Demand-Responsive Transit and the

Winnipeg Transit On-Request Pilot Project

1. What is Demand-Responsive Transit?

"Demand-responsive transit" is an alternative form of providing transit, where vehicle routes and schedules are determined by passenger demand, unlike fixed route transit where transit service has a predetermined route and schedule. Demand-responsive transit is typically applied in areas with lower transit demand or areas where there are lower densities of population and employment areas with circuitous and disconnected road networks which impede the efficient use of fixed-route transit service, and areas where demand for transit service is lower during specific time periods (e.g. evenings and weekends).

Historically, Demand-responsive transit has been provided via Dial-a-Ride-Transit (DART) service, which was first used by transit agencies in the 1990s. In order to book a trip on DART, riders needed to call the Bus Operator directly. The Bus Operator would then determine the most appropriate route to the destination and mark this down on a paper map. Bus operators may receive calls while driving, and would sometimes stop to take calls and plan additional trips. Some bus operators were able to use a headset to take calls while driving, however, many found this workload to be cumbersome and overwhelming. Transit agencies were limited to operating a maximum of one vehicle within each DART zone, since it would not be possible to manage two phones on two different buses in the same DART zone. For these reasons and more, most transit agencies cancelled their DART routes by 2005 and stopped providing any form of demand responsive transit. Winnipeg Transit was the only agency identified that continued to provide DART service from 2005 to 2021.

In recent years, vendors have started offering products that can facilitate demand-responsive transit through a technology application (known as On-Request or On-Demand transit). The applications match ride requests to service vehicles in real-time, and determine the best route for the Bus Operator to take. The directions are given to the bus operator via a smartphone that is mounted in front of them. Transit On-Request offers passengers the ability to book rides with a smart phone or by using a mobile website. Passengers are also able to call into a centralized dispatch centre in order to request a ride, but are no longer able to phone a Bus Operator directly when requesting a ride. Transit agencies are also able to dispatch multiple vehicles in the same "zone" of travel, as the technology application is able to intelligently distribute rides to different vehicles.

2. Winnipeg Transit On-Request Pilot

Project Funding

Winnipeg Transit decided to start exploring On-Request transit in order to offer a more modernized version of the demand-responsive transit service known as DART and to gain critical experience in operating On-Request service which is a key component of the Winnipeg Transit Master Plan. Planning for the Winnipeg Transit On-Request pilot project began in

November, 2020. Funding for the buses and operators would not change for the On-Request zones involved in the pilot project. However, On-Request transit requires additional funding that is typically paid to a vendor who provides the technology platform, support, and services for demand-responsive transit which includes (1) one-time start-up costs to set up On-Request zones and design a tailored application, and (2) monthly (or annual) operational costs to provide support, services, and to power the algorithm used to drive the service/application. The fees cover the cost of using the transit rider application, the bus operator application, and the vehicle operations centre. Monthly costs are based on the number of service vehicles an agency operates. The pilot project was launched as a joint effort between Winnipeg Transit and the Innovation and Technology Department with the latter providing funding to pay for the vendor for the duration of the pilot project.

Through a sole source award authorized by the Manager of Materials, Winnipeg Transit entered into an agreement with VIA Transportation to provide technology support and services for On-Request transit and launched the Winnipeg Transit On-Request Pilot Project on August 12th, 2021. The project was originally set to expire on August 31st, 2022 but has had one extension which is allowing Winnipeg Transit to continue operating On-Request transit while actively working towards hiring a permanent On-Request vendor through an RFP process. The current contract is set to expire on December 31st, 2022.

The table below outlines the new costs associated with operating On-Request transit during the pilot project (up to December 31st, 2022).

Item	Monthly Cost	Total
Start-up cost (3 zones)	-	$37,500
Monthly cost 1-8	$2,250	$18,000
Monthly cost 9-13	$3,000	$15,000
Monthly cost 14-17	$3,300	$13,200
Total for Pilot	**-**	**$83,700**

Two monthly price increases occurred during the pilot; the first was in April, 2022, and was due to Winnipeg Transit increasing the number of service vehicles from three (3) to four (4). The second increase is due the vendor adjusting prices for inflation for the extension period mentioned above.

Areas/Zones Selected for On-Request Transit

Given that Winnipeg was already offering demand-responsive transit service under the three (3) DART routes, these were selected as the routes where On-Request service would now be offered;

- Zone 101: St. Amant/Plaza Drive,

- Zone 102: Southdale, and
- Zone 110: St. Boniface.

A map of each zone is included at the end of this document.

The hours of operation of each service zone are listed below;

Zone	Weekday	Saturday	Sunday
101	7:15pm-12:45am	6:00am-12:45pm, 7:30pm-1:00am	7:00a.m.-12:00am
102	7:15pm-12:45am	6:00am-12:45pm, 7:30pm-1:00am	7:00a.m.-12:00am
110	8:45am-3:45pm	9:00am-6:30pm	9:00am-5:45pm

When the pilot launched in August, each zone maintained had one service vehicle that operated solely within that particular zone. In order to test the capabilities of operating more than one service vehicle in a zone Winnipeg Transit added an additional bus during peak times of On-Request that operates in all three (3) zones. This caused the number of peak vehicles performing On-Request transit duties from three (3) to four (4), which is the reason for the increase in cost described above. The additional bus started operating during evenings and weekends on April 17th, 2022. At this time Winnipeg Transit also expanded Zone 110: St. Boniface to include the Glenwood neighbourhood and add service on Sundays.

How Does On-Request Work?

On-Request allows passengers to book rides using one of the following options;

- Winnipeg Transit On-Request app: passengers can download the app to their mobile device and use it to book a ride. The app is bilingual and fully 'Web Content Accessibility Guidelines (WCAG) 2.0' compliant;
- Winnipeg Transit On-Request online booking portal available through any web browser; and
- By calling 311 and following the prompts for on-request bookings. On-Request bookings are made by Transit customer service representatives which allows customers to bypass the regular queue at 311. Wait times have typically been between one and four minutes.

When passengers request a ride, On-Request's routing technology proposes potential ride options that include walking directions to their pick-up location, the route their bus is set to take, and walking directions from their drop-off location to their final destination. Once a passenger selects a ride proposal instructions are given to the bus operator through a GPS tablet that is mounted in the bus.

Testing, Training, and Launch

All Divisions were involved in planning the implementation of Winnipeg Transit On-Request. The Training Branch took on a significant role developing new manuals and troubleshooting guides, as well as liaising with other branches and divisions to ensure materials and staff are up to date. On-Request training has become part of the regular training received by all new bus operators,

and all current bus operators were trained on the service. The Training branch also worked with the On-request vendor to test each of the service zones prior to launch in an effort to minimize issues on opening day.

Winnipeg Transit completed the following in order to advertise the launch of On-Request Transit;

- Updates to the website including an instructional video highlighting Winnipeg Transit On-Request;
- Paid advertising through Facebook ads, promoted tweets on Twitter, Google adwords, and print; and
- Bus wraps on each of the buses that are used to deliver On-Request transit.

Customer Service and Operations

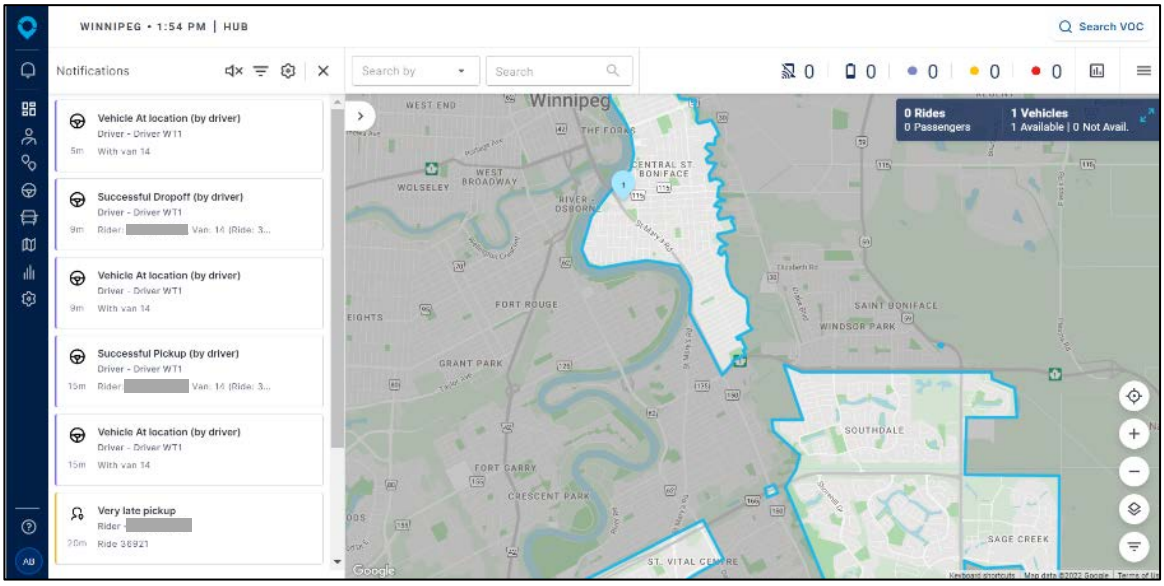
On-Request transit functions differently from DART and allows Transit to provide improvements in levels of customer service and efficiency. However, in order to capitalize on these improvements, new roles and responsibilities were identified for On-Request transit operations. This section highlights the roles and responsibilities taken on by Winnipeg Transit Plus and Winnipeg Transit Operations during the On-Request pilot project.

The Transit Control Centre has been vital throughout the On-Request pilot as the Control Centre is the first point of contact when bus operators report an issue with the On-Request system. The Control Centre is responsible for troubleshooting issues with bus operators, issuing road closure when they are reported from bus operators, and working with bus operators document any oddities within the On-Request system.

Prior to the On-Request pilot, Winnipeg Transit did not have a call centre for the DART system as it relied on passengers calling the bus operators directly. In order to allow for passengers to continue booking rides by phone using On-Request transit, calls were directed to the Winnipeg Transit Plus contact centre. Due to the nature of On-Request calls being made to schedule immediate travel, the contact centre prioritized On-Request bookings. The contact centre at Winnipeg Transit Plus was able to take these calls with minimal disruption to Winnipeg Transit Plus service, and maintained low wait times for On-Request bookings because they were receiving fewer calls overall at Winnipeg Transit Plus (with reduced ridership due to the pandemic). However, with a continued resumption of service the contact centre is receiving an increased volume of calls that is impacting overall customer wait times. During the On-Request pilot project, the contact centre also extended its hours by approximately 24 hours per week in order to match the operational hours of On-Request service.

The On-Request vendor that was selected for the pilot uses a ‘operations centre’ that is hosted on their website. The operations centre helps agencies monitor the overall health of the On-Request system. In the operations centre, they can view vehicle status, ride status, review trip routings, alter rides, and liaise with passengers regarding their ride. A screen shot of the operations centre home page (“hub”) is included below. Many of the duties associated with the operations centre are customer service related, and have since been assigned to the Winnipeg Transit Plus contact centre staff. Winnipeg Transit Plus contact centre employees are able to

handle most issues and escalate anything requiring further scrutiny to the Business Systems Analyst at Winnipeg Transit Plus. If Winnipeg Transit grows the On-Request system in the future, increasing the staffing complement to include supervisory roles for On-Request transit should be considered.

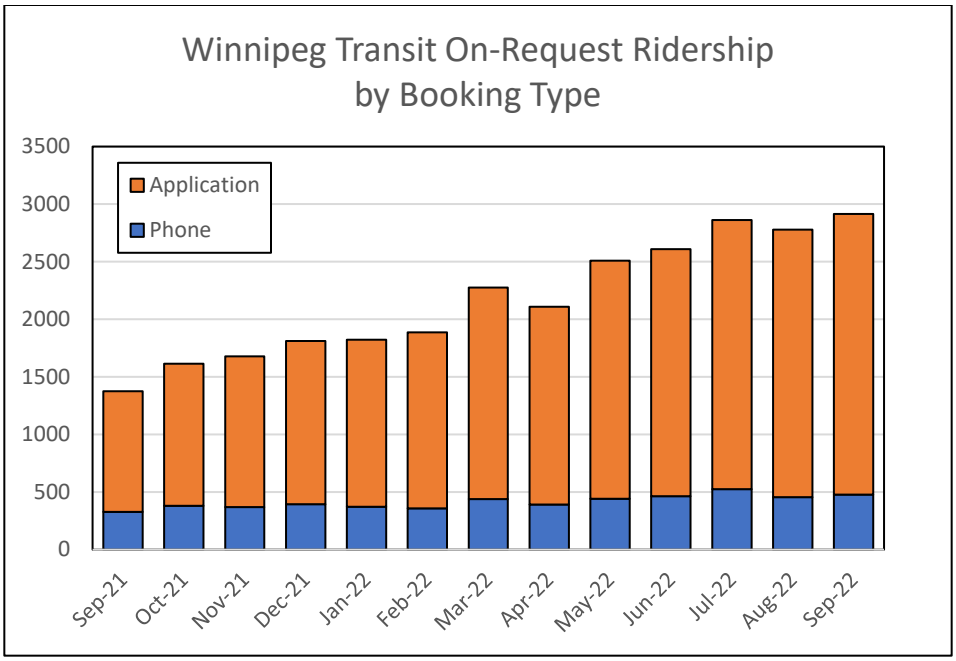


Monthly meetings with the Winnipeg Transit On-Request Working Group have been held since launching On-Request transit. These meetings allow the group to discuss a variety of topics related to the Winnipeg Transit On-Request service and involve members from Training, Control Centre, Winnipeg Transit Plus, Service Development, and VIA Transportation. One of the key considerations identified by this group is to eventually bring Winnipeg Transit Plus – Client Services contact centre and Winnipeg Transit Control Centre into the same room. This would help Controllers and Winnipeg Transit Plus call takers work together when solving On-Request issues, since Controllers are the first point of contact with bus operators, and call centre staff are using the On-Request operations centre (online platform) to perform various customer service tasks.

3. On-Request Ridership and Passenger Feedback

Ridership and Bookings

Winnipeg Transit On-Request launched on August 12, 2021, in the midst of the COVID-19 pandemic. Prior to implementing On-Request transit, each of the zones using DART already had low ridership when compared to pre-pandemic levels. The chart below shows ridership by month, by booking type from September 2021 (first complete month of data) to September 2022 (last complete month of data at the time of writing this report).



Ridership increased steadily throughout the Winnipeg Transit On-Request pilot project. Much of this can be attributed to the return to in-person activities and loosening restrictions associated with the pandemic. Winnipeg Transit expects the ridership of On-Request transit zones to continue to rise as ridership across the entire system returns to normal. In September 2022, ridership across the Winnipeg Transit system was approximately 80% of pre-pandemic levels. At the same time, ridership within the On-Request zones was similarly between 70-80% when compared with pre-pandemic levels.

The chart above shows that the majority of growth in On-Request booking are from requests made through the Winnipeg Transit On-Request application. This also varies significantly by zone. The table below shows the percentages of rides booked by the application vs a customer service agent in the early stage of the pilot (September 2021) compared to now (September 2022);

	September 2021		**September 2022**	
Zone	**% by App**	**% by Phone**	**% by App**	**% by Phone**
101	93%	7%	99%	1%
102	91%	9%	99%	1%
110	51%	49%	53%	47%

In Zone 101 and Zone 102, the majority of rides were booked through the application from very early on in the pilot (93% and 91%, respectively). The discrepancy between app and phone has grown even further since the first month of the pilot, with both zones now having essentially all bookings made through the application.

By contrast, in Zone 110, ridership has been evenly split between bookings made through the application and by phone.

Passenger Experience

Feedback from passengers was collected in two ways; 1) Feedback collected through the application and 2) Feedback collected in person by Winnipeg Transit staff. The application occasionally prompts passengers to fill in a very brief survey at the end of their ride which asks the users to identify issues with their rides, things they enjoyed about the ride, and give the ride a rating out of 5. Since the beginning of the pilot, nearly 2,000 surveys have been completed. The average rating of a passenger's ride from these surveys is 4.8 out of 5.

Winnipeg Transit staff also completed several ride-a-longs where passengers were interviewed in-person about their experiences using On-Request transit. In total, 33 passengers were interviewed across all three zones. A summary of the findings is included below;

- 75% of passengers had experience using dial-a-ride-transit (DART) prior to using On-Request;
- 82% of passengers booked through the application, while 18% of passengers booked by calling a transit representative;
- 84% of passengers indicated they use On-Request either the same or more often as DART;
- 79% of passengers indicated they are 'satisfied' or 'very satisfied' using On-Request; and
- 88% of passengers indicated they are either 'likely' or 'very likely' to recommend On-Request to someone they know.

Passengers were also asked what they liked and didn't like about On-Request. Passengers enjoyed the reliability, and flexibility of On-Request, as well as pick-up and drop-off locations that are closer to their origin/destination when compared to DART, and the convenience of using an application to book a trip on Winnipeg Transit. Passengers did not like the experience of booking through the contact centre and the size of the On-Request zones (many asked for the zones to be expanded and hours of On-Request transit to be extended). During the pilot project Winnipeg Transit began exploring installing kiosk-style phones at key points of interest in On-Request service zones; specifically in Zone 110 due to the high percentage of passengers booking through the contact centre. Installation of these phones would not be advised in Zone 101 or Zone 102 due to 99% of passengers booking though the App.

4. Next Steps for Winnipeg Transit On-Request

Winnipeg Transit is recommending that On-Request be formally adopted as the method of providing demand responsive transit in Winnipeg. In order to transition this pilot service to a permanent fixture, the following next steps have been deemed critical;

- As On-Request transit becomes a permanent fixture, the Winnipeg Transit Plus Contact Centre will need additional resources to cover the extended hours associated with On-Request service (approximately 24 per week). Additionally, as ridership has increased

closer to pre-pandemic levels, the Winnipeg Transit Plus contact centre continues to see increased wait times for On-Request passengers. The contact centre has also taken on additional responsibilities associated with operating the On-Request 'command centre' (an online portal that allows staff to monitor the overall health of the On-Request system). Winnipeg Transit Plus is requesting the addition of 2.60 Clerk A FTEs to maintain service levels and keep wait times associated with On-Request transit low.

- The current contract for the On-Request software platform is set to expire on December 31st, 2022. Winnipeg Transit is currently procuring a permanent On-Request vendor through an RFP process, however the vendor who is selected through this process may not be in place until September, 2023. Winnipeg Transit is requesting to continue operating the Winnipeg Transit On-Request pilot through the transition period from pilot project to permanently-contracted service by extending the current contract for up to nine (9) months. This extension would bring the contract in breach of the various Trade Agreements. As per City Policy F1-003, section B8.1.1(b) the Chief Administrative Officer shall forward a recommendation to Executive Policy Committee which may approve the Single Source negotiation where the Single Source is not permitted under the Policy and/or not permitted under the various Trade Agreements. A report outlining these recommendations will be brought forward to Executive Policy Committee on December 7th, 2022.

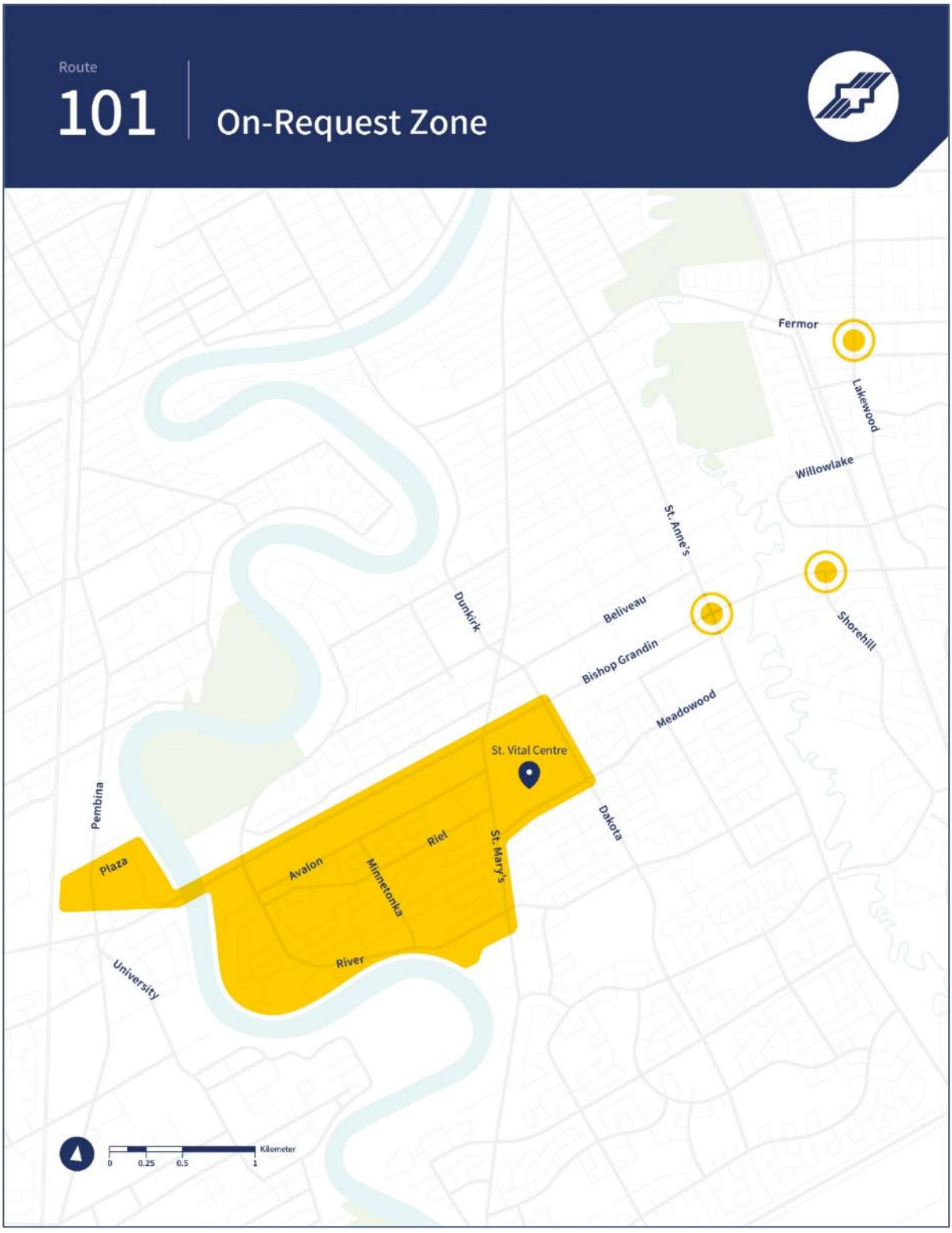
5. Future Considerations

The following are being considered in the future as Winnipeg Transit continues to grow On-Request service;

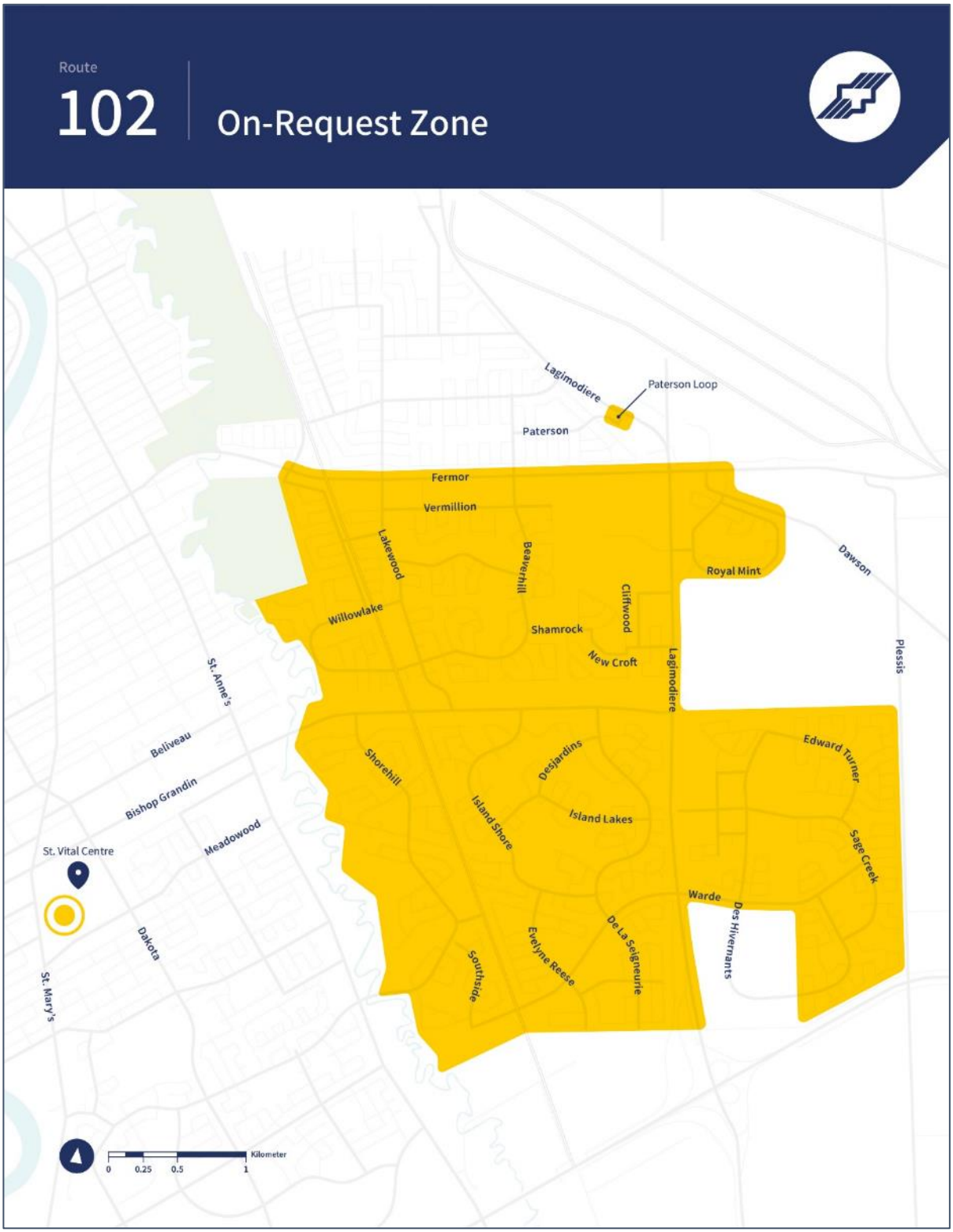
1. Explore the feasibility of combining On-Request service with Winnipeg Transit Plus trips under the 'family of services' model: Combining On-Request and Winnipeg Transit Plus trips is a goal in the Council approved Winnipeg transit Master Plan. On-Request and Winnipeg Transit Plus would be operated together using similar vehicles and a common technology platform.
2. Engage with the public to refine the Winnipeg Transit Master Plan – Short Term Network's 'feeder' network: On-Request service zones have not been finalized under the WTMP and more engagement is needed to determine the 'feeder network'. This will determine the size of On-Request zones, number of zones, and number of service vehicles required. This information will be used to determine future resource needs for On-Request Transit.
3. Evaluate staffing needs and resource requirements for operating a larger On-Request system: Winnipeg Transit will evaluate the impacts of operating a larger On-Request transit system and determine the effects of implementing a 'family of services' model to evaluate future resource needs.
4. Explore the feasibility of using different vehicle types to deliver On-Request transit: Current On-Request service uses 30-ft buses to deliver service. These vehicles are diesel and nearing the end of their service life. Winnipeg Transit will explore the feasibility of using alternate vehicle types, as well as alternate fuel sources.
5. Consider housing Contact Centre and Transit – Control Centre under one roof: Controllers from the Transit – Control Centre are the first point of contact with bus

operators, and the Transit Plus – Contact Centre representatives use the On-Request ‘operations centre’ (online platform) to perform various customer service tasks. Contact Centre representatives require information from Control Centre to perform these tasks and incorporating both groups in the same room would ease workflow and allow for better communication.

Attachment 1 of 3: Map of Zone 101 – St. Amant/Plaza Drive



Attachment 2 of 3: Map of Zone 102 – Southdale



Attachment 3 of 3: Map of Zone 110 – St. Boniface.

