



Report

Implementation Plan

Implementing the Fare Structure and Strategy Review



Prepared for City of Windsor
by IBI Group
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1 Introduction

Transit Windsor retained IBI Group to conduct a fare structure review which considered:

- What fare products to offer;
- what fare levels to set; and
- how fares should be collected (e.g. smartcards, mobile ticketing).

As part of the review, IBI Group was asked to consider updates made to Transit Windsor's Trapeze fareboxes and how they might enable new fare opportunities. The resulting *Fare Structure and Strategy Review* report was issued in October 2018.

This implementation plan takes the recommendations set out in the Fare Structure and Strategy Review and identifies a process to achieve them.

This Implementation Plan is structured as follows:

- Section 2 summarizes Transit Windsor's existing fares;
- Section 3 describes future fares for Transit Windsor, based on the recommended approach identified in the Fare Structure and Strategy Review;
- Section 4 describes an implementation path to move from the existing to the future state;
- Section 5 provides implementation details to assist in configuring the future fare system; and
- Section 6 discusses other relevant implementation details for Transit Windsor consideration.

2 Existing Fares

Transit Windsor's current fares include single ride purchases (via cash and tickets), calendar-based passes (daily and monthly), and several limited-eligibility special passes such as the U-Pass and Affordable Pass Program (APP). Fare classes include Adult, Concession (students and seniors aged 60+), and children (under 5 years old).

Common fare products and fare levels are summarized in Exhibit 1.

Exhibit 1. Existing fare products and fare levels

Fare Class	Single Ride		Passes		
	Cash	Ticket	Day	Month	Other
Adult	\$3 <i>\$5 (tunnel)</i>	5 for \$12.65 <i>\$5 (tunnel)</i>	\$9**	\$95.70*** (local only) <i>\$95.70*** (tunnel only)</i>	<i>\$157 (local + tunnel)</i> \$81.35 (Corporate ValuPass)
Concession (60+)	\$3	5 for \$9.90	-	\$48.40***	-
Concession (students post-secondary and below)	\$3	5 for \$9.90	-	\$66***	\$66† (U-Pass) \$105.50‡ (Summer Saver)
APP	-	-	-	\$48.40	-
Child (<5)	<i>Free*</i>	-	-	-	-

*when accompanied by a full-paying passenger

**day pass valid for full family

***available for-half month at half-price, when purchased from 15th until 21st of each month

†cost per semester, eligible University of Windsor students only

‡cost for July and August

Note: Fares in *italics* include tunnel service, and 2-hour transfer cannot be used on tunnel bus

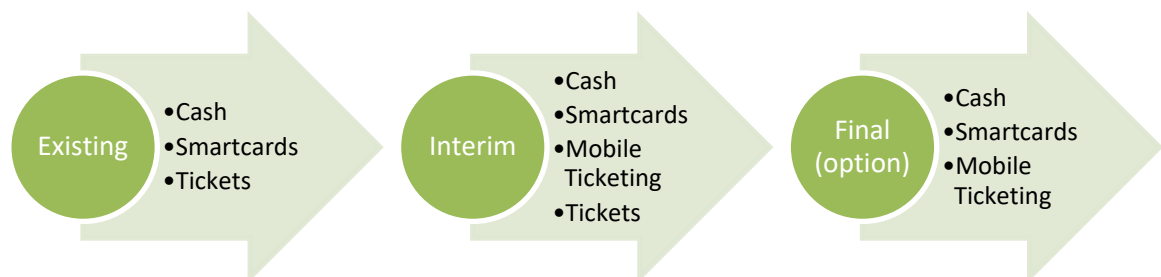
3 Future Fares

The Fare Structure and Strategy Review recommended approach focuses on modernizing Transit Windsor's fare media and simplifying the fare products to increase passenger convenience and maintain ridership.

3.1 Fare Media

Mobile ticketing will be introduced and smartcards will be used more extensively, supported by traditional cash fares. Tickets may ultimately be phased out as the related fare products are transitioned to the new fare media. The transition in fare media is illustrated in Exhibit 2.

Exhibit 2. Fare media transition



3.2 Fare Structure

This report assumes that Transit Windsor’s fare structure will be modified based on the following general principles, which were recommended in the preceding Fare Structure and Strategy Review and will need to be presented to the Board of Directors and City Council for approval:

- Children 12 and under will ride free when accompanied by a full-paying passenger;
- Student fares will only apply to elementary/secondary school-aged students and will be verified by age;
- Post-secondary students will rely on U-Pass style programs (applies to University of Windsor only at this time, could apply to St. Clair College if they decide to join);
- APP riders will be eligible for a new discounted daily pass option;
- Calendar passes are converted to 30-day rolling passes; and
- Frequent riders are incentivized by maintaining the cost of monthly passes while other products increase in line with inflation.

The implications of the above principles are documented in Exhibit 3.

Exhibit 3. Future fare products and fare levels (2023)

Fare Class	Single Ride		Passes		
	Cash	Electronic	Day	30-Day	Other
Adult	\$3.30 <i>\$5.50 (tunnel)</i>	\$2.79 <i>\$5.50 (tunnel)</i>	\$9.95**	\$95.70 (local only)*** <i>\$95.70*** (tunnel only)</i>	<i>\$157 (local + tunnel)</i> \$81.35 (Corporate ValuPass) \$66† (U-Pass)
Concession (60+)	\$3.30	\$2.19	-	\$48.40***	-
Concession (13-19)	\$3.30	\$2.19	-	\$66***	\$105.50† (Summer Saver)
APP	-	-	\$5	\$48.40***	-
Child (<13)	<i>Free*</i>	-	-	-	-

*when accompanied by a full-paying passenger

**day pass valid for full family

***also available as a 15-Day pass at half-price †cost per semester

†cost for July and August

Note: Fares in *italics* include tunnel service, and 2-hour transfer cannot be used on tunnel bus

4 Implementation Plan

4.1 Phasing

The transition to the future fare structure will be phased.

The interim phase will include fare media and products as supported by Transit Windsor's existing Trapeze fare system (i.e. those it should be possible to support through configuration of the existing fare system) and adds a mobile ticketing pilot.

A finalization phase may add additional fare products to the smartcards, which would require development by Trapeze to support. This phase will also progress the mobile ticketing solution from a pilot to a completed implementation. Completion of the finalization phase is dependant on future funding and technology availability; it is not currently supported or planned.

4.1.1 Interim Phase

The interim phase focuses on deploying the proposed fare structure using the fare media and fare products that are supported by the existing Trapeze fare system, plus a mobile ticketing pilot. Fare products beyond this will be supported using legacy fare media (i.e. paper tickets).

For this phase, the expected fare products and fare media to be utilized are documented in Exhibit 4.

Exhibit 4. Interim phase fare media and products

Fare Media Fare Products	Cash	Smartcard (Adult)	Smartcard (Senior, >60)	Smartcard (Youth, 13-19)	Smartcard (APP)	Mobile Ticketing (Adult)	Tickets	Post-Secondary Student Cards
Single Ride – Local	☒					☒	☒	
Single Ride – Tunnel	☒					☒	☒	
Day Pass	☒	☒	☒	☒	☒	☒		
30-Day and 15-Day Pass – Local		☒	☒	☒	☒	☒		
30-Day and 15-Day Pass – Tunnel		☒	☒	☒	☒	☒		
30-Day Pass – Local + Tunnel		☒	☒	☒	☒	☒		
Corporate ValuPass		☒						
U-Pass*								☒
Summer Saver Pass				☒				

*with University/College agreement only

Four separate smartcard classes will be utilized – a standard “adult” smartcard, a “senior” smartcard for riders 60+, a “youth” smartcard for riders aged between 13-19, and an “APP” smartcard. It is recommended that concession class smartcards (60+ and “youth”) be visually distinguishable to aid in their management.

A mobile app pilot will be deployed to support adult single ride and standard passes.

Tickets will remain in use for single ride fares, until the equivalent fares are available on smartcard and are operating reliably.

4.1.2 Finalization Phase

Deployment of the final system requires development by Trapeze, such as for supporting stored value on smartcards (this is not supported in the system currently deployed at Transit Windsor). It will also take the lessons learned from the mobile ticketing pilot and evolve mobile ticketing to a completed implementation.

The final expected fare products and fare media to be utilized are documented in Exhibit 5, with the primary changes being more products offered on smartcard (including all concession single ride fares) and elimination of tickets.

Note that the finalization phase is subject to future funding and technology availability; it is not currently supported or planned.

Exhibit 5. Final system fare media and products

Fare Media	Cash	Smartcard (Adult)	Smartcard (Concession, >60)	Smartcard (Concession, 13-19)	Smartcard (APP)	Mobile Ticketing (Adult)	Tickets	Post-Secondary Student Cards
Fare Products								
Single Ride – Local	☒	☒	☒	☒	☒	☒		
Single Ride – Tunnel	☒	☒	☒	☒	☒	☒		
Day Pass	☒	☒	☒	☒	☒	☒		
30-Day and 15-Day Pass – Local		☒	☒	☒	☒	☒		
30-Day and 15-Day Pass – Tunnel		☒	☒	☒	☒	☒		
30-Day Pass – Local + Tunnel		☒	☒	☒	☒	☒		
Corporate ValuPass		☒						
U-Pass*								☒
Summer Saver Pass				☒				

*with University/College agreement only

Four separate smartcard classes will be utilized – a standard “adult” smartcard, a “senior” smartcard for riders 60+, a “youth” smartcard for riders aged between 13-19, and an “APP”

smartcard. It is recommended that concession class smartcards (60+ and “youth”) be visually distinguishable to aid in their management.

A mobile app will be deployed to support adult single ride and standard passes. It is currently envisioned that the mobile app will be limited to adult fare class products as this addresses the primary mobile app users, and in recognition of the challenges associated with validating non-adult users. However, it is recognized that this may change depending on feedback from the mobile app pilot.

Tickets will be phased out, replaced by single ride purchases on smartcards and on the mobile app.

The interim and finalization phases are based on our understanding of Transit Windsor’s Trapeze fare system and its capabilities. If certain fare products that are shown as part of the finalization phase are found to be available through immediate configuration of the current Trapeze system, it is envisioned that delivery of these fare products will be shifted forward into the interim phase.

The finalization phase would have two stages, first where the expanded range of fare products availability through the smart card and mobile app would be established. Followed shortly after by the elimination of the tickets.

4.2 Implementation Activities and Schedule

Key activities related to transitioning from the current to the future fare structure are summarized in the following sections, with a target schedule identified in Exhibit 6.

4.2.1 Smartcard

Interim Phase

- **Activity SC1: Arrange configuration support.** Contract smartcard vendor (Trapeze) for support in configuring the current smartcard system. It is expected that the contract would include a fixed price to support configuring the fare products and fare classes discussed in this report, ensuring the sales (initial and revaluing) infrastructure is appropriately set up and working, and providing training to ensure that configuration knowledge remains with Transit Windsor so that future changes can be made without vendor involvement.
- **Activity SC2: Configure and deploy interim system.** The vendor and Transit Windsor will work together to configure and deploy the smartcard system interim functionality.
- **Activity SC3: Interim system in use.**

Finalization Phase (not currently supported or planned)

- **Activity SC4: Document system gaps.** Identify and document the gaps between the deployed interim smartcard system and the intended final smartcard system. These may be different than currently envisioned, as creative solutions and unexpected challenges could arise through real-world deployment of the interim phase.
- **Activity SC5: Procure additional functionality.** Contract Transit Windsor’s smartcard vendor (Trapeze) to develop and deploy additional functionality that addresses the gaps identified in SC4. Working with Trapeze is the ideal approach as it should be quicker, simpler, and more cost effective; however, if agreeable terms cannot be reached with Trapeze (or if the subsequent implementation by Trapeze, or its pace of execution, is inadequate), Transit Windsor retains the option of obtaining the required

functionality through a competitive procurement. This alternative would likely take the form of an alternate vendor for the smart card system, rather than of replacing the Trapeze farebox.

- **Activity SC6: Develop and deploy final system.** The vendor and Transit Windsor will work together to develop and deploy functionality to bring the smartcard system to its final state.
- **Activity SC7: Final system in use.** Smartcard system in use. As the extended functionality is proven, redundant fare media is phased out.

4.2.2 Mobile Ticketing

Interim Phase

- **Activity MT1: Arrange pilot:** Arrange pilot implementation of mobile ticketing to address the functionality identified in this report. Transit Windsor may choose to approach Trapeze initially as there are some logistical advantages of maintaining one fare system vendor. However, if Trapeze is unable to support the needed functionality and/or agreeable terms cannot be reached, other mobile ticketing vendors can be approached. Having a separate mobile ticketing system layered on top of a legacy fare system is a common practice in the transit industry.
- **Activity MT2: Deploy pilot.** The vendor and Transit Windsor will work together to deploy the mobile ticketing pilot.
- **Activity MT3: Pilot system in use.**

Finalization Phase (not currently supported or planned)

- **Activity MT4: Document final requirements.** Transit Windsor will develop a set of functional requirements for their final mobile ticketing system, considering the lessons learned during the pilot
- **Activity MT5: Procure final system.** Contract a vendor to develop and deploy the final mobile ticketing system, which will meet the requirements identified in MT4. Depending on the performance of the pilot, and the amount of new and modified functionality, a decision will be made as to whether to continue with the pilot mobile ticketing vendor, or to find a new vendor via a competitive procurement.
- **Activity MT6: Develop and deploy final system:** The vendor and Transit Windsor will work together to develop and deploy the mobile ticketing final system.
- **Activity MT7: Final system in use.** Mobile ticketing in use.

4.2.3 Schedule

A proposed schedule for the activities described above is presented in Exhibit 6. Implementation is projected to be completed by the end of Year 3. For readability, the Exhibit only shows up to Year 4 but the system will continue to remain in use for years beyond this.

Exhibit 6. Implementation Schedule

No.	Task	Interim Phase				System in Use	Potential Finalization Phase (not currently supported or planned)											
		Q1	Q2	Q3	Q4													
Smart Card																		
SC1	Arrange configuration support	█																
SC2	Configure and deploy interim system		█	█	█													
SC3	Interim system in use					█	█	█	█	█	█	█	█	█	█			
SC4	Document system gaps																	
SC5	Procure additional functionality																	
SC6	Develop and deploy final system																	
SC7	Final system in use													█	█			
Mobile ticketing pilot																		
MT1	Arrange pilot	█	█															
MT2	Deploy pilot			█	█													
MT3	Pilot system in use					█	█	█	█	█	█	█	█	█	█			
MT4	Document final requirements																	
MT5	Procure final system																	
MT6	Develop and deploy final system																	
MT7	Final system in use													█	█			

5 Implementation Details

This section describes the fare classes, fare products, and sales infrastructure of the future system. It is intended to act as a guide during configuration and development.

5.1 Fare Classes

Four separate fare classes will be configured:

- Adult;
- “Senior” (60+);
- “Youth” (13-19); and
- APP.

Certain fare classes may use a visually distinguishable smartcard, with the intent being to make it easier for the bus operator to quickly identify visually what type of smartcard the rider is using (e.g., card colour). Since some riders will take advantage of how a contactless smart card can be used without removing it from a wallet/purse, ideally the smart card reader will be able to display the smart card class to the operator for specified classes (e.g. “Senior” and “Youth”).

Certain fare products and prices will be available only to certain fare classes. However, non-adult smartcards will still be able to purchase adult fare products at the adult price, if they are not eligible for fare class specific pricing (e.g. Seniors could purchase a 30-day tunnel pass on their senior smartcard at the adult price, since there is no discounted senior pricing for this product).

- Adult smartcards will be freely available for purchase.
- Senior smartcards will be available to qualified riders, with validation via a similar process as used for senior pass purchases today.
- Youth smartcards will be available to qualified riders, with validation via age (in a similar manner as is done for senior smartcards). Card expiry should be set so that the rider will need to transition to an adult smartcard at the appropriate time.







- APP smartcards will be available to qualified riders, with validation via a similar process as used for APP passes today.

Mobile ticketing will only support the adult fare class; however this may change in the final system depending on feedback and experience during the mobile ticketing pilot.

5.2 Fare Products

Each fare product is described below. This includes the types of fare media that can be used to purchase the fare product, which fare classes are eligible to purchase it, and general notes to guide the configuration. Fare media/class combinations that are only applicable to the finalization phase (not currently supported or planned) are shown in *red italics*.







Single Ride – Local

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard	<i>†</i>	<i>†</i>	<i>†</i>	<i>*†</i>
Mobile Ticketing				
Notes	2-hour transfer from first ride.			

*at adult fare

†only applicable to finalization phase







Single Ride – Tunnel

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard	<i>†</i>	<i>*†</i>	<i>*†</i>	<i>*†</i>
Mobile Ticketing				
Notes	No transfer included. Local bus (if required) is separate fare.			

*at adult fare






†only applicable to finalization phase

Day Pass






Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard		 *	 *	
Mobile Ticketing				
Notes	Valid from time of purchase until end of service (3 a.m.). Adult day pass is good for a family (2 people), APP day pass is good for one person.			

*at adult fare

30-Day and 15-Day Pass – Local






Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard				
Mobile Ticketing				
Notes	Rolling 30-day and 15-day pass from time of first ride.			

30-Day and 15-Day Pass – Tunnel

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard		 *	 *	 *
Mobile Ticketing				
Notes	Rolling 30-day and 15-day pass from time of first ride. Local bus (if required) is a separate fare.			


*at adult fare

30-Day Pass – Local + Tunnel

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard		 *	 *	 *
Mobile Ticketing				
Notes	Rolling 30-day pass from time of first ride.			

*at adult fare

Corporate ValuPass

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard				
Mobile Ticketing				
Notes	Same rules as existing Corporate ValuPass program.			

U-Pass

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard				
Mobile Ticketing				
Notes	Valid for a semester.			

Summer Saver Pass

Eligible Fare Media	Eligible Fare Classes			
	Adult	Senior (60+)	Youth (13-19)	APP
Cash				
Smartcard			☒	
Mobile Ticketing				
Notes	2-month calendar pass valid for July and August.			

5.3 Sales Infrastructure

Legacy sales media will until phased out continue to be sold through legacy sales channels, and the “sales infrastructure” for mobile ticketing is the mobile ticketing app.

Smartcards, however, require infrastructure for both distributing the physical cards and “revaluing” them (e.g. loading passes and potentially stored value). Suggested smartcard sales channels for purchase and revaluing are detailed in Exhibit 7.

Exhibit 7. Smartcard sales channels

Sales Channel	Interim			Final		
	Adult Card Purchase	Senior, Youth, and APP Card Purchase	Revaluing	Adult Card Purchase	Senior, Youth, and APP Card Purchase	Revaluing
Customer Service Centre	☒	☒	☒	☒	☒	☒
Website			☒	☒	☒	☒
Retail Partner	☒			☒		☒
Vending Machine						
Onboard						

Distribution channels for smartcards will be different for adult cards, which can be distributed freely, and concession cards (Senior, Youth, and APP), which require eligibility validation. Distributing a smartcard to a rider is generally a one-time event (i.e., until replacement is needed, which should be rare).

While a rider acquires a smartcard only once, revaluing is a regular occurrence. As such, revaluing a smartcard quickly and conveniently will be critical for a successful implementation. It is expected that website revaluing will be supported for the interim phase, along with in-person revaluing at Transit Windsor customer service locations. In the final system, revaluing will also be possible at retail partners (similar to how tickets can be purchased at retail partners today).

Other sales and revaluing channels for consideration include stand-alone vending machines and onboard the bus. The former can be relatively costly, and the latter can have significant impacts on boarding times. However, both may significantly increase convenience for riders. It is anticipated that neither of these channels are required for launch but could be considered later.

6 Implementation Considerations

The following sections discuss important items for Transit Windsor consideration during implementation.

6.1 External Stakeholders

Portions of the implementation will require involvement from stakeholders outside of Transit Windsor. Some key external stakeholders are identified below.

- Since the preferred approach is via Transit Windsor's existing **system vendor**, it is important that they remain reasonable, engaged, and effectively resourced. If necessary, Transit Windsor retains the option to partner with an alternative vendor.
- The **University of Windsor (and other participating post-secondary schools)** will be involved in the U-Pass program, from a management perspective.
- **Retail Partners** will be involved initially in the distribution of smartcards, this may ultimately grow to include the revaluing of smartcards too. Over time this may replace the previous retail involvement in ticket distribution.

6.2 Staffing

As with any technology deployment, there will be modifications to staff responsibility within Transit Windsor, particularly during and after implementation.

A project leader should be appointed to champion and take full advantage of the opportunities the upgraded fare system will provide.

Participation in these changes will cut across Transit Windsor stakeholders, including IT, Customer Service, Operators, Maintenance, and Supervisors. All staff should be encouraged to take an interest and ownership in the deployment and participate in reporting any issues found.

The following factors are instrumental in a successful project:

- A dedicated project leader with strong leadership;
- All relevant stakeholders involved throughout the configuration and implementation process; and
- A dedicated role at Transit Windsor for providing in-house technical support for the system as it is in use.

6.3 Customer Acceptance

An objective of this deployment is to provide better service to customers. The fare system is extremely public facing and Transit Windsor can expect to receive significant feedback from customers. It is important to engage with customers and solicit their feedback and opinions.

Marketing efforts should be undertaken to help customers accept and utilize the new system. Old methods (for example, tickets) should not be withdrawn until Transit Windsor is confident that new alternatives are sufficiently available and reliable.

6.4 Support

Due to the complexity of the upgrade, Transit Windsor may wish to retain expert support. Potential areas for support include:

- Assisting with preparing contracting documents and negotiating with vendors (e.g. for interim phase configuration, mobile ticketing pilot, and potentially final system upgrades);
- Testing configuration and development items to ensure they meet Transit Windsor needs; and
- Documenting system gaps and requirements if and when moving from the interim phase to the final system.