility – A person has a disability where environmental or physical barriers limit their ability to consistently use conventional transportation services; or
- Temporary Eligibility – A person with a temporary disability that prevents them for using conventional transportation service.

DRT's specialized service is available to persons with cognitive, physical, sensory, environmental, or other disabilities as long as the disability puts the individual in one of the above categories.

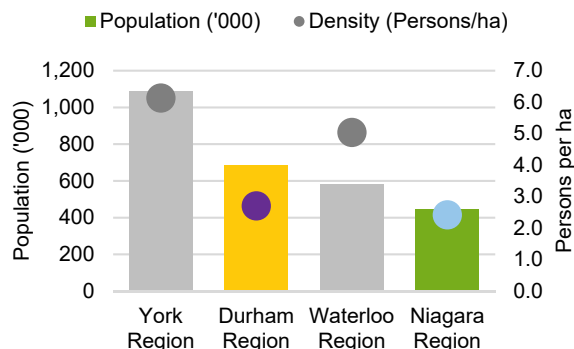
Assessment of eligibility requires input from the applicant's registered healthcare professional and is subject to an internal assessment by DRT staff. All applicants must attend an in-person interview with DRT staff in addition to the assessment of the application form before a final decision is made. While the application asks how far the applicant can travel by foot or with a mobility device, it does not state an upper limit for eligibility.

6.1.3 Service Statistics

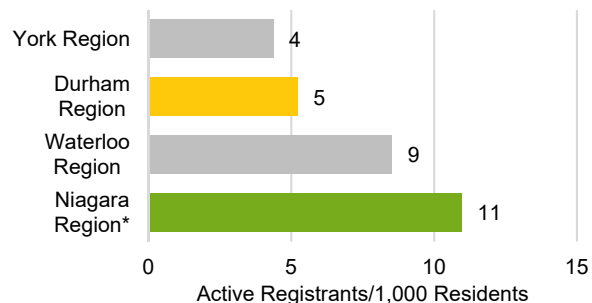
In 2017, DRT had almost 3,600 active specialized transit registrants and provided over 180,000 specialized transit trips to eligible passengers. Total operating costs stood at \$7.2 M with just under \$250,000 in operating revenue. Generally, these figures align closely with those of Niagara Region. **Exhibit 6.1** shows some other key statistics for DRT's specialized transit service alongside those of the other peer systems.

Exhibit 6.1: Key specialized transit metrics for Durham Region and peer regions

Service Area Population and Population Density

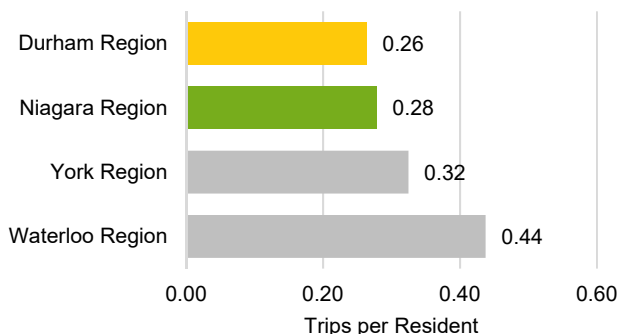


Specialized Transit Registrants per 1,000 Residents



*Many users in Niagara Region are registered for both the regional and municipal services, so there is double-counting in this metric.

Specialized Transit Trips per Capita



Transit Investment and Operating Data

Region	Vehicle-km per Trip (km)	Trips per Vehicle-Hr	Net OpEx per Trip	Net OpEx per Capita
Durham	13.5	1.4	\$38.53	\$10.16
Niagara	13.7	1.8	\$37.80	\$10.53
Waterloo	8.4	3.1	\$38.70	\$16.93
York	15.2	1.6	\$42.37	\$13.76

6.2 York Region

York Region Transit (YRT) and its specialized transit service, Mobility Plus, were formed in 2001 with the amalgamation of municipal service providers in Newmarket, Vaughan, Richmond Hill, and Markham. It serves one of the fastest growing areas of Ontario—York Region’s population increased by 52% between 2001 and 2016, reaching 1.1M people (Statistics Canada, 2017d). Mobility Plus provides door-to-door shared-ride service throughout the region for persons with disabilities who are unable to use YRT’s accessible conventional service.

6.2.1 Service Area and Governance Structure

Mobility Plus is available throughout York Region’s 1,760 km² area—an area similar in size to Niagara Region. Some 87% of residents live along the east-west Highway 7 corridor just north of the Toronto boundary, and along the north-south Yonge Street corridor extending almost to Lake Simcoe.

Similar to DRT’s service area discussed in Section 6.1.1, Mobility Plus also serves a large rural area that covers over 60% of York Region’s total area. Specialized transit vehicles travelled an average of 15.2 km per trip in 2017, which is the longest distance of any of the four communities reviewed in this chapter.

YRT falls under York Region’s Transportation Services Department, which is overseen by the Transportation Services Committee—a committee made up of all members of

Regional Council. The day-to-day operations of YRT, including Mobility Plus, are managed by its General Manager.

Dedicated and non-dedicated specialized transit service are both offered by Mobility Plus. The dedicated service is delivered by external contractors in addition to the Region's own staff and equipment. Non-dedicated service, i.e. service provided using vehicles and staff that are not solely reserved for use in providing specialized public transit, is contracted to local taxi operators. YRT covers 50% of the cost of these non-dedicated trips, with the customer paying the remainder of the fare.

Mobility Plus employs five full-time dispatchers, and 19 full-time and three part-time administrative/other staff. No drivers are directly employed by Mobility Plus as service delivery is contracted to an external company.

6.2.2 Eligibility Criteria and Assessment

To be eligible for Mobility Plus, a person must be unable to use accessible conventional service due to a disability satisfies at least one of the following requirements based on the AODA categories:

- Unconditional Eligibility – A person has a disability that prevents them from using conventional transportation services;
- Conditional Eligibility – A person has a disability where environmental or physical barriers limit their ability to consistently use conventional transportation services; or
- Temporary Eligibility – A person with a temporary disability that prevents them for using conventional transportation service.

Mobility Plus is available to persons with cognitive, physical, sensory, or visual disabilities as long as the disability puts the individual in one of the above categories. A person's physical disability deems them eligible if they are unable to:

- Walk or travel by wheelchair a distance of 175 metres;
- Stand or wait 15 minutes for a bus; or
- Access a bus stop due to environmental barriers such as inclement weather, lack of curb cuts, uneven/broken sidewalks, or steep terrain.

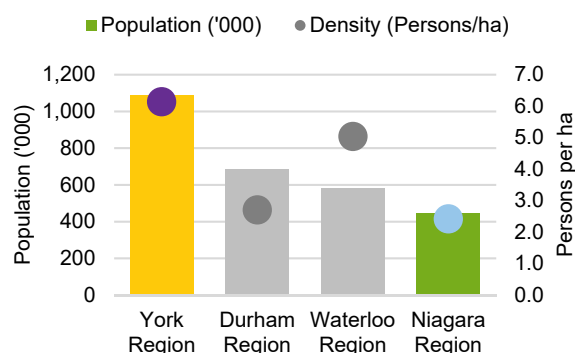
The applicant's healthcare provider must complete a part of the application form. Applications may be approved without an interview, but Mobility Plus may require an interview if the information in the application is insufficient to make a determination.

6.2.3 Service Statistics

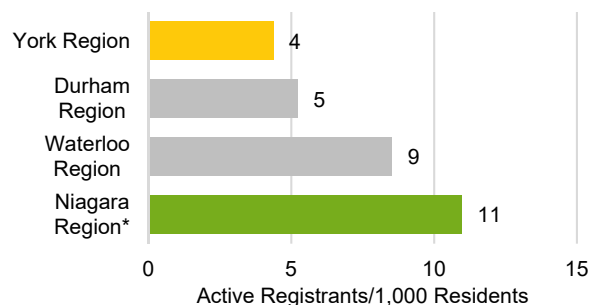
In 2017, Mobility Plus had almost 4,800 active specialized transit registrants and provided over 354,000 specialized transit trips to eligible passengers. Total operating costs stood at \$16M with just over \$1M in operating revenue, which is the highest net operating cost of any of the peers, even on a per-capita or per-trip basis. Exhibit 6.2 shows some other key statistics for Mobility Plus alongside those of the other peer systems.

Exhibit 6.2: Key specialized transit metrics for York Region and peer regions

Service Area Population and Population Density

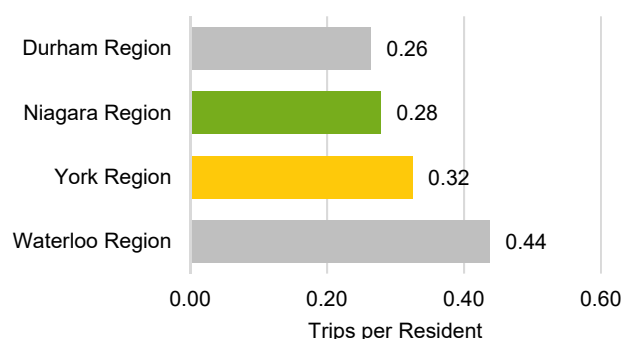


Specialized Transit Registrants per 1,000 Residents



*Many users in Niagara Region are registered for both the regional and municipal services, so there is double-counting in this metric.

Specialized Transit Trips per Capita



Transit Investment and Operating Data

Region	Vehicle-km per Trip	Trips per Vehicle-Hr	Net OpEx per Trip	Net OpEx per Capita
Durham	13.5	1.4	\$38.53	\$10.16
Niagara	13.7	1.8	\$37.80	\$10.53
Waterloo	8.4	3.1	\$38.70	\$16.93
York	15.2	1.6	\$42.37	\$13.76

6.3 Waterloo Region

Waterloo Region is the largest regional municipality in the western GGH. In 2011, the population stood at 535,000 (Statistics Canada, 2017e), up 22% since 2001. This pace of growth reflects the region's status as a technology hub and an integral part of the "Toronto-Waterloo Innovation Corridor". The region's highly urbanized centre comprises the Cities of Kitchener, Cambridge, and Waterloo (the smallest city) and makes up 87% of the population. The population of the four Townships of Woolwich, Wilmot, Wellesley, and North Dumfries combined is just 67,000, which is less than that of the smallest city.

Grand River Transit (GRT) was formed in 2000 with the amalgamation of Kitchener Transit and Cambridge Transit. It is responsible for specialized transit service throughout Waterloo Region, but contracts Kiwanis Transit to operate the services in Wellesley, Wilmot, and Woolwich. In the Cities as well as North Dumfries, GRT's operates the specialized transit service under the brand MobilityPlus.

6.3.1 Service Area and Governance Structure

The service area of GRT spans the region's entire 1,300 km² area, although MobilityPlus only serves just over 300 km² in the three cities and the Township of North Dumfries. Kiwanis Transit serves over 800 km² in the other rural townships' rural communities. While only about 10% of Waterloo Region's population lives in the Kiwanis Transit service area, that organization served almost 20% of the region's 256,000 specialized transit trips in 2017.

The fares are identical for the two systems and match GRT's conventional service fares, but the hours of service differ between the two operators (Steer Davies Gleave, 2017):

- Kiwanis Transit operates 6:00 am – 6:00 pm on weekdays, 7:00 am – 5:00 pm on Saturdays, and no Sunday service.
- GRT's specialized service is available every day 5:15 am – 1:15 am and 7:15 am – 1:15 am on Sundays, generally in line with its conventional service schedule.

GRT is division of the Transportation and Environmental Services department of the Region of Waterloo and does not have a commission structure. The Director of Transit Services oversees the day-to-day operations of GRT, but the Region's Planning and Works Committee, which is made up of all members of Regional Council, is responsible for the overall direction the department.

Kiwanis Transit employs eight full-time and four part-time drivers, one full-time and two part-time dispatchers, and one full-time administrative/another employee. MobilityPlus employs 36 full-time and 10-part time drivers, six full-time and seven part-time dispatchers, and 12 full-time administrative/other staff.

Dedicated and non-dedicated specialized transit service are both offered by MobilityPlus and Kiwanis Transit. MobilityPlus dedicated services are delivered using the Region's own staff and equipment, while Kiwanis Transit provides the dedicated services in its service area. In both cases, non-dedicated service, i.e. service provided using vehicles and staff that are not solely reserved for use in providing specialized public transit, is contracted to local taxi operators. GRT covers 50% of the cost of these non-dedicated trips within the MobilityPlus service area only, with the customer paying the remainder of the fare.

6.3.2 Eligibility Criteria and Assessment

To be eligible for Mobility Plus or Kiwanis Transit, a person must be unable to use accessible conventional service due to a disability satisfies at least one of the following requirements based on the AODA categories:

- Unconditional Eligibility – A person has a disability that prevents them from using conventional transportation services;
- Conditional Eligibility – A person has a disability where environmental or physical barriers limit their ability to consistently use conventional transportation services; or
- Temporary Eligibility – A person with a temporary disability that prevents them for using conventional transportation service.

MobilityPlus eligibility is based on physical ability to use conventional transit and does not consider age or cognitive challenges (Grand River Transit, 2018a). However, residents of North Dumfries may be eligible for MobilityPlus if they are 65 years of age or older, whether or not they have a disability (Grand River Transit, 2018b).

Residents of the Townships may be eligible for Kiwanis Transit if they are 65 years of age or older, whether or not they have a disability (Kiwanis Transit, n.d.). Residents may also be eligible if they have a cognitive, sensory, physical, or environmental disability (Ministry of Transportation for Ontario, 2017).

For both MobilityPlus and Kiwanis Transit, the applicant's healthcare provider must complete a part of the application form if the applicant is less than 65 years old. Applications may be approved without an interview, but GRT may require an internal assessment by an Occupational Therapist if the information in the application is insufficient to make a determination.

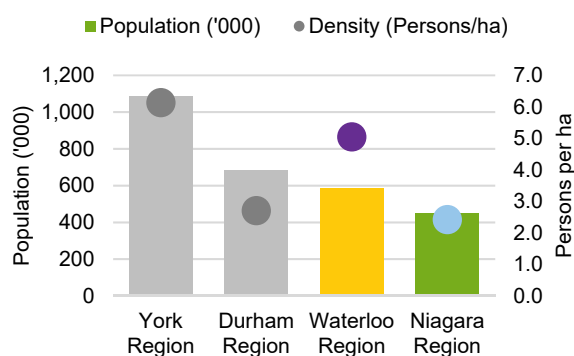
6.3.3 Service Statistics

In 2016, MobilityPlus and Kiwanis Transit had almost 4,900 active specialized transit registrants and provided almost 265,000 specialized transit trips to eligible passengers. Total operating costs stood at \$10.6M with \$890,000 in operating revenue. Kiwanis Transit accounted for roughly 12% of both the cost and the revenue in 2016. **Exhibit 6.3** shows some other key statistics for Waterloo's specialized transit services alongside those of the other peer systems.

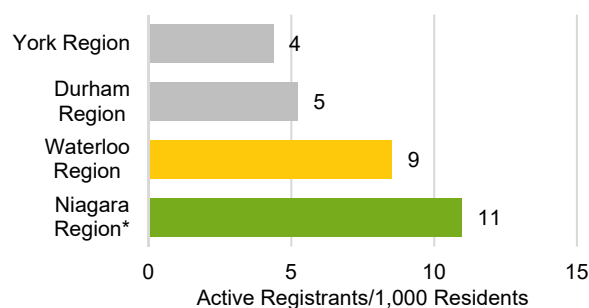
Note that these statistics are for the combined rural and urban operations to enable comparison with the other regional services. Also note that due to a reporting error in 2017, all Waterloo Region statistics are based on 2016 data.

Exhibit 6.3: Key specialized transit metrics for Waterloo Region and peer regions

Service Area Population and Population Density

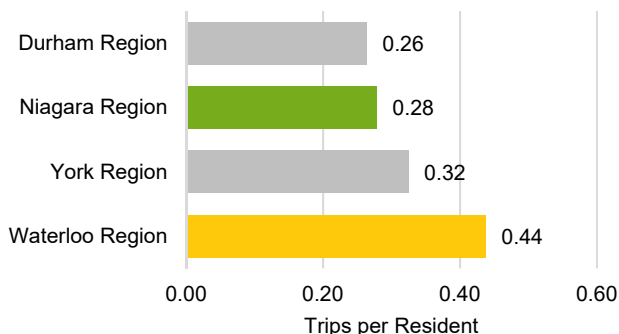


Specialized Transit Registrants per 1,000 Residents



*Many users in Niagara Region are registered for both the regional and municipal services, so there is double-counting in this metric.

Specialized Transit Trips per Capita



Transit Investment and Operating Data

Region	Vehicle-km per Trip (km)	Trips per Vehicle-Hr	Net OpEx per Trip	Net OpEx per Capita
Durham	13.5	1.4	\$38.53	\$10.16
Niagara	13.7	1.8	\$37.80	\$10.53
Waterloo	8.4	3.1	\$38.70	\$16.93
York	15.2	1.6	\$42.37	\$13.76

6.4 Conclusions

York, Waterloo, and Durham all noted the need to expand the availability of transit service as one reason for amalgamating area municipal services under a regional body. In York and Durham, particular attention was paid to the need to enhance service in less densely populated areas that had little or no service before amalgamation (Totten Sims Hubicki Associates, 2004). The rationale for amalgamating conventional services also extended to the specialized service, and all three peers uploaded both types of operations to the Regions.

Waterloo Region stands out in its decision to keep rural and urban specialized transit separate, highlighting how different the challenges of operating in a busy, dense urban environment can be compared to serving the long trips typical of rural communities. This aligns closely with the

direction Niagara Region is pursuing to consolidate conventional service only in the three largest area municipalities (Dillon Consulting, 2017). Further investigation on how exactly Waterloo Region accomplished its amalgamation could be valuable to Niagara Region as it prepares more detailed plans for implementing its own service consolidation.

However, at almost \$17 in net operating costs per resident, Waterloo also operates the most expensive service among the peers, some 60% more costly than Niagara's services. Durham Region, on the other hand, spent just \$10 in net operating cost per resident even though its service area is vast and trip lengths are similar to those in Niagara Region. Further study of the details of DRTs operations could be instructive for setting operational standards for a combined regional service in Niagara Region.

Niagara Region is unique among the peers and other GGH communities—it is a vast area with almost half a million people, over one fifth of whom is aged 65 years or older compared to a less than 15% share in York, Durham, and Waterloo Regions (see **Exhibit 4.4** on page 24). While the Region can learn from the specialized transit practices in peer communities, it will be tasked to come up with a tailored approach that recognizes the uniqueness of its population and geography.

7 Stakeholder Consultation

Engaging with a wide range of stakeholders to hear their input on the future of specialized transit in Niagara Region was an essential part of this study. Two rounds of consultation meetings were held during the study—one was completed at the start of the study to hear initial thoughts on what is working and what could be improved regarding specialized transit, and another took place later in the study process and was used to solicit input on study findings and improvements being considered.

Each of two rounds of consultation included the following four activities:

- An online and paper survey completed by users of specialized transit in Niagara Region;
- Public Information Centres in Welland and St. Catharines (first round) and Niagara Falls and St. Catharines (second round);
- Discussion groups with the Region's Accessibility Advisory Committee and with other key stakeholders from community organizations; and
- A focus group session with representatives of healthcare organizations in Niagara Region.

This chapter summarizes the findings of the outreach and consultation process.

7.1 User Survey

A survey was developed to gather direct input from residents who use the specialized transit services in the region. It included 13 questions covering topics such as which specialized services riders use, the purpose of their trips, when and where they travel, how they feel about the service, and personal information such as age and municipality of residence to categorize the responses. A copy of the survey form is presented in Appendix A.

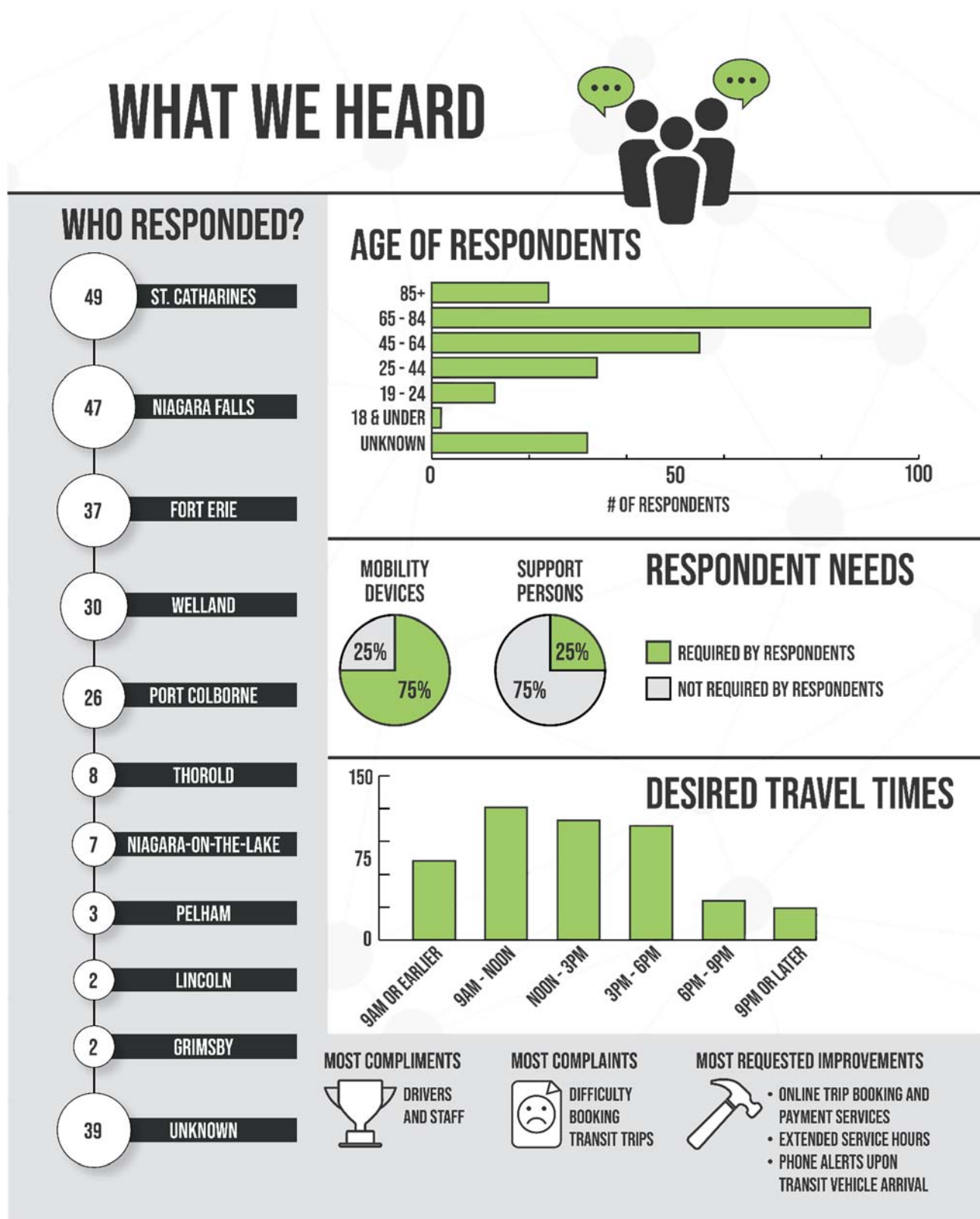
The surveys were distributed via three channels:

- An online survey was made available on the Region's website from April 22nd through May 6th, 2019;
- A paper version of the survey was distributed to attendees at each of the public information centres; and
- A paper version of the survey was distributed for approximately two weeks to riders in specialized transit vehicles operated by the Region and area municipalities. In Port Colborne, the surveys were also distributed at Northland Pointe Long Term Care Facility.

7.1.1 Summary of Results

A total of 250 surveys were returned, which included 172 paper responses and 78 online responses. Of the online responses, 49 were fully completed. **Exhibit 7.1** presents an infographic that summarizes the key results of the survey.

Exhibit 7.1: Infographic summarizing the key results of the rider survey



7.2 Focus Group Meetings with Healthcare Organizations

The need for equal access to an affordable, reliable and effective public transit service is important for patients with mobility challenges who rely on specialized transit on an ongoing basis. On May 10, 2019 a focus group meeting was held with representatives from Niagara Health Services (NHS). Key points presented by the health care community included:

- A significant number of patients who receive a variety of treatments and care rely on specialized transit to get to and from their regular life-support treatments.
- Most of these patients are unable to work due to their health condition, receive government assistance.
- They do not have the financial means to pay for taxis and have no other options for transportation, especially if living in an outlying rural area.
- These patients, for the most part are unable to access technology to book appointments on line. Currently, health care staff book rides for them. Online booking of appointments would streamline the process and create efficiencies for staff and for those who oversee the transit services.
- It has been identified that, grouping patients together at times from similar locations and using the concept of dialysis subscriptions has been beneficial in ensuring rides for many patients to get to and from ongoing treatments.

A second meeting with representatives from Niagara Health Services was held October 31, 2019. Key study outcomes and a preferred approach for going forward, was presented and discussed. There was consensus that the preferred approach would benefit NHS in their delivery of patient services.

7.3 Public Information Centres

Two rounds of Public Information Centres (PICs) were held to gather input. The first round, in April - one on April 23rd in Welland where 19 people attended, and another on April 24th in St. Catharines that hosted 25 attendees. The sessions included poster boards with information about the study and the specialized transit services in Niagara Region, a 30-minute presentation giving background information about the study, and a 1.5-hour general discussion where attendees asked questions and provided input.

The comments received in the PICs indicate that:

- The public is supportive of the Region's move to conduct this study.
- The drivers and staff who interact with NST users are courteous and professional, and the drivers are well trained in handling mobility devices and interacting with the passengers.
- Back-office scheduling of trips does not adequately account for the long distances involved in inter-municipal travel in Niagara Region, so on-time performance is negatively impacted.
- Booking rides is too tedious, including waiting by the phone to be the first caller and be guaranteed a ride, the lack of clarity on the user's part regarding whether an upcoming trip is actually confirmed, and having to call multiple agencies when booking trips that involve an inter-municipal leg and a leg within a local municipality.
- The mobility needs of post-secondary students with disabilities who rely on specialized transit should be reviewed, both in terms of lack of an equivalent U-

Pass for specialized transit, and the poor on-time performance that may cause them to miss classes and exams.

- Residents of Towns and Cities without specialized transit service, particularly in West Niagara Region, feel disadvantaged as it is sometimes easier for them to travel across municipal boundaries using NST than it is to get a ride within their communities in an accessible vehicle.
- Inconsistent eligibility criteria between specialized transit agencies forces users to complete multiple applications, which may involve multiple visits to a healthcare professional for approval.
- Accessible conventional transit is not always feasible as people do not trust that there will be barrier-free access to and from bus stops, or that the drivers will be properly trained to handle mobility devices.
- Alternative service delivery models are welcomed, be it introducing new technology for booking and vehicle tracking, including other service providers like transportation network companies (Uber and Lyft) and accessible taxis, or removing jurisdictional barriers on which agency can provide local trips and which can provide inter-municipal trips.

The second round, in September - one on September 25th in St. Catharines and another on September 26th in Niagara Falls. At each, a preferred approach to address a range of business processes, was presented.

A copy of the April and September PIC presentation material is provided in Appendix B.

The comments received in the PICs indicate that there is general consensus with the preferred approach, and many felt optimistic that the changes discussed, will address many of the systemic problems with the registration process, booking a trip, scheduling, and providing more mobility options.

8 State of the Specialized Transit Industry

8.1 Introduction

As the mobility landscape continues to evolve, connected travelers, continued advancements in transportation technologies, and private sector involvement present unprecedented opportunities for public transportation improvements in general and the delivery of specialized transit, specifically. In recent years, concepts such as microtransit and mobility-on-demand have helped agencies provide a range of mobility options for the senior and disability communities by developing and integrating unconventional modes into their services, engaging the private sector in the form of transportation network companies (TNCs), taxis, and other modes as complementary alternatives to traditional specialized transit delivery schemes. However, while transit agencies continue to experiment with new business models, suppliers, and technologies to extend service (and mobility options), challenges related to providing cost-effective, efficient, and equitable service to all people remain.

Given such opportunities in the area of innovative service delivery, this study included examining immediate as well as longer term actionable strategies to best meet the mobility needs of seniors and people with a disability. Strategies include those sought for travelers who could potentially take accessible fixed route transit, but whose origin or destination cannot be conveniently accessed from the nearest available transit service options. In support of this initiative, this section presents examples of transit agency initiatives related to innovative service delivery models.

8.2 Mobility Landscape in North America

Mobility refers to the movement of people from one place to another. Efficient, cost-effective access to health, education, employment, and entertainment directly impacts people's lives. Choices in travel also have large-scale society-shaping impacts related to human rights, the economy, the environment, and the development of cities.

In advancing the *Specialized Transit in Niagara Region Plan* it is important to embrace the concept of 'mobility' and recognize that the senior and disabled communities ought to be viewed through a lens of a fully integrated (and inclusive) transit or mobility market. That is, looking beyond just enhancements to mandated AODA specialized services and *imagine possibilities* for next generation mobility for the entire community, including seniors and people with a disability.

Over the past 60 years, mobility in Canada has been dominated by the private vehicle. Over this period, challenges have arisen related to people and cities that include:

Large scale society-shaping trends including:

- o Congestion and accidents;
- o Personal health impacts and associated rising health costs;
- o Reduced accessibility to important services and opportunities; and
- o Greenhouse gas emissions.

Urban environment outcomes such as:

- o Sprawl; and
- o Reduced neighbourhood character.

Impacts to individuals such as:

- o Reduced accessibility (e.g., the high costs to own and operate a private vehicle, physical distance from transit and alternative modes of transportation, physical and perceptual barriers); and
- o Fewer social interactions.

At the same time, more people are shifting their dependency toward public transportation. With increased congestion on roadways and concern over greenhouse gas emissions, the Region and other agencies see a need for an increased role in public transportation to address regional mobility needs. As such, transit agencies are under increasing pressure to provide equitable, cost-effective service for all residents, including those of all income levels; needs and preferences; and regions within the service area.

8.2.1 Factors Driving Change

The landscape of mobility is changing driven by new alternative mode choices, advancing technologies, and emerging trends in the transportation field.

New mobility solutions and suppliers have entered the market, beginning with Zipcar as car-sharing service in 2000, followed by Car2Go in 2008, and bike-sharing in 2011. In 2009, ride-sourcing company Uber was founded, followed by Lyft in 2012, with both companies emerging with a ridesplitting option in 2014 and 2017 respectively. In 2014, private microtransit providers Bridj and Chariot were founded. This has resulted in additional choices for people, although not all residents can afford to use the services.

The sharing economy has transformed how we travel. Is a car public or private, is it delivering goods or services?

Smartphone penetration is increasing, and based on research in the United States, more than 75% of Americans own a smartphone. Even larger population owns some type of cellphone. This enables people to be connected at all times and use their phones to receive information in real-time.

Advancing technology has improved access to real-time travel information, allowed for inter-modal payment, and enabled real-time routing and dispatching. Of special importance are the following:

- **Connected and automated vehicles (CAV):** CAVs have the potential to improve traffic safety, transportation efficiency, land-use efficiency, infrastructure and transit spending if used in the correct context. Major car companies are moving towards CAVs. There is movement towards using the vehicles in a shared-use, on-demand context.
- **Beacon technologies and Crowdsourcing Travel Patterns:** Beacons can assist riders with wayfinding. At the same time, transit agencies can receive data on travel habits from riders who are willing to share data. Data can be obtained on which bus stops a rider gets on, where they disembark, and can track if riders get on another bus anywhere within the system. Other opportunities may exist to partner with local businesses to send riders exclusive deals based on their geo-location and nearby retail locations.
- **Artificial Intelligence/Machine Learning:** E-hailing is now very common and also popular with travelers. However, as e-hailing service providers start to offer shared

ride services (Lyft LINE, Uber Pool/Express Pool), it is important for them to improve their ridematching and routing algorithms. Use of data from multiple sources on traffic patterns and variability, crowdsourced data from riders can enable self-learning algorithms and can help with delivery of efficient and cost-effective transportation services. Most shared ride services offered by agencies through conventional demand response software today lack such level of sophistication in their algorithms, particularly when delivering same day trips that require continuous optimization.

New business initiatives and partnerships are a result of the changing mobility ecosystem and are moving the market forward. These include:

- **Ford Smart Mobility**, founded under Ford Motor Company, acquired a number of mobility, technology and microtransit companies including Chariot, Autonomic, Inc., and TransLoc Inc.



Urbanization and the movement of people back into the city has created the need to ensure that people can move around the city at any income, age, and ability and has highlighted the need to create cities that are dense and walkable, simulating a transit renaissance and a reclaiming of streets to people.

An increasing population highlights a greater need for multi-modal options and shared mobility solutions as cities and their surrounding areas become increasingly crowded. **An increasing and ageing population** means that no transportation system is sustainable unless it is accessible.

Environmental awareness and active lifestyles have contributed to a reduced dependence on private vehicles and emerging trends such as cycling.

8.2.2 Mobility Solutions and Suppliers

New and existing challenges related to mobility beg the question of how transit agencies can help to provide solutions in a cost-effective manner. Rather than expending effort providing new technologies and mobility solutions for transit riders, transit agencies are generally better off focusing on what they do best: moving people from point A to point B. It is by partnering or integrating with mobility solution suppliers that transit agencies can help to shape the future of urban mobility without incurring a large cost. Such mobility solutions include:



Microtransit: Microtransit consists of public transit medium capacity vehicles (8 to 15 passengers) operating with on-demand, flexible routing to provide service to areas that are inefficient to serve with a fixed route. The driver operates as an employee of the transit agency or a corporation. The distinguishing feature of microtransit compared to earlier generation demand response transit is that the passenger does not need to schedule a trip far in advance – ordering trips can be done on-demand, and the centralized dispatching algorithm automatically adjusts service in response. Eligibility for microtransit service, as with conventional fixed route service, is open to the public, and fares may be integrated with the rest of the public transit network. Past attempts have

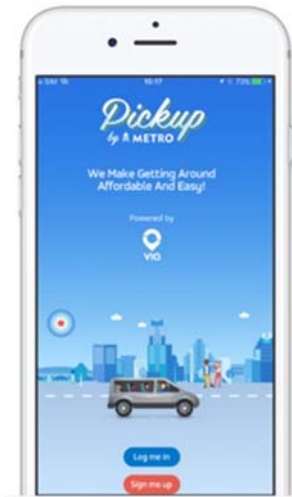
been made by transit agencies to achieve this with previous generations of demand responsive scheduling and dispatch technology with only limited success.

Much of the current interest in microtransit stems from the apparent ability of the mobile apps-based technology being used in recent years by various third party ridesharing, ridesourcing and ridesplitting service providers (see below) to provide this type of service more effectively.

Ridesharing: Ridesharing is a software-assisted modernization of conventional carpooling, in which drivers with their own personal vehicles are matched with passengers using the same subscription service, to split the cost of commuting together. For security and payment management, eligibility as both a driver and a passenger are limited to members who maintain an account with the central service.

Ridesourcing: Ridesourcing consists of a driver utilizing their personal vehicle to provide a private trip to a paying passenger; unlike carpooling and ridesharing, the driver of a ridesourcing service is driving professionally, and not making their own commute in the process of transporting passengers. Ridesourcing closely mirrors the service model of traditional medallion taxis and is most familiarly employed by Transportation Network Companies (TNCs) such as Uber and Lyft.

Ridesplitting: Ridesplitting is a close counterpart of both the ridesourcing and microtransit models. The driver utilizes their personal vehicle, drives professionally rather than as part of their own commute, and can accommodate multiple independent passengers simultaneously (as distinct from ridesourcing that is oriented to individual paying passengers), on a route that dynamically updates in response to new trip requests. Ridesplitting is another service offered by TNCs such as Uber and Lyft in major cities, where the likelihood is higher of customers independently booking trips simultaneously, with start and end points that can be conveniently served using the same overall trip. Ridesplitting commonly uses lower capacity vehicles (less than 6 passengers).



8.3 Emerging Role of Transit Agencies

As new services and suppliers are seen as important parts of the transportation network, many transit agencies are taking on the role of “mobility manager” to ensure that service is equitable in terms of cost, service area, and vehicles, and to coordinate services to prevent further congestion. An example of an agency moving towards this role is the San Francisco Municipal Transportation Agency (SFMTA) whose mission is to “*work together to plan, build, operate, regulate and maintain the transportation network, with our partners, to connect communities.*”

According to Brandon Hemily, Ph.D in *Transit and New Shared-Use Modes; Key questions from the transit agency perspective; a Discussion Paper*, in this new role, transit agencies are being asked to:

- Open real-time transit data to an ever-growing range of new stakeholders;
- Participate and/or build technological interfaces with the new suppliers;
- Participate in external shared-data platforms;

- Develop integrated trip planning tools or real-time information platforms; and
- Participate in, or develop, integrated payment back-offices, with a variety of public and private organizations, many of which may be in competition with each other.

As part of this emerging role, transit agencies may partner with other for-profit and non-profit partners in order to:

- Connect people to transit;
- Provide service to underserved areas;
- Fill gaps in hours of operation; and
- Reduce costs to providing accessible transportation and low-ridership fixed route service.

Beyond partnering from a service delivery and/or technology standpoint with new providers, transit agencies are also experimenting with new business models, including in-house on-demand service (microtransit) for both paratransit and regions with low ridership, and Family of Services, which encourages eligible paratransit riders to take conventional transit for all or part of their trips.

8.4 Business Models

New business models in use by other transit agencies that can be applied to specialized transportation services are described in this section.

8.4.1 Mobility on Demand

Mobility on Demand (MOD) may expand customer travel opportunities and offer customers spontaneity of travel. The service model may be enabled by private companies (such as Uber, Lyft, taxis, private microtransit), or the agency, and used to facilitate first-mile/last-mile solutions, paratransit, and travel within low-density zones where it is not economically feasible to provide specialized transit service. When used for specialized transit, the focus of



MOD is primarily on offering same-day specialized transit services. However, MOD may also be used by transit agencies by TNCs such as Uber and Lyft to complement the transportation network and provide more mobility options for travel, in addition to public specialized transit such as those provided by the NST and the municipal providers.

8.4.2 Family of Services

The Family of Services (FoS) approach encourages eligible riders to complete all or part of their journey using accessible conventional transit services, which reducing the average travel distance for specialized transit trips. The transfer locations are designed to facilitate a consistent, accessible transfer to or from the conventional service. With the FoS approach, door-to-door service will still be provided to eligible customers. Benefits of the FoS model include improved travel spontaneity. The ability for specialized transit users to take advantage of accessible conventional transit may also help enhance dignity and inclusivity. The FoS model also has the potential to decrease the cost of providing door to door service by reducing the average passenger vehicle revenue-miles for trips. This has the potential to mitigate cost increases to achieve additional ridership.

8.4.3 Public Private Partnerships

Transit agencies are partnering with private companies to improve service, and sometimes to expand the geographic area served. Private companies can complement agency services by extending service into lower-density areas, offering first-mile/last-mile solutions, and serving as an alternative to the private vehicle. Potential private partners include TNCs (e.g. Uber, Lyft), taxis, and private microtransit (i.e. private shuttles). With public private partnerships, transit agencies may begin to transition increasingly towards a role of “mobility manager” for Niagara Region, for example. Where FoS may be seen as integrating across a transit agencies’ services, public private partnerships can extend this integration across more of the transportation network.

8.5 Specialized Transit Operations – Common Industry Practices

8.5.1 Operations

NST and the municipal operations are complementary specialized transit service designed to meet the requirements of the AODA. These are available to individuals whose physical, cognitive or sensory disabilities prevent them from using the accessible fixed route transit systems. The following functional attributes of specialized transit system operations are discussed in context of industry best practices:

1. Eligibility and Certification
2. Reservations and Scheduling
3. Fare Policy
4. Performance Measurement

1. Eligibility and Certification

Industry best practice favours a relatively strict and precise process for determining who is eligible to use AODA complementary specialized transit. The AODA requires that the process “strictly limit” AODA eligibility to people who meet the AODA criteria. This is not intended not to discourage eligible applicants from obtaining service; rather to prevent responsible agencies from conferring paratransit access unduly on segments of the general public who are not necessarily covered by the AODA.

Strict eligibility is considered as one of several tools imbedded in the AODA regulations to manage limited program resources for the benefit of those who are eligible under the law. On one hand, insufficient limits on eligibility can lead to a system where costs cannot be contained and inappropriate constraints must be placed on service to balance the budget, resulting in AODA violations limiting transportation for many eligible individuals who have no other option. On the other hand, a complementary specialized or paratransit program that strictly limits eligibility without utilizing best industry practices risks many eligibility denials to people who have a human right to AODA specialized transit service. Therefore, industry best practice typically limits eligibility to people who meet the AODA criteria, and also strives for precise eligibility determinations to ensure that the intent of the AODA is met fully.

Additionally, it is a best practice to have a comprehensive manual describing the eligibility process in detail, including staff responsibilities as well as agency policies and procedures. Formal written documentation is not always standard practice among small transit agencies; however, better program outcomes depend in part on staff familiarity

with implementation policies, procedures and materials, as well as the consistency of their use.

A. Eligibility Criteria / Process: Industry best practice favours robust application of the conditional eligibility provision, which constitutes eligibility determination on a trip-by-trip basis. The National Transit Institute's (NTI) *Comprehensive ADA Paratransit Eligibility* document suggests that 30% to 45% percent of all eligible individuals require complementary specialized transit service only under certain conditions; meaning that they should be considered conditionally eligible. The use of conditional eligibility is an important consideration in the delivery of specialized transit in Niagara Region.

The AODA provides for some flexibility to design a locally appropriate process for determining specialized transit eligibility. Ideally, the application should enable Niagara specialized transit service providers to assess eligibility based on a comprehensive list of skills needed and tasks required to use the Region's fixed route system whenever it is possible. The required skill set should be customized to unique characteristics of the Niagara Region environment, including not only weather but topography and pedestrian infrastructure as well. All conditions that affect travel should be considered. For example, the applicant's potential travel throughout the entire service area, during all seasons. Incidental conditions such as disorientation and fatigue must be considered as well.

In short, it is important to consider path-of-travel barriers, weather, and other possible issues when setting conditional eligibility

B. Support Person/Companions Policies: The AODA indicates that at least one support person or travel companion may ride with any eligible customer. This means that Niagara's specialized transit services must carry an eligible rider's additional companions if space is available. All the municipal and regional specialized transit providers do ask about travel companions and support persons when reservations are made so that the information can be used to develop runs and ensure adequate capacity on vehicles dispatched to deliver service.

2. Reservations & Scheduling

A. Scheduling Window: The AODA allows the negotiation of pick-up times within a two-hour hour window framed by up to one hour before and one hour after requested departure time. A key is to define the window in proper context of a complete understanding of the customer's trip characteristics. Industry best practice tends toward more completely understanding the particular travel need of the individual customer before establishing the pickup window. A preferred strategy is to negotiate pickup time by requesting information about customer time constraints as part of the booking process. A customer's appointment time must be taken into account when scheduling the ride. This includes whether the time requested is the earliest possible time that a customer can travel, or whether it is based on preferred arrival time or a fixed appointment time. When there is a latest arrival time (e.g., medical appointment), the scheduling window should be set to ensure that the customer gets to the appointment on time. When there is an earliest departure time on a return trip (for example, a time when the rider gets off work and so cannot leave before then), the scheduling window should be from that time to one hour after.

It is acceptable to set the schedule around the requested pickup time (plus/ minus one hour) when the customer's travel plans are not constrained by appointments or earliest departure times.

B. Scheduling Will-Call Return Trips: Will-calls can provide significant rider benefits for a limited number of trips, when the rider really does not know the return time. In some medical situations, will-calls are vital, and it is a good practice for a transit agency to make them available. Yet they are workable only if limited in number, particularly during peak operating times. A large number of will-calls at peak operating times can overburden a system and make it difficult to deliver service on time.

C. Managing Cancellations & No-Shows: Industry common practices include the ability to suspend, for a reasonable period of time, access to complementary specialized transit service for customers who indicate a pattern or practice of missing scheduled trips.

The intent is to encourage specialized transit customers to recognize the substantial value of limited complementary specialized transit resources, and to avoid no-shows resulting in service capacity lost to the system. Suspension is a tool for handling those who repeatedly fail to appear for their prearranged rides and have a detrimental effect on operational efficiency, cost, and the quality of the service for other eligible customers. Suspension of eligibility is not intended to be used as a demand management tool. The challenge of no-show policies is to balance customer service and operational efficiency.

Industry practice speaks to the presence of a pattern or practice with intentional, repeated or regular actions, not isolated, accidental, or singular incidents. Moreover, only actions within the control of the individual count as part of a pattern or practice. Missed trips due to operator error are not attributable to the individual passenger. Further, to not allow a suspension of access to service for no-shows that are considered to be beyond the customer's immediate control. Examples of such circumstances include, but are not necessarily limited to the following:

- Sudden change in the customer's condition that prevented a timely cancellation call.
- Support Person or travel companion did not arrive on time to assist the customer.
- The customer was inside calling to check on vehicle arrival and was on hold for extended time.
- The customer's appointment ran longer than anticipated and prevented timely cancellation.
- Mobility aid malfunction.
- Family emergency.
- Adverse weather impacted the customer's travel plans and prevented timely cancellation.
- Transit agency error in classifying an operational glitch as a customer no-show. For example:
 - o The vehicle arrived before or after the pickup window, or not at all.
 - o The vehicle was dispatched to the wrong location.
 - o The driver didn't have or use adequate information to locate the customer at the pick-up location.
 - o The customer provided timely notification of cancellation, but the cancellation was not recorded correctly or was not conveyed to the driver.

Industry best practice leans toward no-show policies that do not penalize customers after a fixed number of occurrences (usually three) within the fixed time frame (e.g., 60 – 90 days).

Generally, cancellations made at least two hours before the scheduled pick-up time are no longer equated with lost service capacity. Industry best practice increasingly is to accommodate requests for same-day and next-bus-available service when possible, and to implement operating practices to redeploy vehicles in productive service.

As an alternative to a traditional “three strikes and you’re out” approach, responsible agencies are increasingly thinking in terms of the percentage of trips missed over a longer period of time to identify any pattern of missed trips. Some agencies assess the no-show records of individual customers relative to the average no-show rate for the customer base as a whole. Some suspension policies consider the absolute number of occurrences as well as relative frequency to avoid arbitrary outcomes. For example, a customer who travels once and misses the trip would have a 100% no-show record; however, the single data point does not constitute a pattern.

Enhanced customer service is essential to the transit industry as a consumer-oriented retail business. Increasingly, specialized transit providers are working with customers in constructive ways to reduce no-shows. Examples of pro-active approaches include keeping customers aware of their record of no-shows, verifying the accuracy of recorded no-shows when customers disagree with particular events, issuing a warning only for the first offense, and giving the customer an opportunity to appeal a suspension.

Other best practices address particular aspects of the reservations, scheduling and trip fulfillment. For example, record specific pickup location details and directions and ensure that the instructions to the driver; review cancellations made after 5:00 pm to confirm that if they are unable to cancel a ride in a timely way because cancellation calls are not taken early enough before their scheduled trip. For example, when a customer with a variable condition has an early morning trip scheduled but is unable to anticipate the need to cancel until that morning, best practice might be considered outside of the customer’s control if the occurrence is not repeated.

D. Use of Technology: A number of advanced technologies, particularly Automatic Vehicle Locator (AVL), Mobile Data Terminals (MDTs), Global Positioning Systems (GPS), and Interactive Voice Response (IVR) systems are assisting some transit agencies to improve on-time performance.

AVL technology allows the agency to monitor the location of its paratransit vehicles on a real-time basis and to provide historical location information on trips. Specialized transit providers can use this information to enhance proactive dispatching, thereby reducing late pickup and drop-off times.

MDTs facilitate communications between vehicle operators and the dispatcher. Drivers use the terminals to record their arrivals and departures in real time. This information is then used to calculate new estimated arrival times for subsequent trips. Late pickups or drop-offs are flagged to the dispatcher, who can then reassign later trips that might otherwise have become backed up.

Automated confirmation and reminder calls are consistent with industry best practice among systems with computer-based scheduling capacity. Common is the practice to auto-call customers with prior day trip confirmations and same-day reminders to help reduce cancellations and no-shows, and to help improve on-time performance.

3. Fare Policy

Similar to the strict eligibility requirements, the maximum fare is intended as another sustainability tool used to manage the total cost of the complementary paratransit (specialized) program. Most transit providers peg specialized transit fares to twice the

regular fare for a comparable fixed route trip. Comparability considers the presence of zone fare structures, transfer charges, and other attributes of the fixed route system fare structure.

Transit agencies may require companions to pay the same specialized transit fare as the eligible rider with a disability, which may not exceed twice the full non-discounted fixed route fare. A support person may not be charged any fare. However, any additional companions may be required to pay the fare.

Many transit agencies have instituted fare incentives for specialized transit eligible riders. They are allowed to ride for free on the fixed route system. Moreover, more transit agencies permit companions to ride fare-free. A support person does not pay a fare. This is an important addition, because some AODA eligible riders would not be able to (or would not feel comfortable) riding the fixed route unaccompanied.

4. Performance Measurement

Beyond just internally-focused measures such as operating efficiency, labour productivity, and maintenance effectiveness, industry best practice focuses on key performance measures

A. On-time Performance: Maintaining schedule reliability is a key challenge for most paratransit service providers. Adherence to schedule is measured against a pick-up window 30 minutes or less, which is an industry standard.

B. No Capacity Constraints: Substantial numbers of untimely pickups, trip denials, missed trips, and excessively long trips are considered illegal capacity constraints. It is current practice in the specialized transit industry to view an on-time pickup as a vehicle arrival within an on-time window established. It is important to reinforce the pickup window concept with riders, drivers, dispatchers, and reservationists. Riders may otherwise not understand or remember the window, and think the vehicle is late when it is not. A good time to do this is when the rider makes the reservation. When the reservationist confirms the final trip information, instead of saying: "We will pick you up at 9 o'clock," if the transit agency has a zero — thirty (0/+30) window, for example, the reservationist could instead say, "We will pick you up between 9 and 9:30 a.m." The result is that, over time, riders will become more educated about the pickup window.

8.5.2 Supplemental Service delivery

Building on the previous discussion of the evolving landscape of mobility, this section discusses common specialized transit industry practices specifically with the use of supplemental delivery services. These services include the use of taxis, accessible taxis and transportation network companies (TNCs).

8.5.2.1 Taxi Best Practices / Attributes of an Effective Accessible Taxi/TNC Program

This section provides a general overview of:

- The evolution and development of wheelchair accessible taxi services;
 - o The barriers that restrict the effectiveness and success of accessible taxi programs;
 - o How jurisdictions have promoted accessible taxi services; and

- o Factors that support the sustainability of accessible taxi services (ability to accommodate a mobility device as well as sensitive to broader aspects of accessibility needs including sensory, cognitive, etc.).

Historically the taxi industry in North America has been characterized by a high degree of entrepreneurial independence. It remains highly market driven with service coverage concentrated in areas with the maximum potential for financial return. Maximum service coverage is often characteristically limited to areas of high demand density or concentrated on markets willing to pay for a higher value and responsive service.

Traditional taxi firms can range from: large companies with a concentration of taxi licenses or medallions and a large fleet of vehicles that they operate with staff drivers or lease out to independent drivers; dispatch brokerages that charge monthly dispatch fees to independent owner operators for dispatch and administrative services; to small “Mom and Pop” outfits that operate completely on their own, taking reservations from home offices or by cellphones while on the road. Operations in small urban centers or rural centers are often undercapitalized and through time can go in and out of business, as demand fluctuates. Increasing operating and business costs (fuel, vehicle maintenance, insurance, brokerage fees, and permits) as well as rising household living costs can push small or independent taxi operators out of business. The same can be true for the emergent, software based transportation network company (TNC) operators working through the Lyft or Uber umbrellas.

Taxi industry regulation can range from a high level of regulatory oversight, as in many metropolitan areas, to a very limited level, or complete lack of regulation (as can be the case in small communities or rural areas).

In recent years the traditional taxi industry has experienced significant competition from software based TNCs such as Lyft and Uber. In many markets, traditional taxi companies are losing market share to TNCs with taxi drivers “jumping ship” and becoming TNC operators. TNCs have also created a regulatory challenge in jurisdictions where for-hire taxi operations are highly regulated. The market penetration, economic viability and regulation of Lyft and Uber operations will continue to play out over the near-term horizon.

Evolution of Taxi/Public Paratransit Partnerships and Accessible Taxi Service: The partnership between taxi companies and public agency transportation providers and accessible taxi service initiatives evolved over the past several decades.

During the 1970s and 1980s, specialized transit and social service agencies increasingly partnered with taxi companies to provide or supplement their services to their ambulatory clients. They recognized the potential of taxi cab partnerships to provide supplemental capacity to:

- Provide backup for bus breakdowns and accidents;
- Offload trips from buses running late;
- Provide service during hours with low productivity (evenings and weekends); and
- Increase capacity when needed to avoid AODA trip denials.

In addition, public transportation agencies have involved taxi companies in subsidized taxi voucher programs as demand management strategies to shift ridership from core specialized transit programs.

Much of this partnering has focused on service to the public specialized transit eligible persons not needing a wheelchair accessible vehicle. Through time, contractual arrangements became more sophisticated with specific performance expectations, driver screening and training requirements and trip assignment criteria to enhance service

efficiencies. In a survey conducted of 45 public transportation agencies, 39 (85%) reported the use of taxi contractors.³

Density of Demand: Taxi and TNC operators tend to serve areas or locations with a high density of potential trips such as hotels, entertainment areas, transportation terminals, and medical complexes and are not willing to respond to trips far from their preferred areas of operation. They also may choose not to operate during hours when demand is lower. In the case of smaller communities, it can be difficult to ensure 24/7 coverage. Taxi and TNC operators may be reluctant to deadhead long distances to serve short trips originating and ending outside their higher density market areas, or to provide night owl coverage when demand is generally lower. Service coverage is highly market driven.

Accessible Taxi Services: Taxi operators have long provided private for-hire services to passengers using wheelchairs. Traditionally, wheelchairs were folded and placed in the back seat or trunks of taxi sedans. However, the provision of this level of service has been spotty, dependent on the willingness of drivers to provide any necessary assistance in and out of the sedan or minivan, and to take the time to fold and stow a passenger's wheelchair. Additional charges were often imposed above the regulated meter, flat rate or zone charges. Service was not available to persons who could not independently transfer or be safely assisted in and out of their wheelchair. This service was not available to persons using power wheelchairs. This is still the case when persons with disabilities request Lyft or Uber service. Drivers may not be willing to accommodate a passenger using a wheelchair.

Wheelchair accessible taxi initiatives were piloted in the 1980s and have become increasingly important through time. Strategies to introduce wheelchair accessible taxi services have included: the limited issuance of new taxi permits to companies or individuals who operate wheelchair accessible taxi cabs; regulatory requirements for all taxi companies in a jurisdiction to include accessible taxis within their active licensed for-hire fleet; or the public agency procurement of accessible taxis with grant funding and the leasing of these vehicles to taxi companies willing to operate them. There have also been independent, private initiatives to procure and operate wheelchair accessible taxi cabs to a targeted market specifically including persons with disabilities. The TCRP reported that 23 (61%) of 38 transportation agencies using taxi companies had wheelchair accessible taxis available.⁴ In the United Kingdom, 100% of all taxis operating in London are wheelchair accessible.⁵

Wheelchair Accessible Taxi Vehicle Development: In North America, early wheelchair accessible taxi design ranged from small shop modifications of old Checker Cabs and non-commercial minivans as well as rare R&D prototypes that never made it to commercial manufacture because of high production costs. The objective was to design and introduce vehicles that could accommodate wheelchairs without requiring the passenger to transfer from their wheelchair, as well as accommodate passengers using power wheelchairs and/or scooters.

Perceived Limitations of Market for Accessible Services: Taxi and TNC operators may view persons requiring an accessible vehicle to be too limited a market to warrant the procurement and operation of a wheelchair accessible vehicle. Many may feel it is more profitable to concentrate on the general public for-hire market requiring a more generic vehicle.

³ TCRP Synthesis 119, (2016), p.22.

⁴ TCRP Synthesis 119, (2016), p.5.

⁵ Massachusetts Community Transportation Series, Wheelchair-Accessible Taxicabs, (October 2013), p. 7.

8.5.3 Emerging Mobility Technologies

This section explores some of the emerging mobility technologies and concepts that are either still in their infancy or yet to be tried in the specialized transit environment. Opportunities have been identified in the following areas:

- Trip Discovery;
- Trip Booking;
- Payments;
- Service Delivery; and
- Customer Information and Wayfinding.
- Further, available technologies have been summarized under the following categories:
 - o **Mainstream technologies:** Refers to technologies that are widely deployed in the industry for solutions relevant to customers and agencies. There are very low risks in deploying such technologies.
 - o **Limited commercial deployment:** While there have been some experimental deployments, either technologies/solutions have not matured or there is not enough acceptance for mainstream use by customers and/or agencies.
 - o **Pilot deployments:** There have been some deployments, typically funded by USDOT grants or under public/private partnerships. Concepts or technologies are still in their infancy.
 - o **Advanced research but no deployments:** These technologies or solutions should be considered high-risk to deploy since no field testing has yet been performed.

8.5.4 Mainstream Deployment

Personal Mobility Enhancements: There are several mainstream technologies available through many vendors that can help enhance the mobility experience of specialized transit customers. These technologies include:

- Real-time information on vehicle arrivals and service alerts. Specialized transit customers often have access to real-time information on iPhone and Android devices as well as real-time information on a transit agency's website. Also, trip planner capabilities should incorporate the real-time status of vehicles when displaying travel options to customers.
- Seamless travel across the region using a single fare medium by capitalizing on account-based payment systems.
- Self-service portal for demand response/specialized transit trips where customers can register, apply for and track their eligibility and book and manage trips.
- Trip notification via interactive voice response (IVR) system the night before the trip and a configurable number of minutes prior to arrival of a vehicle at pickup location.

- Better adoption of continuous optimization a commercially available scheduling engine to support same day trips and vehicle assignments.

Benefits: Suggested enhancements will have the following benefits as perceived by riders:

- Improved customer experience
- Service reliability
- Seamless mobility

8.5.5 Limited Commercial Deployment

8.5.5.1 Enhanced e-Hailing/Booking

E-hailing or ridesharing apps have been prevalent in recent years and have provided travelers additional travel alternatives. However, these services are not an alternative to agency provided specialized transit. They are most suitable solutions for supplemental service. Most of the e-hailing companies now provide their public API (application programming interface) to be used by third party developers. This could potentially allow Niagara Region's specialized transit riders to book their specialized transit trips with one click. However, the experience is not as seamless as might be expected, as is the case with most such mobility aggregator apps. They typically provide a trip discovery platform and booking is done by individually going to e-hailing company websites or apps. Often, transit agencies may also partner with a suitable mobility aggregator such as Moovel who provide an integrated trip brokerage platform for booking and payment for multiple services (e.g., TNC, carshare, bikeshare and transit) through a single trip planning app.



E-hailing solutions by now have been integrated with transit agencies under various models (e.g., fully or partially subsidized by agency or paid by customer) and pose limited risks.

Benefits: Suggested enhancements will have the following benefits as perceived by riders:

- Enhanced trip booking and payments experience;
- Seamless door-to-door mobility;
- Increased personal mobility alternatives and first/last mile connectivity; and
- Cost-savings to agency by reduction in the number of expensive demand response/specialized transit trips.

8.5.5.2 Cashless Payments

Cashless payment enables customers to have the ability to pay for trips electronically, which in turn requires customers to have access to banking. Historically, unbanked and underbanked populations have not allowed agencies to adopt cashless payment strategies, as cash-based fare collection continues to be around 10-30% at most agencies. Need for cash payments require agencies to install fareboxes, which are

expensive to maintain, factoring the daily cash collection, accounting and reconciliation processes.

Considering a best case scenario for banked customers, a cashless plan requires a series of strategies to reduce the amount of cash usage by targeting specific rider market segments. Infrequent specialized transit riders and socio-economically challenged riders' resort to cash-based payments. Targeted strategies could and should be developed for these market segments to steer them towards adopting cashless payments.



With the advent of account-based payment, agencies now have more flexibility in steering customers towards electronic media by establishing an extensive retail network so customers have access to locations where they can buy or reload smartcards. For example, MBTA (Boston) is planning to achieve fully cashless payment by 2020. Part of this strategy involves developing a retail reload network such that 98% of its stops have a retail location within a walking distance (typically ¼ mile).

Specialized transit systems have greater opportunities in adopting cashless payments since those customers have registered accounts and could potentially be provided electronic fare media which is tied to their accounts. Also, customers could pre-pay for some of the trips online when booking via the internet.

To conclude, opportunities and technologies now exist more than ever to adopt cashless payment to a certain degree. There will always remain a segment of the population that will not be able to use electronic media due to lack of a bank account to replenish - unless they use cash to replenish at a retail location. The private sector is also advancing technologies such as PayNearMe where customers can pay using cash at a participating retail location for online transactions. PayNearMe has now also partnered with Blackhawk Networks where customers could go to retail locations that are interfaced with Blackhawk Network for prepaid card sale and distribution.

As stated earlier, adopting 100% cashless payment may leave out a significant section of ridership that is unbanked or underbanked.

8.5.5.3 Enhanced Wayfinding

Wayfinding is one of the key issues in specialized transit, particularly with the senior and disabled population who may not be familiar with the transit service area. There are various reasons, including but not limited to unfamiliarity with routes and stops, poor signage, temporary relocation of stops, stops located within a large transfer center, shared stops with another agency, among many others. In some cases, particularly with riders with a disability, their inability to locate a stop often prompts them to use the more expensive specialized transit service option.

Agencies have conventionally relied on map and text-based signage and tactile guideways to help riders locate stops and its facilities, but modern



technologies based on RFID or Bluetooth Low Energy (BLE) beacons open up greater possibility in helping riders orient towards a bus stop and navigate. Typically, there are the following components involved in beacon-based wayfinding:

- BLE tags that transmit Bluetooth signal and can be installed anywhere, indoors or outdoors. These signals can be preprogrammed to transmit specific information (e.g., stop ID); and
- Riders' smartphone that has an app to detect BLE signal and help navigate the rider through built-in accessibility features of the phone. This could be visual, audio or haptic (e.g., vibration) feedback.



Some agencies and vendors use additional features in improving the navigation aid. These include defining a geo-fence around a stop so the app on a rider's device knows when to start the navigation. Also, BlindWays, the app developed and deployed by Perkins Institute for the Blind and Raizlabs in partnership with MBTA has a crowdsourcing feature that allows regular riders to volunteer in the program and mark obstructions or physical objects (e.g., tree, fire hydrants, potholes, broken sidewalks) on the map which help the app to use that information and provide proper guidance to visually impaired riders. PathVu is also a crowdsourcing-based application that allows riders who use a mobility device (scooters or wheelchairs) to navigate safely to their location.

There are apps meant to address specific types of disabilities as well. For example, WayFinder 3 by AbleLink, allows riders with cognitive disabilities to orient and navigate themselves while traveling.

For general public riders, vendors are starting to launch apps that use augmented reality for better wayfinding. These apps use the smartphone camera to display real-time information to the stop location at which the camera is pointing. Such tools can be very useful to infrequent users of transit.

While there have been several deployments of BLE-based beacons, they are still not mainstream yet, particularly in a transit environment. Key issues with this approach are that of training customers with a disability and that most solutions require the use of a smartphone. Also, it is important to make sure the navigation map being used for directions has an updated database of not just locations but also any physical obstructions.

Maintenance of beacons is also a concern. Beacons operate on battery power and there will need to be a way for an agency to know the battery level to ensure beacons can be serviced when running out of power.

Benefits: The biggest beneficiaries of wayfinding solution will be riders with disabilities. However better wayfinding solutions will also assist general public riders and could prompt more riders to take fixed route transit service.

8.5.6 Pilot Deployments

8.5.6.1 *Connected and Autonomous Vehicles*

While most agencies are still running pilot programs for field testing in a controlled environment, some municipalities such as Las Vegas have already started running Connected and Autonomous Vehicles (CAV) shuttles in mixed traffic.

A key component of a CAV shuttle solution should be to link these vehicles with an overall control center so riders can hail these shuttles like any other ridesplitting service and board them at designated stops. Given the size of these vehicles (16 seats or less) these shuttles can be operated on most streets in any neighborhood given their lower turn-radius needs.



Further, the “connected” aspect of these shuttles can be utilized for ensuring pedestrian and passenger safety as discussed in the next section. V2X sensors installed on the vehicles can interact with other vehicles and roadside equipment (RSE) for collision avoidance. Advanced vision sensors such as those offered by MobileEye can be used for object detection and collision avoidance as well.

While agencies are running pilot programs with key CAV providers such as Navya, EasyMile, Local Motors and operators such as Transdev and Keolis, safety and reliability continue to be an issue. The shuttle Keolis ran in Las Vegas was involved in an accident on Day 1 of testing. Even though the vehicle was not at fault, it stopped to avoid a collision with the vehicle in front instead of backing up a little as human drivers would do.

These shuttles could still be operated in dedicated guideways, similar to Jacksonville Transit Authority’s experimental Urban Circulator project. Manufacturers continue to test and perfect the technology behind autonomous driving.

Benefits: CAV shuttles offer a promising future for providing additional mobility options including first/last mile connectivity given the small size of these vehicles, “connected” nature, and limited cost due to being driverless.

8.5.6.2 *Enhanced Safety Solutions*

Pedestrian safety is an important factor in planning mobility solutions for older adults and people with a disability. Connected vehicle technology can assist with ensuring safety to a great extent through collision avoidance and warning systems. There are the following types of technologies in testing/pilot stages:

- V2X Safety Solution: Vehicle to vehicle (V2V), vehicle to infrastructure (V2I), vehicle to pedestrian (V2P) and similar technologies where vehicles and road side equipment communicate over secure, dedicated short range communication (DSRC) to alert pedestrians or bikers at intersections and other vehicles equipped with V2V sensors; and
- Vision-sensor and Range Sensor based Collision Avoidance: Technology used in autonomous vehicles could also be installed in regular (transit) vehicles for object detection and collision warning/avoidance. This technology includes vision and/or range sensors on vehicles that interact with an on-board vehicle computer to process data and detect objects. Drivers or pedestrians are warned about

potential collisions. In some cases, breaks could be applied automatically to avoid an accident.

Benefits: Safety is critical to transit industry, particularly given Vision Zero initiatives. While safety technologies mentioned in this section are not mainstream, yet they are expected to be widely deployed in coming years. Presence of such technologies, particularly on autonomous vehicles will give riders extra confidence when riding the vehicles.

Similar to any technology deployment, equipment installed on vehicles or at roadside infrastructure will require maintenance to ensure failsafe operation. This may have staffing impacts on the organization.

8.6 Summary

Transit agencies nation-wide have been partnering with private sector such as TNCs, private microtransit companies, and real-time routing and dispatching software providers for several years. However, transit agencies are still assessing how best to position themselves in the shifting paradigm of mobility. Throughout this time agencies have experimented with replacing existing services, complementing current services, and adding new services. Given most of the operating cost in transit industry is attributed to direct driver employment and vehicle ownership, agencies have experimented with a variety of models, where they 1) operate a service on their own; 2) use a contractor to run their services; or 3) partner with TNC or taxis and subsidize trip cost. There is no clear conclusion on the best model, and it varies largely on the type of service being provided and the ridership demography.

The transit industry is witnessing a rapidly changing world fueled by internet age technologies. The power of the internet allows agencies to plan and deploy technologies at a rapid pace even in situations when multiple service providers are involved. A number of technologies/solutions identified in this document have either been field tested as part of a pilot program or have been widely deployed.

9 Recommendations – *A Way Forward*

This chapter presents a recommended approach (Section 9.2) for going forward within a framework as presented in Section 9.1.

9.1 Guiding Principles

A recommended approach reflects the following guiding principles:

- **Preserve the integrity** of the Region's specialized transit services for those with no alternative
- **Maximize benefits from investments** made in accessible fixed route transit and provide flexible mobility options
- **Compliance with AODA** (and principles of universal design)
- **Be fiscally responsible and accountable**

Objectives:

- Maximize use of existing resources
- Increase efficiencies in service delivery
- Enhance the customer experience
- Leverage use of technology to improve future services

**Specialized transit:
shared ride public transit
for those unable to use
accessible fixed route
transit**

Evaluation Criteria: In consideration of the above guiding principles and objectives, the following evaluation criteria were considered in advancing a recommended approach:

Effectiveness - population served & number of trips generated;

Economy - total costs - capital vs. operating costs, large capital outlays, and present-valued expenditures over the long-term;

Efficiency - cost per trip, per vehicle-hour, plus costs to customer and funding partners;

Level of Service - reservation constraints, hours of service, frequency of service, and trip purpose;

Quality of Service – enhanced customer experience - convenience, transfers, travel time, comfort, dignity, and flexibility;

Socio-Economic Factors - impact on employment access and social well-being;

Human Rights Implications – AODA compliance; integration;

Organizational Issues - operational flexibility, control and accountability, human and labor relations, and ease of implementation;

Technical Risk - if new or modified equipment is required;

Public Policy Risk - the potential for changes in direction of local or provincial policies; and

Financial Risk - if large capital outlays are required.

9.1.1 Key Challenges and Opportunities

Informed by the analysis and outreach/survey research efforts articulated herein, the following are key challenges and opportunities considered in the recommended approach:

- Effectively manage demographics / travel demand: Growth (and changes) in the transportation disadvantaged population including the need to manage changing demographics, the delivery of health care services, and settlement patterns in Niagara Region.
- Address governance, program administration & trip management considerations to address:
 - o Increasing costs
 - o Program & fiscal accountability
 - o Service & scheduling efficiencies (enhancements)
- Address the range of functional disabilities.
- Address compliance with AODA.
- First/last 'mile' connections.
- Integration with conventional transit.
- Alternative delivery solutions – NextGen Mobility and opportunities to enhance the customer experience (integrated trip planning, booking, real-time customer information, broadcast trip arrival information, etc.).
- Recognition of the dynamic market for 'essential' services from shopping (changing retail landscape) to the delivery of medical/diagnostic services (and virtual experiences).



9.2 Recommendations

Recommendations address the following core functional areas and reflect consideration of multiple to single providers:

- Eligibility & Certification
- Trip Reservation & Scheduling
- Dispatch/Trip Management
- Service Delivery

9.2.1 Eligibility & Certification

In order to address the current situation of multiple specialized transit providers each having responsibility for this business process, including each having their own application form and certification process, it is recommended that:

1. The eligibility and certification process be centralized under a single entity.
2. A single application form be used by all specialized transit operators in the Region⁶.

⁶ A Draft Niagara Region Specialized Transit Application Form was prepared and distributed for consideration. A copy is provided in Appendix C.

3. The application form be available on-line giving applicants the opportunity to complete and submit a digital version.
4. In-person assessments be introduced as part of the application and certification process. The applicant will have the *option* of including validation by a health care professional within the following parameters:
 - Application form has two parts: Part A - completed by all applicants. Then - one of two options:
 - o Applicant submits completed Part A; applicant will be required to attend an interview and in-person assessment; Or
 - o Applicant may choose to have a health care professional complete Part B, submit both Parts A and B for review and based on the information provided, applicant may be required to attend an interview and in-person assessment.
5. Applicants certification reflect the categories of 'unrestricted', 'conditional/trip-by-trip', and 'temporary'.
6. An every 5-year re-certification process be introduced as a standard operating procedure.

9.2.2 Reservations/Trip Requests and Scheduling

It is recommended that:

7. The reservations/trip request and scheduling functions be centralized under a single entity.
8. Enable registrants to make reservations/trip requests by telephone, app and/or web-portal (One-Call/One-Click capability).
9. Scheduling (route optimization, allocation of resources) to use state-of-the-art, commercially available software with a robust scheduling algorithm.

9.2.3 Development of Policies, Procedures, and Performance Metrics

It is recommended that:

10. The governing entity responsible for the administration and operation of the Region's specialized transit services develop a robust set of policies, procedures and performance metrics.

Policies and procedures to include but not be restricted to:

- Advance booking requirements
- Scheduling windows
- Cancellations and no-shows
- Fare policy

Performance metrics to reflect industry norms regarding key performance indicators (KPIs) including requirements for service monitoring, contract compliance and CUTA reporting.

9.2.4 Service Delivery (Dispatch/Trip Management)

The specific specialized transit delivery framework (number of operating entities, etc.) will be determined by, and as an outcome of the Regions concurrent study of consolidation of services models.

Notwithstanding the outcomes of the consolidation study, it is recommended that:

11. Core specialized transit services to be provided by, and to a level of service as currently provided by the aggregate of the municipal and regional specialized transit providers.
- 12.a. Existing core services to be supplemented by the use of taxis and/or transportation network companies (TNCs)⁷ to accommodate trip requests during times of day, days of week, or areas of service, when the deployment of hourly service would not meet prescribed performance metrics or to provide 'overflow' capability.
12. b. Supplemental services, as described above, be used to accommodate future travel demand/expansion of specialized transit services.

9.2.5 Greater Link/Integration with Fixed-Route Transit Services

Recognizing that specialized transit is shared ride public transit for those unable to use accessible fixed route transit, and with an eye on a greater link or integration with accessible fixed-route transit, the following are recommendations:



13. Apply conditional/trip-by-trip eligibility whereby for specialized transit registrants categorized as 'conditional' and where conditions can be determined (e.g., seasonal, climate/weather, topography, accessible paths of travel, proximity of trip origin/destination to fixed-route service, etc.).
14. Develop incentives and policies to address travel/mobility demand management strategies that may include but not be restricted to: travel/mobility training, fare policy, trip discovery/planning capabilities, etc.

9.2.6 Next-Generation Mobility

It is recommended that the following next-generation mobility (operations, service delivery, and technology) strategies be advanced:

15. Introduce a *Specialized Transit Same-Day Pilot Program*. Through partnerships with taxi and/or transportation network companies (TNCs) provide subsidized, app-based (including trip request, tracking, and mobile payment) trips to specialized transit registrants. For those who may not have a Smart device and/or the unbanked, ensure the provision of a call-centre and ability for trip payment by alternate means.
16. Technology enhancement that include:
 - d. Real-time passenger information including the broadcast (text message or telephone call) of vehicle arrivals.
 - e. Self-service capabilities through an app and/or web portal to address registration, trip planning, reservations, confirmations and cancellations.
 - f. Mobile (cashless) payment.

⁷ Supplemental services to be contracted on a per trip bases and hence, only paid for services consumed and may include subsidized same-day service.

9.3 Financial Plan

Operating costs are presented in Section 9.3.1. Capital costs are presented in Section 9.3.2.

9.3.1 OPERATIONS FINANCIAL PLAN

The operations plan presents trip volumes and operating cost projections focus on the municipal specialized transit services (Niagara Falls, Fort Erie, St. Catharines (including Thorold), and Welland) and Niagara Region's NST service.

The operating costs reflect a financial analysis of two scenarios:

1. Status Quo Delivery Framework (Section 9.3.1.1); and
2. Interventions/Alternate Delivery Framework (Section 9.3.1.3).

Projected trips and operating costs for the smaller transit systems (Pelham, Lincoln, Niagara-on-the-Lake, and Port Colborne) and the municipalities without current transit services (West Niagara - Grimsby, West Lincoln, Wainfleet) are presented in the Status Quo Delivery Framework discussion.

Status Quo Delivery Framework assumes that the current mode of specialized transit service delivery will continue. That is, the use of core services (recognizing that there is marginal use of supplemental/taxis service).

Interventions/Alternate Delivery Framework provides for accommodating future demand without a proportionate growth in costs. This scenario reflects: (a) accommodating an increasing number of trips on accessible fixed-route transit services⁸; and (b) the greater use of supplemental (taxis and/or transportation network companies [TNCs]) services to accommodate trip requests during times of day, days of week, or areas of service, when the deployment of hourly service would not meet prescribed performance metrics or to provide 'overflow' capability. Further, in this scenario, future service expansion will be accommodated with the use of supplemental service providers.

For each scenario, trip volumes and operating costs are presented for the 2018 base-year and projections for years 2021, 2026, and 2031.

For the Interventions Delivery Framework, key operating cost assumptions include:

- Operating costs increase 1% per year (not compounded over the projection years)
- The use of taxis and/or TNCs enables the payment for services consumed and assumes a subsidy per trip of \$25.00.

Table 9.1 presents a summary of the operating financial plan as discussed herein and for each of the *business-as-usual* and *high growth* demand projections. Table 9.2 presents a summary of cost per trip for the same parameters as presented in Table 9.1.

⁸ Premised on advancing the recommendation to implement conditional eligibility as well as other referenced enhancements for greater integration with conventional transit.

Table 9.1: Operating Financial Plan Summary

OPERATING COST SUMMARY													
		2021				2026				2031			
		Trips		Cost		Trips		Cost		Trips		Cost	
		Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions
Business-as-Usual	Municipal/ Regional	110,380	107,069	\$5,668,381	\$4,934,007	118,800	111,672	\$6,579,778	\$5,336,693	127,780	115,002	\$7,350,855	\$5,493,554
	Small Transit Systems	13,240	13,240	\$280,010	\$280,010	13,700	13,700	\$289,580	\$289,580	14,370	14,370	\$303,925	\$303,925
	No Transit System	6,315	6,315	\$133,560	\$133,560	6,735	6,735	\$142,440	\$142,440	7,365	7,365	\$155,770	\$155,770
	TOTAL	129,935	126,624	\$6,081,951	\$5,347,577	139,235	132,107	\$7,011,798	\$5,768,713	149,515	136,737	\$7,810,550	\$5,953,249
High Growth	Municipal/ Regional	111,120	107,786	\$5,756,355	\$5,005,863	128,280	120,583	\$7,169,330	\$5,808,021	148,000	133,200	\$8,590,490	\$6,411,009
	Small Transit Systems	13,900	13,900	\$294,045	\$294,045	15,240	15,240	\$322,325	\$322,325	17,245	17,245	\$364,730	\$364,730
	No Transit System	6,655	6,655	\$140,760	\$140,760	7,525	7,525	\$159,240	\$159,240	8,840	8,840	\$186,965	\$186,965
	TOTAL	131,675	128,341	\$6,191,160	\$5,440,668	151,045	143,348	\$7,650,895	\$6,289,586	174,085	159,285	\$9,142,185	\$6,962,704

Table 9.2: Cost Per Trip Summary

OPERATING COST SUMMARY			Cost Per Trip					
			2021		2026		2031	
2018			Status Quo	Interventions	Status Quo	Interventions	Status Quo	Interventions
Business-as-Usual	Municipal/Regional	\$49.71	\$51.35	\$46.08	\$55.39	\$47.79	\$57.53	\$47.77
	Small Transit Systems	\$21.15	\$21.15	\$21.15	\$21.14	\$21.14	\$21.15	\$21.15
	No Transit System	\$21.15	\$21.15	\$21.15	\$21.15	\$21.15	\$21.15	\$21.15
TOTAL			\$46.81	\$42.23	\$50.36	\$43.67	\$52.24	\$43.54
High Growth	Municipal/Regional	\$49.71	\$51.80	\$46.44	\$55.89	\$48.17	\$58.04	\$48.13
	Small Transit Systems	\$21.15	\$21.15	\$21.15	\$21.15	\$21.15	\$21.15	\$21.15
	No Transit System	\$21.15	\$21.15	\$21.15	\$21.16	\$21.16	\$21.15	\$21.15
TOTAL			\$47.02	\$42.39	\$50.65	\$43.88	\$52.52	\$43.71

9.3.1.1 Status Quo Delivery Framework

Table 9.3 presents the trip volumes and costs for the years previously referenced for the municipal and regional specialized transit services. Further, included are alternate projections that reflect a *business-as-usual* (BAU) projected growth and *high-growth* scenarios.

Key takeaways from the trip volume and operating cost projections to 2031 include:

- 2018 base year: 105,800 trips, net operating cost of \$5,259,379, results in an average cost per trip of \$47.71.
- Of the 105,800 total trips 71.6% are provided by the municipal specialized transit services.
- For the *business-as-usual* growth strategy, the percentage increase of travel demand and operating costs (from the 2018 base year) are as follows:

Year:	<u>2021</u>	<u>2016</u>	<u>2031</u>
% increase – <u>trips</u> :	4.30%	12.29%	20.78%
% increase – <u>costs</u> :	7.78%	25.11%	39.77%
- For the *high growth* strategy, the percentage increase of travel demand and operating costs (from the 2018 base year) are as follows:

Year:	<u>2021</u>	<u>2016</u>	<u>2031</u>
% increase – <u>trips</u> :	5.03%	21.25%	40.00%
% increase – <u>costs</u> :	9.45%	36.32%	63.34%

Table 9.3: Status Quo Delivery Framework

Business As Usual (BAU) Projected Growth												
Municipality/ Service	2018			% of Municipal Trips	% of Total Net Cost	% of Municipal Cost	2021		2026		2031	
	Total Trips	Cost/Trip	Net Operating Cost				% of Total Trips	Net Operating Cost *	Total Trips	Net Operating Cost *	Total Trips	Net Operating Cost *
Niagara Region (NST)**	30,100	\$78.96	\$2,376,696	28.45%	45.19%		31,800	\$2,586,256	37,000	\$3,184,457	40,100	\$3,577,914
Niagara Falls (Chair-A-Van)	24,900	\$30.67	\$763,683	23.53%	14.52%	26.49%	25,847	\$816,519	26,906	\$899,491	28,841	\$999,531
Fort Erie (FAST)**	8,000	\$37.83	\$302,640	7.56%	5.75%	10.50%	8,304	\$323,579	8,645	\$356,460	9,266	\$396,104
St. Catharines (Paratransit)	30,200	\$46.76	\$1,412,152	28.54%	26.85%	48.99%	31,349	\$1,509,854	32,634	\$1,663,280	34,979	\$1,848,266
Welland (WellTrans)	12,600	\$32.08	\$404,208	11.91%	7.69%	14.02%	13,079	\$432,174	13,615	\$476,090	14,594	\$529,039
TOTAL	105,800		\$5,259,379	100%	100%		110,380	\$5,668,381	118,800	\$6,579,778	127,780	\$7,350,855
total municipal trips	75,700		\$2,882,683				78,580		81,800		87,680	
Percentage Increase (from 2018 base year)							4.30%	7.78%	12.29%	25.11%	20.78%	39.77%
High Growth Scenario												
Municipality/ Service	2021		2026		2031							
	Total Trips	Net Operating Cost *	Total Trips	Net Operating Cost *	Total Trips	Net Operating Cost *						
Niagara Region (NST)**	33,200	\$2,700,116	41,400	\$3,563,149	48,100	\$4,291,713						
Niagara Falls (Chair-A-Van)	25,630	\$809,661	28,577	\$955,352	32,860	\$1,138,836						
Fort Erie (FAST)**	8,235	\$320,861	9,182	\$378,597	10,557	\$451,309						
St. Catharines (Paratransit)	31,086	\$1,497,172	34,660	\$1,766,574	39,854	\$2,105,860						
Welland (WellTrans)	12,970	\$428,544	14,461	\$505,656	16,628	\$602,772						
TOTAL	111,120	\$5,756,354	128,280	\$7,169,328	148,000	\$8,590,490						
total municipal trips	77,920		86,880		99,900							
Percentage Increase (from 2018 base year)	5.03%	9.45%	21.25%	36.32%	40.00%	63.34%						
* Assumption: 2018 cost per trip + 1% increase per year (not compounded)												
** Operating Costs include amortized capital costs												

Smaller Transit Systems & Municipalities Without Transit Service

The smaller transits are those in Pelham, Lincoln, Niagara-on-the-Lake, and Port Colborne. Municipalities without current transit services are West Niagara - Grimsby, West Lincoln, and Wainfleet.

For the *business-as-usual* and *high growth* scenarios, Table 9.4 presents the trip volumes and costs for the base-year of 2018 and a projection to year 2031.

Costs per trip were derived from the 2018 CUTA Specialized Transit Statistics for populations in Group 3 (<50,000) and increased to reflect the differential of operations in Niagara Region. Group 3 average cost per trip is \$16.72. The differential used is +26.5% for an adjusted cost per trip of \$21.15.

Table 9.4: Trips and Operating Costs - Small Transit Systems & Municipalities Without Transit Service

	Small Transit Systems			Municipalities No Service	
		2018	2031	2018	2031
Business-as-Usual	Trips	12,900	14,370	6,000	7,365
	Operating Cost	\$272,835	\$303,925	\$126,900	\$155,770
High Growth	Trips	12,900	17,245	6,000	8,840
	Operating Cost	\$272,835	\$364,730	\$126,900	\$186,965

9.3.1.2 In-Person Assessments

In addition to the operating costs presented in Table 9.1, is the enhanced eligibility and certification process' cost of in-person assessments. Based on a projected increase of approximately 800 registrants by 2031 and an estimate that approximately eighty percent will participate in an in-person assessment, at a cost of contracted in-person assessments at \$120. per assessment, the total cost would be \$80,000. Commencing in 2021 and over the following eleven-year period, the cost per year is \$6,982. At a glance:

- 800 registrants x .80 = 640
- Cost per each in-person assessment = \$120.
- Total cost = \$76,800.
- Commencing in 2021, cost per year (for eleven-year period) = \$6,982.

9.3.1.3 Interventions/Alternate Delivery Framework

Table 9.5 presents the trip volumes and costs for the years previously referenced for an alternate delivery framework that includes (as previously mentioned): (a) accommodating an increasing number of trips on accessible fixed-route transit services; and (b) the greater use of supplemental (taxis, TNCs) services to accommodate trip requests during times of day, days of week, or areas of service, when the deployment of hourly service would not meet prescribed performance metrics or to provide 'overflow' capability. Further, in this scenario, future service expansion will be accommodated with the use of supplemental service providers.

This delivery framework and cost projections presents a framework for accommodating future demand projections without a proportionate growth in costs.

As presented in Table 9.3, the 2018 base-year trips and operating costs are presented in Table 9.5. For the *business-as-usual* growth strategy, Tables 9.6 to 9.8 present the distribution of trips as accommodated by fixed-route transit, supplemental/subsidized services and core specialized transit services for the years 2021, 2026, and 2031 respectively.

As presented, the following assumptions for the percentage of trips by mode of service delivery and by year, are as follows:

Year:	2021	2016	2031
% trips – fixed-route:	3%	6%	10%
% trips - supplemental:	20%	25%	30%

For the *business-as-usual* growth strategy, the percentage increase of travel demand and percentage decrease of operating costs (from the 2018 base year) are as follows:

Year:	2021	2026	2031
% change – <u>trips</u> :	+4.33%	+12.29%	+20.77%
% change – <u>costs</u> :	-6.18%	+1.47%	+4.45%

Table 9.5: 2018 Base-Year Trips and Operating Costs

Municipality/ Service	2018						% of Municipal Cost
	Total Trips	Cost/Trip	Net Operating Cost	% of Total Trips	% of Municipal Trips	% of Total Net Cost	
Niagara Region (NST)	30,100	\$78.96	\$2,376,696	28.45%		45.19%	
Niagara Falls (Chair-A-Van)	24,900	\$30.67	\$763,683	23.53%	32.89%	14.52%	26.49%
Fort Erie (FAST)	8,000	\$37.83	\$302,640	7.56%	10.57%	5.75%	10.50%
St. Catharines (Paratransit)	30,200	\$46.76	\$1,412,152	28.54%	39.89%	26.85%	48.99%
Welland (WellTrans)	12,600	\$32.08	\$404,208	11.91%	16.64%	7.69%	14.02%
TOTAL	105,800		\$5,259,379	100%		100%	
total municipal trips	75,700		\$2,882,683				

Table 9.6: 2021 Travel Demand and Operating Costs – Interventions Delivery Framework

Municipality/ Service	2021						
	Total Trips	Percent Trips on Fixed Route	Total Specialized & Supplemental Trips	Percent Trips on Supplemental Services	Supplemental Trips (@\$25. subsidy/trip)	Specialized Trips	Net Operating Cost *
Niagara Region (NST)	31,800	3%	30,846	20%	6,169	24,677	\$2,161,165
Niagara Falls (Chair-A-Van)	25,847	3%	25,072	20%	5,014	20,058	\$758,979
Fort Erie (FAST)	8,304	3%	8,055	20%	1,611	6,444	\$291,373
St. Catharines (Paratransit)	31,349	3%	30,408	20%	6,082	24,327	\$1,323,689
Welland (WellTrans)	13,079	3%	12,687	20%	2,537	10,150	\$398,802
TOTAL	110,380	3%	107,069	20%	21,414	85,655	\$4,934,007

Table 9.7: 2026 Travel Demand and Operating Costs – Interventions Delivery Framework

Municipality/ Service	2026						
	Total Trips	Percent Trips on Fixed Route	Total Specialized & Supplemental Trips	Percent Trips on Supplemental Services	Supplemental Trips (@\$25. subsidy/trip)	Specialized Trips	Net Operating Cost *
Niagara Region (NST)	37,000	6%	34,780	25%	8,695	26,085	\$2,462,417
Niagara Falls (Chair-A-Van)	26,906	6%	25,292	25%	6,323	18,969	\$792,217
Fort Erie (FAST)	8,645	6%	8,126	25%	2,031	6,094	\$302,091
St. Catharines (Paratransit)	32,634	6%	30,676	25%	7,669	23,007	\$1,364,335
Welland (WellTrans)	13,615	6%	12,798	25%	3,200	9,599	\$415,633
TOTAL	118,800	6%	111,672	25%	27,918	83,754	\$5,336,693

Table 9.8: 2031 Travel Demand and Operating Costs – Interventions Delivery Framework

Municipality/ Service	2031						
	Total Trips	Percent Trips on Fixed Route	Total Specialized & Supplemental Trips	Percent Trips on Supplemental Services	Supplemental Trips (@\$25. subsidy/trip)	Specialized Trips	Net Operating Cost *
Niagara Region (NST)	40,100	10%	36,090	30%	10,827	25,263	\$2,524,761
Niagara Falls (Chair-A-Van)	28,841	10%	25,957	30%	7,787	18,170	\$824,378
Fort Erie (FAST)	9,266	10%	8,339	30%	2,502	5,838	\$312,091
St. Catharines (Paratransit)	34,979	10%	31,481	30%	9,444	22,037	\$1,400,518
Welland (WellTrans)	14,594	10%	13,135	30%	3,940	9,194	\$431,805
TOTAL	127,780	10%	115,002	30%	34,501	80,501	\$5,493,554

9.3.2 CAPITAL EXPENDITURES

Capital expenditures, as presented in Table 9.9, are informed by projected capital expenditures as prepared by St. Catharines Transit, Niagara Falls Transit and Welland Transit. Additional capital expenditures for technology enhancements as specified in this study's recommendations are also noted with an order of magnitude cost identified in the table.

Table 9.9: Capital Expenditures

CAPITAL EXPENDITURES	Unit Price	#	2020	#	2021	#	2022	#	2023	#	2024	#	2025	#	2026	#	2027	#	2028
Niagara Falls Transit																			
Specialized Transit Buses	\$100,000	1	\$100,000	1	\$100,000			2	\$200,000	2	\$200,000								
St Catharines Transit																			
Specialized Transit Buses *	\$245,000	2	\$490,000	2	\$490,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000	1	\$245,000
Specialized Transit Vans *	\$190,000	1	\$190,000								1	\$190,000			1	\$190,000		1	\$190,000
* Includes conventional radio, cameras, farebox and MDT/CAD/AVL.																			
Welland Transit																			
Specialized Transit Buses	\$125,000	1	\$125,000	1	\$125,000								1	\$125,000	1	\$125,000			
TOTAL Specialized Transit Vehicles		5	\$905,000	4	\$715,000	1	\$245,000	3	\$445,000	4	\$635,000	2	\$370,000	3	\$560,000	1	\$245,000	2	\$435,000
Technology - Scheduling Software/Suite of Specialized Transit Modules					\$400,000														

Appendix A: Survey Form

We need your help to better understand travel and mobility needs. Your responses will help us improve service for you and other members of the community. Please fill out this survey and **place it in the box or envelope provided**. Thank you!

1. What is the main purpose of your trip today?

- | | | |
|--|--|---|
| ☐ Work | ☐ Attend high school | ☐ Personal reasons |
| ☐ Medical/dental care | ☐ Attend college/university | ☐ Access to another transit system |
| ☐ Shopping | ☐ Leisure outing | |

2. Where did you start your trip? (cross streets, neighbourhood, landmark, etc.)

3. Where is your destination? (cross streets, neighbourhood, landmark, etc.)

4. How often do you use the specialized transit offered by your city or town?

- | | | |
|--|--|--|
| ☐ 6-7 days a week | ☐ 5 days a week | ☐ 3-4 days a week |
| ☐ 1-2 days a week | ☐ Less than once a week | ☐ Never |

5. How often do you use the specialized transit offered by the Region (NST)?

- | | | |
|--|--|--|
| ☐ 6-7 days a week | ☐ 5 days a week | ☐ 3-4 days a week |
| ☐ 1-2 days a week | ☐ Less than once a week | ☐ Never |

6. What times of day do you typically need to travel? (check all that apply)

- | | | |
|---|--|---|
| ☐ 9:00 am or earlier | ☐ 9:00 am – Noon | ☐ Noon – 3:00 pm |
| ☐ 3:00 pm – 6:00 pm | ☐ 6:00 pm – 9:00 pm | ☐ 9:00 pm or later |

7. How strongly do you agree with the following statements about specialized transit service that you use most often?

a) It is easy to book a ride.

- | | | | | |
|---|---|----------------------------------|--|--|
| ☐ Strongly agree | ☐ Somewhat agree | ☐ Neutral | ☐ Somewhat disagree | ☐ Strongly disagree |
|---|---|----------------------------------|--|--|

b) Rides are available at the times I want to travel.

- | | | | | |
|---|---|----------------------------------|--|--|
| ☐ Strongly agree | ☐ Somewhat agree | ☐ Neutral | ☐ Somewhat disagree | ☐ Strongly disagree |
|---|---|----------------------------------|--|--|

c) Drivers and staff are courteous and professional.

- | | | | | |
|---|---|----------------------------------|--|--|
| ☐ Strongly agree | ☐ Somewhat agree | ☐ Neutral | ☐ Somewhat disagree | ☐ Strongly disagree |
|---|---|----------------------------------|--|--|

d) My ride arrives to pick me up on time.

- | | | | | |
|---|---|----------------------------------|--|--|
| ☐ Strongly agree | ☐ Somewhat agree | ☐ Neutral | ☐ Somewhat disagree | ☐ Strongly disagree |
|---|---|----------------------------------|--|--|

e) I arrive at my destination on time.

- | | | | | |
|---|---|----------------------------------|--|--|
| ☐ Strongly agree | ☐ Somewhat agree | ☐ Neutral | ☐ Somewhat disagree | ☐ Strongly disagree |
|---|---|----------------------------------|--|--|

f) Specialized transit fares are reasonable.

- | | | | | |
|---|---|----------------------------------|--|--|
| ☐ Strongly agree | ☐ Somewhat agree | ☐ Neutral | ☐ Somewhat disagree | ☐ Strongly disagree |
|---|---|----------------------------------|--|--|

SPECIALIZED TRANSIT SURVEY

8. In which city or town do you live?

- ☐ Fort Erie ☐ Grimsby ☐ Lincoln ☐ Niagara Falls
- ☐ Niagara-on-the-Lake ☐ Pelham ☐ Port Colborne ☐ St. Catharines
- ☐ Thorold ☐ Wainfleet ☐ Welland ☐ West Lincoln
- ☐ Outside Niagara Region

9. What is your employment status?

- ☐ Employed full-time ☐ Student ☐ Homemaker ☐ Unable to work
- ☐ Employed part-time ☐ Retired ☐ Not working ☐ Prefer not to answer

10. How old are you?

- ☐ 15 or under ☐ 16 to 18 ☐ 19 to 24 ☐ 25 to 44
☐ 45 to 64 ☐ 65 to 84 ☐ 85 or older

11. Do you require a support person for your specialized transit trips? ^{B#}

- ☐ Yes ☐ No

12. Do you use a mobility device?

- ☐ Yes ☐ No

If Yes, please specify:

- ☐
- Wheelchair

- ☐
- Scooter

- ☐
- Walker

- ☐ Other: please specify

13. Do you have any suggestions on how we might improve the service? Check all that apply.

- ☐ Provide service earlier in the morning
- ☐ Provide service later in the evening
- ☐ Provide online trip booking
- ☐ Provide online payment for my trips
- ☐ Send alerts about the vehicle's arrival time to my phone

Other improvements (or comments):

[illegible]

Thank you for your time and effort!

Appendix B: Public Meetings April & September 2019 Presentation Material

Specialized Transit in Niagara



April 2019



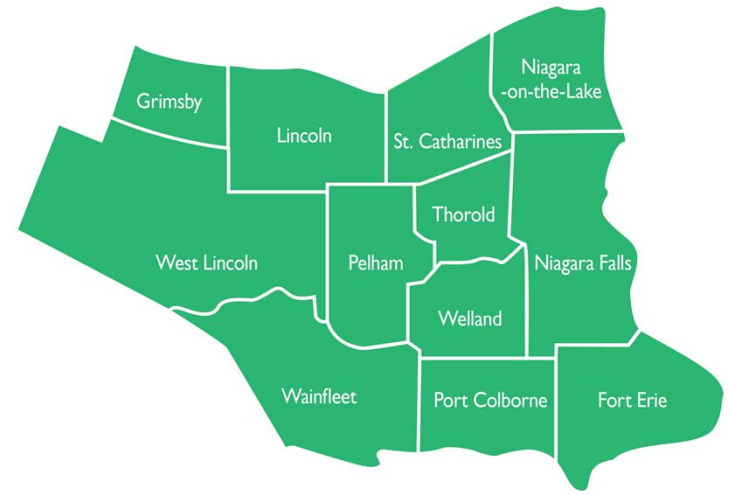
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TRANSIT
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CONNECTING MORE PEOPLE TO MORE POSSIBILITIES

Niagara  Region

Presentation Outline

- Study Objectives & Work Plan
- Specialized Transit in Niagara Region
- Legislative Environment
- Common Industry Practices
- Challenges & Opportunities
- Discussion:
 - Travel needs & requirements
 - What are the key issues & challenges?
 - *An Eye on the Future*



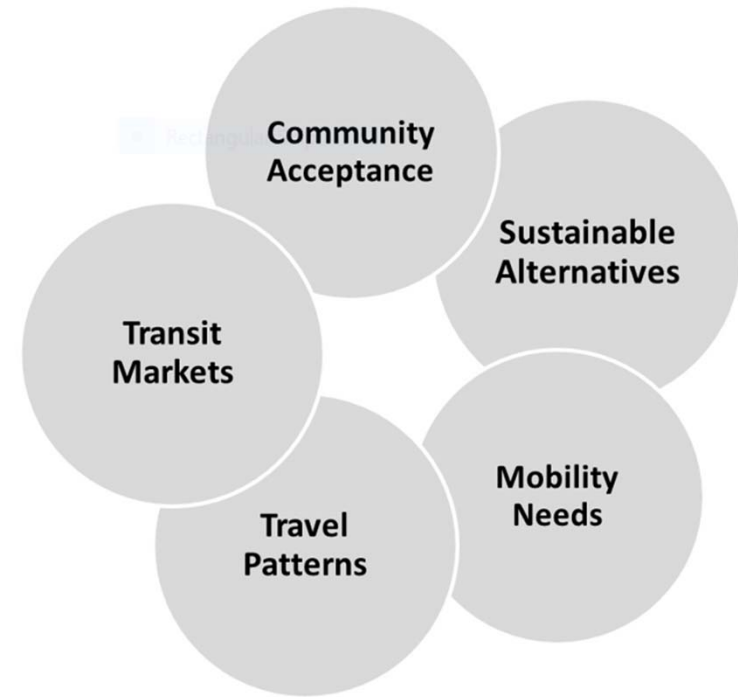
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Niagara Region

Study Objectives

- Opportunities to maximize use of existing resources
- Increase efficiencies in service delivery through policy review and development
- Project future specialized transit travel demand
- Develop options to best meet community's mobility needs - *Action Plan*



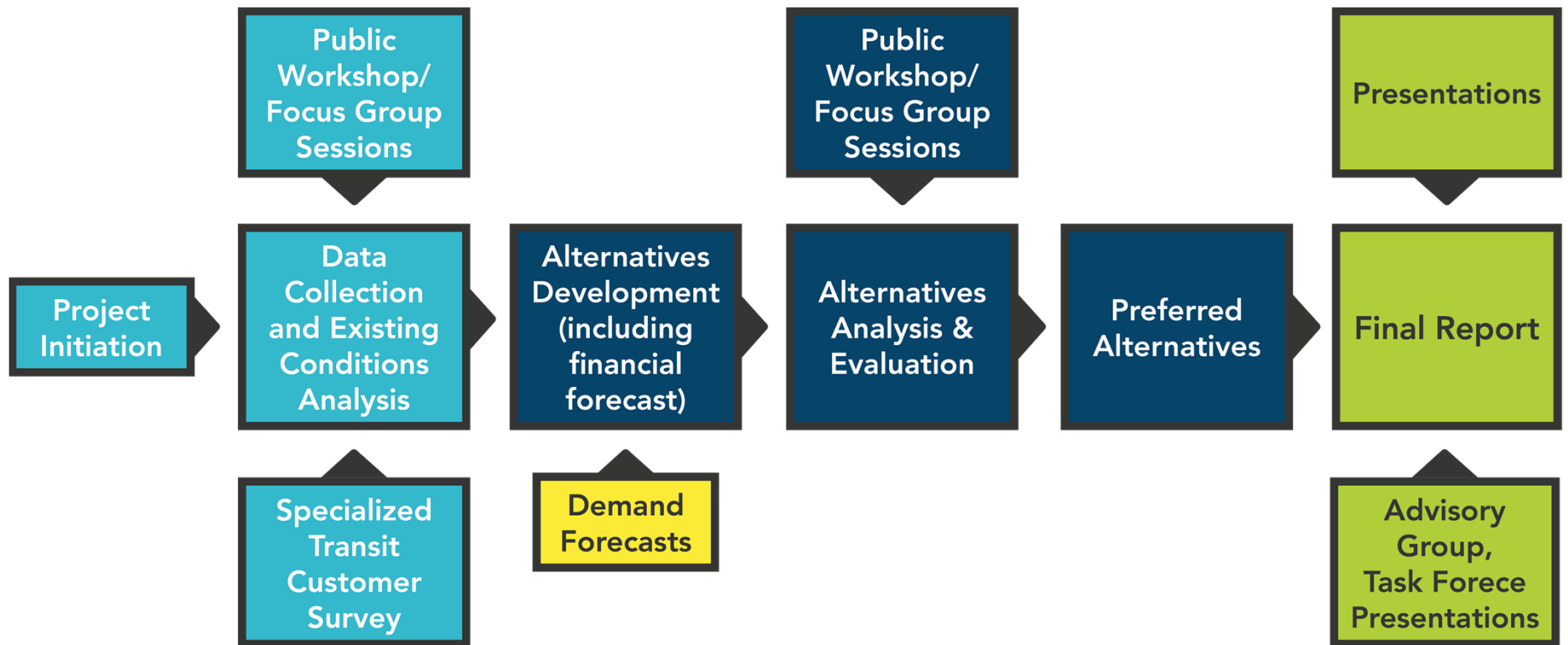
DEMAND	Trip Generation Rates	RIDERSHIP ESTIMATES
PEOPLE		TRIPS

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Niagara  Region

Work Plan



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Niagara  Region

Specialized Transit in Niagara Region

- Total Operating Cost: \$5m
- Close to 5,000 registrants
- Cost/Trip: \$36.90
- Total Trips: 136,335
- Cost/Capita: \$11.23
- Trips/Capita: 0.3044

Service	Population Served	# Registrants	Total Trips	Operating Cost	Cost/Trip	Operating Cost/Capita	Trips/Capita
Niagara Region (NST)	447,888	1,153	31,417	\$2,239,757	\$71.29	\$4.71	0.0701
Niagara Falls (Chair-A-Van)	88,070	2,198	45,770	\$541,091	\$11.82	\$5.55	0.5197
Fort Erie (FAST)	30,710	221	7,460	\$275,448	\$36.92	\$8.63	0.2429
St. Catharines (Paratransit)	131,400	1,049	37,452	\$1,533,261	\$40.94	\$10.96	0.285
Welland (WellTrans)	52,293	291	14,236	\$441,928	\$31.04	\$7.88	0.2722
TOTAL	447,888	4,912	136,335	\$5,031,485	\$36.90	\$11.23	0.3044

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Niagara  Region

Compared to Peers

- Cost/trip – reflects peer average
- Trips/capita & Cost/Capita – similar to peer averages

Region	Trips	Op. Cost (\$M)	Cost/Trip	Trips/ Capita	Op. Cost/ Capita
Niagara Region	136,335	\$5.03m	\$36.90	0.3044	\$11.23
Durham	180,600	\$7.20m	\$39.87	0.26	\$10.52
Halton	259,900	\$6.94m	\$26.55	0.47	\$12.66
Waterloo – Rural	47,400	\$1.68m	\$35.44	0.8	\$28.41
York	353,600	\$16.00m	\$45.25	0.32	\$14.69
Peer Average			\$36.80	0.4309	\$15.50

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Niagara  Region

Legislative Environment

“When barriers get in the way of people with disabilities participating fully in society as a result of their disabilities, everyone loses.”

Accessibility for Ontarians with Disabilities Act (AODA)

Specific standards for conventional & specialized transit services (Ontario regulation 191/11)



What is an accessibility standard?

A rule (set of measures, policies & practices) - organizations have to follow to identify, remove and prevent barriers.

Accessibility Standards – include:

- Eligibility
- Fare Parity
- Trip Restrictions
- Origin to Destination
- Hours of Service
- Advance Booking
- Attendants/Companions
- Visitors

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Niagara Region

Common Industry Practices

- Key Functional Area

Funding & Oversight

- determines budget & other resource levels
- planning & service monitoring

Eligibility & Certification

- centralized, others left to service provider
- range of criteria & processes

Reservations & Scheduling

- takes trip requests
- allocates drivers & vehicles to meet needs
- common use of computerized scheduling

Service Delivery

- core service - buses & vans & use of supplemental services (sedans, vans)
- in-house & contract operations

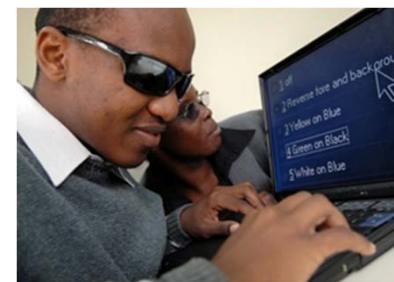
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Niagara  Region

Common Industry Practices

- Next-Generation Mobility:
 - **Supplemental services** – taxis, transportation network companies (TNCs), microtransit
 - Address peaking, late evenings & weekends
 - **Technology**
 - Computerized scheduling & dispatch
 - Vehicle locating & communication (AVL/MDTs)
 - IVR – broadcast vehicle arrivals, etc.
 - App +/-or web portal – registration, trip planning, reservations, confirmations, cancellations
 - Mobile payment



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Niagara Region

Common Industry Practices

- **Community Collaboratives / Entrepreneurial Partnerships:**
Coordinated Human/Social Service Transportation (& other community-based agencies & organizations)
- **Greater link/integration with fixed-route transit services**
 - Extent may meet mobility needs – current & future?
 - Incentives & policies address demand /mobility management opportunities?



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Niagara Region

Challenges & Opportunities

- Effectively manage demographics / travel demand
- Address governance, program administration & trip management considerations in order to address:
 - Increasing costs
 - Program & fiscal accountability
 - Service & scheduling efficiencies (enhancements)
- Address range of functional disabilities
- Address compliance with AODA

**Shared ride
public transit
for those
unable to use
accessible fixed
route transit**

**STATUS QUO IS NOT SUSTAINABLE WITHOUT
INTERVENTIONS**

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Niagara  Region

Dialogue – Questions? Comments?

- **ISSUES & CHALLENGES ?**
 - *What works well? And not so well?*
- **TRAVEL NEEDS & REQUIREMENTS ?**

Tell Us About:

- Any unmet needs?
- Obstacles to accessing transportation?
- Strategies to address gaps or obstacles? Priorities?
- The role of fixed-route transit in meeting mobility needs: current & future?
- Your thoughts on the role of technology?

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Niagara  Region

Your Input!

What do you think about?



- Eligibility criteria?
- Availability of service?
- Advance booking requirements?
- On-time performance?
- Service reliability?
- Travel times?
- Fares?
- Passenger Information?

Anything else?

An Eye on the Future?

- Improvements to fixed-route transit service?
- Next-Gen service delivery?
 - TNCs, taxis, microtransit
- Technology?
 - Transit/specialized *App*
 - Specialized *Web portal*
 - Range of functionalities
 - Registration, trip planning, booking, mobile payment

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Niagara  Region

Specialized
Transit in
Niagara

MOVING TRANSIT FORWARD

Thank
You

April 2019

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Specialized Transit in Niagara



September 2019

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Niagara  Region

Specialized Transit Study Scope

Established
Municipal
Specialized
Transit
Systems



Transit systems (hybrid)

- Lincoln Transit (U-Link)
- Niagara-on-the-Lake Transit
- Pelham Transit

Transit systems
under contract

- Thorold
- Port Colborne

No transit service

- Grimsby
- West Lincoln
- Wainfleet

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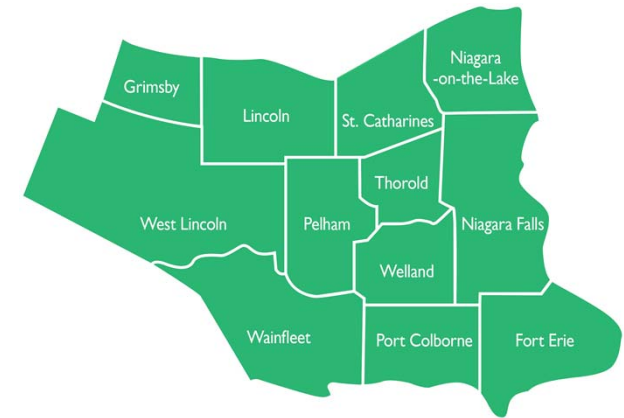
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Niagara Region

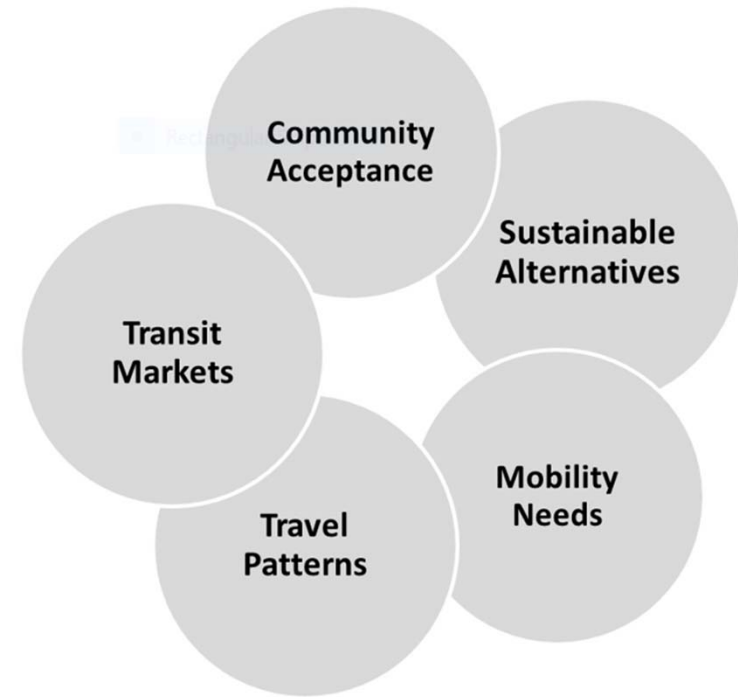
Presentation Outline

- Work Plan – Status/Update
- Specialized Transit in Niagara Region – Existing Conditions
- *What We Heard* – Stakeholder Consultation & Survey Results
- Travel Demand Estimates
- Key Issues & Challenges
- *Imagine Possibilities* – Opportunities
- Guiding Principles
- Concepts - A Preferred Approach - *An Eye on the Future*

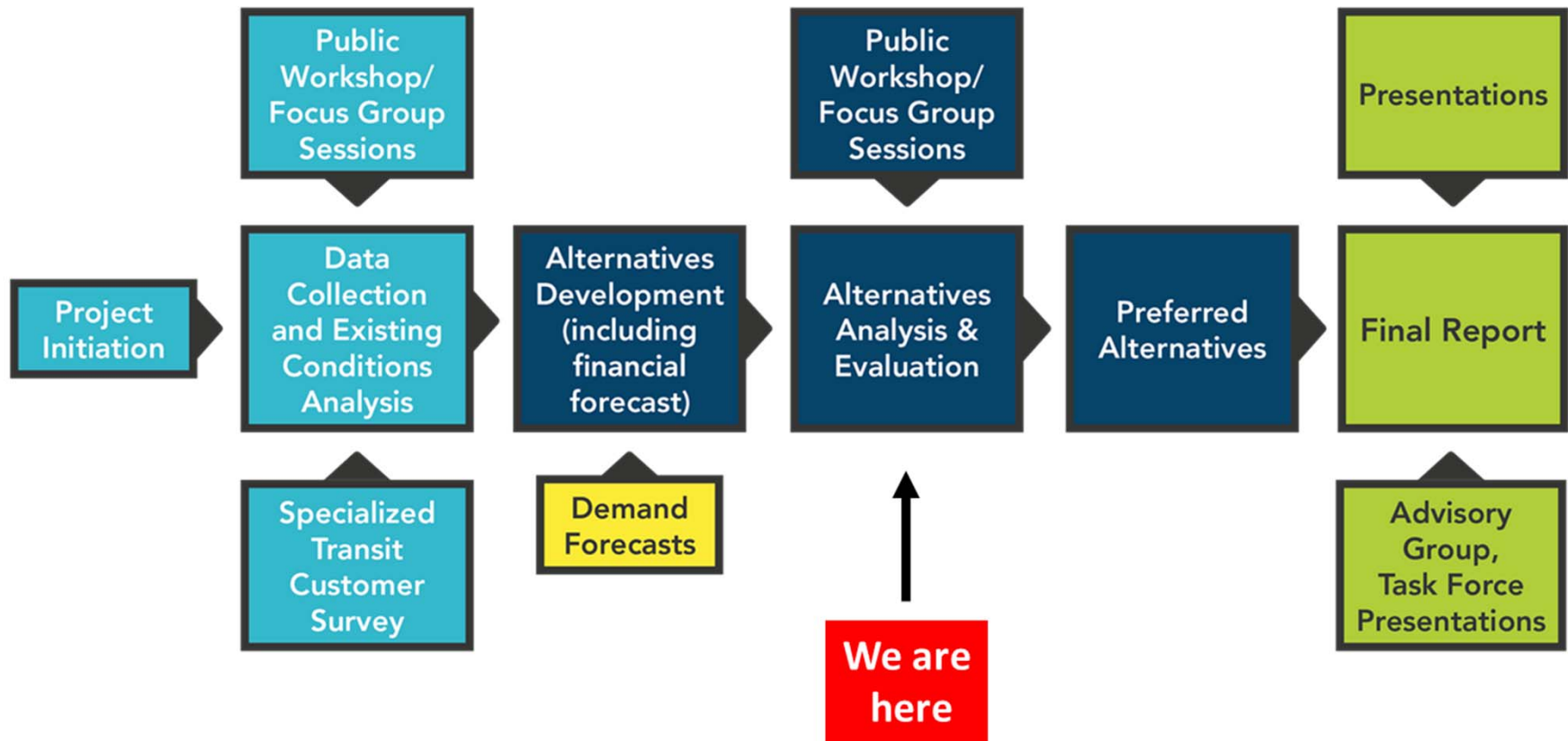


Study Objectives

- Opportunities to maximize use of existing resources
- Increase efficiencies in service delivery through policy review and development
- Project future specialized transit travel demand
- Develop options to best meet community's mobility needs - *Action Plan*



Work Plan



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TRANSIT
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Niagara  Region

Specialized Transit in Niagara Region

- Total Operating Cost: \$5.27m
- 3,435 registrants
- Cost/Trip: \$45.17
- Total Trips: 105,800
- Cost/Capita: \$11.68
- Trips/Capita: 0.236

Service	Population Served	# Registrants	Total Trips	Operating Cost	Cost/Trip	Operating Cost/Capita	Trips/Capita
Niagara Region (NST)	447,900	1,153	30,100	\$2.37m	\$78.96	\$5.31	0.067
Niagara Falls (Chair-A-Van)	88,100	734	24,900	\$.76m	\$30.67	\$8.66	0.283
Fort Erie (FAST)	30,700	182	8,000	\$.30m	\$37.83	\$9.87	0.261
St. Catharines (Paratransit)	151,900	1,117	30,200	\$1.44m	\$46.76	\$9.30	0.199
Welland (WellTrans)	52,300	249	12,600	\$.40m	\$32.08	\$7.88	0.241
TOTAL	447,900	3,435	105,800	\$5.27m	\$45.17	\$11.68	0.236

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Niagara  Region

Outreach & Consultation

- **Customer Survey** - online and paper, 250 completed surveys
- **Public Information Centres** - Welland and St. Catharines, approx. 45 attendees;
- **Discussion Groups** - Accessibility Advisory Committee & other key stakeholders (community organizations)
- **Focus Group Session** - Niagara Health Services

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Niagara  Region

What We Heard

- Favourable view of drivers & staff
- Difficulty booking a trip – tedious including need to call multiple agencies (municipal & regional travel)
- Poor on time performance (or don't show up)
- Excessive travel times
- Inconsistent eligibility criteria & processes
- Residents of communities without specialized transit (West Niagara) – feel disadvantaged

What We Heard (cont.)

- Need for accessible paths of travel to use accessible fixed route transit

Most Requested Improvements

- Online trip booking and payment
- Extended service hours
- Phone alert upon vehicle arrival
- Ride-hailing/same day service (may be prepared to pay premium fare)

Forecasting Future Demand

- Provides a baseline for planning for future needs
- Need to know overall specialized transit demand and origins/destinations of trips
- Forecasts span years 2021 – 2031

Forecasting Approach

Current Context

- Shifting demand from locals to NST
- About 40% of trips are for dialysis and medical

Drivers of Change

- Aging & disability in Niagara Region
- Location of healthcare facilities

Future Demand

- Business-as-usual forecast
- High-growth forecast with higher rate of disability

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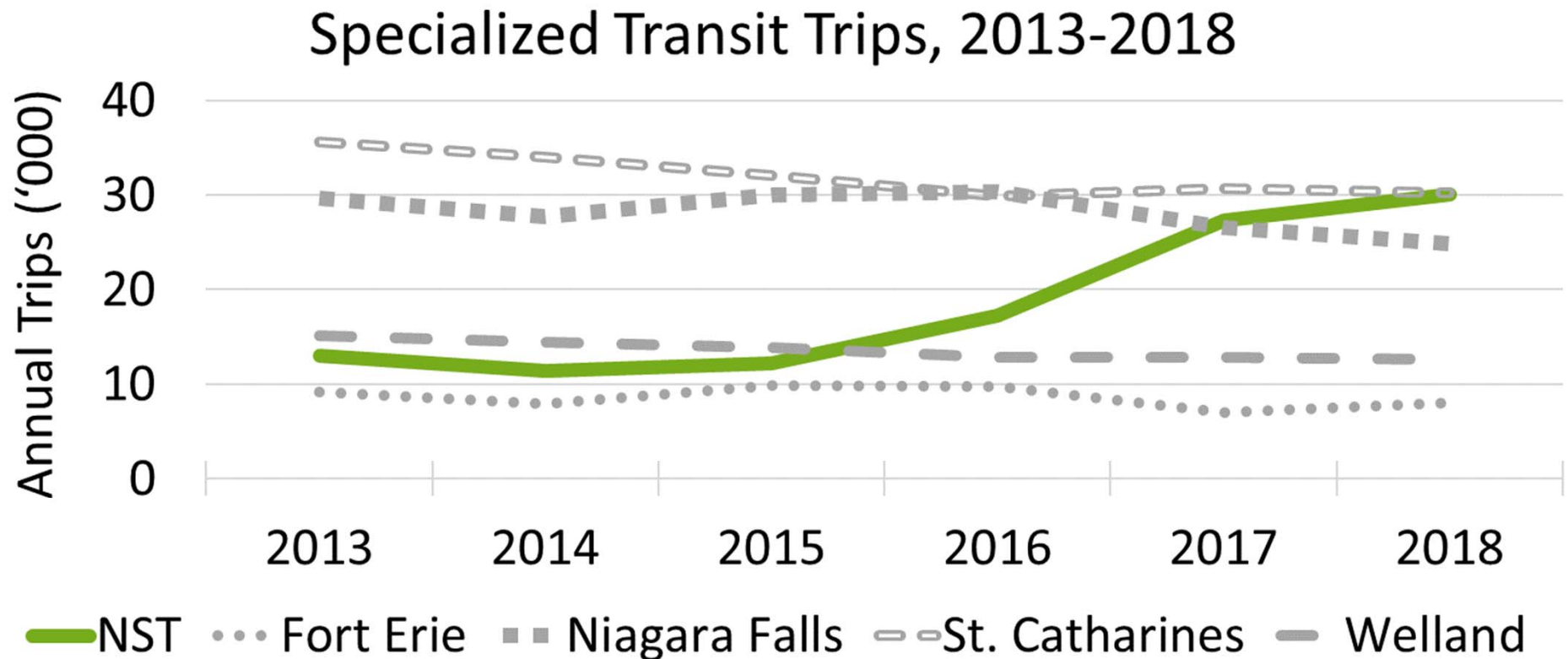
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Niagara  Region

Current Context

- Total demand up 3%, in line with population growth
- 14% of trips are for dialysis, over half of that on NST



Drivers of Change

Aging Population

- One in four residents will be over 65yrs by 2031

Rising Medical Needs

- 20% rise in residents with severe disability by 2031¹
- 25% rise in Region's dialysis needs by 2028²

Facility Locations

- South Niagara Hospital will shift healthcare facilities to Niagara Falls in 2026

**MOVING
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FORWARD**

¹Based on Municipal Comprehensive Review and Canadian Survey on Disability

²Source: Ontario Renal Network 2017/2018 – 2027/2028 projection for Niagara Health

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Niagara  Region

Future Demand (BAU Case)

- Total demand hits 130,000 in 2021, 150,000 by 2031
- Inter-municipal trips grow to 27% of demand

	2018	2031	Percentage Change
Regional Trips	30,000	40,100	34%
Trips by Municipal Agencies	71,700	83,500	16%
Trips by Other Organizations	22,600	26,300	16%
Total Trips	124,000	149,900	21%

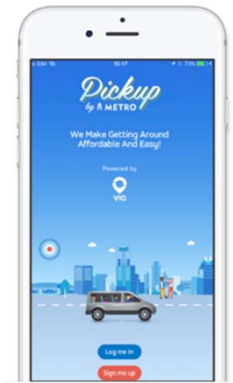
Future Demand (High Growth)

- Double growth rate of pop. with disability to 2.8% p.a.
- 12% more trips in 2026, 20% more by 2031 vs BAU

	2018	2031	Percentage Change
Regional Trips	30,000	48,000	60%
Trips by Municipal Agencies	71,700	100,000	40%
Trips by Other Organizations	22,600	31,600	40%
Total Trips	124,000	179,600	45%

Challenges & Opportunities

- Effectively manage demographics / travel demand
- Address governance, program administration & trip management considerations to address:
 - Increasing costs
 - Program & fiscal accountability
 - Service & scheduling efficiencies (enhancements)
- Address range of functional disabilities
- Address compliance with AODA
- First/last 'mile' connections
- Integration with conventional transit
- Alternative delivery solutions – NextGen Mobility



Our goal is to provide shared ride public transit for those unable to use accessible fixed route transit

**MOVING
TRANSIT
FORWARD**

CONNECTING MORE PEOPLE TO MORE POSSIBILITIES



Niagara Region

Guiding Principles – *An Eye on the Future*

A Preferred Approach Designed To:

- **Preserve the integrity** of the Region's specialized transit services for those with no alternative
 - **Maximize benefits from investments** made in accessible fixed route transit & provide flexible mobility options
 - **Compliance with AODA** (& universal design)
 - **Be fiscally responsible and accountable**
- Maximize use of existing resources
 - Increase efficiencies in service delivery
 - Enhance the customer experience
 - Leverage use of technology

Our goal is to provide shared ride public transit for those unable to use accessible fixed route transit

**MOVING
TRANSIT
FORWARD**

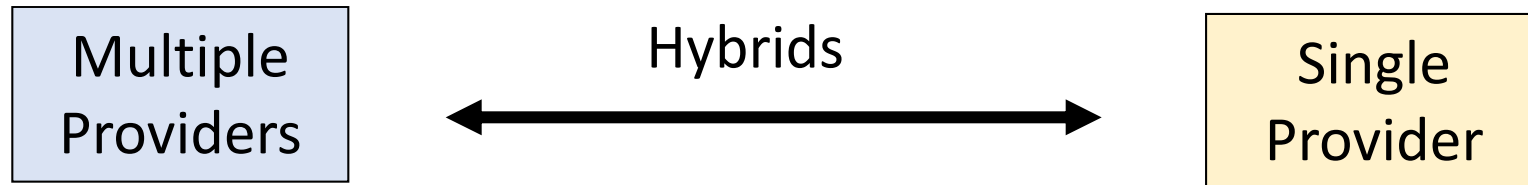
CONNECTING MORE PEOPLE TO MORE POSSIBILITIES



Niagara  Region

Imagine Possibilities – Opportunities

Delivery Models



Models – to address core functional areas:

1. Eligibility & Certification
2. Trip Reservation & Scheduling
3. Dispatch/Trip Management
4. Service Delivery

Concepts – *A Preferred Approach*

Eligibility & Certification

- Centralized
- Application available on-line/web portal
- Consideration of use of In-person assessment & periodic re-certification

Reservations

- Centralized (One-Call / One-Click)

Scheduling (route optimization, allocation of resources)

- Extension of the reservation process

Concepts – *A Preferred Approach*

Service Delivery (Dispatch / Trip Management)

- Core service – buses & vans and/or use of supplemental services
- Alternate scenarios:
 - Multiple “service areas” (for example - Municipal boundaries or zones)
 - Demand management strategies – prescribed availability of service (days of week, times of day, etc.)

Next-Gen Mobility / Leverage Technology

- **Supplemental services** – taxis, TNCs, microtransit
 - Address peaking, late evenings & weekends
 - e-Hailing (same day) service

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Concepts – *A Preferred Approach*

■ Technology

- o Computerized scheduling & dispatch (route optimization)
- o Real-time passenger information, IVR – broadcast vehicle arrivals
- o Self-service: App +/- web portal – registration, trip planning, reservations, confirmations, cancellations
- o Mobile payment (advanced fare systems)



■ Greater link/integration with fixed-route transit services

- o Extent may meet mobility needs – current & future?
- o Incentives & policies address demand/ mobility management opportunities?



**MOVING
TRANSIT
FORWARD**

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Niagara  Region

Next Steps

- Based on input received and analysis, translate *Preferred Approach* into **Recommendations**
- Assess potential impact on demand of operational & service delivery *interventions*
- Develop financial forecasts
- Draft & Final Report – November/December 2019

A network diagram background consisting of a series of interconnected nodes and lines, forming a complex web-like structure. The nodes are represented by small circles, and the lines are thin, connecting the nodes in a non-linear fashion. The background is dark gray, and the network diagram is composed of light gray lines and nodes.

MOVING TRANSIT FORWARD



September 2019

CONNECTING MORE PEOPLE TO MORE POSSIBILITIES

Appendix C: Niagara Specialized Transit Draft Application Form

NIAGARA SPECIALIZED TRANSIT APPLICATION FORM

Specialized Transit is a pre-booked, shared-ride, origin to destination service for persons with a permanent or temporary physical disability and/or intellectual challenge/cognitive disability.

The application process includes an interview and in-person assessment for some applicants. The choice may be yours. This application form has two parts: Part A is to be completed by all applicants. Following completion of Part A, you have one of two options:

1. You can send in your completed Part A, your application will be reviewed and you will be called in for an interview and in-person assessment. Transportation will be provided for you to attend the interview and in-person assessment.

Or

2. You can have your health care professional complete Part B, submit both Parts A and B for review and based on the information provided, you may be required to attend an interview and in-person assessment. If you are required to attend an interview and in-person assessment, transportation will be provided.

If you have any questions or need assistance, please call

<insert contact>

<insert phone number>

HOW TO APPLY FOR THE SPECIALIZED TRANSIT PROGRAM:

Based on the one of two options mentioned above:

- Fill out Part A of this application. If you choose, submit and you will be required to attend an interview and in-person assessment.

Or:

- Take or send the application (Parts A and B) to your health care professional to have Part B completed. Submit and you may be required to attend an interview and in-person assessment.
 - Return the completed application (Part A or Parts A and B) to <insert agency – TBD>.
 - <Insert Agency – TBD> will notify you of your eligibility. If we require additional information, you may be requested to come in for an interview to provide us with more information about your disability and the reason(s) you require this service.
 - All information on this application form will be kept confidential.
 - Failure to completely fill out the application will delay the application process.
-

PLEASE TYPE OR PRINT CLEARLY

1. **Name:** _____
(Last) (First) (Middle)
2. **Address:** _____
(Apt) (Street)

(City or Town) (Postal Code)
3. **Daytime Phone:** () _____ **Evening Phone:** () _____
TTY/TDD Number: () _____ (For Hearing Impaired)
4. **Date of Birth:** _____
YY /MM /DD
5. **Does the applicant reside in a long term care facility?** ☐ Yes ☐ No
If yes, Name of Facility: _____ **Ward/Room #** _____
☐ Permanent ☐ Convalescent ☐ Respite ☐ Short-term
6. **In case of an emergency, please notify (eg. family, friend, neighbour):**
Name: _____
Relationship: _____
Telephone Number(s): () _____

Check one box only:

7. A. ☐ **I can always walk unassisted approximately 100 meters.**
B. ☐ **I can never walk 100 meters.**
C. ☐ **I could walk 100 meters only if (circle all that apply):**
1. I have an attendant with me
2. I am familiar with the area
3. There are curb cuts along the route
4. There is a sidewalk
5. The ground is level or only slightly inclined
6. The path is free of ice, snow or debris
7. Other _____

Check one box only:

8. A. ☐ I can generally wait outside for 10 to 15 minutes if I had to wait for a bus/van.

B. ☐ I cannot wait outside for any period of time.

C. ☐ I can wait outside for 10 to 15 minutes only if (circle all that apply):

1. There is a bench
2. There is a shelter
3. The wait is no longer than _____ minutes
4. Other _____

9. Will you use any of the following if you use this transportation services? Check all that apply:

- | | |
|---|---|
| ☐ Manual wheelchair | ☐ Service animal |
| ☐ Powered wheelchair | ☐ Cane |
| ☐ Oxygen bottle | ☐ White cane |
| ☐ Powered scooter | ☐ Prosthesis |
| ☐ Walker | ☐ Communications Board |
| ☐ Hearing aid | ☐ Crutches |
| ☐ Other _____ | |

Regarding the use of *Specialized Transit*. Check one box only:

10. A. ☐ I can independently recognize my destination and leave the vehicle.

B. ☐ I cannot independently recognize my destination and leave the vehicle.

C. ☐ I can recognize my destination and leave the vehicle only if:

(Circle all that apply):

1. I receive travel training
2. The driver helps me at my destination
3. Other _____

11. Do you require a Support Person when you travel?

☐ Yes ☐ No

Checking yes on *Support Person* means you need someone to travel with you in order to successfully complete a trip. A *Support Person* is not provided to you but is your responsibility to bring one and they travel for free.

12. If you use a wheelchair or scooter, can you transfer to a car without assistance?

☐ Yes ☐ No ☐ Sometimes

13. **What is the disability or condition which requires you to use specialized transit service?**
(Please check)

☐ Cognitive ☐ Ambulatory ☐ Visual ☐ Other (please specify) _____

14. **Please read the following statements and check the one that best describes your disability. Please check all that apply.**

- ☐ I have a temporary disability and will only need specialized transit until I recover.
- ☐ I have a disability which prevents me from using accessible fixed-route transit.
- ☐ I can use accessible fixed-route transit for certain trips but not others.
- ☐ I have difficulty remembering all of the things I have to do to use accessible fixed-route transit.
- ☐ I could use accessible fixed-route transit on some days (good days) but not others (bad days).
- ☐ I believe I can learn to ride accessible fixed-route transit if someone taught me.
- ☐ I am able to ride accessible fixed-route transit independently.
- ☐ I would never be able to use accessible fixed-route transit by myself.

15. **I hereby certify that to the best of my knowledge, the information given above is correct.**

If I choose to have my health care professional complete Part B, I authorize the health care professional named in Part B to provide information to <Insert name of agency – TBD>. If <Insert name of agency – TBD> receives new information regarding a change in my functional ability, my eligibility status may be reviewed and changed.

Signature of Applicant: _____ Date: _____
YY/MM/DD

16. **If you are not the applicant, but have completed this application on the applicant's behalf, please provide the following information:**

Your name: _____

Address: _____

Daytime Phone Number: () _____

Relationship to applicant: _____

I certify that to the best of my knowledge the information given above is correct.

Signature: _____ Date: _____
YY/MM/DD

When you have completed Part A, you may mail, fax or email as provided below. You will be required to attend an interview and in-person assessment.

Or:

Take or mail Parts A and B to your health care professional. Based on the information provided, you may be required to attend an interview and in-person assessment. When Part B has also been completed, return Parts A and B by mail, fax or email as provided below:

Mail: <Insert name & address of agency – TBD>

Fax: Attn: Specialized Transit <Insert name of agency – TBD> fax: <Insert Fax #>

E-mail: <Insert email address>

PART B: FOR THE HEALTH CARE PROFESSIONAL TO COMPLETE

The <Insert name of agency – TBD> *Specialized Transit* service, is a pre-booked, shared-ride, origin to destination transportation service for persons with permanent or temporary physical disabilities and/or intellectual challenges.

CERTIFICATION PROCESS:

1. The applicant (or representative) has completed Part A. Please read Part A in its entirety.
2. In completing Part B, please follow the listed criteria.
3. You may be contacted if any questions remain.
4. The application must be filled out COMPLETELY or it will not be processed.

-
1. I have read Part A in its entirety. Yes ☐ No ☐
 2. I agree with the information in Part A. Yes ☐ No ☐

If NO, please explain:

3. Condition causing disability:

4. Severity: mild ☐ moderate ☐ severe ☐ profound ☐

5. Expected duration of disability:

☐ **Temporary:** Expected duration until / /
YY MM DD

☐ **Permanent:** Conditions with no expectation of improvement.

6. Is (are) there any other effect(s) of the disability that <Insert name of agency – TBD> should be aware of? (Please type or print)

7. I hereby certify that the above information is true.

Signature: _____ Date: _____

YY/ MM /DD

Print Name / Stamp: _____

Street Address: _____

City or Town: _____ Province: _____

Postal Code: _____

Telephone Number: () _____

License/Certification Number: _____

Profession (check one)

- | | |
|--|---|
| ☐ Licensed physician | ☐ Nurse |
| ☐ Licensed physical therapist | ☐ Licensed optometrist |
| ☐ Certified rehabilitation specialist | ☐ Certified psychologist |
| ☐ Registered occupational therapist | |

THANK YOU FOR YOUR ASSISTANCE

Please return this application to the person seeking *Specialized Transit Program* certification, or with the person's permission, submit directly to:

Mail: <Insert name & address of agency – TBD>

Fax: Attn: Specialized Transit <Insert name of agency – TBD> fax: <Insert Fax #>

E-mail: <Insert email address>

Specialized Transit:**Eligibility and Certification Terms and Conditions****1. Categories of eligibility**

Eligible applicants will be granted eligibility in one of three categories:

- i. Unconditional eligibility;
- ii. Temporary eligibility; and
- iii. Conditional eligibility.

A person with a disability where environmental or physical barriers limits their ability to consistently walk approximately 100 meters or wait outside for 10 to 15 minutes may be categorized as having conditional eligibility.

2. Specialized Transit in Niagara - Eligibility Application Process

- a. The **<Insert name of agency – TBD>** will not charge a fee to persons with disabilities who apply or who are considered eligible for specialized transit services.
- b. The **<Insert name of agency – TBD>** may require a reassessment of the eligibility of temporarily eligible registrants at reasonable intervals.
- c. The **<Insert name of agency – TBD>** shall, upon the request of the person requesting specialized transit services, make available to the requester all of his or her specialized transportation services eligibility application and decision information in accessible formats.
- d. The **<Insert name of agency – TBD>** shall establish an independent appeal process to review decisions respecting eligibility.
- e. The **<Insert name of agency – TBD>** will decide on an appeal with respect to eligibility within 30 calendar days after receiving the complete appeal application, but if a final decision is not made within the 30 days, the applicant shall be granted temporary eligibility until a final decision is made.
- f. Respecting the collection, use and disclosure of personal information collected for purposes of determining eligibility, shall remain confidential.

“personal information” means personal information within the meaning of the Freedom of Information and Protection of Privacy Act.