



**For Action  
with Confidential Attachment**

## **Fare Modernization Annual Update**

**Date:** July 17, 2024  
**To:** TTC Board  
**From:** Chief Strategy and Customer Officer (Acting)

### **Reason for Confidential Information**

---

This report contains information about a position, plan, procedure, criteria, or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the City or local board.

### **Summary**

---

The purpose of this report is to provide an annual update on the progress made since the last Fare Modernization Update to the TTC Board in February 2023. This report includes an update on TTC's fare modernization efforts, its automated fare collection system (PRESTO), and its related automated fare media.

### **Recommendations**

---

It is recommended that the TTC Board:

1. Receive this report for information; and
2. Receive the Confidential Attachment and authorize that the information contained in the Confidential Attachment remain confidential as it contains information about a position, plan, procedure, criteria, or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the City or local board.

### **Financial Summary**

---

This report provides an update on the TTC's fare collection systems. There is no financial impact arising from the adoption of the recommendations in this report beyond what has already been approved in the 2024 – 2033 Capital Budget and Plan.

The 2024-2033 Capital Budget and Plan, approved by the TTC Board on December 20, 2023 and City Council on February 14, 2024, includes project cost funding of \$79.2 million for the PRESTO project, of which \$71.9 million was incurred to the end of 2023 based on year-end results. As a result, the remaining funding for this project totals \$7.3 million, cash flowed from 2024 to 2026. The remaining funds are sufficient to complete

the TTC's work on deliverables associated with the 2012 TTC-Metrolinx Master E-Fare Collection Outsourcing Agreement (the "Agreement").

The Chief Financial Officer has reviewed this report and agrees with the financial information.

## **Equity/Accessibility Matters**

---

A cornerstone of the TTC's 2024-2028 Corporate Plan is accessibility, and as a proud leader in providing accessible public transit in the City of Toronto, we are committed to ensuring reliable, safe, and inclusive transit services for all our customers. This is supported through leveraging PRESTO technology and engaging with the City of Toronto's Poverty Reduction Strategy Office (PRSO) and the TTC's Advisory Committee on Accessible Transit (ACAT).

The TTC and Metrolinx have been working to proactively identify potential barriers to transit equity and access in joint fare modernization efforts. The intent of identifying barriers is to avoid or mitigate these potential barriers, ensuring that no customer segments or equity-deserving groups are left behind.

Advancements in fare collection technology have enabled the TTC and the City of Toronto to implement new policies that significantly benefit our customers, including the two-hour transfer on PRESTO and the City's Fair Pass Transit Discount Program. In 2023, the launch of Open Payment, enabling customers to pay with contactless debit or credit, and PRESTO in Google Wallet, have further expanded payment options and made it easier for more customers to pay their fare.

The implementation of the Province's One Fare Program in February 2024 eliminated the double fare for customers connecting between the TTC and its regional transit partners. This new program will save an adult commuting five days per week on multiple systems an average of \$1,600 annually. It is especially impactful for low-income customers who are making short trips on local transit across the municipal boundary.

The TTC and Metrolinx continue to work on fare modernization in 2024, including the expansion of PRESTO in other mobile wallets, transitioning the remaining TTC legacy fare media onto PRESTO, including Support Person Assistance Cards and Convention Passes, and further expanding the third-party retail network.

It is important to note that physical PRESTO cards and limited-use PRESTO Tickets will continue to be available. These options provide the most protection from banking fees associated with debit and credit transactions, which may particularly impact those who are unbanked or under-banked and have low or volatile income. The availability of PRESTO Tickets will ensure continued access for social and community agencies that distribute fares to numerous groups, such as newcomers, those experiencing homelessness, and clients with low incomes.

For customers who are able and willing to tap their credit or debit card to travel, the Open Payment method of payment presents minimal obstacles in paying a transit fare.

With this new capability, there is nothing to buy or load. To pay their fare, customers simply tap their physical credit or debit card or use the same cards on their mobile device. Most major banks are no longer charging debit transaction fees for Open Payment transactions on the PRESTO system.

## Decision History

---

The TTC is focused on continuously improving its fare collection system to ensure it is modern, efficient and customer-focused. The following reports highlight in detail the many steps the TTC has taken to advance fare modernization.

At its meeting on January 25, 2018, the TTC Board adopted, with amendments, the [TTC Corporate Plan 2018-2022](#). Critical Path 5 highlights the importance to innovate for the long-term, including the need to maintain a modern fare collection system.

At its meeting on October 24, 2019, the Board moved a motion to complete a [Fare Collection Request for Information \(RFI\)](#). The purpose of the RFI was to identify service providers and technologies used by transit properties worldwide with the intent to better understand industry trends.

At its meeting on May 13, 2020, the TTC Board approved a report detailing the proposed scope of work for two TTC policy documents: the [5-Year Fare Policy and the 10-Year Collection Outlook](#).

At its meeting on September 24, 2020, the TTC Board received the report, [PRESTO Annual Update](#) on the PRESTO implementation achievements, the progress on the negotiations with Metrolinx on further improvements to the PRESTO system, how to achieve the remaining key milestones, and resetting the TTC's ongoing relationship with PRESTO.

At its meeting on February 10, 2021, the TTC Board received the report, [PRESTO, Fare Policy and Collection Strategy Update](#) on the PRESTO implementation achievements, progress made since the last update in September 2020, and ongoing negotiations with Metrolinx on achieving the key remaining milestones. This report also provided a progress update on the development of the 5-Year Fare Policy and 10-Year Fare Collection Outlook.

At its meeting on May 12, 2021, the TTC Board received an update on the [5-Year Fare Policy and 10-Year Fare Collection Outlook](#). An analysis of the existing TTC fare policies and the findings from the fare collection RFI were presented. Seven strategic fare policy goals were approved, which have informed the technical analysis of several fare options. Staff were also directed to move forward with vendor demonstrations of Full System Integrators.

At its meeting on February 10, 2022, the TTC Board received an overview of the opportunities and benefits of a fare capping model along with key findings and messages from various stakeholder and customer groups, titled: [Advancing the 5-Year](#)

[Fare Policy](#). Fare capping was endorsed in principle, with a motion directing staff to conduct additional financial analysis to be presented to the Board.

At its meeting on February 10, 2022, the TTC Board received an update on [TTC's Fare Collection Modernization](#) initiatives and endorsed the technology and operations fare collection options, including the use of Open Payment, that informed the implementation plan.

At its meeting on June 23, 2022, the TTC Board received the report, [TTC's 10-Year Collection Outlook – Modernizing Fare Collection](#) on the TTC's Fare Collection Modernization, including an overview of the progress made with the 10-Year Fare Collection Outlook, including a Business Case Outline, and a PRESTO update on how business deliverables have been progressing with Metrolinx.

At its meeting on February 23, 2023, the TTC Board received the report, [Fare Modernization Update](#) on the TTC's Fare Collection Modernization Program, which included a progress update on the delivery of outstanding business requirements and an overview of the TTC's Fare Modernization work, including a Risk Mitigation Plan as the TTC's contract with Metrolinx comes to an end in 2027.

At its meeting on May 16, 2024, the TTC Board approved a new five-year [TTC Corporate Plan, 'Moving Toronto, Connecting Communities, TTC Corporate Plan 2024-2028 & Beyond'](#). Highlighted in Action 2.2.6, the Corporate Plan identified the implementation of a World-Class Fare Collection System, which includes the development of future-state requirements for the next generation of the TTC's fare collection system.

## **Issue Background**

---

A TTC fare grants customers access to the entire transit network, including subway, bus, streetcar services, and Wheel-Trans services for eligible customers. With the introduction of the One Fare Program, a TTC fare provides free transfers to neighbouring transit agencies, and paying a GO Transit fare provides free transfers to and from TTC, as long as customers pay using a PRESTO or debit/credit card.

The TTC Board approved fare policy goals as part of the 5-Year Fare Policy in 2021. These goals helped define the TTC's vision to develop a fare policy reflective of customer needs while taking into account TTC's financial sustainability, and provided the basis for assessing future fare policy recommendations, which drive the TTC's fare collection.

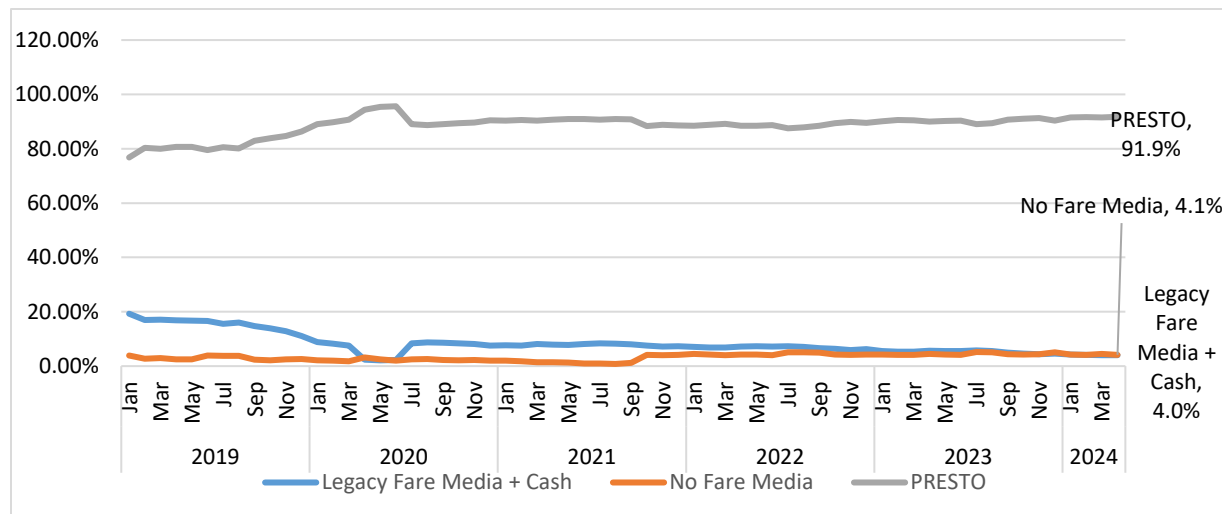
**PRESTO represents the largest portion of the TTC’s fare collection and it will continue to increase with the decline in usage of cash and legacy tickets and tokens.**

The TTC collects its fares in two ways:

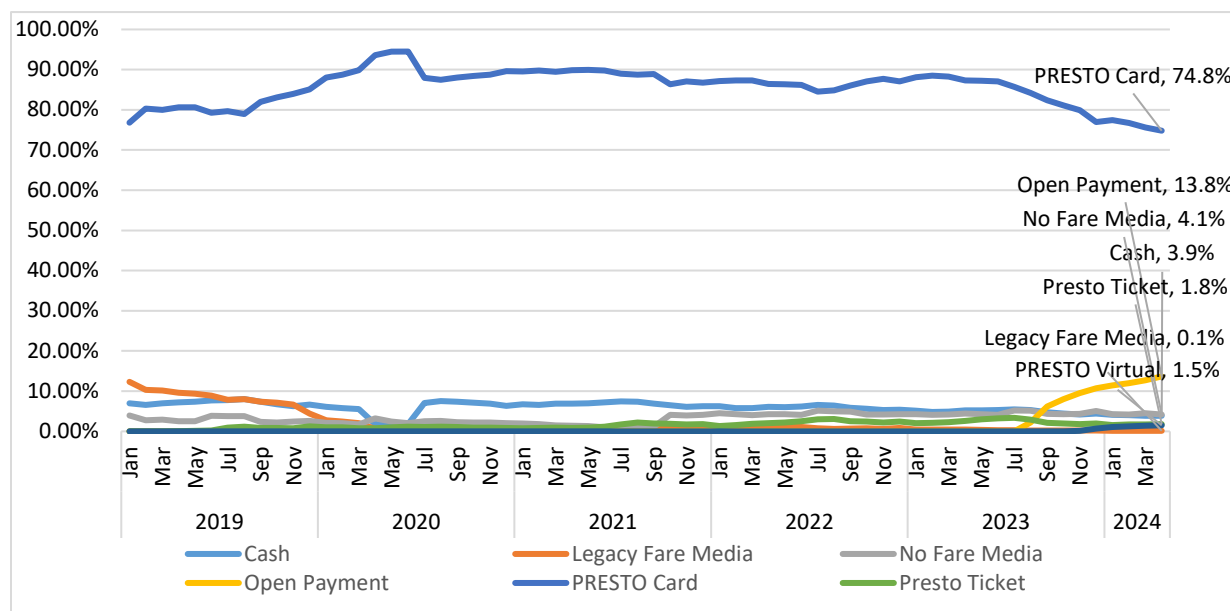
1. Legacy Fare Media: The TTC collects cash fares, TTC tickets and TTC tokens. As shown in Figure 1 and Figure 2, as of April 2024, this represents 4.0% of the fare media mix (3.9% cash, 0.1% tickets and tokens).
2. Automated Fare Collection System: The TTC collects fares automatically through PRESTO via the PRESTO card, PRESTO in Mobile Wallet, PRESTO Tickets and Open Payment (credit/debit). PRESTO’s automated fare media represents 91.9% of the total fare media mix, as of April 2024, as shown in Figure 1.

The remaining 4.1% of the total fare media mix cannot be attributed to any specific fare media and includes children 12 and under who ride for free and free rides under various promotional events such as New Years Eve.

**Figure 1: Fare Media Mix (5-Year Review – PRESTO /Legacy/No Fare Media – January 2019 to April 2024)**



**Figure 2: All Fare Media Mix (5-Year Review – January 2019 to April 2024)**



Note: The Fare Media Mix, as shown in Figure 1 and Figure 2, is based on actual revenue ridership.

Legacy Fare Media: Cash, TTC Tickets, Tokens and Passes

**The TTC has extended the acceptance of TTC Tickets, Tokens and TTC Day Passes, and is currently evaluating an acceptance stop date.**

The TTC stopped selling legacy TTC Tickets, Tokens, and remaining TTC Passes (day and GTA weekly) in a phased approach, starting with all subway stations on November 30, 2019, followed by all third-party network locations as of March 24, 2023. The cessation of legacy fare media sales, along with the introduction of the PRESTO bulk Limited Use Media (LUM) sales program and the launch of Open Payment, have resulted in a significant decline in the usage of legacy tickets and tokens. It is estimated that 632,000 tickets and 6,885,000 tokens remain in circulation, and as shown in Figure 2, accounts for 0.1% of monthly fare media mix collected.

The TTC previously communicated to the Board that it would stop accepting tickets in September 2023, but due to the delayed opening of Lines 5 and 6, this target date has also been postponed. Retirement of legacy fare media forms (tickets and tokens) is supported by:

- Lines 5 and 6 – both are reliant on fare payment before boarding, (both lines have limited capabilities in accepting tickets or tokens).
- The 2012 TTC-Metrolinx Master E-Fare Collection Outsourcing Agreement (the “Agreement”)
- Auditor General’s 2019 Recommendations on Fare Evasion.

Diminishing use of legacy payments combined with strong take-up of more convenient options, suggest that the acceptance of media that has not been sold for well over a year should end soon. A recommendation will be brought to the TTC Board in the Fall with consideration of some options. Once a date is established, it will be widely communicated to customers well in advance to ensure customers are aware.

The Agreement of 2012 stated that the TTC's adoption of PRESTO should allow for the TTC to cease acceptance of all TTC legacy fare media, including the TTC taking all reasonable actions to achieve this milestone. With the uptake in PRESTO adoption at 91.9%, the next step is for the TTC to discontinue acceptance of legacy fare media to fully migrate the TTC's fare collection system to PRESTO (with the exception of cash).

In addition, the Auditor General's Recommendations on Fare Evasion from 2019 recommended that the TTC develop strategies to reduce fare evasion rates, expand its fare inspection program to include coverage of subway station entrances, and take actions to reduce the number of illegal entries (particularly at automatic subway entrances). The TTC's primary strategy is to modernize its fare collection system. A modernized fare collection system at the TTC would advance TTC's fare compliance efforts: ceasing the acceptance of legacy fare media would help facilitate future implementation of system-wide proof of payment throughout our system.

#### Automated Fare Collection System (PRESTO)

#### **The TTC continues to work to fulfill obligations under the 2012 Agreement, which ends in 2027.**

Since the Agreement in 2012, the TTC and Metrolinx has implemented a number of foundational fare collection changes required to transition TTC customers to the PRESTO fare collection system, as illustrated in Figure 3 below. Since September 2020, the TTC staff has provided the Board with annual PRESTO updates on the status of outstanding business requirements necessary to fully migrate TTC onto PRESTO.

TTC and Metrolinx staff have made significant progress on completing the outstanding business requirements as described in greater detail in the following section of this report.

**Figure 3: Timeline of PRESTO Deliverables**



## Comments

---

The Fare Modernization Update report in February 2023 identified the top five priority business requirements that remained outstanding deliverables from Metrolinx:

1. Open Payment and account-based technology.
2. Flexible fare rules and policy.
3. System/device performance and functionality.
4. Limited Use Media (PRESTO Tickets) on surface vehicles.
5. Third Party fare media network.



## **Status Update: Key Business Requirements**

**The TTC and Metrolinx have been making progress in the completion of the remaining business requirements. PRESTO's new fare payment technology will enable the delivery of outstanding business requirements and enable the goals outlined in the 10-Year Fare Collection Outlook.**

Since the last Fare Modernization Update Report in February 2023, Metrolinx has delivered key business requirements, including a device refresh, a new Service Level Agreement program, the launch of Open Payment (debit/credit) for adult fares, and the launch of PRESTO in Mobile Wallet (Google), with PRESTO in Apple Mobile Wallet expanding soon.

Despite this progress, there are business requirements that are yet to be delivered and are dependent on PRESTO upgrading its system. Metrolinx is currently in the process of acquiring new vendor(s) to provide the payments technology and equipment for the PRESTO fare collection system, as their current vendor's contract expires at the end of 2025. The next generation of PRESTO will enable progressive fare policy and fare collection innovations, including a full account-based system and open architecture. An account-based system is the industry standard for a modernized fare collection system and will align the TTC with peer transit agencies, including the Chicago Transit Authority (CTA), the Metropolitan Transportation Authority (MTA) in New York and the Massachusetts Bay Transportation Authority (MBTA) in Boston.

The following section outlines the progress on the top five gaps identified previously and complementary initiatives delivered:

### **1. Open Payment and account-based technology**

The Open Payment method of fare payment (credit/debit) was launched in August 2023. Open Payment allows customers to tap their credit or debit card to pay a single TTC Adult fare. Open Payment usage has steadily increased since launching and accounts for 13.7% of total fare media payments, as of April 2024. This is a first in transit real-time mass transit transaction (MTT) launch globally, as MTT is a newly established framework by the global payment networks. Additionally, PRESTO in Google Wallet was launched in November 2023. PRESTO in Google Wallet allows customers to add a PRESTO card to a digital wallet, enabling them to tap their smartphone or smartwatch to pay instead of using a physical card. It supports all fare types (Adult, Youth, Senior, Post-Secondary and Fair Pass) and products on the PRESTO card, such as single fares and passes. Usage has increased to 1.7% of total fare media payments as of April 2024. PRESTO in Apple Mobile Wallet will be coming soon.

Account-based technology has enabled Open Payment thus far and will continue to evolve and enable further improvements. It is important to note that setting a fare type (Senior, Youth etc.) for Open Payment is relatively new; the TTC is only aware of its implementation in one other market. Open Payment for other fare types (Youth, Senior, and Fair Pass) may be launched under "Release 2" at a later date.

## **2. Flexible fare rules and policy**

The TTC completed its first 5-Year Fare Policy and 10-Year Fare Collection Outlook in 2022. The 5-Year Fare Policy identified policy goals and opportunities to support future fare policy decision-making, while the 10-Year Fare Collection Outlook identified the approach to implement the policy goals and objectives. The TTC's fare policy vision is to ensure that transit is the obvious way to travel, ensuring that no one is excluded because of cost, technology or complexity of fares. Having a continued understanding of the different needs of customers in the current environment is critical to achieving this vision as well as improving the fare collection system by ensuring that it is driven by policy goals and decisions. The current card-based fare collection technology cannot support all of the TTC's desired flexibility for serving customers with future fare policy directions, such as dynamic pricing, pass options or possible loyalty options for customers.

However, the flexibility outlined in the Agreement and identified through the 5-Year Fare Policy and 10-Year Fare Collection Outlook can be supported by an account-based fare collection system. Metrolinx is currently in the process of procuring a new system that will be fully account-based, currently projected to be fully transitioned over by the end of 2025.

## **3. System/device performance and functionality**

The TTC and Metrolinx reached an agreement to replace all fare validators on vehicles and inspection devices to enable an Open Payment launch. These are the same validators in use by GO Transit and 905 transit agencies. The TTC conducted performance testing on these devices and confirmed the new devices meet the performance and reliability requirements. Installation plans were finalized in October 2022. A device refresh commenced in October 2022 and was completed in April 2023.

The TTC and Metrolinx had also jointly agreed on the Service Level Agreements (SLAs) for device availability and Key Performance Indicators (KPIs) for service in July 2021. The new SLAs were executed in June 2023, which allows for the TTC to receive performance metrics reports to hold Metrolinx accountable for their managed service performance.

Metrolinx has a fraud management program in place for PRESTO, which leverages industry tools and analytics to mitigate against the use of illegitimate payment cards to load fare media. In addition, the TTC and Metrolinx are collaborating to develop reporting for the TTC network to monitor, identify and analyze fraudulent and suspicious activities.

Since its launch in January 2019, the PRESTO smartphone application (app) has undergone a series of continuous enhancements aimed at optimizing the customer experience for both anonymous and registered cards. These enhancements encompass real-time fund loading and balance checking, monitoring of transfer windows to provide trip time clarity, streamlined biometric login for user convenience, and the ability to

purchase transit passes, alongside push notifications for crucial updates, such as low balance alerts.

In addition to its existing accessibility features, recent upgrades were implemented to further broaden the app's inclusivity. These include provisions for larger font sizes, bold text options, and a three-finger swipe functionality, ensuring usability across a diverse customer base.

Additional enhancements were also implemented on the PRESTO website's customer service outlet page. An enhanced lookup capability allows customers to easily find a retail location to buy, load, and set concessions on their PRESTO card, based on address, postal code or user location.

#### **4. Limited Use Media (PRESTO Tickets) on surface vehicles**

In 2022, Metrolinx successfully transitioned the TTC's bulk sales program to PRESTO, which enables social agencies and institutions, such as the City of Toronto and school boards, to purchase machine-readable PRESTO Tickets at Adult, Youth, and Senior prices directly through Metrolinx. This enabled the TTC to stop selling TTC legacy fare media. Since June 2022 and until the end of Period 4 2024, there have been approximately 5.8 million PRESTO Tickets sold through the program, out of which 3.2 million have been used, resulting in an approximate revenue of \$8.5 million for the TTC.

There is another set of requirements to provide customers paying cash on buses with a Machine-Readable Transfer (MRT) that can be validated by fare payment devices on vehicles, fare gate readers at stations and inspection devices. Retirement of paper transfers and the Stations Transformation program can only be fully implemented when these requirements are met. The Stations Transformation project was intended to take place in the initial phase of eliminating legacy fare media. Since eliminating legacy fare media is delayed, the Stations Transformation project is temporarily stalled.

Metrolinx is committed to deliver a MRT solution with review sessions of potential options underway. However, the TTC is exploring opportunities to integrate the issuance of the MRT solution with registering fareboxes and use of self-serve customer devices. The incremental scope change, by the TTC will likely impact the delivery timeline and costs. Any incremental costs for the implementation of registering fareboxes would be the TTC's expense and is not funded.

#### **5. Third-Party fare media network**

The business requirements included in the Agreement state that Metrolinx shall establish a retail network (or third-party agent network) as part of the managed services. Although Metrolinx is provided discretion in how it establishes the retail network, the business requirements provide that third-party agents should, "provide the same convenience and accessibility as TTC's current sales network."

The third-party network that Metrolinx has delivered to date does not provide the same access that was provided to customers through the TTC's legacy third-party retail

network. As of April 2024, there are 188 retail locations in Toronto offering in-person support to customers looking to buy a PRESTO card, load a PRESTO card, or set a different fare type (Youth/Senior/Post-Secondary). This is in contrast to the TTC's own retail network prior to the introduction of PRESTO, which had about 1,200 locations. It is worth noting, however, that the current network does provide additional capabilities for customers to set concessions that the legacy network did not. In addition, the TTC recognizes the new alternatives available to customers with the introduction of PRESTO, such as online, through the PRESTO app or the ability to pay with a credit or debit card, which allows convenience and coverage in ways the TTC's legacy network did not provide.

Since the negotiated settlement, Metrolinx has expanded the retail network by adding more than 25 additional retail locations under the "Loblaw Group" where customers can load a PRESTO card and set fare types. However, more work is underway to expand the retail network across the city further. While customer improvements in new and emerging technology are on the horizon with PRESTO, Metrolinx has acknowledged that access to transit must also be available for marginalized and underserved communities.

Metrolinx and the TTC are working collaboratively to expand the third-party retail network to improve transit access and equity to key neighbourhood improvement areas (NIAs) as defined by the City's Poverty Reduction Strategy. An expanded retail network will also better support the communities that disproportionately experience poverty, low income and/or are more at-risk, including people with disabilities, racialized and Indigenous Peoples, women (especially single mothers and older women), and recent immigrants or newcomers.

### **Complementary Initiatives**

The TTC and Metrolinx have collaborated on initiatives beyond those business requirements outlined in the Agreement. This includes the introduction of the implementation of PRESTO in Mobile Wallet as well as the implementation of the One Fare Program, which eliminates double fares for TTC customers when transferring to GO Transit or 905 municipal transit service providers and work is continuing on service integration.

### **TTC's Path Forward**

**In preparation for the conclusion of the Agreement at the end of 2027, the TTC is preparing a risk mitigation plan for our automated fare collection system.**

### **Background**

In 2022, the TTC completed its 5-Year Fare Policy and 10-Year Fare Collection Outlook (the "10-Year Outlook"). The reports identified a roadmap for Fare Modernization and looks at how the fare system can evolve to accommodate existing and potential new fare policies and improve customer access to fare payment through innovation. The TTC recognizes the importance of how fare policy establishes business requirements

for fare collection technology changes. With that in mind, the 10-Year Outlook was developed by incorporating the fare policy outcomes from the 5-Year Fare Policy project. It then captured the TTC's business and customer needs by undertaking the following tasks in detail:

- Current State Review – A review of the current system as the baseline.
- Peer Review – Learning the pros and cons of various peer-agency fare collection systems and future enhancements.
- Industry Review and Request for Information – Understanding the types of vendors, their strengths and weaknesses, and future innovations they are developing.
- Determine Business Objectives – Setting the direction of the fare system, including fare technology and system operations.
- Options Analysis – Evaluating the technology and operation options against the business objectives.
- Final Recommendations – Using the extensive work above, developed a strategic roadmap for fare collection at the TTC for the next 10 years.
- Implementation Strategy – Illustrates the delivery of the recommended technology components.

The result of the 10-Year Outlook was a final report that included all the components listed above, but most importantly, the report specified all the technology components that the TTC will want to have in its future fare collection system. The recommended technology components were approved by the TTC Board at its meeting on February 10, 2022.

## **Conclusion of the Agreement**

The Agreement has an initial term of 15 years and it expires on November 28, 2027. The Agreement provides for an extension of the term through two options.

**Option 1** provides for a renewal at the sole discretion of Metrolinx for a one-year term, thereby extending the Agreement to 2028. Metrolinx has notified the TTC that they will *not* exercise their option to extend the Agreement by one year. Therefore, this option is no longer valid.

**Option 2** provides for a five-year automatic renewal minus any amount, if applicable, in which Metrolinx elected to renew the contract under its one-year extension option. As Metrolinx did not exercise the one-year extension option, the Agreement will automatically renew for five years to 2032, unless either the TTC or Metrolinx gives 24-months' notice of their desire not to renew. The deadline to opt-out of the automatic

renewal for either party is November 27, 2025. This option currently remains open for both Metrolinx and the TTC.

Since the Agreement in 2012, the fare collection landscape has been transformed and the market has changed. Therefore, the TTC is finalizing a comprehensive business case that includes the option of implementing new technology.

The Business Case scope includes the following major components that compare the two options noted above based on cost, governance and schedule:

- Concept of Operations.
- Implementation and Transition.
- Staffing and Resourcing Comparison.
- Capital Cost Analysis Comparison.
- Operating Cost Analysis Comparison.
- Cost of Fare Collection Summary.

The purpose of the Business Case is fundamental to inform and review the TTC's key requirements beyond 2027, which considers lessons learned from the existing contract, to provide a path forward once the Agreement comes to an end.

## **Contact**

---

Angela Gibson, Executive Director – Fare Technology and System Stewardship (Acting)  
416-712-5338  
angela.gibson@ttc.ca

Mark Mis, Head, Strategy and Foresight (Acting)  
416-393-4275  
mark.mis@ttc.ca

## **Signature**

---

Wendy Reuter  
Chief Strategy and Customer Officer (Acting)

## **Attachments**

---

Confidential Attachment 1