

Final Report

Haliburton Public Transportation Implementation Plan



Prepared for County of Haliburton
by IBI Group
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1 Introduction

Haliburton lacks a county-wide public transportation service that can provide basic mobility for residents and visitors. In an effort to increase local transportation options, a partnership between the County and numerous community partner agencies, known as the Transportation Taskforce, was formed. The Taskforce developed a business case for a municipally-run transportation service suitable to meet the needs of residents which was approved by the County of Haliburton Council for implementation.

This report develops an implementation plan for the provision of a booked shared ride service in Haliburton, building on the work done by the County and the Transportation Taskforce to date.

1.1 Background

Haliburton faces unique transportation challenges, with small, sparsely populated, rural communities spread out over a large area. The county has some community-based transportation options and limited specialized transportation services, although none of the available service options are open to all users. With many low-income residents and a sizable elderly population, there is a need for a transportation service that can provide basic mobility to residents of the county. Providing a public transportation service in this context requires a decision between limiting the service to areas where it can be productive or paying significantly more for the service.

In developing the business case for a booked shared ride service, the Transportation Taskforce identified demographics that would most benefit from a public transportation service, common trip purposes, and destinations. The business case explored the most suitable options for a public transportation service to serve the needs of residents who consider transportation to be a barrier to their daily lives. To provide an effective transportation service for the county, it is necessary to balance the needs of the community with the available resources.

1.2 Context

Haliburton County has a year-round population of approximately 18,000, which more than doubles in the summer due to tourism and cottage residents. The county's residents are spread out over more than 4,000km², and there are several small centres where residents can work, access services and conduct personal business, including Minden and Haliburton Village. The county's small

and sparsely distributed population is a challenge for the provision of a public transportation service.

According to the 2016 census, approximately 33% of Haliburton's residents are aged 65 and over – nearly double the rate of the over 65 population in the province. As the population ages, a public transportation service that is accessible and provides a basic level of mobility to users can allow people to age in place. In addition to the senior population, many members of the community without access to a personal vehicle have their quality of life diminished by the lack of affordable transportation options. Without public transportation, they cannot access employment opportunities, basic necessities, and social activities.

1.3 Purpose

The purpose of this study is to recommend an implementation plan for a public transportation service that is suited to the needs of the residents of the geographic county of Haliburton. This report provides a detailed service plan for the provision of such a service and a schedule of actions for the County to take toward implementation.

1.4 Report Structure

The structure of this report is as follows:

- Section 2 provides the operating context, a review of peer communities, and the challenges and opportunities for providing a public transportation service;
- Section 3 outlines the service strategy for the preferred service option, providing details regarding the service characteristics, vehicle selection, and the operating model and service delivery structure;
- Section 4 reviews technology options that meet the requirements for booking, dispatch and scheduling, and recommends considerations to leverage emerging technologies for the medium and long term;
- Section 5 provides a marketing and communications plan and identifies the resources required to deliver it;
- Section 6 develops a financial plan that includes capital and operating costs and funding opportunities from other levels of government;
- Section 7 reviews legislation to guide the provision of the service and policies and procedures to support the implementation and operation of the service;

- Section 8 develops a monitoring and reporting plan for the service and outlines the service standards; and
- Section 9 recommends a detailed implementation phasing plan for the County to roll out the service.

2 Operating Context

There are currently various agencies providing specialized transportation services in Haliburton County, including mental health, crisis and support agencies, education and training agencies, Ontario Works, and Ontario Disability Support Program. There are also municipalities and non-profit agencies operating specialized transportation services (DYMO and Bancroft Community Transit). The characteristics for these services are outlined in Exhibit 2-1.

The existing transportation services in the County of Haliburton currently serve highly-specialized trips, such as:

- Non-emergency medical services;
- Various trip types (e.g. shopping, social activities) for people with disabilities; and
- Trips to access specific community services (legal appointments, counselling appointments, work placements etc.)

For residents that do not meet the eligibility requirements of the existing services, there are no affordable transportation options.

Exhibit 2-1: Characteristics of Existing Services

Service Description	Eligibility Requirements/ Demographics Served	Service Area	Annual Revenue-hrs	Ridership (2017)
DYMO – Dysart et al Accessible Community Service	Users with mobility difficulties (e.g. cognitive, physical and sensory impairments.) Service within the County; pre-booked trips available outside the county	1,506 km ² Population: 6,500	494	1,356
Bancroft Community Transit (includes former TROUT services)	Users must be under 55 and are referred to the service by a community agency they work with. Services include Highlands East, North Hastings, Belleville, Prince Edward County, Quinte West	2,025 km ² Population: 10,243	1,066	5,727

2.1 Peer Review

There is no legislative requirement in Ontario to provide public transportation, however, the Accessibility for Ontarians with Disabilities Act (AODA) requires that any public transportation service provided must serve the needs of all users, including those with a disability. Some smaller municipalities integrate the conventional and accessible services by operating flexible route segments on otherwise fixed routes.

While all communities and their needs are unique, a peer review is an opportunity to see what is possible in contexts facing similar challenges. The peer services reviewed include conventional flexible and fixed route services, door-to-door accessible services, and a subsidized transportation program. The selected services are in communities similar to the County in terms of size, demographics, or population distribution. The review identifies a range of potential operating models for the implementation of public transportations in the county. The services reviewed were:

- **Deseronto Transit** – an accessible inter-municipal fixed-route service connecting Deseronto to Napanee, Belleville, Tyendinaga Territory and Prince Edward County. The service operates some runs with on-demand early in the morning or late in the evening.
- **Ride Norfolk** – an accessible fixed-route service connecting various communities within Norfolk County to Simcoe on alternating days. The service is entirely fixed-route and the fleet is fully accessible.
- **Sunshine Coach Service** – a door-to-door accessible transportation service for residents with disabilities in Renfrew County.
- **Brant County Subsidized Transportation Program (STP)** – a door-to-door accessible transportation service for residents with disabilities in Brant County. The service is contracted to two licensed taxi companies, and users are provided with subsidized rides to use the company of their choice.

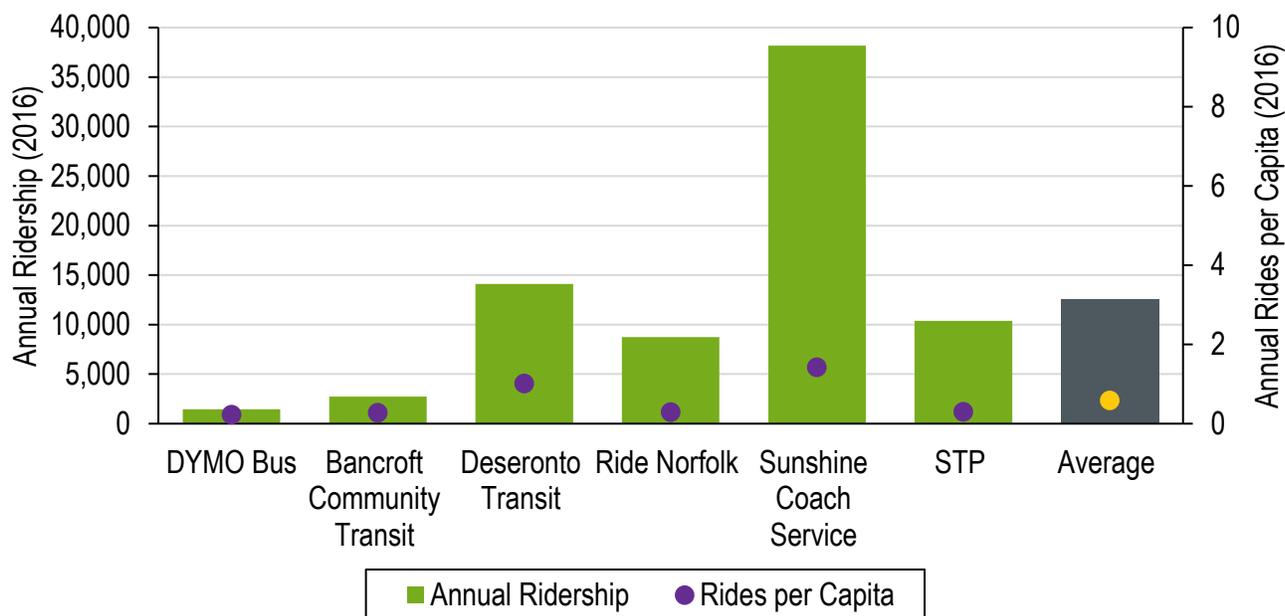
Exhibit 2-2 presents a summary of the key characteristic of each of the services and the communities they operate in.

Exhibit 2-2: Key Characteristics of Transit Services in Peer Communities

Description		Service Area	Annual Revenue-Hrs	Service Span	Fare Type (Avg. Fare)	Ridership (2016)
Fixed Route Services						
Deseronto Transit	Accessible, fixed-route service; on-demand option 2 fixed-routes; 3 buses	464km ² Population: 13,974	5,537	Weekdays: 4:30 to 00:00 Weekends: 4:30 to 19:00	Zone Based (\$9)	14,108
Ride Norfolk	Accessible, fixed-route operating in different zones on alternate days 5 fixed-routes; 2 buses	1,607km ² Population: 30,737	3,610	Weekdays: 8:00 to 18:00	Zone Based (\$3)	8,745
Specialized Services						
Sunshine Coach Service (Renfrew, ON)	Residents with a disability 12 vehicles total (9 accessible vans/minivans, 1 small bus, 2 – other)	2861.4km ² Population: 26,950	13,661	Weekdays: 7:30 to 16:30 (Weekends by reservation only) Saturdays: 10:00 to 16:30 Sundays: 9:30 to 16:30	Flat Fare within the Town of Renfrew; distance based fare otherwise (\$6)	38,184
STP (Brant, ON)	Residents with temporary or permanent disabilities	843km ² Population: 36,707	N/A 2016 Budget: \$168,000	24/7	Zone Based (\$9)	10,389

Of the comparable services, Sunshine Coach Service has the highest ridership, and the highest per capita ridership. The Sunshine Coach Service is concentrated in the Town of Renfrew, which has a high population density and various trip generators. The annual ridership and rides per capita of all the comparable systems, as well as DYMO Bus and Bancroft Community Transit are shown in Exhibit 2-3.

Exhibit 2-3: Annual Ridership and Ridership per Capita in Peer



2.2 Challenges and Opportunities

In 2017, the Transportation Taskforce conducted a mapping analysis of transportation needs in Haliburton, which analyzed the results of a resident and business survey to identify transportation barriers in the county. The analysis identified two key issues:

- The lack of affordable transportation options for people in the 15-64 age group that are not eligible for existing services; and
- The lack of service in Minden Hills and Haliburton Village, which were the most common origin and destination points.

The findings of this exercise provided a starting point to explore other challenges and opportunities for providing public transportation in the county, particularly related to the demographics and settlement patterns. These challenges include:

- **An elderly population:** Approximately 33% of the County of Haliburton’s population is aged 65 and over. The county’s average

age is 52 – significantly older than the provincial average (41). Between 2011 and 2016, Haliburton’s population grew by nearly 6%. As the population grows and ages, the existing transportation services, which are limited to start with, will experience higher demand.

- **A sparsely distributed population over a large area:** Like most rural communities, the County of Haliburton is very sparsely populated. The average population density is 4.5 people per square kilometer. This means any public transportation service will have to cover extensive distances to connect residents to services. This is cost-prohibitive for any public transportation service, but more so in rural areas where there are also fewer potential riders.
- **The low income of many residents:** Income is a key demographic characteristic associated with transit need. Households with low incomes and no access to public transportation tend to spend a higher proportion of their income on transportation costs. The unemployment rate in the County of Haliburton and the percentage of low income households is higher than the provincial average. The existing transportation services are limited in their ability to connect low income residents to services and opportunities for work, which has a significant impact on quality of life.
- **The current travel patterns:** Over 92% of commute trips in the County of Haliburton happen by car. Given the lack of other transportation options, this is to be expected. However, nearly 37% of commute trips in the county are less than 15 minutes in duration, which indicates there may be an opportunity for public transportation to connect people to work opportunities.

These challenges frame the development of the service strategy, which helps to identify what kind of service is suitable for meeting the transportation needs of the county’s residents

3 Service Strategy

Due to the large area of the county and its rural settlement patterns, the service strategy identified is an entirely demand-responsive transportation (DRT) service. The DRT service would offer booked shared rides within a defined service area, available to anyone in the coverage area for any trip purpose.

3.1 Guiding Principles

The provision of public transportation will be guided by a mission and vision that reflect the transportation needs of the community. These are supported by goals and objectives – the means by which the service will address the community’s transportation needs.

The mission statement outlines the role of public transportation, the scope of the service, and guides the decision-making processes and day-to-day operations. The mission statement is therefore:

- *Public transportation will provide basic mobility for residents by connecting them to their day-to-day activities with a safe and reliable service.*

In alignment with the community’s overall long term vision, the future aspirations of the service are to:

- *To provide an equitable and accessible county-wide transportation service that will improve the quality of life of residents and support a sustainable and prosperous community.*

The following sections review the service options considered and the attributes of the preferred service option.

3.2 Service Plan Options

Four service plan options were developed and presented to County Council for review in November 2018, following consultation with the Transportation Task Force. Initially, a blended service that included a fixed route component was considered, but ruled out due to the costs of operating a fixed route in the Haliburton context. The county’s low population densities could not support the ridership needed to make the service operationally sustainable.

To define the options, a service span of 10 hours a day, 6 days/week was identified as an appropriate starting point. This would be the equivalent of 3,040 annual revenue service hours.

Given the county's geography and settlement patterns, it is necessary to limit the area to which transit service would be provided. Unfortunately, it is not feasible to provide complete coverage of the county within a reasonable budget. Defining a coverage area is a key requirement for providing a demand-response service, as it designates where the service will operate. The coverage area should include as many of the residents of the community as possible and provide access to the main trip generators.

Coverage Area

Like most rural communities, the county is sparsely populated with a few communities where most services are concentrated. Three communities, Haliburton Village, Minden, and Carnarvon, house roughly a quarter of the county's population and a majority of its services and institutions. They have a variety of trip generators, including health services, shopping, recreational activities, and employment opportunities.

These communities have the highest potential for ridership and will make up the core coverage area. Smaller communities including Wilberforce, Gooderham and Dorset will make up the supplemental coverage area to provide basic mobility for residents outside the core coverage area. Exhibit 3-1 illustrates the service coverage areas.

Each service plan option explored ways of allocating the annual service hours to achieve the vision of a county-wide wide service within the constrained resources. The following assumptions were made in selecting the service delivery options:

- Haliburton Village and Minden have several trip generators that will attract trips from the whole county and, together with Carnarvon, comprise the core coverage area;
- The core coverage area will have a higher allocation of daily hours of service to maximize productivity;
- Service will be limited to County and Provincial Roads, and year-round municipally-maintained roads due to operational constraints; and
- Trips to in-demand services/destinations will be grouped where possible to achieve higher productivity.

Outside the core coverage area, a supplemental coverage area was identified to provide a basic level of mobility to residents outside the coverage area. The trade-offs for providing service for a larger coverage area, include limited productivity due to the distance between settlement areas and increased travel time for passengers, which lead to compromised service in the core area. Alternatively, higher operating costs (longer service span, additional vehicles) can be incurred to accommodate the larger service area.

Exhibit 3-1 Service Coverage Areas

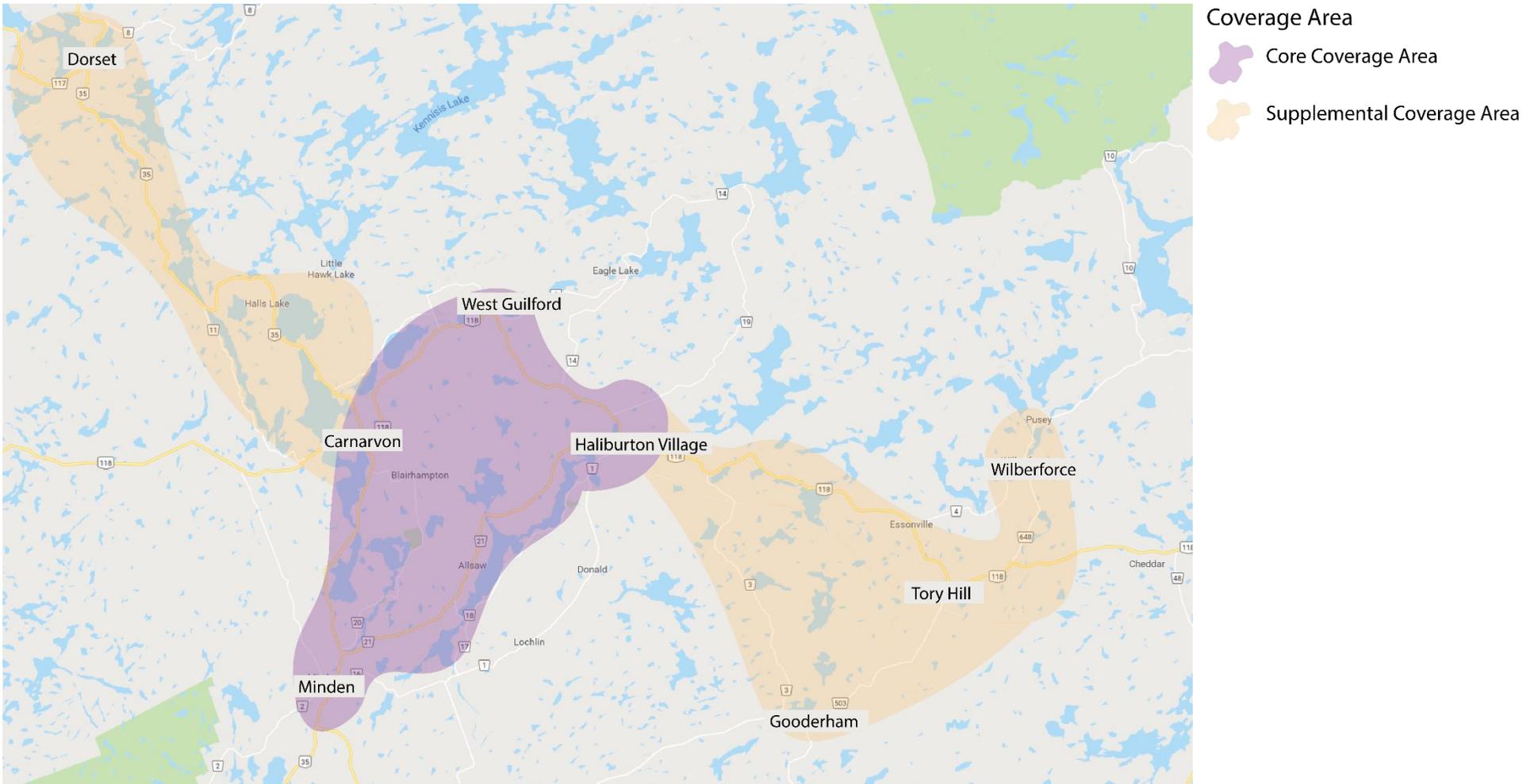


Exhibit 3-2 is a summary of the characteristics of the 4 service plan options presented to Council for review. **Option D**, which includes a longer service span to accommodate the larger coverage area was selected as the preferred service plan option.

Exhibit 3-2: Service Plan Options Characteristics

Service Area	Population (2017)	Days of Operation	Hours of Operation	Annual Revenue Hours	Annual Ridership
Option A					
Core Coverage Area	4,500	Monday – Saturday	6 hrs./day	1,824	2,600
Wilberforce	300	Monday – Saturday	4 hrs./day	1,216	200
TOTAL	4,800	6 days/week	10 hrs./day	3,040	2,800
Option B					
Core Coverage Area	4,500	Monday – Saturday	6 hrs./day	1,824	2,600
Wilberforce (via Gooderham)	500	Monday – Saturday	4 hrs./day	1,216	300
TOTAL	5,000	6 days/week	10 hrs./day	3,040	2,900
Option C					
Core Coverage Area	4,500	Monday, Wednesday, Friday, Saturday	10 hrs./day	2,030	2,600
Wilberforce (via Gooderham)	500	Tuesday, Thursday	10 hrs./day	1,010	300
TOTAL	5,000	6 days/week	10 hrs./day	3,040	2,900
Option D					
Core Coverage Area	4,500	Monday – Saturday	6 hrs./day	1,824	2,600
Wilberforce (via Gooderham)	500	Monday – Saturday	3 hrs./day	912	300
Dorset	400	Monday – Saturday	3 hrs./day	912	200
TOTAL	5,400	6 days/week	12 hrs./day	3,648	3,100

3.3 Preferred Service Plan

The service provided would be available to serve all trip purposes that begin and end within the coverage area. It would operate six days a week (Monday to Saturday) for a twelve hour service span between 7:00am and 7:00pm, totalling 3,648 annual revenue hours. The span was selected to serve the hours of operation of most services and institutions, and with consideration for the distance between destinations. Service would not be available on statutory holidays or Sundays.

The coverage area has an approximate population of approximately 5,400, and ridership is estimated at 0.58 trips per capita – in keeping with the ridership rates of peer communities reviewed.

Booking Protocol

Demand response services typically offer two types of trips – recurring trips, to and from specific locations at the same time, or one-time trips. These are typically referred to as subscription trips and casual trips respectively. A prevalence of subscription trips can be detrimental to the system as it may limit opportunities for spontaneous travel. The proportion of subscription to one-time trips can be an indicator of high demand.

The booking protocol should require that users provide:

- a day and date of travel;
- a pick-up address;
- a drop-off address;
- the trip purpose (should identify if the trip is a subscription or casual trip);
- a preferred arrival time (if the purpose of the trip is an appointment);
- additional passengers; and
- any special instruction (e.g. related to pick-up or drop-off location; mobility device accommodation etc.)

Return trips should be booked as two separate trips. This information will be used in the ride prioritization and scheduling process. Booking should be available on-line or over the phone, and must be done at least 3 hours before the end of service the day before the trip to allow for scheduling and dispatch. Consequently, scheduling and dispatch must be available until 5:00pm, Monday to Saturday to accommodate trip requests. As discussed in section 4, same-day booking options may be available with some booking and dispatch platforms. Cancellations should be made over the phone at least 24 hours before the

scheduled trip, during regular operating hours to allow for scheduling to accommodate other trips. Any cancellations outside the cancellation window or no shows should be penalized to limit reoccurrence. Conversely, if trips are delayed more than 10 minutes after the scheduled pick-up window, the user should contact dispatch.

Ride Prioritization

Although the recommended service will have no restrictions on trip type, limited resources require that certain trip types be prioritized. Trips for medical appointments, education and work trips, grocery shopping and other necessities of life should be prioritized over social trips, and trips will be grouped whenever possible to increase productivity. Subscription trips should also be evaluated periodically if they impact the capacity to accommodate casual trips. Trips will be prioritized on a first come, first-served basis based on the trip purpose, attributes of the user, and whether or not the trip is a recurring trip as shown in Exhibit 3-3. The earlier a booking is made, the more likely it will be accommodated.

Exhibit 3-3: Ride Prioritization Framework

Priority Rank	Trip Purpose	User Attributes	Trip Type
1	Medical Appointments Social services Prescribed therapy (e.g. occupational therapy, physiotherapy)	Users with mobility difficulties (e.g. cognitive, physical and sensory impairments.), with or without attendants	One-time trip (one-way or return)
2	Essential shopping (groceries, prescriptions)	Users over the age of 55	Recurring trip (one-way or return)
3	Education or work trips Personal business (banking, legal services etc.) Advance ticketed events	All other users	
4	Recreational trips Social outings Grooming Religious services Non-essential shopping All other trip purposes		

Fare Considerations

When selecting a fare policy, a number of key principles should be considered:

- Public transportation benefits the community as a whole, and it is appropriate for the community to support they service financially;
- Fares are a source of revenue for the system, and the cost of collecting them should not be higher than the revenue;
- Fares should be kept low enough to be affordable and attractive for users;
- Cash fares should be allowed in consideration of occasional users of the service;
- If fare products are considered, they should offer a discount compared to cash fares to incentivize their purchase;
- Fares should be perceived by the public as supporting the level of service offered (i.e. users are more supportive of fare increases if level of service is improved); and
- Fares should be reviewed annually, or every two years to maintain small regular adjustments as opposed to occasional significant changes.

A zone based fare should be considered, similar to a majority of the services in the peer review. Users can pay a lower fare to travel within a community and a higher fare to travel between communities. A zone based fare is more equitable for a system covering a large service are because it more closely reflects the costs of operation and ensures that short trips do not have to subsidize long trips. The average fare should be approximately \$7.00, similar to peer communities.

Operating Costs

Operating costs for the service have been estimated at \$60.00 per hour, based on the mileage rate and driver's hourly wage obtained from the County's Business Case. A review of operating costs for peer communities indicates a range from \$25.00 per hour to \$77.00 per hour, for an average of \$53.00 per hour. Bancroft Community Transit and Ride Norfolk have the highest hourly costs, topping \$70 per hour. For cost estimating purposes, two scenarios have been considered: \$60.00 per hour in keeping with the Business Case, and \$70.00 per hour.

In addition to fares, it is expected that local donations will be a source of revenue for the service. Donations are estimated at \$5,000, based on stakeholder feedback.

Exhibit 3-4: Operating Costs per Revenue Hour for Peer Communities

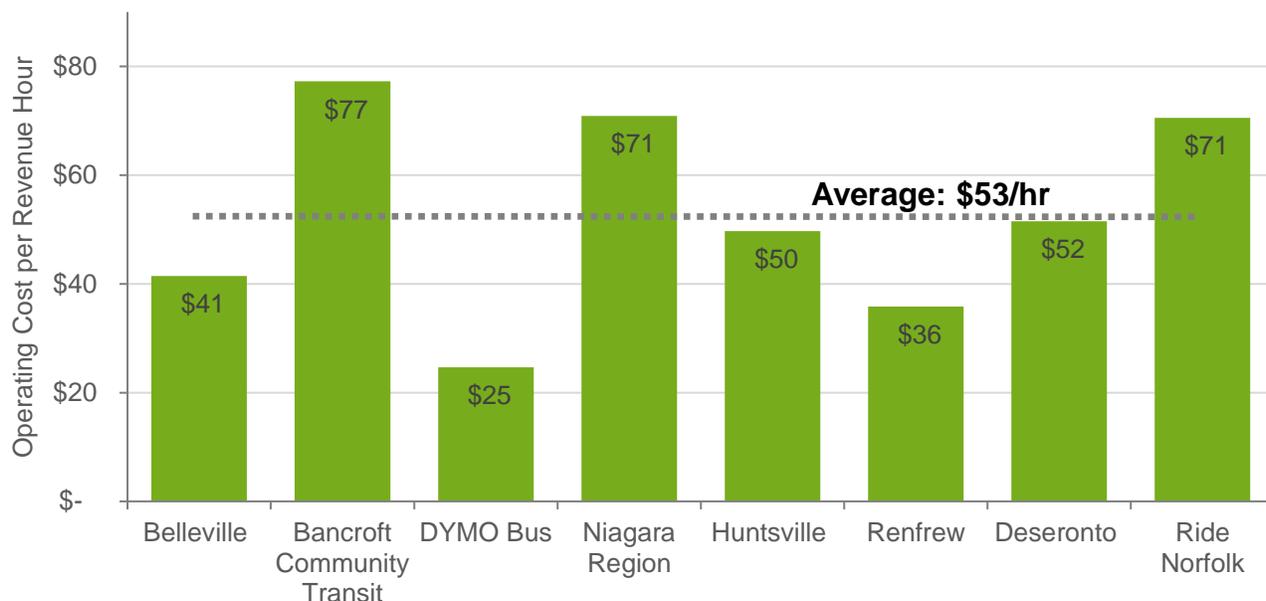


Exhibit 3-5 summarizes the service characteristics and estimated revenue and costs for the preferred service option. An average and a high estimate are presented for the operating costs.

Exhibit 3-5: Summary of Service Characteristics and Revenue and Cost Estimates

Preferred Option	Core Coverage Area	Wilberforce (via Gooderham)	Dorset	Total
Population (2017)	4,500	500	400	5,400
Days of Operation	Monday – Saturday			6 days/week
Hours of Operation	6hrs./day	3 hrs./day	3 hrs./day	12 hrs./day
Annual Revenue Hours	1,824	912	912	3,648
Annual Ridership	2,600	300	200	3,100
Revenue and Cost Estimates				
Average Fare Paid (one way)	Below Average	Above Average	Above Average	\$7.00
Annual Fare Revenue (based on an average fare of \$7)	\$17,500	\$1,900	\$1,600	\$21,000
Local Donations				\$5,000
Operation Costs (@ \$60/hr)	\$109,440	\$54,720	\$54,720	\$218,880
Operating Costs (@ \$70/hr)	\$127,680	\$63,840	\$63,840	\$255,360

Vehicle Selection

Given the recommended service span and estimated ridership, a single light-duty vehicle would be appropriate for the service offered. As the only public transportation service in the county, the service must be accessible to users with mobility devices. Therefore, the vehicle will need to be lift-equipped to accommodate users with mobility aids. The vehicle should have a capacity for two or more wheelchairs or mobility aids. A spare vehicle with similar characteristics should be available in the event of capacity constraints on the main vehicle, or for maintenance activities. The existing DYMO service has an accessible vehicle with a wheelchair capacity of 4 and seated passenger capacity of 4, which is appropriate for the proposed service.

The County has the option to

- purchase or lease vehicles for the service;
- obtain and re-purpose the DYMO bus for the service; or,
- require the contractor to provide vehicles.

The option for the County to own or lease the vehicle will incur expenses for procurement.

It is recommended that the County purchase the DYMO bus, which has the features required of an accessible public transit vehicle, and either sell or lease it to the contractor for the service. The County should require the contractor to provide an additional vehicle that meets the requirements of an accessible public transit vehicle, and the maintenance of the County-owned vehicle should be the responsibility of the contractor and included in their operation costs.

3.4 Operating Model

It is recommended that the County contract the operation of the service to a third party through a competitive Request for Proposal (RFP) process. The main benefits of utilizing a private firm under contract are the time and cost savings. The RFP process also allows the County the flexibility to invite respondents to propose “value added” services that may enhance the operation and delivery of the service. A competitive bid process also ensures that the cost to operate the service reflects market conditions while also providing the flexibility to modifying services without incurring high capital costs or to alter the level of service as needed.

With a contracted service, the County is responsible for oversight of the contract and service as well as some supportive administrative tasks as outlined in the delivery structure below.

Delivery Structure

This section identifies the administrative and staffing needs required by the County to support the provision of the proposed public transportation service with input from other stakeholders as identified in Exhibit 3-6.

Exhibit 3-6: Recommended Administrative Roles and Responsibilities

Task	Province	County of Haliburton	Local Municipalities	Contractor
Planning				
Setting the vision, mission, goals and objectives		✓	✓	
Approving a service strategy (including operating model, service levels and coverage areas)		✓	✓	
Developing supporting policies and procedures (e.g. fares, training, licensing)		✓	✓	
Marketing and Promotion		✓	✓	
Funding				
Gas Tax Funding	✓			
Local Funding		✓		
Operations and Management				
Scheduling and Dispatch				✓
Service delivery as specified by the County				✓
Contract Management		✓		
Operations Management		✓		✓
Fare Collection/Fare product distribution				✓
Customer Service		✓		✓
Fleet maintenance				✓
Operator training, labour relations				✓

County Staff Requirements

To support these tasks the County will require administrative staff resources for the planning, management, and marketing of the service. As there is currently no staff at the County level dedicated to these tasks, at least one full-time employee (FTE) would be needed to take on the responsibilities. The main responsibilities of this position will include:

- Administration and monitoring of contracts and operating agreements. This may include periodic inspection of the vehicles used for service;
- Marketing and communications, including preparing and distributing customer information and promotional materials, communicating service disruptions, and updating (or coordinating updates to) the website;
- Coordinating the distribution of any fare products (e.g. passes, transit tickets);
- Responding to customer enquiries and feedback;
- Reconciliation of ridership and revenue – including coordinating the daily collection of fare revenues from the contractor. This task can be incorporated into the operator contract to streamline administrative costs;
- Regularly reviewing and updating supporting policies and procedures as needed;
- Preparing all necessary reports and documentation on the performance of the service for Council updates, the Ministry of Transportation (MTO), the Canadian Urban Transit Association (CUTA), and other agencies that request information on the service; and
- Reviewing the eligibility requirements for receiving funding from other levels of government (e.g. gas tax) and exploring additional funding options as required (e.g. coordinating local donations).

The launch of the service will be the most resource intensive and will require additional staff resources of approximately 0.5 FTE in the lead up to the launch of the service and for the first few months afterwards. The additional staff resources would assist with contract management, marketing, and communication.

4 Technology Options

Demand-response transit services require processes and procedures for booking, scheduling, and dispatching trip requests from users. Historically, these processes have been manual, requiring a user to call an operator to “book” a trip, which the operator/dispatcher then schedules and dispatches. As the technology available for booking, scheduling and dispatching has become more sophisticated, it is possible for the process to become partially or fully automated. This section identifies some commercial off-the-shelf software options and recommends a technology direction for the County that includes a technology monitoring approach for the medium and long term.

4.1 Functional Requirements

The two main functional requirements are customer booking and vehicle scheduling/dispatching. Other administrative functions may also be beneficial for the service, including ride logs and trip data for reporting purposes.

Booking

The main requirement for booking is a user interface for advance booking. This can be a call-in line directly to an operator (or an automatic call distributor), a web form, or a web/mobile application. The booking protocol in Section 3.3 identifies the information required for users to book a trip, including origin and destination, time of travel, and trip purpose. Typically, booking must be done in advance in order to schedule and confirm trips. With the proposed coverage area, advance booking will also be necessary to avoid trip conflicts and to efficiently utilize the available transportation resources (vehicle, driver).

From an administrative standpoint, it is beneficial to develop a database for storing trip attributes to aid in the scheduling and dispatch process, as well as for the collection of statistics for reporting purposes.

Schedule and Dispatch

The inputs required for scheduling and dispatching are the trip attributes provided during the booking, any coverage area restrictions, the ride prioritization framework and travel times. With a manual scheduling and dispatching process, it is also necessary to establish procedures to communicate trip itineraries to operators and confirm pick-up and drop off windows to users.

4.2 Software Options

A number of software packages are available to assist with the scheduling and dispatch functions. All the software options reviewed provide automated scheduling and dispatch for both prescheduled and on-demand trips, options for driver communications (typically including in-vehicle hardware), and user information applications (such as a website or a mobile application). A brief summary of some of the software options suitable for use in Haliburton, how they work, and their costs, is outlined below:

- **RideCo** provides fully automated on-demand scheduling and dispatch, and can be supplemented by a call-in function. It is customizable, supports all types of vehicles and creates shared trip itineraries. The software can be licensed annually for \$10,000CAD, with an additional \$10,000CAD to provide a branded mobile-friendly website. RideCo's software is in use in both high- and low-density areas, providing first- and last-mile transportation options and microtransit.
- **TapRide (by DoubleMap)** provides a fully automated on-demand scheduling and dispatch service that also allows for a call-in function and manual dispatch. It is highly customizable, allowing for administrators and dispatchers to add or remove restrictions for the entire coverage area, or for specific areas within a coverage area (e.g. changes to service hours, creating pick up and drop off zones etc.). The initial cost is \$12,000USD, with nearly 40% of that going towards capital and installation costs. This cost excludes the hardware required by drivers in the vehicle (a data-enabled tablet) which can be procured by the client, and the costs to install the system and train the users. The annual licencing cost is approximately \$7,000USD for two vehicles. TapRide's software is in use at various campus safe ride programs.
- **Pantonium** is relatively new in the marketplace and provides software to automate scheduling and dispatch processes for demand responsive transportation. The system provides a fully automated dispatch that is responsive to events and scheduling changes in real time. It allows for the administrator to customize parameters (e.g. in-vehicle travel time, pick up and drop off locations) as needed, and to address customer service issues. The service works for any vehicle size and allows for a call-in function. The initial cost, which includes all installation and hardware (including dedicated servers) is in the \$45,000 range, plus approximately \$2,000 per vehicle per month. Pantonium's software is in use in medium- and low- density areas, providing flexible transit services and rural on-demand services.

- **TripSpark (by Trapeze)** is a fully automated on-demand scheduling and dispatch service whose core system is comprised of four main modules: the real-time scheduling and dispatch, in-vehicle driver technology, a notification system, and a passenger portal (in the form of a mobile-friendly website). The system also has a reporting module, billing management and client registration. The cost of the system is in the 6-figure range making it more suited to a mid- to large-sized operation.

4.3 Technology Direction

The booking, dispatch and scheduling method will need to address the constraints of the operating context. The main constraints in Haliburton are the size of the county, the population distribution, and the gaps in cell service. The proposed operating model will pose challenges for the coordination and organization of trips due to the service area and settlement patterns. The estimated annual ridership is low enough that it is unlikely that real-time trip assignment scheduling will be required in the near term. Additionally, the gaps in cell coverage in the county pose a challenge for real-time scheduling.

The software options reviewed support call-in functions, but mainly promote web and mobile applications for booking. In Haliburton, a call-in function will be required to support users without internet access, or those that prefer calling in. The County can implement a manual call-in system paired with an online booking form.

The main benefits of the available software options reviewed are the automated scheduling and dispatch options, particularly as they pertain to matching trips and building shared itineraries. Given the size of the coverage area and the distance between destinations, manual scheduling and dispatch can be time consuming. In addition, manually scheduling and dispatching trips reduces the ability for the service to accommodate same-day trip requests. However, with the scale of the service (one vehicle) and projected ridership for the first year, the scheduling process is unlikely to warrant automation at this point.

It is recommended that the County begin with a manual booking, scheduling and dispatch process before investing in an automated process due to the scale of the service. Until an automated scheduling and dispatch process is available, there will be no availability for same day services. Such a manual booking system will consist of a database for scheduling and dispatching needs. Booking can be accommodated through a web form on the service website or through a call-in number. Web booking should be promoted to reserve the call-in channel for users with limited access to the internet. All booked trips should be entered manually into a database for scheduling and dispatch. The database should store trip attributes to aid in the scheduling, dispatch and ride prioritization processes. The cost to build a customized database will be in the range of

\$10,000, which includes a needs analysis. The contractor will be responsible for scheduling and dispatch, and consequently, for managing the system.

As the service grows, it is recommended that a software option with a low start-up cost be explored. RideCo, and TapRide are good candidates for the software option based on their start-up costs. If the service is to grow to include additional vehicles, RideCo's costs are more competitive as the licensing cost is not based on fleet size, but on number of trips per day. Their threshold is 120 rides per day, after which they charge a low marginal cost per additional ride. For the Haliburton context, this pricing scheme would be more cost effective than a service whose license fees are based on the number of vehicles in use. The gaps in cell coverage will continue to pose a challenge for any software option as they rely on driver communication for the trip assignment process.

5 Marketing and Communications Plan

A marketing and communications plan is integral to raising awareness of the new DRT service. This can be particularly challenging because their operating patterns make them less visible than fixed route services.

A simple way to make the service more visible is by developing recognizable branding. The purpose of branding is to develop an image of the service to would-be users. It involves two key considerations:

- a brand message, which should convey the mission, vision, and objectives of the services; and,
- a visual identity, which makes the service recognizable and confirms its authenticity.

The brand message is communicated to users through their experience of the service (i.e. in the day-to-day operation) and influences their perception of the system. The guiding principles of the service should be communicated internally, so that all staff are aware of the mission, vision and objectives, and the actions being taken toward meeting them. The visual identity should be applied to all the materials used for the service, including vehicle livery, marketing materials, and on-line communications.

For the launch of the service, branding should be paired with a targeted marketing to make people more aware of the service. Targeted marketing can take two main forms: community based marketing, and media advisories or paid advertising. Community based marketing would primarily involve communicating with existing services that work with the demographic groups that would benefit most from the service, such as seniors and low-income residents. This is a more engaged form of promotion, and requires on-going two-way communication with community groups. In addition to communicating through existing service providers, it will be important for the service to be promoted at community events, such as festivals and farmers markets. Media advisories and paid advertising can be a one-time undertaking to promote the launch of the service.

Following the launch of the service, it is important to communicate information about the service on an on-going basis to help grow ridership. The following tasks are recommended as part of the marketing and communications plan:

- **Develop Customer Information Materials** including a website and a transportation service brochure. These will incorporate all the essential information about the service, such as hours of operations, coverage area, fare structure and where to purchase fare media.

Website: The website should also include a trip booking form, contact information, service policies, a feedback form and rider alerts. It should be promoted on the County's website landing page, as well

as on the local municipalities' websites. Transit information can also be incorporated into the Community Transportation Hub website.

Print Brochure: The brochure should be available on the vehicle, at service agencies and retailers, County offices and other municipal facilities, and should feature the visual brand.

- **Establish a Customer Information Line** for feedback. This should be a dedicated telephone number for customer information that is coordinated by the contractor and staffed during the regular business hours. An email address or comment form on the website can also be provided for the same purpose.
- **Update Council Regularly** regarding the performance of the transportation service and any other relevant occurrences.
- **Create Special Promotion Days** that allow people to try the service for special fares or to community-wide events. Given the county includes four lower-tier municipalities, the special promotion days can be used to highlight events or destinations in each of the municipalities.
- **Maintain Regular Community Involvement** to promote the benefits of a public transportation system and communicate service changes or disruptions. This can include regular communication with community agencies, and the media.

5.1 Resource Requirements

Financial and administrative resources will be required to support and implement the marketing and communications plan. The main cost will be developing the branding of the service, which will require retaining the services of branding professionals if none are available at the County. The typical cost to develop a brand for this purpose and scale is approximately \$10,000. In addition to the branding, a special promotional budget of \$10,000 should be established for the launch of the service, including development and distribution of promotional materials. In terms of staffing resources, there should be expected to be high volumes of customer enquiries with the launch of the service, and for the first few months of service.

An annual budget for on-going promotional activities should be established based on the promotional activities selected (e.g. the special promotion days). The regular FTE will be required to commit about 300 hours annually to manage and update the marketing and communication plan. This budget can be supplemented by cross-promotional activities with other County services and local businesses and community services.

6 Financial Plan

The financial plan provides start-up capital costs, operating costs, and high level considerations for the recommended service and other considerations to expand the service in the medium and long term. It also identifies and reviews funding options from other levels of government.

Given the operating model, the main County costs for start-up will be:

- Website design and branding; and
- Vehicle acquisition, should the option to re-purpose the DYMO bus not be selected.

The main operating costs for the first five years will be:

- Administrative costs for 1.5 FTEs initially and 1.0 FTE thereafter;
- Marketing and communication costs; and
- Operator contract costs (which will include fuel, labour, maintenance, logistics and, potentially, vehicles)

Exhibit 6-1 provides a multi-year estimate of the revenue and operating costs, with two estimates for the cost of the operating contract. The service area population growth rate is based on the Ministry of Finance Ontario Population Projections Update for 2017-2041. The annual revenue hours have been kept constant, assuming a 5-year operating contract. The County staff wages are based on the estimation in the initial Business Case.

The maximum gas tax contribution (75% of net municipal investment) is assumed. The Gas Tax allocation formula is based on a 70/30 split between ridership and population, to accommodate for the disparities in funding between high growth and low growth areas. Changes in the Provincial Gas Tax Funding Program may have an impact on future allocations. The cost estimates below assume no changes to the program, and would need to be reviewed if that does not remain constant.

Exhibit 6-1: 5-Year Budget Estimates for the DRT Service

Item	Plan Year				
	2019*	2020	2021	2022	2023
Service Area Population	5,500	5,500	5,600	5,600	5,700
Annual Revenue Hours	912	3,648	3,648	3,648	3,648
Annual Ridership	800	3,200	3,300	3,300	3,300
Revenue					
Fare Revenue	\$5,300	\$21,600	\$21,800	\$22,000	\$22,200
Donations	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Total Revenue	\$10,300	\$26,600	\$26,800	\$27,000	\$27,200
Operating Costs (@ \$60/hr)					
Operating Contract	\$54,720	\$218,880	\$218,880	\$218,880	\$218,880
County Staff	\$65,166	\$65,166	\$65,166	\$65,166	\$65,166
Passenger and Trip Database**	\$10,000	\$ -	\$ -	\$ -	\$ -
Marketing and Communications	\$30,000	\$10,000	\$10,000	\$10,000	\$10,000
Total Expenses	\$159,886	\$294,046	\$294,046	\$294,046	\$294,046
Gas Tax***	\$68,523	\$126,020	\$126,020	\$126,020	\$126,020
Net Municipal Investment****	\$81,018	\$141,644	\$141,445	\$141,244	\$141,040
Operating Costs (@ \$70/hr)					
Operating Contract	\$63,840	\$255,360	\$255,360	255,360	\$255,360
County Staff	\$65,166	\$65,166	\$65,166	\$65,166	\$65,166
Database**	\$10,000	\$ -	\$ -	\$ -	\$ -
Marketing and Communications	\$30,000	\$10,000	\$10,000	\$10,000	\$10,000
Total Expenses	\$169,006	\$330,526	\$330,526	\$330,526	\$330,526
Gas Tax***	\$72,431	\$141,654	\$141,654	\$141,654	\$141,654
Net Municipal Investment****	\$86,230	\$162,490	\$162,291	\$162,089	\$161,886
*3 months, effective September 30, 2019					
**The cost to maintain the database will be included in the operating contract					
***Available after one year of operation; amount to be confirmed					
****Municipal Contributions assume maximum gas tax contributions (75% of municipal costs plus revenue and donations)					
All values in constant 2018 dollars					

The net municipal investment for the 2019 will be in the range of \$81,018 and \$86,230, which includes a marketing and communications budget, 1.5 FTE, and the operating contract for 2019. This only accounts for 3 months of service and approximately 6 months of County administrative staff time.

After the first contract term ends, the County should review the performance of the system and make changes to the coverage area and annual revenue hours based on the performance of the system. The County can also consider adopting scheduling and dispatch software to streamline office operations and improve service utilization.

7 Legislative and Policy Review

This section outlines the legislative requirements for providing public transportation services, and suggests supporting policies for the implementation of the service.

7.1 Legislative Requirements

The provision of public transportation in Ontario is guided by various regulations which outline the municipal obligations when providing public transportation service. The main regulations guiding the provision of a public transportation service and their requirements are:

- The **Accessibility for Ontarians with Disabilities Act (AODA)**, 2005, which requires that all public transportation services are compliant with the Act. AODA aims to have a fully accessible province by 2025. To be compliant with the Act, all public transportation services must work to remove barriers from their operations and provide convenient services for all users, including those with disabilities. The legal obligations for a public transportation service operating in the Province are outlined in Ontario Regulation (O. Reg.) 191/11 and include:
 - Providing information on the accessibility equipment and features on their vehicles, routes and services in an accessible format;
 - Accessibility training for employees and volunteers;
 - Developing public emergency preparedness and response policies that provide for the safety of all users;
 - Developing equitable fare policies including allowing support persons accompanying a person with a disability to travel for free;
 - Developing accessibility plans that include processes for managing, evaluating and taking action on customer feedback;
 - Ensuring there is clearly marked priority seating on all vehicles;
 - Establishing booking policies that either provide same day service to the extent that it is available or accept booking requests up to three hours before the published end of the service period on the day before the intended day of travel; and
 - Providing accessible means to accept bookings.

- The **Highway Traffic Act**, 1990, which outlines the responsibilities of all road users in the province;
- **Accessible Vehicle Act**, 1990 O. Reg. 629 which identifies the features required to ensure a public transit vehicle is accessible;
- The **Public Vehicles Act**, 1990 which is intended to ensure the public safety for the users of public vehicles and establishes a system for licensing and inspecting public vehicles. This legislation only applies to services which operate outside of the municipality;
- **Ontario's Canadian Content for Transit Vehicle Procurement Policy**, 2008, requires that all transit vehicles procured with provincial funding must have at least 25% Canadian content; and
- The **Municipal Freedom of Information and Protection of Privacy Act**, 1990, requires municipalities to protect the privacy of individual's personal information existing in government records, and gives individuals the right to request access to municipal government information, including most general records and those containing their personal information.

7.2 Actions

To support the implementation of the public transportation service, the County should take the steps:

- Up-load the responsibility for public transit services from the Townships to the County;
- Review bylaws related to the licensing of public vehicles both at the County and the lower-tier municipalities to ensure the new service is compliant with the Public Vehicles Act;
- Adopt a by-law or resolution committing to ongoing financial support of public transit in order to be eligible for the Ontario Dedicated Gas Tax Funds for Public Transportation Program (Gas Tax). The Gas Tax provides transit funding for municipalities toward capital and/or operating expenses, at their discretion. The by-law or resolution should include the expected municipal contributions that are being committed. 70% of Gas Tax funding allocation is based on ridership data, and the MTO requires for ridership data to be collected and reported to CUTA;
- Adopt accessibility training procedures for all staff associated with implementing the public transportation service, including those developing marketing and promotional materials;

- Adopt operating policies that are compliant with the O. Reg. 191/11 requirements for fare policies, booking procedures, and communications; and
- Establish policies and procedures for the monitoring the compliance of the service with the legislative requirements outlined in Section 7.1.

8 Monitoring and Reporting Plan

On the basis of contracting out the service to a third party, the County would be responsible for monitoring the operations and maintenance of the service, as well as reporting on the performance of the service to Council, resident and transit associations.

The contract for services should outline the information the contractor must provide, including usage metrics and public feedback.

Exhibit 8-1 identifies the recommended performance indicators that should be collected to monitor the performance of the system and who should be responsible for collecting it.

The purpose of collecting this data is to identify usage trends, including common destinations, usage peaks, service utilization, and the cost effectiveness of the service. In addition, these metrics can be shared by trade associations such as CUTA and the Ontario Public Transit Association (OPTA). It is useful for benchmarking the system against peer communities, and monitoring trends. It is also useful for regular updates to Council on the service, and for Gas Tax funding eligibility.

Exhibit 8-1: Recommended Performance Indicators

Recommended Performance Indicators	Collected By
Operating Data	
Revenue Vehicle Kilometres	Contractor
Total Vehicle Kilometres	Contractor
Revenue Vehicle Hours	Contractor
Total Vehicle Hours	Contractor
Passenger Data	
Total annual ridership	Contractor
Ridership by month	Contractor
Number of Passengers by Trip Purpose	Contractor
Percentage of Subscription Trips	Contractor
Percentage of on-demand/day-of trip requests	Contractor
Advance cancellations	Contractor
No shows/Cancelled at the door	Contractor
Unaccommodated trips	Contractor
Number and nature of complaints	Contractor
Operating Expenses	
Administrative Costs (County)	County
Number of employees (by role)	County/Contractor
Contract costs	County
Maintenance	Contractor
Fuel	Contractor
Software licences	County
Operating Revenues and Funding Contributions	
Total operating revenue	County
Federal contributions	County
Provincial contributions	County
Municipal contributions	County
Other/Donations	County
Capital Expenses	
Vehicles Purchased	County
Debt servicing	County
Software purchases	County
Other capital expenses	County
Capital Funding Sources	
Federal contributions	County
Provincial contributions	County
Municipal contributions	County
Other/Donations	County

8.1 Service Standards

Service standards provide the framework and support for decision-making for improving or modifying service. They guide resource allocation as the community changes, and can be used to evaluate the service to ensure it continues meeting the needs of the population. The following service standards are recommended for the system:

- **Service Span** should accommodate a majority of trip requests within the 12-hour day. If a significant portion of unaccommodated trips are requested outside of the hours of operation, the service span should be reviewed.
- **Service utilization** should increase beyond the projected 0.88 trips/hour. The aim should be to eventually grow to 2.5 trips per hour, in keeping with peer communities reviewed in the technical memorandum. Some strategies to improve service utilization include minimizing no-shows and same-day cancellations by introducing penalties and improving scheduling and dispatch methods to allow same day trip accommodation.
- **Wait times** are defined by the length of the pick-up and drop off window. This window should be short enough to minimize in-vehicle travel time for users while allowing flexibility for operations. To begin, the service should aim to provide consistent wait times.
- **In-vehicle travel times** are expected to be higher with a DRT service when accommodating shared itineraries. However, in-vehicle travel times should not exceed 1.5 times the typical travel time from origin to destination. The aim in building shared trip itineraries should be to minimize in-vehicle travel time where possible.

9 Implementation Plan

9.1 Recommendations

- The County should adopt the mission statement and vision identified as the guiding principles for the service;
- Booking protocol;
 - Booking will be limited to up to three hours before the published end of the service period on the day before the intended day of travel (i.e. if service ends at 7:00pm on a Saturday, trip requests for Monday must be made before 4:00pm on Saturday);
 - Establish a cancellation policy that outlines a minimum window to cancel trips and penalties for late cancellations to reduce no-shows; and,
 - Adopt the ride prioritization framework outlined in Exhibit 3-3.
- Fare Policy:
 - Adopt a zone based fare with a lower fare per one-way trip within the core coverage area and a higher fare for trips originating in the supplemental coverage area;
 - The average fare should be approximately \$7.00, similar to peer communities.
- Vehicle Selection:
 - The County should obtain the DYMO bus, which has the features required of an accessible public transit vehicle, and either sell or lease it to the contractor for the service;
 - The County should require the contractor to provide an additional vehicle that meets the requirements of an accessible public transit vehicle; and
 - The maintenance of the County-owned vehicle will be the responsibility of the contractor and included in their operating costs.
- Operating Model:
 - Contract out the operation of the service to a third party through a competitive RFP process; and

- Retain 1 FTE for the administration of the service, and 0.5 FTE in the lead up to the launch of the service and for the first three months of operations.
- Technology Directions
 - Initial service deployment to utilize manual trip booking and dispatch
 - Review software options as the service grows and explore options to automate the booking, scheduling and dispatch process
- Marketing and Communications:
 - Establish an annual budget for on-going promotional activities; and
 - Dedicate 300 staff hours annually to manage and update the marketing and communication plan.
- Supporting Policies:
 - Up-load the responsibility for public transit services from the lower-tier municipalities to the County;
 - Review bylaws related to the licensing of public vehicles both at the County and the lower-tier municipalities to ensure the new service is compliant with the Public Vehicles Act;
 - Adopt a by-law or resolution committing to ongoing financial support of public transit;
 - Adopt accessibility training procedures for all staff associated with implementing the public transportation service, including those developing marketing and promotional materials;
- Adopt the service standards outlined in Section 8.1 to monitor the performance of the system; and
- Regularly report the performance of the system to Council, CUTA, OPTA and other transportation agencies as required.

9.2 Implementation Schedule

To implement the public transportation service with consideration for Council approval and County budgeting processes, a target implementation date of Fall 2019 is recommended. Exhibit 9-1 outlines the actions required and their associated timelines for a fall implementation.

Exhibit 9-1: Implementation Plan

Action	Notes
Winter 2018/2019	
Present report to Council	
Council approval and budget approval	
Public Information Centre regarding new service	
Prepare RFP and Contract Documents	
Council approval for RFP and Contract	
Issue RFP	Allow 4 weeks for responses
Spring 2019	
RFP Closes	
Evaluate bids and award contract	
Finalize contract with successful bidder	
Develop system branding	
Summer 2019	
Prepare communication and information materials	e.g. website, promotional materials
Targeted marketing	Paid advertising; community based marketing; promotional efforts to gain publicity
County to identify and prepare administrative roles related to the service	
September 2019	
Launch new DRT service	Plan promotional events around service launch
On-going after launch	
Monitor performance and report to Council regularly	
Provide contract and service oversight	