



The Corporation of the Town of Tecumseh

Development Services

To: Mayor and Members of Council

From: Brian Hillman, Director Development Services

Date to Council: December 13, 2022

Report Number: DS-2022-47

Subject: On-Demand Transit Pilot Project Results and 2023 Transit
Recommendations
OUR FILE: T03 TTS

Recommendations

It is recommended:

That DS-2022-47, entitled “On-Demand Transit Pilot Project Results and 2023 Transit Recommendations”, **be received**;

And that the Tecumseh Transit Service reverting to the pre-pilot program fixed route service Monday to Friday and continuing to operate as an On-Demand service for Saturdays only beginning January 2, 2023, at a net budget expenditure of \$87,500 **be approved** in advance of the 2023 budget deliberations due to the timing of service renewal;

And further that Administration **be authorized** to negotiate an Amending Agreement to the existing Transit Delivery and Maintenance Services Agreement between the Town of Tecumseh and First Canada ULC, which will facilitate an extension to the existing contract to the end of 2023, which Amending Agreement will be brought forward for consideration by Council under separate report on January 24, 2023; and

And furthermore, that Administration **be authorized** to further assess potential changes to the fixed route in the first quarter of 2023, including public engagement, and that the findings be brought forward by way of a future report for Council's consideration.

Executive Summary

This Report provides Council with an analysis of the Tecumseh Transit Service (TTS) On-Demand Transit Pilot Project which was initiated on March 28 of 2022. It identifies some of the positive aspects of the on-demand approach as well as the challenges faced during the pilot project. An analysis of various options for the TTS in 2023 is also provided along with a recommendation to revert to the fixed route system for Mondays to Fridays while continuing with the on-demand service for Saturdays only. The Report also contains a recommendation to extend the service delivery contract with First Student for another year to December 31, 2023 and to undertake an assessment of the fixed route in the first quarter of 2023.

Background

The Tecumseh Transit Service (TTS) is now into its thirteenth year of operation since it was introduced to the northerly urban area of the Town in December of 2009. Until April of this year, the TTS operated on a fixed route with a one-hour schedule ("headway") covering approximately 30 kilometres and 43 stops. The Town manages the service but contracts the operation and maintenance of the two Town-owned buses to First Student.

On June 22, 2021, Council approved a one-year pilot project for an on-demand transit service, partially funded by the Canada Healthy Communities Initiative grant program. An on-demand transit service uses computer algorithms in response to service requests initiated through an app on a smart phone or on the web-based version or through a call-in service, resulting in immediate routing.

Blaise Transit, an on-demand transit service provider, was retained by the Town to develop the software solution ("Blaise Engine") and app and to assist with marketing, managing and promoting the service. Blaise Transit provides this type of on-demand service to a number of other Canadian municipal transit providers.

Initially targeted to begin in late 2021, the commencement of the on-demand service was delayed due to complications arising from the COVID-19 pandemic and challenges with respect to securing a call centre service provider. Ultimately, the Town engaged Answer 365 to provide the necessary call-in service to enable those riders without a cell phone to book rides. And once the pandemic restrictions were relaxed, the TTS on-demand service began on March 28, 2022.

Over the past nine months, Town Administration has worked with Blaise Transit, Answer 365 and First Canada ULC ("First Student") to implement, manage and operate the on-demand transit pilot project. It was anticipated that the on-demand approach to transit delivery would result in:

- Improved service;
- Increased ridership;
- Maximized coverage though increased fleet utilization;
- Improved reliability and trip transparency;
- Shorter commute times; and
- Flexible transit schedule built around ridership needs.

It also enabled the Town to extend the service into the Amy Croft Drive area of Lakeshore, which had been the subject of frequent requests by users, and to provide a more direct connection to the Tecumseh Hamlet by providing for a stop on the south side of County Road 22 at the Tecumseh Towne Centre plaza. These stops had been previously eliminated in order to maintain the one-hour schedule of the fixed route system.

Notwithstanding the anticipated benefits and considerable efforts undertaken to effect the transition to the on-demand transit service model, it has faced a number of challenges over the course of the pilot project.

The following report provides a summary of the following:

- An analysis of the on-demand pilot project over the past nine months;
- Identification of issues/concerns related to the on-demand service; and
- Service delivery options and a final recommendation regarding the TTS for 2023.

Comments

On-Demand Transit Service Analysis

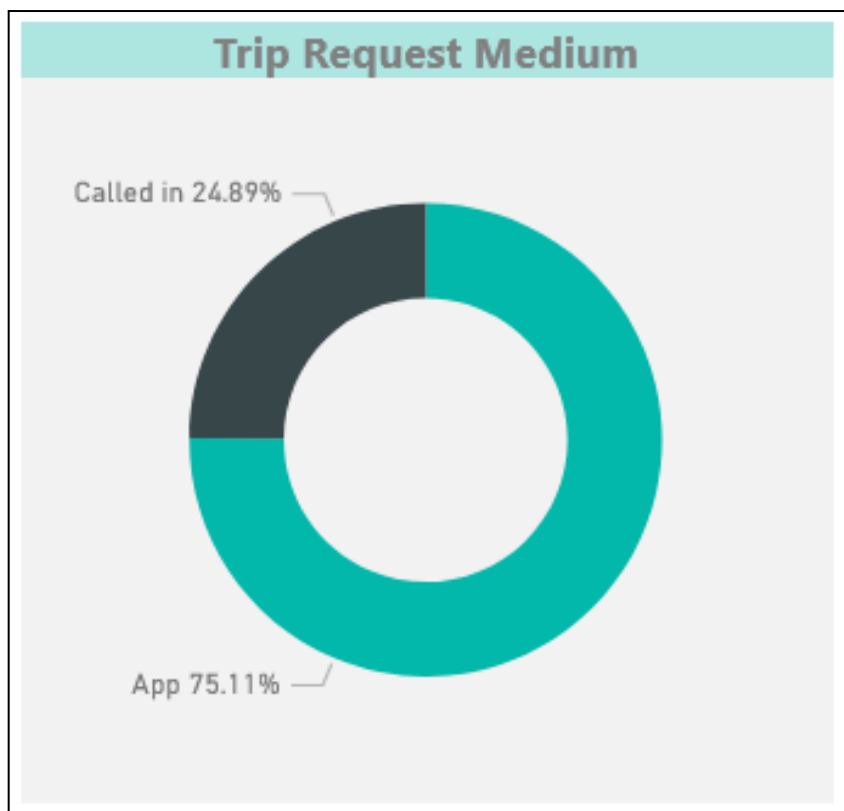
As part of the service offered through Blaise Transit, the Town is able to review a number of metrics related to the on-demand transit service and its performance from its initiation on March 28, 2022 to the end of November, 2022. The following section of this Report, contains the metrics generated by and extracted from the Blaise Engine along with an explanation of each.

Trip Requests

Figure 1 provides a breakdown of the trip request medium which is the percentage of trips made through the Blaise App versus the number made through the Answer 365 call-in service. The call-in service is available to those riders who do not have access to a smart phone where the app can be downloaded or are not comfortable using the technology. Approximately three quarters of the trips were booked through the app. Although this percentage of riders remained consistent, the amount of time necessary to

book rides diminished over this period. Although the goal is to encourage more riders to use the app, thereby reducing costs associated with the call-in service, there will always be a proportion of the ridership that will need to use a call-in service.

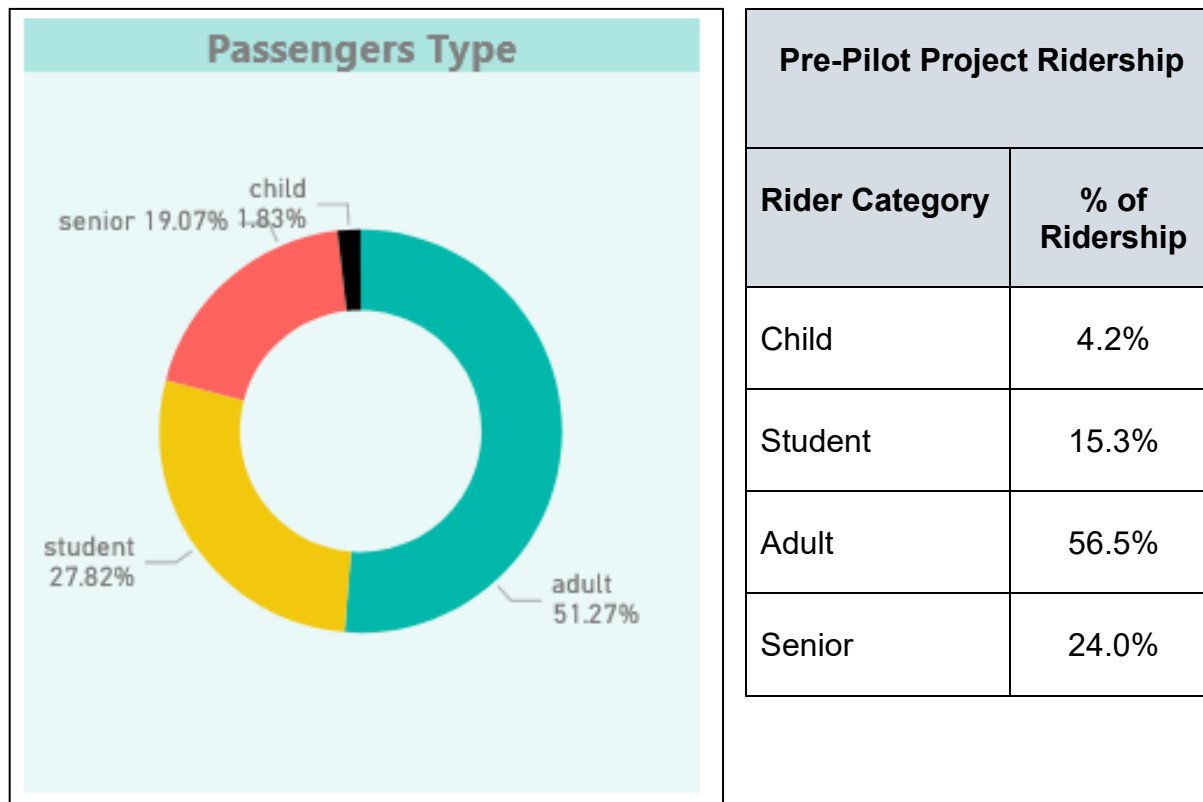
Figure 1



Passenger Type

Figure 2 breaks down the percentage of riders into the following categories: Adults (18-54); Students (6-17 or college/university students with a valid student ID); Seniors (55 and over); and Children (5 and under). Adults used the service most frequently followed by students, seniors and children. This ridership profile prior to the pilot project was: Adults 56.5%; Students 15.3%; Seniors 24.0%; and Free 4.2% (the free category captured children 5 and under as well as veterans, blind persons and those assisting riders who use a wheelchair). The reduction in seniors and adults relative to students using the system is consistent with some of the ridership comments received regarding the reluctance of senior riders to use the on-demand technology.

Figure 2

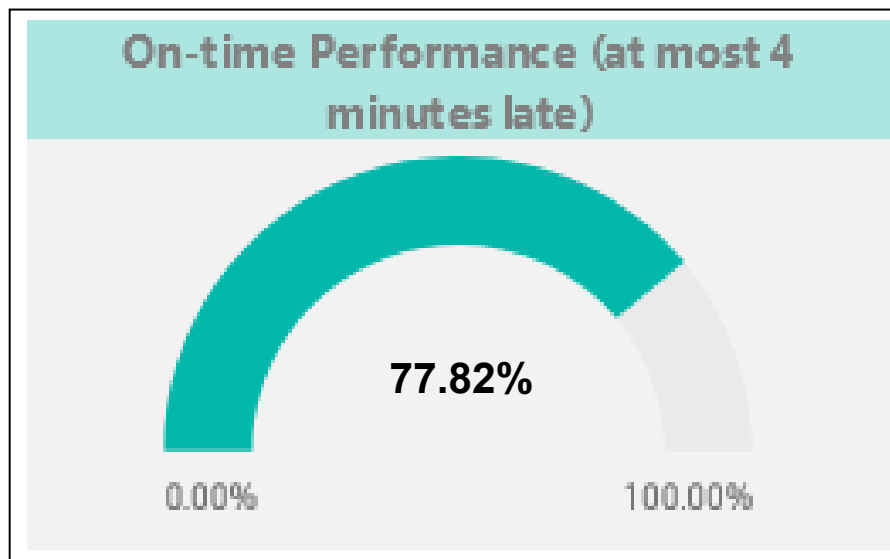


Trip Performance

Figure 3 demonstrates that nearly 78 percent of trips were on time based on being within four minutes of the requested trip time. It should be noted that a trip could be requested by either desired departure time or arrival time depending on the trip purpose. For example, a rider that can't leave work before 5:00 p.m. may request a trip by a departure time of 5:05 whereas a rider who needs to be at work by 9:00 a.m. may request an arrival time of 8:45 a.m. The app then balances all the competing requests and provides a time within a prescribed window from the requested departure or arrival time (i.e. 15 minutes later or earlier). The rider can then accept or deny the offered ride.

In terms of the trip time, the Blaise Engine indicated that the average walk to the nearest bus stop was two minutes, the time waiting for the bus was one minute, the time spent riding on the bus was 13 minutes and the average time walking to the destination was two minutes for a total trip time from origin to destination of 18 minutes. Although there is no official data noting the average time spent on the bus when the TTS was a fixed route system, one of the common complaints was that the trips were not direct enough given the circuitous one-hour route resulting in longer time spent on the bus.

Figure 3



Total Boardings

Figure 4 depicts the monthly boardings which ranged from 717 in July to 1,011 in September for months in which the service was operating for the entire month. This amounted to an average of 914 monthly boardings. As a comparison, monthly average totals from 2012 to 2019 ranged from 2,200 to 2,450 and during the pandemic, the average monthly ridership was 1,085 and 1,200 in 2020 and 2021, respectively. Accordingly, ridership has dropped to 37-42 percent of the pre-pandemic levels and 76-84 percent of the ridership during the pandemic. Prior to launching the on-demand program, it was anticipated that ridership would increase due to shorter commute times and increased reliability and flexibility.

Figure 4



Trip Distribution

The aforementioned boardings were distributed relatively evenly throughout Monday to Friday with an average of approximately 40 riders per day. On Saturdays however, the average number of trips was only 26 due to schools and some businesses being closed that day.

As Figure 5 (Monday-Friday) below illustrates, trips were also relatively evenly distributed throughout the day with the exception of a peak around 8:00 a.m. when riders were boarding to go to work or school. It was during this time that the app had some difficulty accommodating trips, particularly when there were competing rides requests at opposite ends of the route (i.e. rides originating from Tecumseh Mall versus those originating from in town). This situation led to some rides getting pushed outside of the desired departure or arrival times thereby causing frustration for riders.

On Saturdays, this distribution was more evenly distributed and the morning peak wasn't as pronounced as evidenced by Figure 6. The data suggests that the combined lower ridership and more evenly distributed trips on Saturday enabled the on-demand system to better accommodate trip requests. The system therefore experienced fewer problems on Saturdays and used significantly less fuel due to lower kilometres traveled.

Figure 5 – Monday to Friday

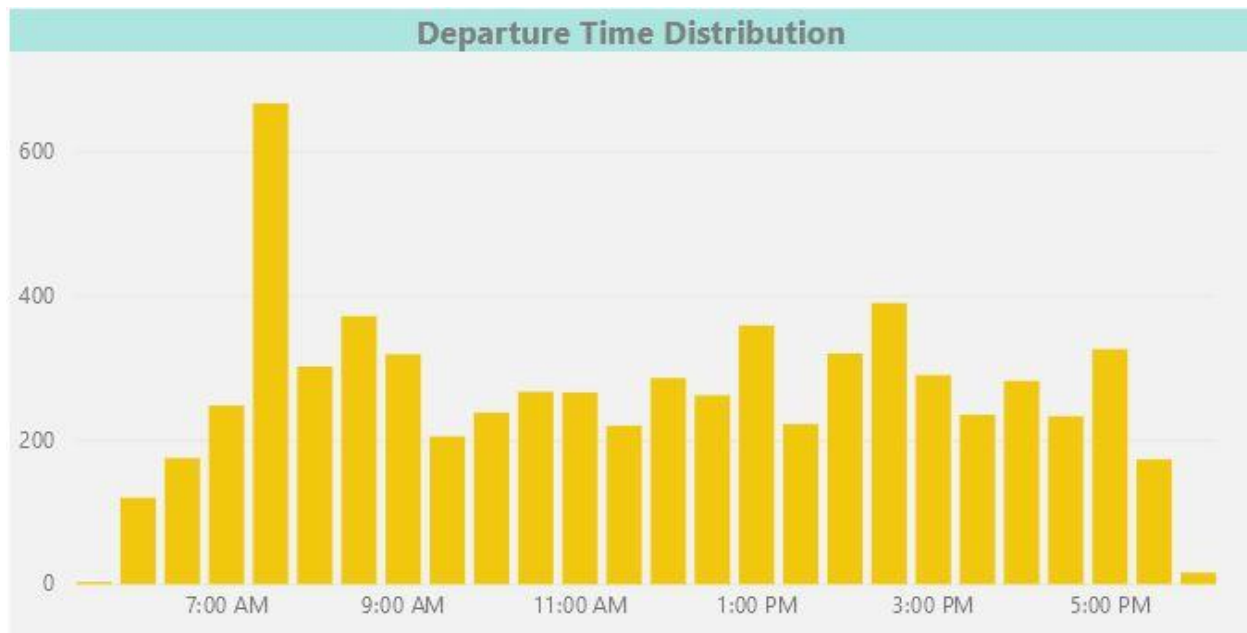
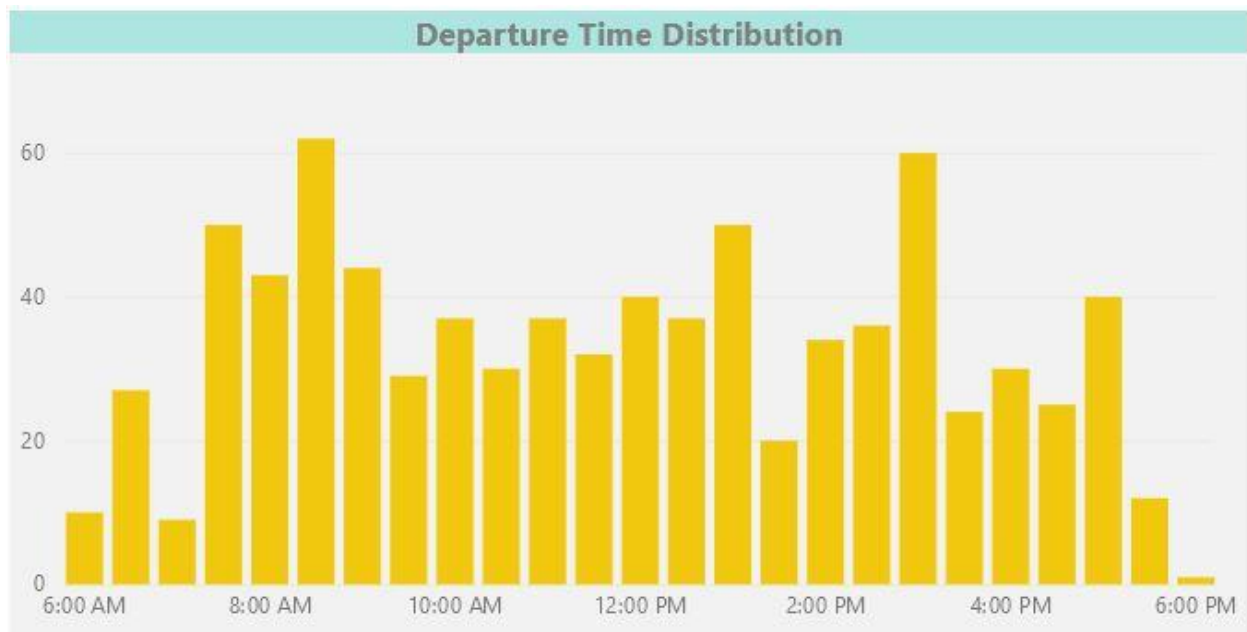


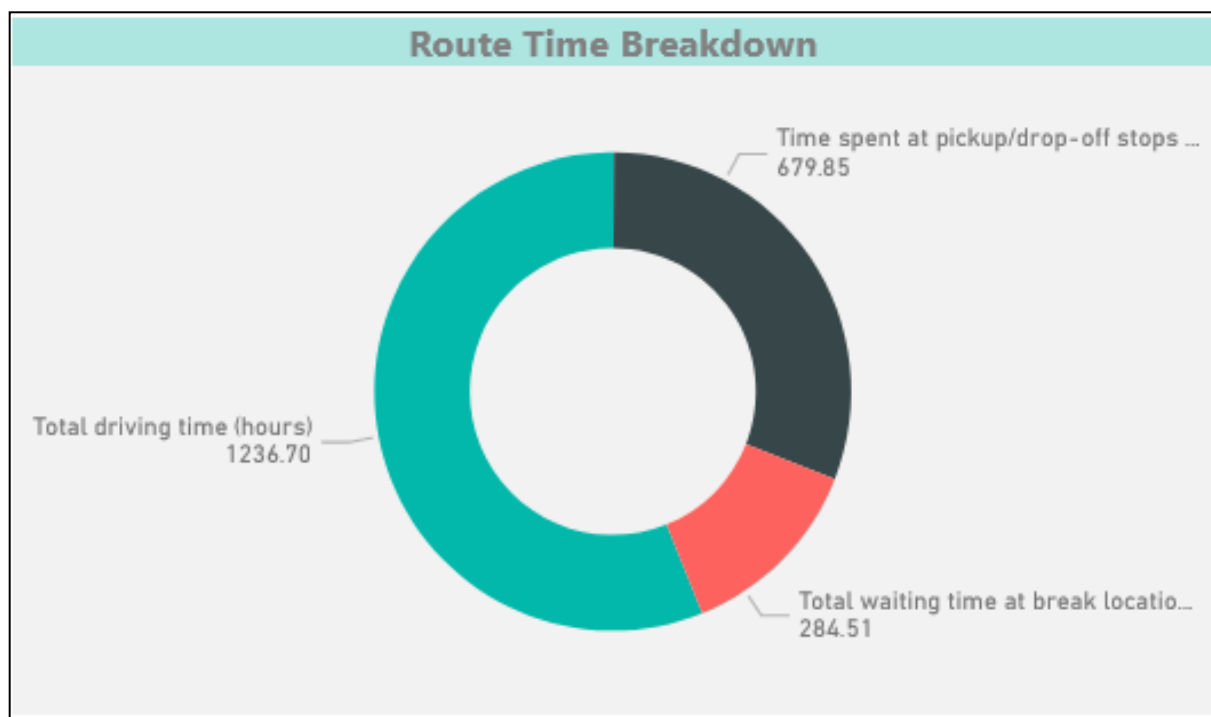
Figure 6 - Saturday



Route Time Breakdown

The TTS bus travelled an average of 222.8 kilometres per day. Prior to the on-demand pilot project, the average daily kilometres travelled were 360 and average monthly fuel usage was 2,476 litres. The average monthly fuel usage during the on-demand transit service was 1,784 representing a reduction of 692 litres or 28 percent per month. The reason for the fewer kilometres travelled and lower fuel consumption was due in part to lower ridership but also because the bus would not be in operation when it wasn't required as opposed to a fixed route approach where the bus would continue to follow a route regardless of ridership demand. Figure 7 below indicates that out of the total 2,201 hours that the bus was in service over the pilot project, 679.85 hours were spent at bus stops and 284.51 of those hours were spent at a break location. This is one of the benefits of an on-demand service – it reduces the number of kilometres and fuel thereby saving money on gas and reducing GHG emissions.

Figure 7



Most Popular Origins and Destinations

Attachments 1 and 2 geographically illustrate the origins and destinations of all trips during the pilot project. The top 10 pick-up location and drop-off locations are listed in the following table:

Top 10 Pick-Up Locations	Top 10 Drop-Off Locations
Tecumseh Mall	Tecumseh Mall
Southfield Westbound (Stop immediately before Tecumseh Mall)	Sobey's Plaza
Zehrs Plaza	Southfield Westbound (Stop immediately before Tecumseh Mall)
Sobey's Plaza	Food Basics Plaza
Lacasse Street @ Little River	Lacasse Street @ Little River
Food Basics Plaza	L'Essor High School
L'Essor High School	Manning Road @ Lanoue
Lesperance Road @ Little River	Riverside Drive @ Lakewood Park North
Shawnee Road @ Arbour Street	Lesperance Road @ Little River
Brouillette Court Eastbound	Manning Road @ Tecumseh Road

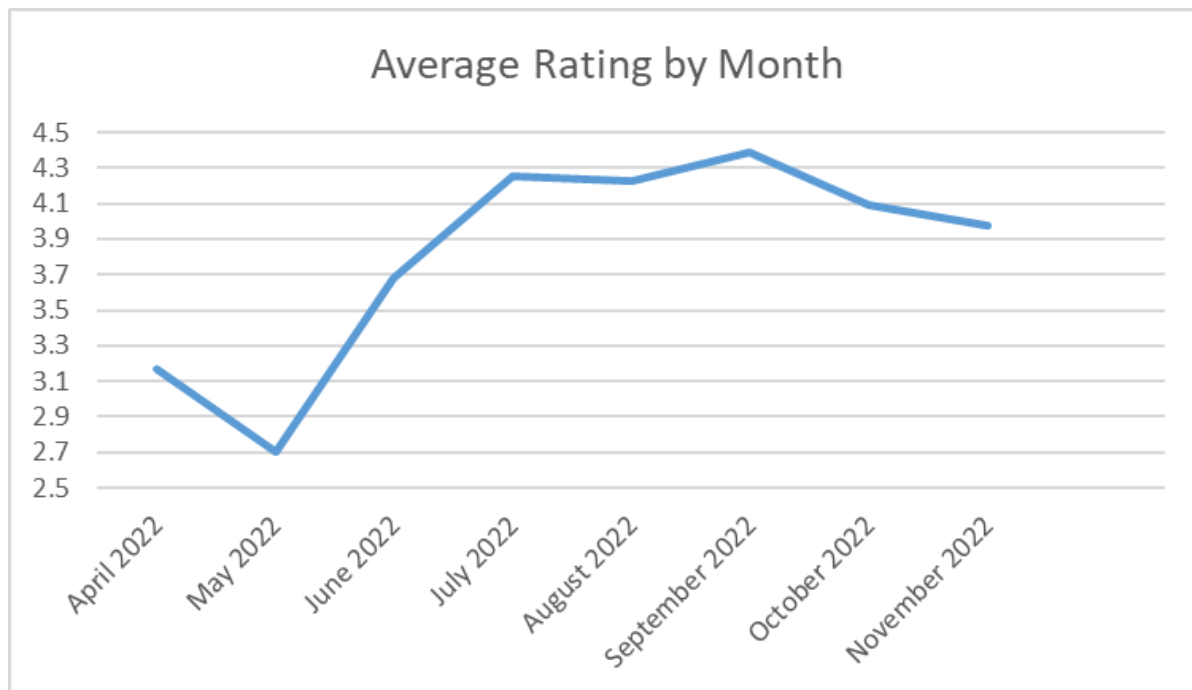
The maps in Attachments 1 and 2 and the foregoing table indicate that the vast majority of trips either originate or end at Tecumseh Mall in Windsor where a Transit Windsor hub exists enabling riders to access key destinations throughout the city. A total of 2,924 trips originated at this location and it acted as a destination for 2,439 trips. Most of the trip routing activity, approximately 70 percent, took place between Tecumseh Mall and destinations along the Tecumseh Road corridor – particularly the Zehrs and Food Basics grocery stores in Tecumseh and the Sobey's Plaza in Lakeshore. Other popular origins/destinations included the high density residential area along Tecumseh Road served by the stops on Southfield Drive, Lacasse Street and Lesperance at Little River Blvd, L'Essor High School and Riverside Drive at Lakewood Park North (St. Clair Beach Retirement Facility). It is anticipated that as growth and intensification in the Tecumseh Road corridor continues, demand for the transit service in this area will increase. Some of the least popular stops included the stops along Arlington and Riverside in the east end of town, Renaud at Lesperance and Bedell and Manning at Little River Blvd.

Ridership Rating

Another feature of the app was the ability for riders to provide a rating out of five and/or comments on the trip experience. Figure 8 shows the progression of this rating from April to May. Initially, ratings were low as riders adjusted to the new system and parameters were being adjusted to better address ridership demands. Ratings improved over time as some of

the bugs were worked out and riders adapted leading to an average passenger rating of 3.66 for the eight-month period.

Figure 8



This numeric rating is augmented by the ridership comments which revealed a polarization of ridership experience. A sample of some of the comments received is contained in Attachment 3. The most popular comments could be grouped into the following themes:

- Complementary toward the drivers;
- Bus didn't show up/was late/came early and I missed it;
- Transit app keeps pushing pick-up time past booked time and adversely affected trip;
- Service not reliable; and
- Negative Call Centre experience (mostly early on in the pilot project).

Cost of Pilot Project

Following is the estimated cost of the on-demand pilot project to the end of 2023 along with the Federal and Provincial funding received by the Town toward that cost:

Project Costs	Approved Budget	Actual Amount
Software Solution/App Development	\$10,000	\$10,000
Marketing/Promotion/Education	\$5,800	\$5,800
Call-in Centre*	\$50,000	\$22,650
Tablets	\$2,500	\$2,500
Tablet Bus Mounts	\$1,900	\$1,900
Total Project Costs	\$70,200	\$42,850
Project Funding		
CHCI Funding	\$27,150	\$27,150
SRA Funding	\$5,000	\$5,000
Total Project Funding	\$32,150	\$32,150
Net Cost to Town	\$38,050	\$10,700

* includes estimated December expense of \$2,000

The difference between approved budget net cost to the Town versus the actual amount is due to fewer riders using the call-in centre than had been originally projected.

On-Demand Transit Service Analysis – Summary of Findings

Although the pilot project has not been in effect for the full 12 months, it has become apparent that the Town's current service area and peak demand time periods are not entirely conducive to an on-demand approach. The competing demands for popular trips at opposite ends of the service area (i.e. Tecumseh Mall and origins/destinations within Tecumseh) with only one bus in service resulted in some trip times being altered to the extent that they no longer met the needs of the rider. Given that most trips either start or end at Tecumseh Mall, there is constant potential for conflicting trip requests. When a trip is pushed back by any time, it makes it difficult for riders to plan their transfers to or from the Windsor transit system resulting in either missing a connecting bus or long waits for it at Tecumseh Mall. The Town received many complaints of this nature and we believe that the frustration caused by this predicament resulted in many riders leaving the system and having to find alternative transportation solutions.

Administration believes that there are alternative approaches to the status quo on-demand system that would at least partially address the issues currently being experienced. These alternatives are assessed in the following section of this Report.

TTS Service Options for 2023

Administration has identified the following six options and an analysis of each is summarized in Attachments 4 and 5A to 5F:

Option 1: On-Demand Status Quo

Option 2: Former Fixed Route

Option 3: On-Demand with Two Vehicles

Option 4: Hybrid of Fixed Route and On-Demand with Two Vehicles

Option 5: Fixed Route – Tecumseh Road

Option 6: Fixed Route Monday-Friday/On-Demand Saturday

Upon review and assessment of each of the six options, Administration is recommending Option 6: Fixed Route Monday-Friday/On-Demand Saturday for the following reasons:

- Serves existing ridership and may help restore ridership to pre-pandemic levels
- On-demand functions better on Saturdays under lower and more evenly spread ridership (i.e. no a.m. peak periods)
- Passenger/driver frustration reduced
- Less Administration time/resources
- Less fuel/lower GHG than the former fixed route over six days
- Enables easier transition to wider use of on-demand in the future (i.e. in conjunction with Lakeshore or off-peak hours such as Sundays or evenings)

Need for Transit Service Delivery Contract Extensions

First Student

Regardless of which transit service delivery option is selected, there is a need to extend the contract with First Student at this time. The current contract was extended in 2020 to December 31, 2022. In order to ensure the service continues uninterrupted into 2023, it is important that the Town continues to use the current service provider – First Student. The Town continues to have a sound relationship with First Student and there is a high level of user satisfaction with the current TTS drivers.

Based on the foregoing, Town Administration recommends that Council authorize it to negotiate a one-year contract extension in accordance with Section 3 of the existing Transit Delivery and Maintenance Services Agreement. If Council agrees with this recommendation, a proposed Transit Delivery and Maintenance Services Amending Agreement will be prepared by the Town's Solicitor and brought before Council at the January 24, 2023 meeting under separate report. First Student has verbally agreed to continue to provide the service until the amending agreement is authorized for execution at that Council meeting. The one-year extension of service will provide an

opportunity for Administration to continue to investigate and properly assess different transit delivery models, including possible relationships with the Town of Lakeshore and the City of Windsor, for future consideration by Council.

Blaise Transit and Answer 365

If Council agrees with the recommendation to proceed with Option 6, contract extensions will be required for Blaise Transit and Answer 365. Each contract will be less than the \$10,000 threshold established by the Town's Purchasing By-law and may therefore be approved by the Director. Administration also has a sound relationship with each of these service providers as they have both worked closely with the Town to optimize the on-demand service.

Future Optimization of Fixed Route

The data through the pilot project did reveal that there are a number of ridership patterns that should be further reviewed in order to potentially optimize the fixed route. For example, there were two popular stops utilized as part of the on-demand service that were not part of the former fixed route – Sobey's grocery store in Lakeshore and Tecumseh Towne Centre on the southeast corner of the Lesperance Road/County Road 22 intersection. These stops were removed as part of a review in 2018 in order to maintain the one-hour headway of the former fixed route. It is believed that there are other opportunities to revise the fixed route while adding these popular stops.

It is therefore recommended that Council authorize Administration to further assess potential changes to the fixed route utilizing the findings of the on-demand pilot project and through a public engagement process. It is proposed that this assessment be undertaken in the first quarter of 2023 and that the findings be brought forward to Council as part of a future report.

Summary

The on-demand pilot project has provided the Town with an opportunity to understand both the benefits and constraints of the service model by way of direct experience. Maintaining the on-demand service on Saturdays will enable the Town and transit riders to continue to become accustomed to this type of service and provide future opportunities for expanding/enhancing transit service through the addition of evening hours and Sundays. The pilot project demonstrated that the on-demand approach was able to provide a good level of service on Saturdays with few complaints. Finally, it is anticipated that the service itself will continue to improve as Blaise Transit further develops its software solution with continual updates, with additional opportunities for an improved application if the Town expands beyond a one-bus service model in the future.

Council is requested to approve in principle the proposed Fixed Route Monday-Friday/On-Demand Saturday TTS delivery model for 2023 at this time. The additional

revenue and costs associated with the proposed delivery model are outlined on Attachment 4 and in the Financial Implications section of this Report. Pre-budget approval in advance of the 2023 budget deliberations is requested to facilitate service continuity past December 31st of this year.

Consultations

Financial Services
 First Student Canada
 Blaise Transit

Financial Implications

In accordance with Option 6 in Attachment 4, the 2023 estimated cost of reverting back to a fixed-use service Monday-Friday and continuing to use on-demand transit on Saturdays only is detailed in the following table:

Expenses	Former Fixed Route (Option 2)	Recommended Option Original Fixed Route Monday-Friday On-Demand Saturday (Option 6)
First Student	\$250,000	\$250,000
Blaise On-Demand App	n/a	\$10,000
Answer 365 Call Centre	n/a	\$10,000
Operational Cost -Total	\$250,000	\$270,000
Annualized Capital (Vehicles)	\$80,000	\$80,000
Total Estimated Annual Cost	\$330,000	\$350,000
Estimated Provincial Gas Tax Contribution (75%)	\$247,500	262,500
Net Annual Cost	\$82,500	\$87,500

The net financial impact to the tax base is \$5,000 per year.

Link to Strategic Priorities

Applicable	2019-22 Strategic Priorities
<input checked="" type="checkbox"/>	Make the Town of Tecumseh an even better place to live, work and invest through a shared vision for our residents and newcomers.
<input checked="" type="checkbox"/>	Ensure that Tecumseh's current and future growth is built upon the principles of sustainability and strategic decision-making.
<input type="checkbox"/>	Integrate the principles of health and wellness into all of Tecumseh's plans and priorities.
<input checked="" type="checkbox"/>	Steward the Town's "continuous improvement" approach to municipal service delivery to residents and businesses.
<input checked="" type="checkbox"/>	Demonstrate the Town's leadership role in the community by promoting good governance and community engagement, by bringing together organizations serving the Town and the region to pursue common goals.

Communications

Not applicable ☒

Website ☐ Social Media ☐ News Release ☐ Local Newspaper ☐

This report has been reviewed by Senior Administration as indicated below and recommended for submission by the Chief Administrative Officer.

Prepared by:

Chad Jeffery, MA, MCIP, RPP
Manager Planning Services & Local Economic Development

Reviewed by:

Tom Kitsos, CPA, CMA, BComm
Director Financial Services & Chief Financial Officer

Reviewed by:

Brian Hillman, MA, MCIP, RPP
Director Development Services

Recommended by:

Margaret Misek-Evans, MCIP, RPP
Chief Administrative Officer

Attachment Number	Attachment Name
1.	Total On-Demand Ridership by Bus Stop – Pick-up Location Requests
2.	Total On-Demand Ridership by Bus Stop – Drop-Off Location Requests
3.	Selected Comments Received
4.	Analysis of Service Delivery Options
5A.	Option 1 – On-Demand/Status Quo

Attachment Number	Attachment Name
5B.	Option 2 – Original Fixed Route
5C.	Option 3 - On-Demand (2 Vehicles)
5D.	Option 4 – Hybrid Fixed Route Tecumseh Road/On-Demand
5E.	Option 5 – Fixed Route Tecumseh Road
5F.	Option 6 – Original Fixed Route (Mon. to Fri.)/On-Demand (Saturdays)