



Office of the Auditor General of Ontario

Value-for-Money Audit
Metrolinx
Operations and
Governance



December 2020

Metrolinx Operations and Governance

1.0 Summary

Metrolinx is a government agency that plays a key role in public transit services in Ontario. Metrolinx operates GO Transit trains and buses in the Greater Toronto and Hamilton Area (GTHA) and the Union Pearson (UP) Express from Union Station in downtown Toronto to the Toronto Pearson Airport. It also awards and manages the contracts for the electronic fare system PRESTO, which enables riders to tap a PRESTO card to pay for fares on buses and trains in municipalities across the GTHA and in Ottawa on OC Transpo.

Metrolinx has also been tasked with planning and rolling out a fare system that would be integrated across the GTHA. An integrated fare system would mean that riders would pay one fare when crossing municipal boundaries. For example, on a trip starting in Mississauga and ending in Toronto, a rider would pay a single fare, instead of paying one fare for a MiWay bus in Mississauga and a second fare for a Toronto Transit Commission (TTC) subway ride, as they do currently.

Metrolinx's responsibilities are set out in the *Metrolinx Act, 2006* and in a Memorandum of Understanding with the Ministry of Transportation (Ministry).

In 2019/20, Metrolinx's total operating costs were \$1.151 billion and as of December 31, 2019,

Metrolinx employed the equivalent of 4,197 full-time staff. Since 2014/15, Metrolinx has had increasing operating deficits that have been subsidized by the province. It will face further financial pressure as a result of the COVID-19 pandemic.

Regarding its train and bus operations, Metrolinx's on-time performance for GO trains—its ability to keep the trains on schedule—has been between 92% and 95% during the last five years, and for buses approximately 95% consistently. Its on-time performance for trains is comparable to that of other transit agencies in the United States and the United Kingdom. While overall on-time performance for trains and buses is positive, Metrolinx should continue to focus on improving the performance of those train and bus routes and lines with a high number of delays or cancellations. We found that the delays and cancellations for trains were mainly related to the services provided by Canadian National Railway (CN), Canadian Pacific Railway (CP) and Bombardier. Metrolinx needs to collect more information on bus delays to determine how to make further improvements on its on-time performance for buses.

For the electronic PRESTO fare system, Metrolinx is highly dependent on its service provider Accenture. The Ministry contracted Accenture in 2006 to build an electronic fare system with capability for flat fares (same fare regardless of the distance travelled) and zone-based travel (fare based on the number of zones crossed in one trip);

fare system equipment (for example, tap devices); an initial website; and capability for customer service access such as in-person, via telephone and email. Since 2006, Accenture's scope of work increased to include services including deploying PRESTO on the TTC in Toronto and OC Transpo in Ottawa.

The Ministry's original contract with Accenture totalled \$231.7 million. Metrolinx took over the contract with Accenture in 2011. As PRESTO services expanded after 2012, Metrolinx engaged Accenture for additional work worth over \$1.7 billion under the existing agreement without competitive procurements. Metrolinx has grown significantly dependent on Accenture, a situation about which Metrolinx's Board has expressed concern to management over the years. Nevertheless, Metrolinx continued to approve the contract increases. The contract between Metrolinx and Accenture is currently not managed under Metrolinx's Vendor Performance Management System. This means that, unlike the arrangement with other service providers, Metrolinx does not assess and review Accenture's performance every six months and provide a performance rating that would form part of Metrolinx's evaluation of bids from Accenture for future contracts.

Since the launch of PRESTO in 2010, riders have not yet had two key elements: the convenience of integrated fares across the GTHA; and the ability to use their own debit or credit cards to tap and pay—a feature called “open payment.” In the latest plans to modernize PRESTO, senior Metrolinx management had originally planned to implement open payment no earlier than 2022, when Accenture's main contract agreement expires. However, Metrolinx's CEO and Audit, Finance and Risk Management Committee pushed to expedite the project. In 2019 and 2020, Metrolinx engaged Accenture to deliver a pilot project for open payment on UP Express under the existing agreement and did not conduct a competitive tender process.

A qualified Board of Directors oversees Metrolinx's operations through its Chief Executive Officer

and is responsible for setting strategic direction. The Board is also responsible for identifying, managing and monitoring key risks, such as passenger safety; Metrolinx's financial performance; capital projects; and technology and cybersecurity (see our related 2020 audit, *Information Technology (IT) Systems and Cybersecurity at Metrolinx*). Metrolinx's Board composition has changed since 2018, and our review of governance confirmed improvements in governance processes.

Operations

- **Although Metrolinx plans to competitively procure the services Accenture currently provides in anticipation of the PRESTO contract expiration, Accenture may have an advantage in being chosen for this work.** The services Accenture currently provides include operating the core IT software system and piloting an open payment capability. Despite Metrolinx's intent to competitively procure this and other services in future, we noted that between October 2019 and April 2020, Metrolinx engaged Accenture, under the existing agreement, to develop and pilot an open payment capability on UP Express and for additional maintenance work within the current PRESTO system for approximately \$53 million. Metrolinx launched the pilot to meet customers' expectations and demonstrate progress with PRESTO's ability to accept different forms of payment. Engaging Accenture to deliver the open payment pilot work could likely give Accenture a further advantage over competing service providers when all the PRESTO systems and services are tendered.
- **After 14 years, PRESTO has still not been fully adopted in the GTHA.** One of the key objectives of the PRESTO fare card system was to seamlessly connect GO Transit and municipal transit agencies in the GTHA. PRESTO use by riders has increased

substantially in the last decade, with an overall adoption rate across the GTHA of 71%. However, the adoption rates vary by municipalities. For example, in Durham Region, it was only 37.5% as of January 2020. One of the reasons for this low adoption rate is that Accenture has not been able to have PRESTO offer the same discounted fare to post-secondary students that they currently enjoy with the Durham Region UPass. About 30% of Durham Region Transit's riders are post-secondary students. Three post-secondary schools contracted with a third party to create an app to enable a student discount on Durham's transit system. If this third-party UPass solution is rolled out, students will have no incentive to switch to PRESTO.

- **Commuters still do not pay one fare when they cross city boundaries.** Metrolinx's vision for integrated fares across the GTHA would allow riders to pay just once when they cross regional and municipal boundaries using different transit systems. In our 2012 audit, Metrolinx—Regional Transportation Planning, we recommended that Metrolinx work with the provincial government and GTHA transit agencies to make progress on implementing fare integration. However, we found that little progress had been made at the time of this audit.
- **Metrolinx has not consistently tracked the cause of train delays and cancellations related to Bombardier.** Bombardier provides the crews to operate all GO rail trips and solely maintains the entire GO train fleet. Between 2015/16 and 2019/20, train crew operation issues related to Bombardier resulted in 2,353 train delays and 211 train cancellations. In the same time period, equipment issues related to Bombardier resulted in 2,804 train delays and 724 train cancellations. Two separate teams within Metrolinx's Rail Operations Business Unit oversee the two

Bombardier contracts without a standardized approach. The main instrument for managing Bombardier's contract performance has been issuing liquidated damages—compensation for specific breaches of contract. However, there was no consistency between the two teams in collecting and analyzing data with respect to Bombardier's performance and issuing liquidated damages. According to Metrolinx, it will be rolling out in-house standard reports and analyses for trending train delays caused by Bombardier's rail equipment and train crew operation service issues on a monthly basis by February 2021.

- **Metrolinx has limited data on bus delays and cancellations to understand how to further improve the reliability of bus services.** On a daily basis, there was an average of 101 bus delays and 2.4 cancellations from 2015/16 to 2019/20. We noted that Metrolinx does not have an effective system in place to track the reasons for bus delays or cancellations when they occur. Metrolinx uses a manual process for capturing some bus delay reasons and lacks complete information to understand how to further improve the reliability of bus service, especially on the routes that are most affected by delays or cancellations.
- **Metrolinx established the Service Guarantee Program to improve customer satisfaction and drive customer loyalty and retention; however, customer satisfaction with the claim submission process has been low.** GO train riders can claim a refund within specific parameters when trains are late or cancelled. According to Metrolinx's overall customer satisfaction survey results, customer satisfaction with the Program's claim submission process ranged from 57% to 63% over the last five years. Metrolinx's GO Contact Centre received over 19,800 customer complaints during the last five years related to this Program. They included

complaints about denied claim disputes and the eligibility criteria, as well as suggestions for an automatic refund process. Although Metrolinx has implemented a number of changes to the Program over the years to improve customer experience, we found that it still has a number of deficiencies, including no automatic refund services, a short window to make a claim and lack of clarity on some denied claims.

- **Metrolinx needs to take steps to reduce its operating costs.** Metrolinx's operating expenses increased by 52% between 2015/16 and 2019/20. This required the province to increase their operating subsidies to Metrolinx by a total of 80%, or \$187 million. During the same period, Metrolinx's operating subsidies have in part increased due to its expanded service mandate. However, the Ministry's February 2020 review of Metrolinx's operations found opportunities to reduce operating costs by reducing management overhead, reducing back-office costs, and improving operational costs and revenue collection.
- **Since it was announced to be a pandemic in March 2020, COVID-19 has significantly impacted transit operations.** The COVID-19 pandemic has had, and continues to have, a significant impact on all areas of Metrolinx's business. In March 2020, Metrolinx reduced services and/or suspended routes on GO trains, buses and the UP Express, as ridership declined by as much as 95% as a result of the pandemic. Between March and September 2020, Metrolinx's GO train trip frequency fluctuated between 39% to 64% of pre-COVID-19 service levels; UP was consistently at 50% of previous service frequency; and bus service fluctuated between 58% and 61% of its normal operations. In September, Metrolinx increased services on both its rail and bus lines as schools and some businesses reopened. While ridership saw a steady but

slow recovery, as of September 2020, ridership was still about 90% below Metrolinx's pre-COVID ridership forecast. At the same time, in response to the pandemic, Metrolinx has had to deploy measures on its trains and buses for the safety of its customers that have resulted in additional costs. At the time of our audit, Metrolinx's 2020/21 business plan, reflecting the impacts of the pandemic, was being reviewed internally. The preliminary analysis indicated a significant increase in the amount of provincial subsidy Metrolinx will require in 2020/21, of potentially as much as \$600 million above previously approved levels.

Governance

- **Metrolinx has a qualified Board of Directors providing oversight.** We found that Metrolinx's current Board of Directors has diverse skills. Most Board members have extensive experience in corporate governance and have served or are currently serving on other boards of public and private corporations. Some directors previously held executive roles in various organizations. The directors' skill sets include engineering, rail, infrastructure project finance, accounting and technology. At the time of our audit, 12 of the 14 current Board members (excluding the CEO) had been appointed in the last two years. Considering the complexity of Metrolinx's operations, it is important to stagger appointments in the future to smooth the transition of new members to the Board.
- **Metrolinx's Memorandum of Understanding (MOU) with the Ministry does not reflect the current roles of Metrolinx and the Ministry in transportation planning.** Metrolinx signed the MOU with the Ministry in 2010. The MOU was to provide clarity around accountability relationships and roles and responsibilities, and ensure that

Metrolinx's transportation services remain consistent with provincial legislation and with government policies. Thirteen amendments have been made to the *Metrolinx Act, 2006* and the province has issued 20 letters of direction to Metrolinx since the signing of the MOU in 2010. The MOU has not been amended to reflect these changes and updated roles, responsibilities and accountabilities. In particular, 2018 legislative changes regarding the Ministry's and Metrolinx's roles in regional transportation planning are not reflected in the MOU. The Ministry indicated the need to revise the MOU in late 2018; however, this has not yet been done.

Cost Estimates of Light Rapid Transit (LRT) Projects

On December 18, 2019, the Leader of the Official Opposition in Ontario requested that our Office assess the reasonableness of cost estimates presented to the public under the current and previous governments for rapid transit projects. This request included the Hamilton light rapid transit (LRT) system, which the Ministry cancelled on December 16, 2019. We replied on December 19, 2019 that we were in the process of auditing Metrolinx and we would be reviewing this issue. We noted the following:

- For the Finch West LRT, the winning bid was lower than the budget approved by the Treasury Board.** The initial budget for the Finch West LRT, approved by the Treasury Board in 2015, was \$4.4 billion. The final budget, based on the winning bid approved by the Treasury Board in 2019, was \$3.4 billion, or 23% lower than the initial budget. The initial budget, based on the project design being only 10% complete, accepted a certain level of risk with regard to its precision (that is, the budget was expected to be within 30% of the final cost).
- The cost estimate of the Hurontario LRT increased by \$600 million from the original budget approved by the Treasury Board even though the scope of the project was reduced.** The Treasury Board approved an initial budget of \$5 billion in August 2016 for the Hurontario LRT. After issuing the Request for Proposal for the project in August 2017, Metrolinx received feedback from proponents that the cost of the project would be higher. In December 2018, the Ministry sought Treasury Board approval to reduce the scope of the project, including reducing the length of the line by about two kilometres, the number of LRT vehicles from 43 to 28, and the frequency of trains during peak periods from every five minutes to every seven-and-a-half minutes. The Treasury Board approved the reduced scope and reduced the line to the current 18 kilometres with 19 stops. Between April and May 2019, Metrolinx received two qualifying bids for the project. Despite the reduction in project scope, the final bids still came in higher than the initial Treasury Board-approved budget of \$5 billion. The final Treasury Board-approved budget in 2019, based on the winning bid, was \$5.6 billion. This was \$600 million more than the \$5 billion originally approved (an increase of 12%). The initial budget approved by Treasury Board was again based on project design being only 10% complete and was expected to be within 30% of the final cost.
- The Ministry was aware as early as 2016 that the total cost estimate for the Hamilton LRT would be higher than the \$1 billion in capital costs that the province had publicly committed to funding in 2015, but it did not make this fact public.** The \$1 billion was sufficient to cover only the project's initially estimated construction cost. Subsequently, in December 2016, Treasury Board approved a budget of \$2.981 billion for the project, based on estimated costs that

included \$823 million in construction costs. In March 2018, Treasury Board approved a revised cost estimate of \$3.659 billion, including construction costs of \$1.083 billion, because the LRT's estimated length had increased. We found that the 2016 and 2018 estimates did not represent the full cost of the LRT and were significantly understated. These estimates were not made public at those times. Based on a detailed review, we found that the \$5.5-billion cost estimate reported by the Minister of Transportation in December 2019, when the project was cancelled, was reasonable.

This report contains 13 recommendations, with 26 action items, to address our findings.

Overall Conclusion

Metrolinx's on-time rail service performance is comparable to that of transit agencies in other jurisdictions, but Metrolinx could further improve its on-time performance. For example, it has not consistently tracked the cause of service delays and cancellations attributable to Bombardier's issues with rail equipment and train crew operations. Regarding bus service, Metrolinx needs to improve the quality and completeness of its data on bus delays and cancellations, especially for the worst-performing routes, in order to improve the reliability of bus service.

Metrolinx has effective processes in place to operate trains and buses safely in accordance with applicable legislation, regulations, agreements and policies. These processes include Transport Canada's monitoring of compliance with the *Federal Railway Safety Act*, various regulatory bus inspections, and Metrolinx's own analysis of passenger safety incidents and actions to reduce the impact on customers.

With respect to the PRESTO electronic fare system, we found that Metrolinx created a dependency on Accenture for all aspects of designing, building and operating PRESTO by not competi-

tively tendering as PRESTO services expanded. Metrolinx plans to go to market in 2022 to procure the services that Accenture currently provides under its master agreement for PRESTO. However, it may have given Accenture a competitive advantage by engaging it under its existing agreement to deliver the current open payment pilot project on UP Express.

Overall, the \$5.5-billion cost estimate that the Minister of Transportation provided in 2019 for the Hamilton LRT was reasonable. The Ministry was aware in both December 2016 and March 2018 that the estimated costs for the project were higher than its public commitment of \$1 billion, which was only for construction costs, but it did not make the increases public or communicate them to the City of Hamilton.

Metrolinx's Board will need to continue to address the ongoing challenges facing Metrolinx. Metrolinx has had increasing operating expenses in the past five years, leading to higher operating deficits, and now faces further financial pressure as a result of the COVID-19 pandemic.

OVERALL RESPONSE FROM METROLINX

Metrolinx thanks the Auditor General for completing the Operations and Governance Audit. The findings will help support continuous improvement in our operations, PRESTO, and capital programs.

We further appreciate the report's recognition that Metrolinx has a capable Board of Directors to help oversee and steer organizational direction. Metrolinx is committed to delivering safe and reliable services to our customers that are easy to use, engaging communities where neighbourhoods are being transformed by transit projects and ensuring strong governance, oversight, processes and controls underpin the growing complexity and scope of the Metrolinx business.

Metrolinx accepts the recommendations to enhance PRESTO expertise and reduce reliance on Accenture. PRESTO management is currently preparing for re-procurement of the PRESTO system, and has already taken steps to strengthen internal technical expertise, developed a future state road-map that reduces reliance on any one vendor, and gives PRESTO stronger control of its systems through cloud technology and development of an integration hub. All future contracts will support accountability through specific and actionable performance targets. Metrolinx will continue to work with municipal and provincial partners on fare integration strategies and work to remove barriers to PRESTO adoption. Metrolinx has an active PRESTO Board Committee that will provide further governance and decision-making on PRESTO operations.

Customer satisfaction is one of our key priorities and we accept the Auditor General's recommendations aimed at increasing satisfaction and on time performance. Metrolinx will develop stronger internal tracking processes and systems to better track and remediate the root cause of train and bus delays and cancellations. We will continue to work with our rail partners and vendors, including CN, CP, and Bombardier to improve reliability for our customers. Metrolinx will complete a review of the Service Guarantee Program and assess the feasibility of automating the current process.

Over the last five years, Metrolinx has increased service capacity by 41.5%, while reducing its operating expenses as a percentage of train capacity (i.e., cost per user seat) by 8.2%. Metrolinx plans to make further efforts to reduce costs through ongoing analysis of organizational spans and layers of control.

Metrolinx will review its Light Rail Transit (LRT) reporting and estimation practices in partnership with Infrastructure Ontario. Much work has already been completed since the LRT program's inception, including an enhanced

business case framework and methodology, monthly reporting review and additional project governance and approvals through the Metrolinx Investment Panel and Board. In October 2020, Metrolinx enacted a new Capital Oversight Committee of the Board with a mandate to provide advice to management and the Board regarding Metrolinx's activities in developing, procuring and implementing large transit infrastructure projects, which includes project and program review for light rail transit and other transit expansion projects. Metrolinx will further review its current Board progress reporting packages to ensure sufficient detail and timely reporting on material project changes.

2.0 Background

2.1 Overview of Metrolinx

Metrolinx was created as an agency of the government of Ontario by the *Greater Toronto Transportation Authority Act, 2006*, now the *Metrolinx Act, 2006* (Act). The Act sets out the mandate and responsibilities of Metrolinx. Specifically, Metrolinx is to provide leadership in co-ordinating, planning, financing, developing and implementing an integrated transit network in the Greater Golden Horseshoe. It also oversees transit capital projects, and operates GO Transit trains and buses, the Union Pearson (UP) Express and the PRESTO fare payment system.

The Greater Toronto and Hamilton Area (GTHA) is expected to reach a total population of 10 million by 2041. Metrolinx initially provided transportation planning for the GTHA. In 2018, Metrolinx developed its 2041 Regional Transportation Plan as a blueprint to create an integrated regional transportation system that was expected to serve this growing population. However, on November 15, 2018, the province introduced Bill 57, *Restoring Trust, Transparency and Accountability*

Act, 2018, which, among other things, changed Metrolinx's planning mandate to focus on transit planning rather than broader regional transportation planning. The Ministry has now assumed this responsibility. In June 2019, the Act was amended to facilitate Metrolinx's ownership and control of designated rapid transit projects: the Relief Line (North and South—now referred to as the Ontario Line); the Scarborough Subway Extension; and the Yonge Subway Extension.

2.2 Board of Directors

Metrolinx is governed by its Board of Directors. The Board is responsible for setting Metrolinx's strategic direction, identifying, managing and monitoring key risks, as well as providing oversight of its operations. Metrolinx's Board consists of the Chair, the President and Chief Executive Officer, and up to 13 other members appointed by the Lieutenant Governor in Council on the recommendation of the Minister of Transportation. Currently, the Board comprises 15 members appointed by Order-in-Council.

According to the *Metrolinx Act, 2006*, the Board is required to meet at least four times per year and is accountable to the Minister of Transportation. Historically, Metrolinx has held at least six Board meetings per year, with at least four including public and media sessions. Until June 2020, the Board had five standing committees—Audit, Finance and Risk Management; Customer Experience; Governance; Human Resources and Compensation; and Executive Committee. In June 2020, three advisory committees—Capital Oversight, PRESTO and Real Estate—became standing committees of the Board and increased the total number of Board committees to eight.

2.3 Key Service Operations

2.3.1 GO Transit

GO Transit, in operation since 1967, merged with Metrolinx in 2009. GO Transit is the regional public transit service for the Greater Toronto and Hamilton Area (GTHA) that stretches from Hamilton and Kitchener-Waterloo in the west to Newcastle and Peterborough in the east, and from Orangeville, Barrie and Beaverton in the north to Niagara Falls in the south. See **Figure 1** for Metrolinx's GO Transit system map.

The GO Transit network consists of seven train lines running through 68 stations and 44 bus routes that provided over 76 million passenger trips in the 2019/20 fiscal year. The bus routes either replace some train service outside of rush hour (defined as from the start of service to 9 a.m. and from 3 p.m. to 7 p.m., Monday to Friday) or provide connections beyond the train lines. **Figure 2** and **Figure 3** show the growth in GO Transit ridership over the last five years.

The operation and maintenance for the 91 train locomotives and 918 bi-level train coaches is contracted out to Bombardier, which provides certified train crews, train operators, customer service ambassadors and fleet technicians. Bombardier operates all GO rail trips (479,461 trips from April 2015 to March 2020).

The operation of 321 double-deck and 185 single-deck bus coaches is provided in-house by Metrolinx's 875 unionized drivers, 265 unionized and non-unionized bus and facility maintenance staff and 125 non-unionized support staff.

Metrolinx owns 69% of the rail corridors it uses and the remaining 31% are owned by Canadian National Railway (CN) and Canadian Pacific Railway (CP). Metrolinx trains are dispatched by CN and CP Rail, Toronto Terminals Railways and RailTerm. At the time of our audit, Metrolinx started the process of transitioning the dispatching of all trains in-house in February 2020. Metrolinx has projected that this transition will be completed by 2022.

Figure 1: GO Transit Service Map, as of September 2020

Source: Metrolinx

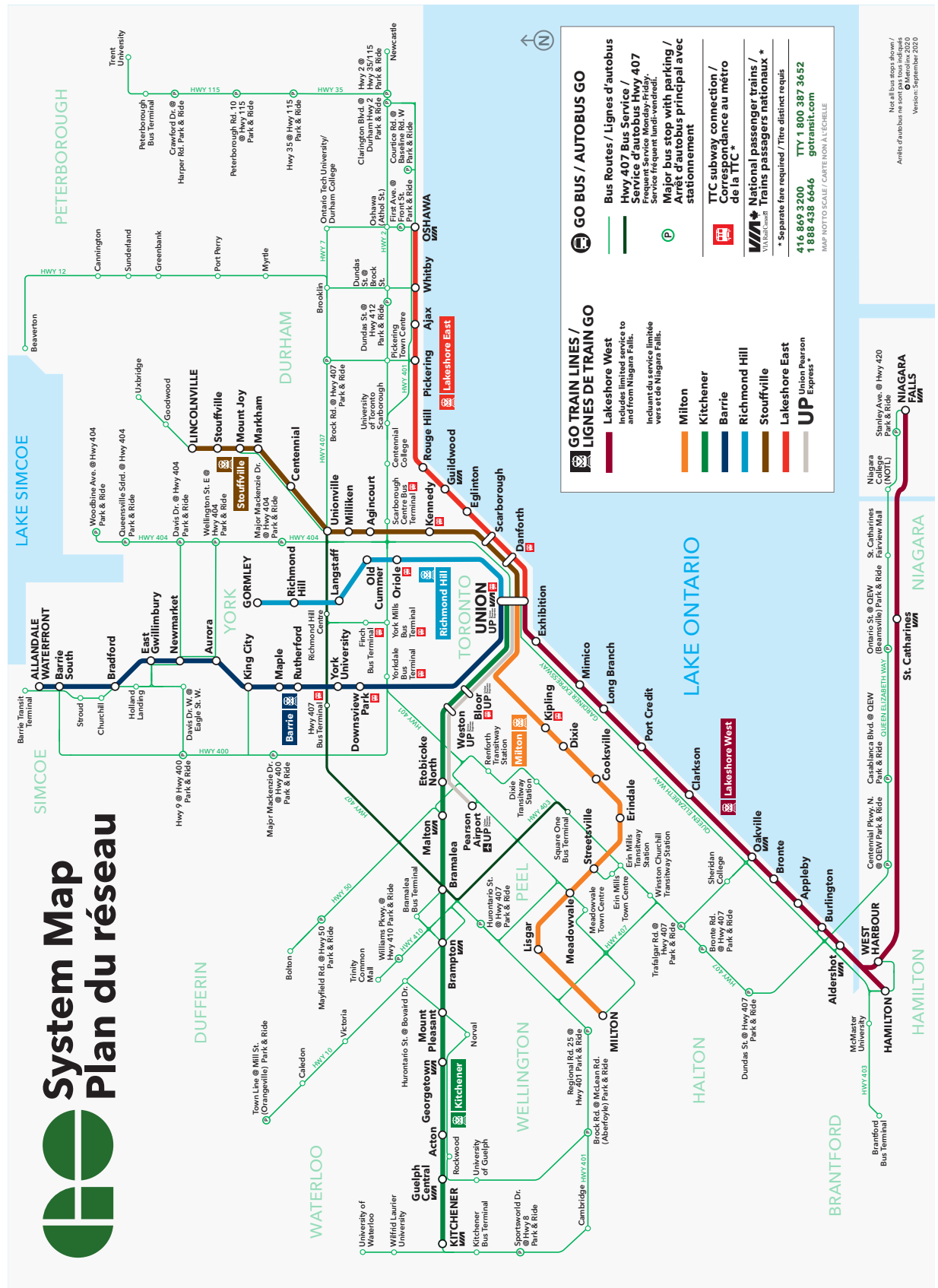


Figure 2: Passenger Boardings for GO Rail by Routes, 2015/16–2019/20

Source of data: Metrolinx

	2015/16	2016/17	2017/18	2018/19	2019/20	5-Year % Change
Barrie	4,503,154	4,679,975	4,883,401	5,678,545	5,829,895	29
Kitchener	4,860,365	5,253,974	5,524,280	5,820,970	6,045,133	24
Richmond Hill	2,394,303	2,488,933	2,673,341	2,909,086	2,919,435	22
Stouffville	3,899,338	3,888,525	4,164,133	4,505,948	4,488,176	15
Lakeshore West	17,090,641	17,735,180	18,616,173	19,193,716	19,318,368	13
Lakeshore East	13,533,254	13,706,381	13,577,331	14,246,885	14,800,696	9
Milton	6,776,264	6,956,268	7,049,139	7,451,621	7,201,498	6
Total	53,057,319	54,709,236	56,487,798	59,806,771	60,603,201	14

Figure 3: Passenger Boardings for GO Bus by Routes, 2015/16–2019/20

Source of data: Metrolinx

	2015/16	2016/17	2017/18	2018/19	2019/20	5-Year % Change
Richmond Hill	143,811	139,099	149,019	160,161	161,970	13
Kitchener	1,090,503	1,046,280	1,132,859	1,266,463	1,174,550	8
Lakeshore West	216,701	228,709	234,582	236,851	223,150	3
Milton	1,603,841	1,638,872	1,577,411	1,652,037	1,627,409	1
Lakeshore East	234,864	239,546	240,693	236,528	207,157	(12)
Stouffville	681,895	714,362	457,992	450,447	415,689	(39)
Barrie	716,264	747,611	590,357	279,342	302,166	(58)
Total	4,687,879	4,754,479	4,382,913	4,281,829	4,112,091	(12)

2.3.2 UP Express

UP Express, launched in June 2015, connects Union Station (rail and subway stations in downtown Toronto) and Toronto Pearson Airport. The system consists of four stations and spans a total of 23 kilometres. Trains depart every 15 minutes from 4:55 a.m. to 1 a.m. seven days a week. Total ridership was 4.2 million in 2019/20.

2.3.3 PRESTO

PRESTO is an electronic fare payment system for public transit in the GTHA and Ottawa-Carleton region for buses, subways, light rail and street-cars. PRESTO is available on 11 transit systems in southern and eastern Ontario, including nine municipal transit systems as well as GO Transit and

UP Express. The nine municipal transit systems consist of Brampton Transit, Burlington Transit, Durham Region Transit, Hamilton Street Railway, MiWay (Mississauga), Oakville Transit, OC Transpo (Ottawa), the Toronto Transit Commission and York Region Transit.

PRESTO became an operational division of Metrolinx in 2011. There were close to 8 million unique PRESTO cards issued (registered and unregistered) across all transit agencies as of the end of the 2019/20 fiscal year. **Figure 4** presents the growth of PRESTO card users for all transit users in the last five years. From 2015/16 to 2019/20, the annual number of boardings of transit customers using PRESTO has increased by 281%.

Customers using PRESTO cards pay by tapping their card on machines either at transit stations

or on vehicles. They can load funds and check balances at machines in stations or via the app or web. PRESTO card services are also offered at over 200 retail locations as well as all PRESTO-enabled transit agencies' customer service locations. All PRESTO customers have access to the PRESTO Call Centre and its online tools. While PRESTO cards are geared toward regular transit users, PRESTO one-way, round-trip tickets and day passes are also available for occasional transit.

In 2006, after completing a public tendering process, the Ministry of Transportation awarded a 10-year contract of \$231.7 million to Accenture to design, build and operate the PRESTO electronic fare system. This initial contract was to implement the fare system for GO Transit and the 905 municipal transit agencies. The original scope in 2006 was to build a fare collection system that was capable of accepting flat fares (the same fare regardless of the distance travelled, such as on the TTC subway) and zone-based travel (the fare is based on the number of zones crossed in one trip, such as on a GO train). The scope also included the fare system equipment (for example, tap devices), the initial website and for customer service access such as in-person, via telephone and email.

In 2016, Metrolinx extended the contract with Accenture to 2022 to continue the rollout of PRESTO across the GTHA, including UP Express, OC Transpo (Ottawa) and the TTC (Toronto). See **Figure 5** for a timeline of the PRESTO rollout for the 11 transit agencies and their adoption rates as of January 31, 2020.

At the time of our audit, Metrolinx was rolling out the mid-term plan of its PRESTO 2025 Modernization Strategy to upgrade the central system and PRESTO equipment, such as ticket machines, tap devices and fare gates. Some of the new products in the mid-term plan include open payment (using debit and credit cards to pay for transit) and paying fares with the customer's phone (through various apps).

Metrolinx is also working on preparing for the procurement of PRESTO services once the

Figure 4: Growth of PRESTO Card Users for All Transit Agencies, 2015/16–2019/20

Source of data: Metrolinx

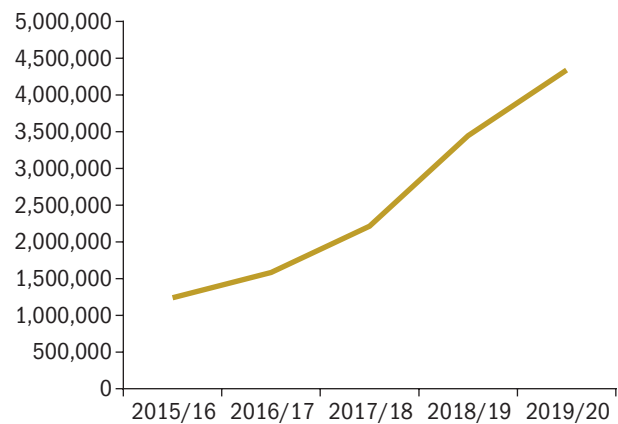


Figure 5: PRESTO Adoption at GO Transit and Transit Agencies, as of January 31, 2020

Source of data: Metrolinx

Transit Agency	Rollout Completion *	Adoption Rate (%)
Burlington Transit	2010	80.8
Oakville Transit	2010	88.1
Brampton Transit	2011	91.8
Hamilton Street Railway	2011	75.0
Durham Region Transit	2011	37.5
MiWay (Mississauga)	2011	67.0
York Region Transit	2011	79.0
GO Transit (trains and buses)	2012	92.6
OC Transpo (Ottawa)	2013	48.8
UP Express	2015	55.3
Toronto Transit Commission	2018	71.5
Overall		70.8

* Metrolinx defines "rollout completion" as when a transit rider can pay with PRESTO throughout a transit agency's network.

current agreement with the key service provider, Accenture, expires in October 2022. Through this procurement process, Metrolinx is aiming to move to a multi-vendor model. The plan includes transferring pieces of the current PRESTO system—for example, the website, the apps and the contact centre—to various new suppliers over time. The payment system for PRESTO will include

an open payment function. The current system developed by Accenture (legacy system) would continue during transitioning, pending the results of the procurement.

2.4 Financial and Staffing Information

As seen in **Figure 6**, in 2019/20, Metrolinx earned about \$721 million in revenue from fares and other sources. Fare revenue from GO Transit and UP Express services accounts for about 80% of Metrolinx's total revenue. Non-fare revenue consists mostly of PRESTO commission fees collected from the TTC and other transit providers, partnership and advertising revenue, corridor access fees, commercial space revenue, and gains and losses on sale of capital assets. Total operating costs were \$1.151 billion in 2019/20.

For the period 2015/16 to 2019/20, Metrolinx had an average annual operating loss of about \$343 million. The province provides an operating subsidy to Metrolinx each year to cover the operating loss. **Figure 7** shows that the operating subsidy provided by the province increased 80% from approximately \$234 million in 2015/16 to \$421 million in 2019/20, in part due to increases in service capacity during the same period.

Capital project costs are funded by three levels of government, mostly by the province. **Figure 7** shows that the annual capital subsidies from the three levels of governments increased 30% from \$2.757 billion in 2015/16 to \$3.597 billion in 2019/20 due to a number of transit projects that are under way. Metrolinx estimates that the capital cost subsidy will total \$23.6 billion from 2020/21 to 2024/25. This funding will be used for GO Transit

Figure 6: Metrolinx Selected Financial Information, 2015/16–2019/20 (\$ million)

Prepared by the Office of the Auditor General of Ontario

	2015/16	2016/17	2017/18	2018/19	2019/20	5-year % Change
Operating Items						
Fare Revenue ¹	479.47	519.90	540.99	566.66	574.16	20
Non-fare Revenue ²	45.25	51.77	84.53	94.85	146.73	224
Total Revenue	524.72	571.67	625.52	661.51	720.89	37
Operating Costs						
Operations ³	222.92	248.18	314.58	356.33	375.40	68
Labour and Benefits	256.60	268.80	308.23	325.06	342.70	34
Supplies and Services ⁴	81.47	88.75	97.11	120.07	149.13	83
Facilities and Tracks ⁵	107.52	129.90	146.00	168.97	145.41	35
Equipment Maintenance ⁶	90.85	99.94	118.19	117.86	138.32	52
Total Operations	759.36	835.57	984.11	1,088.29	1,150.96	52
Operating Loss	(234.64)	(263.90)	(358.59)	(426.78)	(430.07)	83

1. Fare revenue from GO bus, rail and UP Express services, less fare integration costs.

2. Non-fare revenue includes PRESTO commission fees collected from the TTC and other transit providers, partnership and advertising revenue, corridor access fees, commercial space revenue, and gains and losses on sale of capital assets.

3. Operations includes costs associated with rail, bus, crew, and PRESTO operations, fuel, power and communications, road charges, insurance and claims, and farecard stock and commissions.

4. Supplies and services include professional services, advertising and promotions, financial fees and services, uniforms, office supplies and equipment, software and staff development.

5. Facilities and tracks include costs associated with the maintenance of corridor, stations, facilities, rent, utilities, telecommunications and contracted services.

6. Equipment maintenance includes fleet repair and maintenance, inspection and cleaning, some supplies, materials, yard operations, bus storage and other support services.

Figure 7: Federal, Provincial and Municipal Subsidies to Metrolinx, 2015/16–2019/20 (\$ million)

Prepared by the Office of the Auditor General of Ontario

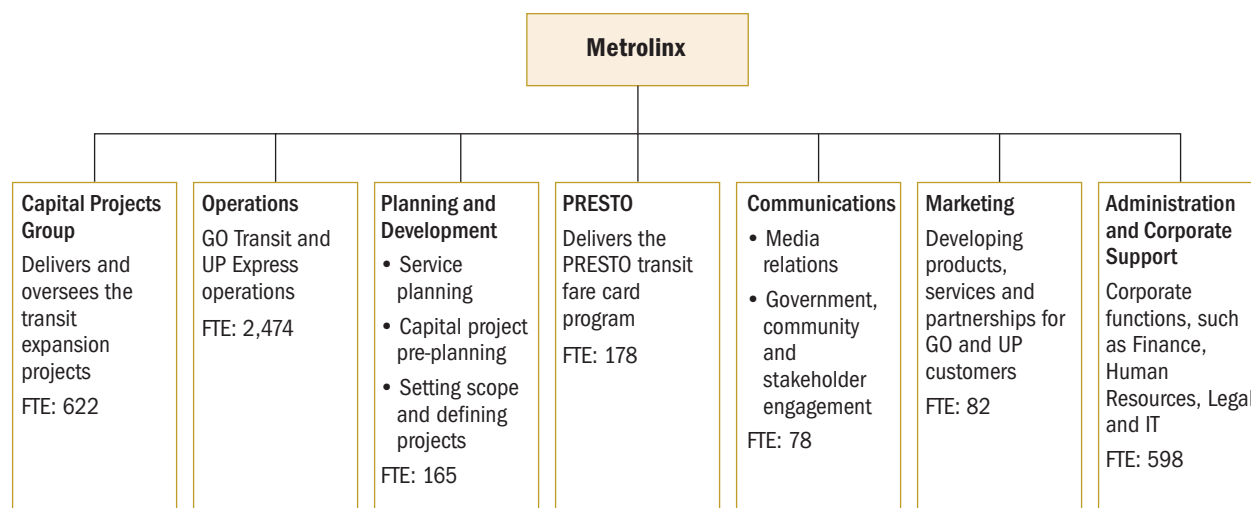
	2015/16	2016/17	2017/18	2018/19	2019/20	5-Year % Trend
Provincial capital subsidy	2,712	2,759	3,407	3,877 ¹	3,587 ¹	32
Federal capital subsidy	35	26	112	27	4	(88)
Municipal capital subsidy	10	8	14	13	6	(41)
Total capital subsidy	2,757	2,793	3,533	3,917	3,597	30
Operating subsidy ²	234	263	341	421 ¹	421 ¹	80
Total subsidy	2,991	3,056	3,874	4,338	4,018	34

1. Reclassifications were made for subsidies for cancelled capital programs and bid fees.

2. The province provides the operating subsidy.

Figure 8: Metrolinx's Organizational Chart, as of December 31, 2019

Prepared by the Office of the Auditor General of Ontario



Note: Staffing numbers are full-time equivalents (FTE).

expansion, rehabilitation and renewal, PRESTO, rapid transit projects and the subways program.

As of December 31, 2019, Metrolinx employed the equivalent of 4,197 full-time staff. See **Figure 8** for Metrolinx's organization chart. About half (52%) of Metrolinx's workforce is represented by two unions: the International Association of Machinists and Aerospace Workers (IAMAW) and the Amalgamated Transit Union (ATU). Employees who are members of IAMAW consist of customer care representatives and customer service co-ordinators. Employees who are members of ATU include front-line staff (bus drivers, technicians,

station attendants and transit safety officers), along with some corporate support functions such as IT, communications and finance. Non-unionized employees account for 48% of Metrolinx's workforce and consist of employees from across the organization. Labour and benefits accounted for 30% of expenditures.

2.5 Service Performance

One of Metrolinx's corporate goals is "to be on time." Its Customer Charter states, "We want to get you where you need to be, when you need to be

there.” For all rail trips, Metrolinx defines on-time performance as within five minutes of scheduled train arrival time at the final station at each respective line and within 15 minutes for bus.

From 2015/16 to 2019/20, Metrolinx publicly reported on-time performance for rail was between 92% and 95% and for bus of around 95% consistently. During the same period, the number of scheduled GO train trips increased by 43% from 81,340 trips in 2015/16 to 116,450 trips in 2019/20.

Similar to transit agencies in other jurisdictions, Metrolinx’s on-time performance calculation did not include delays due to some external factors that Metrolinx considered to be out of its control, such as extreme weather conditions. Metrolinx’s publicly reported on-time performance for trains was comparable with other transit agencies in the United States and the United Kingdom.

Figure 9 shows train delays and ridership by train route from 2015/16 to 2019/20.

Figure 10 provides a summary of train delays and cancellations grouped by delay and cancellation reasons from 2015/16 to 2019/20. The most common reasons for train delays and cancellations were due to external factors. These delays were attributed to external factors such as trespassers, vandalism to stations or vehicles, police investigations, medical emergencies, priority alarms (not equipment related), external passenger safety incidents and any construction where passengers received advance notice from Metrolinx (for example, via the GO Transit website, announcements at stations and on-board train and bus announcements).

2.6 Fare Integration

One of Metrolinx’s ten strategic directions is implementing an integrated regional fare structure. It was envisioned that by 2012 a region-wide integrated transit fare system would be in place allowing users to pay a seamless, integrated fare for all transit systems across the region. PRESTO fare

smart card technology was a cornerstone in this strategy with a focus on offering new fare products, such as special passes for certain time periods, and integrating fares throughout the region. Metrolinx has analyzed options for the design of an integrated regional fare structure and implemented several programs.

Cross boundary trips—that is, those where riders change transit systems—have increased significantly in recent years. In 2014, there were over 16 million cross-boundary trips. In 2019, there were over 43 million cross-boundary trips taken. For 2019, this included 8.5 million riders who used both the TTC and GO Transit. An additional 11.7 million riders used both the TTC and 905 transit. Overall, 27% of active PRESTO cards were used across more than one transit agency.

Metrolinx currently has co-fare arrangements with all GTHA transit agencies other than the TTC, where passengers transferring between GO Transit and municipal transit can use their PRESTO cards to receive a discount on the ride they transfer to. In 2019/20, the cost of running the co-fare arrangement, paid for by the province, was over \$16.4 million.

2.7 Customer Service

Customer inquiries and complaints relating to GO Transit and UP Express are handled by Metrolinx’s internal Customer Care Team while those relating to PRESTO are mainly handled by Metrolinx’s contractor, Accenture. Both contact centres together responded to about 1.5 million customer inquiries and complaints in 2019. Inquiries may come in the form of telephone calls, emails, webs comment forms, webchat (PRESTO) and social media. According to Metrolinx, which conducts monthly and quarterly surveys of GO Transit users and monthly and semi-annual surveys of PRESTO customers, in 2019/20, customer satisfaction was 79% for GO services and 73% for PRESTO.

Figure 9: Train Delays, Cancellations and Scheduled Trips by Train Route, 2015/16-2019/20

Prepared by the Office of the Auditor General of Ontario

Train Route	2015/16		2016/17		2017/18		2018/19		2019/20		5- Year % Change
	Scheduled Trips	% of Trains Delayed and Cancelled*	Scheduled Trips	% of Trains Delayed and Cancelled*	Scheduled Trips	% of Trains Delayed and Cancelled*	Scheduled Trips	% of Trains Delayed and Cancelled*	Scheduled Trips	% of Trains Delayed and Cancelled*	
Kitchener	6,066	12.1	7,754	8.3	7,486	8.2	7,706	12.8	9,698	14.0	1.9
Barrie	3,712	7.9	4,258	10.0	7,058	15.7	11,880	12.0	11,769	12.3	4.4
Milton	4,550	10.5	4,838	8.6	4,996	5.5	5,032	13.7	4,977	10.4	(0.1)
Lakeshore East	29,776	6.0	30,224	6.9	30,733	8.8	34,934	14.4	39,507	9.9	3.9
Lakeshore West	30,691	7.1	30,985	7.0	31,206	5.4	34,409	9.8	38,109	8.1	1.0
Stouffville	3,780	3.4	3,918	3.9	7,484	4.9	7,992	7.5	9,386	6.6	3.2
Richmond Hill	2,765	7.1	2,962	4.5	2,986	3.8	3,010	5.2	3,004	4.6	(2.5)
Total	81,340	7.1	84,759	7.1	91,949	7.5	104,963	11.7	116,450	9.5	2.4

* Percentage of delays and cancellations is calculated based on the total number of delays (five minutes and over at the destination) and cancellations divided by the number of scheduled trips for each route.

Figure 10: Reasons for GO Train Delays and Cancellations, 2015/16–2019/20

Prepared by the Office of the Auditor General of Ontario

Delay and Cancellation Reasons	Number of Delays and Cancellations					5-Year Total	5-Year % Change
	2015/16	2016/17	2017/18	2018/19	2019/20		
External Factors ¹	1,228	1,275	1,601	3,136	3,322	10,562	171
Track/Signal ²	1,005	951	1,217	1,795	1,667	6,635	66
Train Control ³	905	649	717	1,679	1,823	5,773	101
Construction	354	434	657	1,701	1,210	4,356	242
Equipment Problems ⁴	417	773	695	1,032	1,114	4,031	167
GO Passenger Service ⁵	598	740	554	436	590	2,918	(1)
Congestion	505	429	510	979	383	2,806	(24)
Crew ⁶	311	415	501	720	618	2,565	99
Train Operation	327	248	253	258	155	1,241	(53)
Weather	78	38	99	417	151	783	94
Communications	78	43	53	101	48	323	(38)
Total	5,806	5,995	6,857	12,254	11,081	41,993	91

1. External factors include medical emergencies, police investigations, trespassers and vandalism.

2. Track/Signal-related delays and cancellations mainly occur on operational infrastructure owned by CN and CP (Section 4.2.1).

3. Ninety percent of train control delays and cancellations are attributable to CN and CP (Section 4.2.1).

4. Equipment-related delays and cancellations are mainly attributable to external service providers or original equipment manufacturers. Eighty-eight percent of equipment issues causing delays and cancellations are attributable to Bombardier. (Section 4.2.2).

5. GO passenger service includes waiting for passengers due to a special event such as a concert.

6. Crew related delays and cancellations attributable to Bombardier, which is the sole operator of Metrolinx's rail services (Section 4.2.2).

2.8 Passenger Safety

Transport Canada is the federal department responsible for developing regulations, policies and services of rail transportation in Canada. Transport Canada's rail safety inspectors conduct inspections to determine whether a railway's operations, equipment, signals and infrastructure support safety and complies with the *Federal Railway Safety Act*. Transport Canada conducted eight inspections on Metrolinx's rail operations in 2020 covering rail operations, train tracks, fleet maintenance and signals. Of the eight inspections, Metrolinx passed six of them with no concerns raised. For the remaining two inspections, Transport Canada raised concerns about trains operating at speeds higher than the allowable limits, faulty track equipment and poor visibility of track signage due to placement or being covered by vegetation. By the end of our audit, Metrolinx had addressed those concerns and

Transport Canada had also accepted Metrolinx's corrective measures.

For buses, Metrolinx has processes in place that are defined by various compliance requirements. For example, under Regulation 199/07 under the *Highway Traffic Act*, inspection of vehicles is done daily by bus drivers. Semi-annually, Ministry of Transportation-licensed motor vehicle inspection mechanics check compliance of vehicles with the National Safety Standard and applicable legislation.

Metrolinx also tracks and monitors passenger safety incidents on Metrolinx vehicles, property and facilities such as train stations and bus stops. There has been an average of about seven injuries per million passengers in 2018 and 2019. The top reasons for passenger injuries are slips, trips and falls at stations and also falls on buses due to hard breaking or acceleration. Metrolinx analyzes injury trends on a regular basis to develop action plans to reduce injuries and impact on customers.

Figure 11: Total Amount Paid to Metrolinx's External Service Providers for Key Transit Operations, 2015/16–2019/20

Source of data: Metrolinx

Company	Metrolinx Line of Business	Service Provided	(\$ million)
Bombardier Transportation Canada	GO Operations	Operations and maintenance of GO trains and UP Express	1,157
Accenture	PRESTO	Implementation of the PRESTO fare card system	793
PNR RailWorks	GO Operations	Routine track and signal maintenance on train corridors	209
Toronto Terminals Railway	GO Operations	Track maintenance and operations	109
Canadian National Railway	GO Operations	Track and rail maintenance of train corridors	104
Canadian Pacific Railway	GO Operations	Track and rail maintenance of corridors	48

2.9 Service Provider Management

Metrolinx has retained several external service providers (**Figure 11**) to deliver some of its key operations, such as operating and maintaining GO Transit trains and UP Express trains; maintaining train tracks across its rail corridors; operating and maintaining train signals; and designing, implementing and maintaining the PRESTO fare card system.

Following the recommendations of our 2016 *Annual Report* value-for-money audit, Metrolinx–Public Transit Construction Contract Awarding and Oversight, Metrolinx completed the implementation of a Vendor Performance Management System in 2017 to supplement existing contract management procedures.

Under the System, Metrolinx business units are to measure the performance of their vendors using a contract performance appraisal scorecard. Interim contract performance appraisals are generally issued annually or every six months at Metrolinx's discretion for contracts longer than 12 months. Final appraisals are required to be issued after contract completion. For contracts tendered prior to 2015, Metrolinx may, at its discretion, choose to apply the requirements of the Vendor Performance Management System. This decision is jointly made by the business unit that retained the vendor, the procurement division, and where required, Metrolinx's legal team.

2.10 Light Rail Transit (LRT) Projects

Light rail transit (LRT) consists of light rail vehicles typically running in an exclusive right-of-way, fully separated from traffic, with signal priority measures in place, and longer distances between stops compared with buses and streetcars. The higher capacity of these transit vehicles and the ability to link multiple vehicles together allow more people to travel faster than traditional buses and streetcars.

Metrolinx is responsible for the planning and delivery of LRT projects, including developing project cost estimates, proposing project budgets for approval and managing the cost once the proposed budget is approved by the Treasury Board/Management Board of Cabinet. All major public infrastructure projects, including LRT projects, with an estimated capital cost exceeding \$100 million are evaluated for delivery using the public-private-partnership (P3) model, as directed by the government. Under the P3 model, Metrolinx initiates a project and establishes the scope, budget and purpose of the project. A private-sector company is contracted to finance and carry out construction, and in some cases, be responsible for the long-term maintenance and/or operation of a project after completing construction. All six LRT projects mentioned in this report selected a P3 delivery model.

These six rapid transit projects were identified in Metrolinx's 2008 Big Move regional transportation plan—the Eglinton Crosstown, Finch West, Hamilton, Hurontario, Scarborough and Sheppard East—that would later be selected to be LRTs.

Figure 12 shows the status and latest Treasury Board-approved budgets for these LRT projects as of June 30, 2020. Please note that all Treasury Board-approved budgets in this report are pre-

sented in year of expenditure dollars. We discuss our findings on the Eglinton Crosstown LRT project and the Scarborough LRT cancellation in our *2018 Annual Report* and *2020 Annual Report* follow-up, Metrolinx–LRT Construction and Infrastructure Planning.

Figure 12: Status of Light Rail Transit (LRT) Projects, as of June 30, 2020

Prepared by the Office of the Auditor General of Ontario

Project Description	Status	Latest Treasury Board-Approved Budget (\$ billion)
1. Eglinton-Crosstown, Toronto		
<ul style="list-style-type: none"> Located along Eglinton Avenue Connects Weston Road and TTC Kennedy Station Length: 19 km (10 km underground) 25 stations and stops, linking to and intersecting with 54 TTC bus routes, three TTC subway stations, the Union–Pearson Express, and three GO train routes (Kitchener, Barrie and Stouffville) 	<ul style="list-style-type: none"> Under construction since 2016 Target in-service date: Sep 2021 	12.0 (May 2016)
2. Finch West, Toronto		
<ul style="list-style-type: none"> Located along Finch Avenue West Connects Finch West TTC station and Humber College Length: 11 km 	<ul style="list-style-type: none"> Under construction since 2018 Target in-service date: 2023 	3.4 (May 2019)
3. Hurontario, Mississauga		
<ul style="list-style-type: none"> Located along Hurontario Street Connects Port Credit GO Station and Steeles Avenue Length: 18 km 	<ul style="list-style-type: none"> Main contract awarded Oct 21, 2019 Target in-service date: Sep 2024 	5.6 (Aug 2019)
4. Scarborough, Toronto		
<ul style="list-style-type: none"> Upgrade the existing Scarborough Rapid Transit (SRT) service between Kennedy and McCowan stations Extend the service to Malvern Town Centre Length: Existing SRT is 6 km; proposed extension was 5 km 	<ul style="list-style-type: none"> Cancelled in 2013 	n/a
5. Sheppard East, Toronto		
<ul style="list-style-type: none"> Located along Sheppard Avenue Connects Don Mills TTC Station to Morningside Avenue Length: 13 km 	<ul style="list-style-type: none"> Deferred in 2015 Cancelled in 2019 	n/a
6. Hamilton LRT, Hamilton		
<ul style="list-style-type: none"> Spans the City of Hamilton below the mountain (along Main Street, King Street and Queenston Road) Connects McMaster University to Eastgate Square Length: 14 km 	<ul style="list-style-type: none"> Cancelled in 2019 	3.7 (Mar 2018)

LRT Cost Estimation Process

According to the Canadian Institute of Quantity Surveyors, capital projects are divided into four classes that measure two elements: how close the cost estimate is to the final cost, and what percentage of the project design is complete. The four classes—D, C, B and A—are in order of how accurate the cost estimate is, with D the least accurate and A the most accurate. They are as follows:

Class D: within 30% of the final cost; only 10% of the project design is complete.

Class C: within 20% of the final cost; 30% of the project design is complete.

Class B: within 15% of the final cost; 60% of the project design is complete.

Class A: within 10% of the final cost; 90% of the project design is complete.

The process for preparing a cost estimate for Treasury Board approval begins with Metrolinx and Infrastructure Ontario. Metrolinx is responsible for estimating the capital costs and uses the services of engineering firms to estimate operating and maintenance costs of the project. Infrastructure Ontario generates financing and insurance costs using financial modelling.

This initial cost estimate is prepared to a level of Class D. The Ministry of Transportation (Ministry) submits this initial cost estimate to the Treasury Board for LRT budget approvals. This process has been used for all LRT projects in Ontario delivered through a Public Private Partnership (P3) model.

As part of the procurement of the LRTs under the P3 model, proponents refine the project design as part of the bidding process and advance the project design completion to 30% before submitting their bids. In contrast, under a traditional procurement model, the project owner, such as Metrolinx, would refine the project design to 90% of completion prior to tendering the project.

During the procurement process, Metrolinx and Infrastructure Ontario refine their internal cost estimates. They also engage external cost consultants to advise on or validate their cost estimates. The

updated cost estimate is then used as a benchmark, along with other historical bids received for other transit projects, to assess the bids.

The Treasury Board approves the final LRT budget based on the winning bid, which could be lower or higher than the initial budget it approved. In the case that the winning bid exceeds the initial approved LRT project budget by 5% or more, the 2015 Treasury Board/Management Board of Cabinet Directive for Major Public Infrastructure Projects states that the Ministry must submit another request for additional funding to the Treasury Board. In that case, the Treasury Board may approve the revised, increased budget based on the winning bid or decline the request, which would result in a failed procurement and cancellation of the project.

Once the contract is awarded, the successful bidder further advances the project design toward completion and takes on additional costs associated with the unknowns in the design that they are responsible for as part of the contract.

3.0 Audit Objective and Scope

Our audit objective was to assess whether Metrolinx has effective governance and administrative structures and processes in place to:

- operate GO Transit trains and buses, and UP Express trains, on-time and safely in a cost-effective manner in accordance with applicable legislation, regulations, agreements and policies;
- operate the PRESTO fare payment system in an integrated and customer-focused manner in collaboration with other transit partners;
- reliably estimate the cost of completing its light rail transit projects, including the Hamilton light rail transit project; and
- measure and publicly report periodically on the results and effectiveness of its operations in meeting its mandate.

In planning for our work, we identified the audit criteria (**Appendix 1**) we would use to address our audit objective. We established these criteria based on a review of applicable legislation, policies and procedures, internal and external studies and best practices. Metrolinx's senior management reviewed and agreed with the suitability of our objective and associated criteria.

In determining the scope of this audit, we referred back to our previous audits of Metrolinx. Specifically: (2018) *Metrolinx LRT Construction and Infrastructure Planning*; (2018) *Metrolinx GO Station Selection*; (2016) *Metrolinx Public Transit Construction Contract Awarding and Oversight*; and (2012) *Metrolinx Regional Transportation Planning*.

This audit focused on the following of Metrolinx's operations:

- measurement and reporting of the performance of its rail and bus service;
- the Service Guarantee Program;
- progress on the integrated regional fare system within the GTHA; and
- management and oversight of its PRESTO contract with Accenture and other large external service providers responsible for key transit operations;
- the reasonableness of costs estimates for completing its light rail transit projects including estimates associated with the cancellation of the Hamilton LRT; and
- Board governance.

This audit did not assess Metrolinx's transportation and transit planning process or its management of capital projects such as the Ontario Line.

After the start of our audit, on December 18, 2019, we received a request from the Leader of the Official Opposition in Ontario that our Office assess the reasonableness of cost estimates presented to the public under the current and previous governments for rapid transit projects, including the Hamilton LRT. Our audit of Metrolinx was under way and we responded on December 19, 2019 that we were conducting this work as part of our audit.

We conducted our audit between December 2019 and September 2020. We performed our work primarily at Metrolinx's office. Due to the impact of COVID-19, our work was conducted remotely between mid-March 2020 and July 9, 2020.

We received written representation from Metrolinx, the Ministry of Transportation and Infrastructure Ontario management that, effective November 13, 2020, they had provided us with all the information they were aware of that could significantly affect the findings or the conclusions of this report.

In performing our audit work, we spoke with staff and reviewed relevant documentation from the Ministry of Transportation, Infrastructure Ontario, the Ministry of Infrastructure, the City of Hamilton and Transport Action Ontario for our review of cost estimates of LRT projects. We engaged an independent, professional quantity surveying and project management firm specializing in construction cost planning, estimating and cost control to assist us in reviewing Metrolinx's LRT cost estimating process and in assessing the reasonableness of the \$5.5-billion Hamilton LRT cost estimate in December 2019 and the two earlier cost estimates that were used to obtain Treasury Board Secretariat approval in December 2016 and March 2018.

With respect to fare integration and implementing PRESTO, we reviewed relevant documentation and interviewed staff from the following transit agencies: Brampton Transit, Burlington Transit, Durham Region Transit, Hamilton Street Railway, MiWay (Mississauga), Oakville Transit, the Toronto Transit Commission and York Regional Transit. We also met with the Auditor General of the City of Toronto. We also reached out to OC Transpo, Ottawa's municipal transit agency, but did not receive a response.

We conducted our work and reported on the results of our examination in accordance with the applicable Canadian Standards on Assurance Engagements—Direct Engagements issued by the Auditing and Assurance Standards Board of the

Chartered Professional Accountants of Canada. This included obtaining a reasonable level of assurance.

The Office of the Auditor General of Ontario applies the Canadian Standard on Quality Control and, as a result, maintains a comprehensive quality-control system that includes documented policies and procedures with respect to compliance with rules of professional conduct, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Professional Conduct of the Chartered Professional Accountants of Ontario, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

4.0 Detailed Audit Observations—Business Operations

4.1 Accenture Contract for PRESTO

4.1.1 Sole-Sourcing for PRESTO Development has Resulted in High Supplier Dependency on Accenture

The costs for developing and operating the PRESTO fare card system across the Greater Toronto and Hamilton Area (GTHA) and Ottawa transit agencies have totalled nearly \$2 billion as of May 2020. In 2006, the Ministry of Transportation (Ministry) signed the original 10-year, \$231.7-million contract with Accenture to design, develop and operate an electronic fare system, PRESTO, for GO Transit and transit agencies in the GTHA municipalities in the 905 area code (see **Section 2.3.3**).

In 2011, Metrolinx took over the original contract with Accenture. Since 2012, Accenture's contract value has increased by over \$1.7 billion (**Figure 13**). This increase is partly due to increases

in the scope and scale of PRESTO. For example, PRESTO expanded services to 11 transit agencies, including the TTC, OC Transpo and UP Express, which were not in the scope of the original contract. **Appendix 2** shows the timeline and expansion of the roll-out of PRESTO.

Except for the original contract, we found that nearly all subsequent contract increases occurred without Metrolinx undertaking competitive procurements increasing dependency on Accenture.

As noted in our 2012 audit, *Metrolinx—Regional Transportation Planning*, when the Ministry started the e-fare payment system project in 2002, it identified a number of guiding principles for development and implementation. One of these principles was that the fare system should, where possible, use off-the-shelf products whose components could be purchased from multiple sources. This would allow for more procurement options should there be additional functionalities in the future. However, since 2006, Accenture has provided the key services for the design, build, execution and operations of the entire PRESTO system across the GTHA transit agencies. Metrolinx indicated that this has limited its ability to consider alternative procurement options and evaluate whether Accenture services and technology solutions were cost effective. Over the years, Metrolinx's Board of Directors expressed concern to management regarding the agency's dependency on Accenture; however, the Board continued to approve the increases in expenditures.

A recommendation we made in 2012 was to have Metrolinx comply with the intent of the government's policy of open, competitive procurement, and all value-for-money considerations before any significant transportation procurement decision is finalized. However, as noted, this audit found that Metrolinx continued to extend existing or award new contracts to Accenture without a competitive process and sufficient assessment of cost effectiveness and value for money.

Specifically, we found the following examples:

- **Metrolinx did not undertake a public tendering process when the Accenture**

Figure 13: Contract Costs for Accenture, October 2006–May 2020 (\$ million)

Prepared by the Office of the Auditor General of Ontario

Funding Request Date	Capital Costs	Operating Costs	Recoverable Costs	Total	
Original contract 2006	149.2	82.5	n/a	231.7	<ul style="list-style-type: none"> Build and operate PRESTO to support GO transit and 7 Greater Toronto and Hamilton Area (GTHA) transit agencies
Update to Metrolinx Board to Approve Additional Costs					
Sep 2012	297.3	76.0	100.0	473.3	<ul style="list-style-type: none"> Rollout of PRESTO Next Generation to Ottawa and GTHA Develop and deploy PRESTO for the TTC
Mar 2014	100.0	n/a	n/a	100.0	<ul style="list-style-type: none"> Interim increase related to TTC deployment and other key projects
Dec 2014	55.0	5.0	n/a	60.0	<ul style="list-style-type: none"> Procure PRESTO devices for TTC deployment Upgrade software to meet TTC requirements Ongoing work for design and device layout at 46 TTC subway stations
Apr 2015	5.0	7.0	8.0	20.0	<ul style="list-style-type: none"> Procure various PRESTO devices on behalf of transit agencies TTC commitments Operating expenditures
Aug 2015	180.0	30.0	15.0	225.0	<ul style="list-style-type: none"> TTC capital spending to enhance the quality assurance and testing of PRESTO PRESTO capacity expansion Procure various PRESTO devices on behalf of GTHA and Ottawa transit agencies Ongoing operating costs
Jun 2016	140.3	319.5	30.5	490.3	<ul style="list-style-type: none"> Contract extension by six years
Jun 2018	235.0	n/a	30.0	265.0	<ul style="list-style-type: none"> Programs related to state of good repair Fulfilling commitments made through 2016 and 2017 during operating agreement negotiations with GTHA and Ottawa transit agencies Virtual PRESTO development as substitute for open payment Cost of capital projects not scoped out during the 2016 extension
Apr 2019	33.0	n/a	n/a	33.0	<ul style="list-style-type: none"> Increase for Accenture's expanded role to complete the procurement and deployment of replacement PRESTO devices for GO transit and the 905 transit agencies
Oct 2019–Feb 2020	21.6	n/a	n/a	21.6	<ul style="list-style-type: none"> The \$21.6 million approved is for assessing maintenance needs of the current PRESTO system and for designing an open payment pilot The Board does not receive presentations on this approval since the total cost is broken down into three smaller statements of work According to Metrolinx, all three levels of approval (the Audit Finance and Risk Management Committee, the Executive Committee and the Metrolinx Board) were aware that Accenture had the expertise to complete this work and Metrolinx exercised its right under the Master Agreement to issue these statements of work to Accenture

Funding Request Date	Capital Costs	Operating Costs	Recoverable Costs	Total	
Apr-May 2020	31.5	n/a	n/a	31.5	<ul style="list-style-type: none"> The Executive Committee approves \$40 million for the PRESTO Mid-Term Modernization Plan, of which \$37.7 million is to execute the open payment pilot and to undertake maintenance of the current PRESTO system Management informs the Executive Committee that Accenture will be completing the majority of the work related to the open payment initiative On May 1, Accenture signs another statement of work worth \$31.5 million to execute the open payment pilot on the UP Express
Total	1,247.9	520.0	183.5	1,951.4	

agreement came up for renewal in October 2016. In 2016, Metrolinx extended its agreement with Accenture for six years until October 2022 without undertaking a competitive procurement process. Metrolinx's decision to extend the agreement was based on several factors, including recommendations from a third-party consultant engaged by Metrolinx to review its PRESTO service options. The consultant's report highlighted Metrolinx's risk of losing Accenture's institutional knowledge that Accenture acquired over the previous 10 years. It also pointed to other factors such as the high cost of procurement and Metrolinx's resource and time constraints to procure a new vendor during the PRESTO rollout at the TTC at the time. As a result, Metrolinx decided to renew the agreement with Accenture rather than undertake a competitive tender.

- **Metrolinx reduced technical requirements and awarded a contract to Accenture with no competitive process after it received no compliant responses to a Request for Proposals (RFP) with complex requirements.** As shown in **Appendix 2**, in 2017, Metrolinx issued an RFP for the replacement of all outdated PRESTO devices on GO Transit and the transit agencies serving municipalities in the 905 area code. However, the public tender process failed after Metrolinx received two bids but neither of them qualified. Feedback

from the market indicated that the technical requirements were too complex and the perceived level of risk to the vendors was too high. Metrolinx subsequently reduced the technical requirements and, in 2018, engaged Accenture for an additional \$77 million to deliver an off-the-shelf solution, with the Board's approval. Metrolinx's recommendation to the Board not to re-tender the contract was based on management's assessment that Accenture was best suited to deliver all aspects of the project with minimal risk. As such, other vendors were not given the opportunity to bid for the revised contract with reduced technical requirements.

4.1.2 Awarding Accenture Pilot Project Could Give It Advantage in Future Bidding

Metrolinx's current contract with Accenture expires in October 2022. Metrolinx advised us that it intends to go to market to competitively procure all services for PRESTO currently provided under Accenture's current master agreement. These services include managing customer accounts and payment cards, the customer call centre, the website, the app and running the core IT software system that will have open payment capability. Open payment will allow transit users to pay for fares using their debit and credit cards, including virtual credit cards such as Apple Pay. According to Metrolinx, the agreement to manage the existing system until

the new system with open payment capability is fully up and running will also be tendered. At the time of our audit, Metrolinx had started planning for the procurement process to take place between late 2020 and late 2021.

Under the PRESTO modernization plan, finalized in late 2019, we noted that Metrolinx initially planned to roll out open payment after 2022.

However, Metrolinx engaged Accenture between October 2019 and April 2020 under its existing agreement to design and pilot an open payment system on UP Express and other maintenance work for a cost of \$53 million. Metrolinx did not conduct a competitive tender for this pilot. Running the open payment functionality within Presto, for which Accenture was contracted for the pilot, will be part of the services tendered in 2022.

The senior management team at Metrolinx responsible for PRESTO initially indicated in June 2019 to the Audit, Finance and Risk Management Committee that implementing open payment would require changes to the current PRESTO business model of tapping with only a PRESTO card and could not be undertaken before Accenture's contract expired in 2022. However, our review of the June 2019 Audit, Finance and Risk Management Committee meeting materials showed that the CEO and the PRESTO Advisory Subcommittee Chair expedited work on open payment to meet customer expectations.

Management did not inform the Board or any of its committees that Accenture was awarded the open payment pilot project under the new timeline without a competitive process. According to Metrolinx, it decided to use Accenture without a public tender because of Accenture's ability to build on the existing IT system platform; to shorten delivery timelines; and the need to integrate the deliverables with the current system.

Although the award of the open payment pilot to Accenture could give Accenture an advantage in bidding for post-2022 work, Metrolinx's CEO and the PRESTO Advisory Subcommittee saw the pilot as necessary to meet customers' expectations

and demonstrate progress with PRESTO's ability to accept different forms of payment.

RECOMMENDATION 1

In order to have PRESTO operating in a cost-effective manner that meets business and customer needs, we recommend that Metrolinx:

- reduce dependency on Accenture by improving its in-house technical expertise with respect to knowledge and understanding of PRESTO services and technological solutions;
- undertake a competitive procurement for the development and delivery of various elements of PRESTO, including the open payment capability, in anticipation of the expiry in 2022 of the current contract with Accenture; and
- establish strategies and actions to manage the advantage held by the current service provider and level the playing field for all potential bidders during the planned larger competitive procurement process.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation and will actively take steps to improve its in-house technical expertise.

PRESTO management is currently preparing for re-procurement of the PRESTO system. PRESTO recently recruited internal technology experts to develop a deeper understanding of PRESTO's end-to-end architecture. PRESTO will leverage these resources to decrease reliance on one supplier and move to a modular approach that allows vendors to plug and play through an integration hub. PRESTO designed and has control and ownership over this integration hub. This work will enable re-procurement planned for 2022. PRESTO is also committed to moving to a cloud-based platform owned by PRESTO and developing technical standards for working with PRESTO that all suppliers follow.

Metrolinx is committed to undertaking a competitive procurement in anticipation of the expiry of the current agreement with Accenture. Open payment capabilities will be part of this procurement. To manage any potential or perceived conflict of interest with Accenture, any information that is shared with the supplier will be shared with the entire vendor community. Metrolinx is also creating a data room that ensures a level playing field by providing visibility to PRESTO's system details to the potential supplier base.

4.1.3 PRESTO Still Not Fully Adopted in GTHA after 14 Years

One of the key objectives of the PRESTO fare card system is to seamlessly connect GO Transit and municipal transit agencies in the GTHA, making it more convenient for users to take transit across the region. However, the adoption rate of PRESTO cards by riders in municipal transit systems varies. Since the rollout of PRESTO first began in 2010, the 11 transit agencies in the GTHA and Ottawa have achieved a 71% overall adoption rate as of January 31, 2020. Our review found the cost and technological limitations of adding the unique needs of each municipality to the current PRESTO system have acted as a barrier for some transit agencies to make PRESTO use more attractive to their riders. We also found that some transit agencies improved the adoption rate by ending their previous fare options, such as ending tokens for the TTC.

In our 2012 audit on Regional Transportation Planning, we recommended that Metrolinx work with GTHA municipalities and transit agencies to resolve outstanding issues with PRESTO operations that inhibited local transit riders from switching to PRESTO. While PRESTO use has increased substantially in the last decade (see **Figure 4**), the following examples highlight that there are still barriers to some local transit users adopting PRESTO:

- In Durham Region Transit, one of the factors contributing to a low adoption rate (37.5%) is that about 30% of the system's riders are post-secondary students still using the Durham Region UPass. The UPass is a university bus pass for post secondary students attending Durham college, Ontario Tech University and Trent University's Durham Campus to have unlimited access to transit in Durham Region seven days a week. The fee for the UPass is \$283.50 for the school year (September to April) and is part of the ancillary fees every student pays as part of their tuition. In late 2019, the three post-secondary schools approached Durham Region Transit to test a digital UPass technology developed by a third party and the transit agency engaged with Metrolinx for a PRESTO-based solution. Accenture was not able to develop a comparable tool that was easy to roll out to students, like the third-party smart phone app. Accenture was only able to incorporate the UPass on the PRESTO card. However, Durham Region Transit would incur additional costs in managing and distributing the cards and the students would also incur a \$6 fee per card. If this third-party UPass solution is rolled out, these transit users, which account for 30% of Durham Region Transit's riders, will have no incentive to switch to PRESTO. As a result, PRESTO adoption will remain low because of Accenture's inability to develop a solution for the municipal transit agency. As of early 2020, Durham Region Transit and the three institutions decided to move forward with the third party's digital UPass solution. This solution comes at no cost to Durham Region Transit since the three schools are bearing the cost of the tool. However, the post-secondary schools have expressed support to move to PRESTO when a UPass solution becomes available.
- A Memorandum of Understanding between the City of Toronto and the Region of York

stated that the City of Toronto would pay for the operations and maintenance of the TTC's extension to Vaughan. To ensure that subway use was maximized, York Region Transit (YRT) bus services to York University were to stop operations once the Toronto-York subway extension line opened in 2017. Prior to the subway extension opening, Metrolinx, the TTC and YRT held working sessions to develop a fare-integration solution. Discussions were ongoing to develop a solution so riders crossing between Toronto and York Region would not have to pay double fares. Accenture estimated that the solution preferred by the transit agencies would cost \$20 million to \$25 million, which was cost-prohibitive to transit agencies. Due to the high cost of the solution and the lack of agreement from all parties, this initiative did not move forward. As a result, those York University students who are travelling between York Region and Toronto are currently paying a full fare on YRT buses that bring them to the TTC's Pioneer Village Station, and then they have to pay a full TTC fare to get to York University. The result is that students who were paying only the YRT fare (\$3.88 on PRESTO) when the buses were allowed to stop inside York University Campus now have to pay \$7.08 (on PRESTO) for a one-way ride to campus because they have to switch from YRT buses to the TTC subway. This discontinuation of bus services into York University campus has also impacted students taking Brampton Transit and GO Transit buses.

The current PRESTO technology cannot accommodate multiple concessions. Concessions are fares offered at a lower price than usual for specific groups of people such as students and seniors. Also, fare concessions are not transferable between municipal transit systems.

We also found that adoption rates varied depending on the actions that transit systems used

regarding their former options of payment, known as a legacy fare system. For example, Brampton transit, with an adoption rate of 91.8%, eliminated its legacy fare system, which led to riders switching to PRESTO cards. The TTC also eliminated its own tokens and monthly passes, which increased PRESTO card usage. Some of the remaining transit agencies still maintain their own legacy systems.

RECOMMENDATION 2

In order to increase adoption of PRESTO across Greater Toronto and Hamilton Area (GTHA) transit agencies, we recommend that Metrolinx work with the GTHA transit agencies to resolve outstanding issues related to the operation of PRESTO, including an inability to accommodate varying fare types, that prevent its full adoption by respective transit systems.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation and will enhance adoption by working with transit agencies on outstanding issues to phase out legacy fare media, and working with Durham region on a transit fare solution for post-secondary students.

4.1.4 Accenture's Performance Could be Managed More Effectively

The 2016 master agreement between Metrolinx and Accenture is currently not managed using Metrolinx's Vendor Performance Management System (discussed in **Section 2.9**). Under this agreement, Accenture provides the key services for the design, build, execution and operations of the entire PRESTO system across the GTHA transit agencies. Unlike other service providers, Metrolinx does not assess and review Accenture's performance for work under this agreement every six months and provide a performance rating that can be used to assess Accenture for future contracts.

In addition, based on our review of information shared by several GTHA municipal transit agencies, malfunctioning PRESTO devices and cards have led to an estimated lost revenue of \$10 million for transit agencies since 2016. Our 2020 audit Information Technology (IT) Systems and Cybersecurity at Metrolinx also noted that from February 2016 to May 2020, PRESTO fare payment devices encountered over 45,000 software and hardware incidents, such as transit tickets not dispensing or jammed and device outages due to Internet connectivity problems and extreme weather conditions.

Metrolinx launched the Vendor Performance Management System in 2017. In 2016, when Metrolinx was developing the system and contemplating which service providers to include, it decided not to include the Accenture contract for PRESTO because it was originally set to expire at the end of 2016. In October 2016, the contract was extended for another six years by way of amendments negotiated directly by Metrolinx's legal division. According to Metrolinx, the procurement division, responsible for managing the Vendor Performance Management System, was not involved in the negotiations due to the complexity of the contract. As a result, the extended contract was not included under Metrolinx's Vendor Performance Management System.

In accordance with the current agreement, which is in effect until October 2022, Metrolinx receives monthly operations' reports from Accenture, which include service-level performance measurements for Accenture and its subcontractors. Some of the performance measures include PRESTO contact centre performance summaries such as customer call categories and volumes; reports on monthly device incidents by subcontractors; change management summaries of all PRESTO production requests; performance measures for the Accenture Service Desk; and availability of all PRESTO services such as websites and servers. In these reports, Accenture self-reports whether the performance targets have been met. Metrolinx does not validate Accenture's self-reporting against

supporting data that Accenture provides unless the reporting shows an anomaly.

The current agreement also allows Metrolinx to conduct annual audits and spot audits of Accenture's financial and operational controls, systems, databases, all operations, books, records and documentation relating to the PRESTO system. Metrolinx contracts third parties to conduct standard industry audits for PRESTO, focusing on financial reporting and compliance with international data security standards for payment cards; however, Metrolinx has not conducted operational and/or performance audits in relation to the PRESTO system.

According to the current contract, service level issues are required to be formally reported and resolved by Accenture if a service level has not been met for two consecutive months. We noted that since the contract was renewed in 2016, there have been no issues self-reported by Accenture. However, our review of monthly performance reports over the last five years showed that Accenture had missed performance targets on numerous occasions. Details of the missed performance targets can be found in our 2020 audit of Information Technology (IT) Systems and Cybersecurity at Metrolinx.

RECOMMENDATION 3

To improve its oversight of PRESTO service providers' performance (Accenture and subcontractors), we recommend that Metrolinx:

- include Accenture's PRESTO Agreement (Master Services and Supply Agreement) in Metrolinx's Vendor Performance Management system in order to formally oversee Accenture's performance for the remainder of the contract term;
- undertake risk-based operational/performance audits of PRESTO services currently provided by Accenture; and
- require agreements with future PRESTO service providers contain robust performance monitoring, reporting and accountability

mechanisms with contractual rights for periodic operational and/or performance audits, issue escalation, and compensation or penalties for poor performance.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation and will add the Accenture Master Services and Supply Agreement contract into the Metrolinx Procurement-Vendor Performance Management System. Metrolinx will also undertake risk-based operations/performance audits of the PRESTO service currently provided by Accenture. Metrolinx will perform a minimum of one audit per year, starting in 2021. Metrolinx will also ensure that, as part of all future procurements, contracts will include performance monitoring, reporting and accountability mechanisms.

4.2 Oversight and Management of External Service Providers

4.2.1 Metrolinx Has Little Recourse in Contracts with CN and CP

Metrolinx owns 69% of the rail corridors it uses and the remaining 31% are owned by Canadian National Railway (CN) and Canadian Pacific Railway (CP). GO trains that run on tracks owned by CN and CP are controlled by these respective railways. Similarly, the tracks owned by CN and CP are also maintained by these respective railways. Current operations and maintenance agreements have been in place between Metrolinx and CN since 2011 and with CP since 2015 for train control, and to maintain the tracks and signals owned by these companies. In 2019/20, Metrolinx paid over \$31 million to CN and CP for the use of their tracks, train control, and track and signal maintenance.

The province of Ontario, GO Transit and Metrolinx have had multiple contractual arrangements with CN going back to 1967. Metrolinx requires the use of the sections of the track owned by CN and

CP for its GO trains where services run outside of Metrolinx-owned corridors. Therefore, Metrolinx has limited ability to influence the performance of CN and CP because its operations depend on using these tracks.

Performance reviews consist mainly of monthly and quarterly meetings between Metrolinx and the two railways. While any non-compliance deemed material by Metrolinx can result in Metrolinx withholding payments to CN and CP, the agreements do not allow Metrolinx to assess liquidated damages for delays attributable to CN and CP.

Metrolinx's publicly reported on-time performance for GO trains fluctuated between 92% and 95% during the period 2015/16 to 2019/20. In those five years, Metrolinx reported 37,574 train delays and 4,419 cancellations on the entire rail system—tracks owned by Metrolinx, CN and CP. Train control (managing train movements) issues accounted for 5,773 or 14% of all train delays and cancellations while track and signal issues accounted for 6,635 or 16% (see **Figure 10**).

Of those totals, our review showed that 5,171 (or 90%) of train control delays and cancellations over the entire rail network were attributable to CN and CP over the past five years. Train control issues were mostly related to the stop signal/waiting signal, meeting an opposing train, or waiting for a train to clear. For track and signal issues, 1,759 (or 27%) were attributable to CN's and CP's corridors. Track and signal issues were mostly due to signal failure, code errors or computer problems.

4.2.2 Metrolinx Has Not Consistently Tracked the Cause of Train Delays, Cancellations Related to Bombardier

Bombardier provides the crew to operate all GO rail trips and solely maintains the entire GO train fleet. Unlike its relationship with CN and CP, Metrolinx has various mechanisms through its service provider agreement to manage Bombardier's performance. However, at the time of our audit, we found that Metrolinx's data collection and analysis was

not consistent in terms of monitoring Bombardier's performance under the two agreements.

Bombardier operated 479,461 trips in the five-year period from April 2015 through to March 2020. Metrolinx has two separate agreements with Bombardier: one for the maintenance and repair of its rail equipment and another for operating its train services, for both the GO lines and UP Express service. Both agreements are for the period June 1, 2008 to December 21, 2024.

Two separate teams within Metrolinx's Rail Operations Business Unit oversee the two Bombardier contracts without a standardized approach. The main instrument for managing Bombardier's contract performance has been issuing liquidated damages— compensation for specific breaches of contract. However, there was no consistency between the two teams in collecting and analyzing data with respect to Bombardier's performance and issuing liquidated damages. For example, the database managed by the team responsible for overseeing the contract for train services did not always contain details on whether train crew operation events led to train delays or cancellations. This information is important for correctly assessing the amount of liquidated damages against Bombardier. Also, this team was not able to provide details of some of the incidents that led to liquidated damages being assessed against Bombardier.

Between 2015/16 and 2019/20, train crew operation issues related to Bombardier resulted in 2,353 train delays and 211 train cancellations. Examples of such issues include crews not following operating procedures; crew members arriving late for work;

a shortage of train crews; and platform overshoot. Platform overshoot is the most common issue causing delays. It occurs when a train goes past the precise stopping point at a station stop causing the accessibility coach to not align with the accessibility ramp at the station.

Similarly, between 2015/16 and 2019/20, equipment issues related to Bombardier resulted in 2,804 train delays and 724 train cancellations of the total delays and cancellations over all of the rail corridors owned by Metrolinx, CN and CP.

As seen in **Figure 14**, between 2015/16 and 2019/20, Metrolinx issued approximately \$10.1 million in liquidated damages to Bombardier for delays and cancellations resulting from train crew operations and rail equipment maintenance issues. This represents 0.9% (of a possible maximum 3% as stipulated in the contract) of the \$1.16 billion paid to Bombardier during the same period.

In early 2019, Metrolinx's Commercial Management Division assumed responsibility of both contracts to improve monitoring and oversight of Bombardier's performance. Metrolinx's Commercial Management Division team indicated it will be developing standard reports and analyses for trending train delays caused by Bombardier's rail equipment and train crew operation service issues on a monthly basis and use them for senior management reporting. Metrolinx informed us that it is planning to implement these standard reports by February 2021.

Figure 14: Monetary Penalties* Issued to Bombardier by Metrolinx, 2015/16–2019/20 (\$ million)

Source of data: Metrolinx

Contract	2015/16	2016/17	2017/18	2018/19	2019/20	5-Year Total	5-Year % Change
Rail Equipment Maintenance Service Agreement	0.33	0.64	0.48	0.89	2.32	4.66	603
Train Operations Service Agreement	0.58	0.77	0.47	2.65	0.98	5.45	69
Total	0.91	1.41	0.95	3.54	3.3	10.11	n/a

* Monetary penalties are issued to Bombardier under the liquidated damages provision of the agreements between Bombardier and Metrolinx for not meeting contractual obligations.

RECOMMENDATION 4

To further reduce the number of train delays and cancellations associated with train operations and maintenance and improve the management of the Bombardier contracts, we recommend that Metrolinx's Commercial Management Division:

- determine and record the root cause of all delays and cancellations; and
- have Bombardier take corrective actions to reduce the number of operational and equipment failures on trains.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation. Metrolinx Operations has recently established a centralized and dedicated performance team to aid in performance analytics and performance improvement. The Performance Director was appointed in November 2020 and a key task is to produce a business case for a root cause analytical tool. This will allocate incidents to causes and provide trend analysis and root cause analysis for managers to use across Operations, Engineering and through our delivery partners. The business case will be presented to the Board within the next six months.

Metrolinx will continue to work with Bombardier on known causes for delay. Metrolinx will work with Bombardier Operations to eliminate or reduce delays related to passenger alarm activations and platform overshoot.

A comprehensive plan has been developed and is being rolled out in partnership with Bombardier to correct fleet-related defects and failures that contribute to delays. The program addresses door failures, locomotive performance (GO), Diesel Multiple Unit performance (UP), air system failure and traction system failures.

4.3 Metrolinx Unable to Fully Assess How to Improve Bus Service due to Limited Data on Delays, Cancellations

We found that Metrolinx does not have an effective system in place to track the reasons for bus delays or cancellations.

On a daily basis, there was an average of 101 bus delays and 2.4 cancellations from 2015/16 to 2019/20. Cumulatively, the delays and cancellations represented 5.2% of all scheduled bus trips in that period. **Figure 15** shows the top six bus routes with the highest percentage of delays in 2019.

While Metrolinx uses data from GPS devices on GO buses to determine whether a bus is on time, it uses a manual process to track the reasons for delays. Metrolinx relies on bus drivers and bus operations supervisors to inform the bus garages or the Network Operations Centre, through the radio, of the reasons for delays or cancellations. The Network Operations Centre then notifies other departments of the delays and cancellations by email. These emails are then used for monthly reporting, which includes reporting on the number of delays by each bus route and corridor.

We found that this manual process is not effective because not all bus delay reasons are captured. On a monthly basis, email notifications on the bus delays are manually filtered using key words to determine only the number of bus delays related to mechanical breakdowns. Up until June 2020,

Figure 15: Bus Routes with Highest Percentage of Delays, 2019

Source of data: Metrolinx

	% of Trips Delayed 15 Minutes or More
33 - York Mills/University of Guelph	10.1
92 - Whitby-Finch	9.9
67 - Keswick/North York	9.9
70 - Uxbridge/Unionville	8.9
27 - Milton/North York	8.3
69 - Sutton-Newmarket	8.0

Metrolinx did not categorize other reasons for bus delays that are also within Metrolinx's control, such as "vehicle availability" and "late start" (that is, driver departing late, traffic between garage and first stop, equipment issues at the garage). In June 2020, Metrolinx began categorizing bus delays using all reasons. However, this first report in June 2020 still showed that 51% of the delay reasons were unknown. With respect to the majority of the remaining delays, "traffic" accounted for 14% of the delays, followed by "late start" (13%) and "equipment failure" (12%).

Over the past two years, there were also 2,891 bus cancellations. We reviewed and analyzed the 2018 and 2019 cancellation data and noted that Route 47-Highway 407 West and the Express route Hamilton/Toronto accounted for approximately 14% and 10% of all bus cancellations each year, respectively. However, Metrolinx did not analyze the data for the reasons for the cancellations and, instead, relied on the experience of bus operations supervisors to infer the reasons for the cancellations. When we reviewed the cancellation data file, the most common reasons provided for cancellations were "cancellation" and "service adjustments," which did not provide sufficient information for analysis.

RECOMMENDATION 5

To improve measurement and analysis of GO buses' performance and improve on-time bus service, we recommend that Metrolinx:

- implement a robust process to track bus delays and cancellations with detailed reasons;
- analyze root causes for bus routes that experience more significant delays and cancellations than others; and
- take corrective action to address common or recurring root causes of bus delays and cancellations.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendations and will perform a review of the current process of obtaining information related to bus delays and cancellations, and the tracking of the same information, to develop and implement an automated system by September 2021 that records, categorizes and reports on bus delays.

Metrolinx will also develop and implement a root cause analysis process that identifies trends leading to delay and/or cancellations to service. Metrolinx will determine whether there is available software that can be utilized to help evaluate trends and route performance. In addition, Metrolinx will perform the following:

- develop and implement a process/procedure to make use of the information analyzed and develop corrective actions;
- identify root causes to road calls and service disruptions, and develop improvement plans;
- monitor the Bus Overhaul Program launched in August 2020 aimed at improving cooling and exhaust system reliability; and
- identify buses that experience an in-service failure more than once in a 60-day period; and launch the Bus Services "Bad Actor" Program with in-depth mechanical review of these buses.

4.4 Low Customer Satisfaction on Service Guarantee Program

The Service Guarantee Program (Program) was established to improve customer satisfaction and drive customer loyalty and retention. However, we found that the Program has a number of deficiencies, including no automatic refund services, a short window to make a claim and lack of clarity on some denied claims.

According to Metrolinx's overall customer satisfaction survey results, customer satisfaction with

the Program's claim submission process ranged from 57% to 63% over the last five years. Metrolinx has implemented a number of changes to the Program over the years to improve customer experience, including updates to the claim submission web portal, onboard messaging to announce trip eligibility and other program enhancements.

Despite these steps, its GO Contact Centre received over 19,800 customer complaints during the last five years relating to the Program. Reasons for complaints included denied claim disputes, the eligibility criteria and the process for claiming the service guarantee as well as people providing suggestions for an automatic refund process.

In 2008, when Metrolinx's on-time performance for rail had fallen to approximately 88%, Metrolinx began refunding the fare to compensate customers who were impacted by train delays of 45 minutes or more. In 2012, Metrolinx established the current Service Guarantee Program for train delays of 15 minutes or more and for boarded train trips cancelled after they departed. The Program applies to train delays for which GO Transit is responsible (for example, equipment or signal failure) but excludes severe weather, medical emergencies, accidents and police investigations.

Our review of the program noted a number of concerns:

- **Customers have a small window to submit a claim:** Metrolinx requires claims to be submitted within seven days of the delayed GO train trip for PRESTO card holders and by the end of the business day following the delayed train for paper ticket holders. In comparison, the Northern Railway Corporation and the Avanti West Coast in the United Kingdom both accept claims up to 28 days after a delayed trip. Trenitalia in Italy allows customers to request compensation for train delays up to one year after the affected journey. UP Express also offers a refund up to 30 days after the delayed trip.
- **Metrolinx cannot explain reasons for some potentially eligible claims being denied:**

From 2015/16 to 2019/20, around 172,000 (9%) of submitted Service Guarantee Program claims were denied. Metrolinx maintains data on the Program in a dedicated IT system. We noted that some data older than one year has been purged from the system. In addition, in order to investigate or validate denied claims, Metrolinx needs to access data from several other systems, including the core PRESTO system managed by Accenture. As a result, Metrolinx was not able to readily validate some of the denied claims that we noted may have been due to delay reasons that were eligible reasons for refunds.

- **The refund is not automatic:** Currently, eligible customers need to submit a claim to get a refund, although our 2020 audit Information Technology (IT) Systems and Cybersecurity at Metrolinx found that, although Metrolinx has the technology and necessary data to automatically refund customers who qualify, Metrolinx does not do this. In comparison, some rail companies in other jurisdictions, such as the Northern Railway Corporation and South Western Railway in England, have an automatic repayment plan if the train was delayed and the ticket was purchased on the website or app. A compensation payment is automatically generated within three days for trains delayed for 15 minutes or more.

For a Service Guarantee Program claim to be processed, the trip must be eligible, the customer's PRESTO card number needs to be valid and in good standing, and the card tap history must reconcile with the eligible trip, and not have been tapped more than 15 minutes before the train was scheduled to depart. Metrolinx publicly posts these eligibility criteria on its website. Under this program, from 2015/16 to 2019/20, a total of 824,901 refunds were issued, costing Metrolinx \$6.5 million (an average of \$8 per claim) in refunded fare revenue.

At the time of our audit, Metrolinx had not made any significant changes to the Program to address

customer feedback with respect to the desire for an automatic refund process.

On a monthly basis, Metrolinx prepares a report on the number of delays 15 minutes and up (arrival at final station) and how much it would have cost Metrolinx to refund customers for such delays. We reviewed the monthly information from the last five fiscal years and noted that, if all eligible customers received refunds, Metrolinx would have refunded up to a maximum of \$24.5 million to customers potentially affected by delays. In that same period, Metrolinx actually refunded \$6.5 million to customers. We calculated that only about 27% of all eligible passengers made a claim in the last five fiscal years. Metrolinx does not undertake any analysis to determine the reasons why eligible riders do not submit claims; it only tracks and reports the number of Service Guarantee claims and the amount claimed.

RECOMMENDATION 6

To ensure that the Service Guarantee Program (Program) is effective, we recommend that Metrolinx:

- conduct a review of the Program to determine whether it is effective in improving customer satisfaction;
- address customer feedback on the Service Guarantee claim process, including implementing a fully automatic refund process for claims; and
- improve tracking and analysis of Service Guarantee claims, including denied claims.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation and will undertake a program review, which will culminate in recommendations around:

- program alignment between GO and UP Express;
- claim submission window;

- defined program metrics for success, reporting and measurement; and
- customer communication about program, submission process and eligibility program monitoring and controls.

The review will consider Metrolinx's expanding payment channels including e-ticketing and open payment. The evaluation will also consider customer experience, cost, benefit, risk and technical feasibility and will culminate in a recommendation that is well supported by data.

Metrolinx will also undertake a feasibility study to automate refunds to PRESTO customers for eligible service delays under the Service Guarantee Program and commits to improving our analysis and tracking of Service Guarantee claims, including denied claims.

4.5 Integrated Regional Fare System

4.5.1 Varied Municipal Transit Fares Impede Integration

In **Section 4.1.3**, we discuss how cost and technological limitations of the PRESTO system continue to be a barrier to its adoption across the GTHA. While Metrolinx has been able to implement co-fare policies for GO Transit, it does not have the authority or control to set transit fare policies in the regional transportation area. Metrolinx's lack of authority makes it difficult for the agency to lead fare integration in the GTHA.

Fare policies are determined by the individual municipalities when they set their budgets, and depend on a wide range of factors such as ridership projections, service changes, asset maintenance and replacement plans and general operating costs. For example, York Region transit charges the most per ride of all the GTHA and Ottawa agencies at \$4.25 cash (or PRESTO \$3.88) per ride compared with Hamilton Street Railway at \$3.25 cash (or PRESTO \$2.50).

Each of the 11 transit providers set different policies and rules around fares and concessions. Concessions are fares offered at a lower price than usual for specific groups of people such as students and seniors. These decisions are typically made by elected councils of those jurisdictions. **Appendix 3** shows that there is no consistency in the fare amount charged for a ride across the transit agencies and in the concessions or passes offered to various age cohorts in the transit agencies' respective jurisdictions. For example, children under 12 ride for free on the TTC; free rides apply only to children under the age of five on Brampton Transit.

Metrolinx established the Fare Integration Forum (Forum) in February 2019 to champion the case for fare and service integration and to provide advice and make recommendations to transit and transportation leaders and city managers. The Forum is composed of the GTHA transit agency representatives and Metrolinx senior staff. However, this and other collaborative groups do not have any decision-making authority. In order to have a successful integrated fare system in the region, the 10 GTHA transit agencies (not including Ottawa) have to collectively agree to implement consistent fares and concessions for special groups. For example, seniors passes in one municipality can be used only in the respective municipal transit system and cannot be used in neighbouring transit agencies.

At the same time, the *Ontario Municipal Act, 2001* states that all municipalities must prepare and adopt an annual budget with amounts sufficient to pay all outstanding debts during the period. As a result, in order to fund co-fare arrangements or cross-boundary discounts, municipalities would have to account for potential revenue impacts in their annual budgets.

4.5.2 Commuters Pay Separate Fare Each Time They Cross City Boundaries

In our 2012 *Metrolinx–Regional Transportation Planning* audit, we recommended that Metrolinx work with the provincial government and GTHA

transit agencies on implementing fare integration. However, we found that this recommendation had not been completed at the time of this audit.

As detailed under the Regional Planning section of Metrolinx's website, Metrolinx's vision for integrated fares across the GTHA would allow riders to cross regional and municipal boundaries using different transit systems by paying just one fare rather than having to pay an individual fare for every system travelled on.

While Metrolinx has been able to implement adjustments to the GO fare structure and discounts on GO Transit fare in the 905 regions, we noted two examples where riders were significantly impacted by a lack of fare integration:

- There is currently no integration of fares and services at the boundary of the City of Toronto and the other municipalities in the 905 region. Transit users transferring between the TTC and neighbouring transit agencies in the same trip are required to pay two separate fares by tapping their PRESTO cards twice when boarding and disembarking. This affects approximately 33 million commuter trips each year. Riders crossing municipal boundaries face the inconvenience of tapping once when they board in one municipality and then tapping again when they exit in the neighbouring municipality in order to pay two full fares.
- Similarly, the Double Discounted Fare Program, which provided a discount of up to \$1.50 to riders switching between GO Transit or UP Express and the TTC (and vice versa), was discontinued in March 2020. In 2019, there were about 15 million transfers between the two transit agencies that benefited from this discount. This discounted fare program was implemented based on the 2017 direction of the Metrolinx Board after it was identified that double fare trips involving GO/UP and the TTC were a barrier for customers. To offset the loss of revenue for both Metrolinx and the TTC, the province provided funding

of \$4.6 million in 2017/18, \$21 million in 2018/19 and \$23.4 million in 2019/20. The Double Discount Fare Program ended on March 31, 2020 because further funding was not committed. The province, Metrolinx, the City of Toronto and the TTC did not come to an agreement to provide further funding for the initiative.

RECOMMENDATION 7

To make progress with the implementation of the integrated fare system in the Greater Toronto and Hamilton Area, we recommend that Metrolinx work jointly with municipal transit agencies to propose fare integration options to the Ministry of Transportation and that the Ministry address barriers to implementation.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendations and will develop and evaluate, with input from municipalities, a short list of options for an integrated fare structure across the Region and across modes. Metrolinx will also identify short-term actions that can be implemented within one year with municipal transit agencies, to address specific barriers to cross-boundary travel and improve service integration.

4.6 Opportunities to Reduce Operating Costs

Metrolinx's operating expenses increased by 52% from 2015/16 to 2019/20 (see **Figure 6**). This led to an 80% or \$187-million increase in operating subsidies funded by the province during that period. During the same period, Metrolinx's operating subsidy has in part increased due to its expanded mandate, which includes more GO train service and station destinations, the launch of UP Express in 2015, light rail transit and subway projects and the evolution of PRESTO across the GTHA and Ottawa.

However, a February 2020 review of Metrolinx's operations commissioned by the Ministry of Transportation found that there is an opportunity to reduce operating costs by reducing management overhead, reducing back-office costs and improving operations costs and revenue collection. The review noted:

- Span of control:** Span of control refers to the number of staff that can be managed effectively and efficiently by supervisors or managers in an organization. The review noted that 539 managerial positions at Metrolinx have too few staff reporting to them. According to the review, increasing manager spans by streamlining reporting and clarifying roles creates an opportunity to reduce administrative burden and improve organizational effectiveness.
- Vacancies:** At the time of the review, Metrolinx had 716 vacant positions, 252 of which had been open for more than 100 days. Roles that had been sitting vacant for long periods might be because of a number of factors such as a lack of urgent business need or challenging roles to fill. The review projected that reallocating those unfilled positions would free up \$12 million in Metrolinx's operating budget.
- Back office cost and full-time equivalents(FTE):** A set of 15 peer organizations were chosen based on similar industry (including government and private-sector players in comparable industries), headcount and revenue to help benchmark Metrolinx's back office cost to its peers. The review noted that Metrolinx had the opportunity to save 10% to 25% of back office costs. In particular, marketing and communications functions were significantly larger than peers on a cost and FTE basis and Finance FTEs were also higher than comparable benchmarks.

The review also found that 25% to 30% of all staff positions in the Capital Projects Group, the division that delivers and oversees the transit

expansion projects, are filled by external consultants. Specifically, 25% of management positions (vice president, head, director and manager roles) are filled by external consultants. The Ministry's review suggested that Metrolinx could save \$10 million to \$15 million annually by bringing these strategic roles in-house. In past audits, we had noted Metrolinx's extensive use of external consultants.

Although Metrolinx was engaged over the course of the review, it did not have an opportunity to review and comment on the final report.

We noted that Metrolinx has not recently been called to the Standing Committee on Government Agencies of the Ontario Legislature. This Committee is empowered to review and report on the operations of provincial agencies, including Metrolinx, to improve accountability of government agencies. However, the last time this Standing Committee reviewed Metrolinx's results of its financial operations or its achievement of its legislated mandate was on November 19, 2013.

RECOMMENDATION 8

To demonstrate its legislative accountability, compliance with its mandate, and to reduce its operating costs, we recommend that Metrolinx implement cost-saving strategies, such as reducing management overhead and reliance on external consultants, noted in the Ministry of Transportation's review and in our audit of Metrolinx's Information Technology (IT) Systems and Cybersecurity.

RESPONSE FROM METROLINX

Metrolinx will undertake the following actions to support the efficient and effective delivery of the organization's mandate and strategic objectives:

- develop and implement cost savings strategies; and
- undertake a review of divisional structures to understand the appropriate spans of control.

RECOMMENDATION 9

To strengthen legislative accountability, we recommend that the Standing Committee on Government Agencies have Metrolinx provide regular updates to the Committee on its progress on meeting its legislated mandate and the results of its financial operations.

Note: This recommendation is for consideration by the Standing Committee on Government Agencies.

4.7 COVID-19 Pandemic Has Significantly Impacted Transit Operations

In March 2020, Metrolinx reduced services and/or suspended routes on GO trains and buses and UP Express as ridership declined by as much as 95% as a result of the COVID-19 pandemic. Between March and September 2020, Metrolinx's GO train trip frequency fluctuated between 39% to 64% of pre-COVID-19 service levels; UP was consistently at 50% of previous service frequency; and bus service fluctuated between 58% and 61% of its normal operations.

In September 2020, Metrolinx increased services on both its rail and bus lines as schools and some businesses reopened. While ridership saw a steady but slow recovery, as of September 2020, ridership was still about 90% below Metrolinx's original ridership forecast from before the pandemic.

Measures that Metrolinx has had to deploy on its trains and buses during the pandemic that have resulted in additional costs include physical distancing requirements that reduce vehicle capacity; increased costs of facility and vehicle cleaning and disinfection; additional costs for health screening and pandemic supplies, including personal protective equipment and hand sanitizers; and increased capital costs associated with driver and passenger barriers on trains and buses.

At the time of our audit, Metrolinx's 2020/21 business plan was internally under review to reflect

the actual impacts of the pandemic. The preliminary analysis indicated a significant increase in the provincial subsidy requirement that may be over \$600 million for 2020/21 above previously approved levels.

On July 27, 2020, the province, in partnership with the federal government, announced funding of up to \$4 billion to support municipalities and critical services, including public transit. Specifically, municipal transit operators that have seen steep declines in revenues will receive support to help address the financial impacts of COVID-19 and continue their operations in a safe manner. In addition, \$15 million in provincial funding will be available to 110 municipalities to fund enhanced cleaning of their respective transit systems. As of September 30, Metrolinx was working closely with the provincial government with respect to addressing the funding it will receive.

5.0 Detailed Audit Observations—Board Governance

5.1 Metrolinx Has a Qualified Board of Directors Providing Oversight

Our audit work included examining major legislative and regulatory changes that might impact on Metrolinx's mandate and assessing the Board's decision-making process and its role in strategic planning. We also examined the Board's standing committees, appointments, members' training and Board members' independence and integrity. As part of the work, we interviewed former and all current Board members.

Metrolinx's Board of Directors has diverse skills. Most Board members have extensive experience in corporate governance and have served or are currently serving on other boards of public and private corporations. Some directors previously held execu-

tive roles in various organizations. The directors' skill sets include engineering, rail, infrastructure project finance and technology. The Board periodically reviews its required skill sets in light of new government directives or changes to Metrolinx's mandate, such as, for example, the recent addition of implementing subway projects. The most recent Board members brought experience to the Board in the area of electronic payments. This will be beneficial as Metrolinx undertakes PRESTO system modernization.

Directors we interviewed indicated that it takes some time after being appointed to become familiar with the organization. We found that not staggering the appointments of directors could negatively impact a Board when a high percentage of Board members leave at the same time. At the time of our audit, 12 of the 14 current Board members (excluding the CEO) had been appointed only in the last two years. Considering the complexity of Metrolinx's business, it is important to stagger appointments to smooth turnover on the Board.

According to the Board members that we interviewed, they receive sufficient information in order to effectively challenge and direct management. Board members are also generally satisfied with the way in which Metrolinx management reports progress with strategic objectives, including performance measures and targets. In our interviews, Board members mentioned that there are open discussions and clarification from management on various operational performance measures that fall behind.

The evaluation of the CEO is done annually in consultation with the Chair of the Board and is presented to the Board for review and approval based on the Human Resource Committee's recommendation. The performance evaluation is linked to a performance bonus. The most recent performance evaluation was presented and discussed by the Human Resource Committee of the Board on May 27, 2020. The performance review included both areas of success and areas where improvements were needed.

5.2 Memorandum of Understanding between Metrolinx and Ministry of Transportation Is Outdated

We found that Metrolinx's Memorandum of Understanding (MOU) with the Ministry of Transportation (Ministry) is out-of-date and does not reflect current accountability relationships and the respective roles of Metrolinx and the Ministry regarding transportation planning.

Metrolinx signed the MOU with the Ministry in 2010 to set the foundation for the relationship with the government. The MOU was to provide clarity around accountability relationships and roles and responsibilities and ensure that Metrolinx's transportation services and ancillary operations are consistent with provincial legislation and with the government's policies. Thirteen amendments have been made to the *Metrolinx Act, 2006* (Act), and the province has issued 20 letters of direction to Metrolinx since the signing of the MOU in 2010.

Leading board governance practices stress the importance of an effective accountability relationship between the government and its board-governed agency with clearly defined roles and responsibilities. The MOU has not been amended to reflect these changes and update roles, responsibilities and accountabilities. The Ministry indicated the need to revise the MOU in late 2018; however, this has not yet been done.

For example, our review of the current MOU found that **Section 2.8** of the MOU states that Metrolinx is to develop and adopt a transportation plan. The 2041 Regional Transportation Plan, which is posted on Metrolinx's website, was developed by Metrolinx and published in March 2018. The document indicates that it represents the advice of the Metrolinx Board to the province, and fulfills Metrolinx's legislative requirements under the Act. It is mentioned that the plan articulates the goals shared by Metrolinx, the province, and the GTHA's municipalities and transit agencies, and the actions required to work toward achieving an integrated transportation system.

On November 15, 2018, the province introduced Bill 57, *Restoring Trust, Transparency and Accountability Act, 2018*, which, among other things, refined Metrolinx's mandate to focus on transit versus transportation planning. Pending passage of Bill 57, a letter of direction dated November 26, 2018 from the Minister of Transportation directed Metrolinx to put on hold work for the 2041 Regional Transportation Plan pending further review and direction from the Ministry. In this letter, the Ministry advised Metrolinx that it was taking the lead in developing a new transportation plan for the region. The Minister notified Metrolinx of proposed changes to the Act, including: "Metrolinx's mandate would be amended to focus the role of the agency as a transit project planner, builder and operator." The enactment of Bill 57 has changed Metrolinx's role in transportation planning. However, the MOU has not been updated to reflect this change in planning mandate.

RECOMMENDATION 10

To publicly and operationally clarify roles and responsibilities, and to reduce the impact on Metrolinx's Board from a change of a high percentage of Board members at the same time, we recommend that the Ministry of Transportation (Ministry):

- update the Memorandum of Understanding between itself and Metrolinx in line with 2018 amendments in the *Metrolinx Act, 2006* and post the updated version on Metrolinx's website; and
- stagger the appointments of Board members in the future.

MINISTRY RESPONSE

The Ministry of Transportation (Ministry) accepts the Auditor General's recommendation. The Memorandum of Understanding (MOU) between the Ministry and Metrolinx has been updated, including reflecting the December 2018 amendments to the *Metrolinx Act, 2006*

(Act), and approved by the Minister. The MOU will be presented at the November 26, 2020 Metrolinx Board meeting for Board review, and the Ministry anticipates that it will be signed shortly thereafter.

The amendments that were made to the Act in 2018 focused the role and mandate of Metrolinx on regional transit implementation and to strengthen mechanisms to provide government direction and oversight. Further to the amendments, the Ministry also noted to Metrolinx, in a Ministerial direction, that the agency's broader planning role would no longer be in the purview of the agency.

As part of the Ministry's recent transformation initiative, a new division, the Agency Oversight & Partnership Division, was created to ensure an integrated view of agency oversight. This division will provide comprehensive advice to the government including advice on Board appointments and skills required to maintain effective Board oversight, and will look at opportunities to establish processes that identify opportunities for staggering future Board appointments.

6.0 Detailed Audit Observations—Cost Estimates of LRTs

As noted in **Section 2.10** and **Figure 12**, six rapid transit projects were identified in Metrolinx's 2008 Big Move regional transportation plan—the Eglinton Crosstown, Finch West, Hamilton, Hurontario, Scarborough and Sheppard East. We discussed our findings on the Eglinton Crosstown Light Rail Transit (LRT) project and the Scarborough LRT cancellation in our *2018 Annual Report* and *2020 Annual Report* follow-up, Metrolinx—LRT Construction and Infrastructure Planning. Because the procurements of the Finch West (see **Section 6.1**) and Hurontario (see **Section 6.2**) LRTs have been completed,

we reviewed their various cost estimates against the final bids to assess their reasonableness. With respect to the Hamilton LRT (see **Section 6.4**), we reviewed the reasonableness of cost estimates at different stages of approvals, since the project was cancelled before the final bids were received. In addition, we reviewed events leading up to the project's cancellation before the procurement process was completed. We also reviewed the cost of cancellation for the Sheppard East LRT (see **Section 6.3**).

6.1 Finch West LRT's Winning Bid Was Lower than Original Treasury Board-Approved Budget

The Finch West LRT is 11 kilometres, with 18 stops from Humber College to the Finch West TTC subway stop. The LRT will allow people to connect to other regions' transit systems such as the TTC, GO, MiWay, York Regional Transit and Zum (Brampton Transit System). Its target completion date is 2023.

In 2015, the province announced \$1.2-billion in funding for the capital (construction) cost of the project.

The original Treasury Board-approved initial budget in July 2015 was \$4.4 billion, which included estimates for construction costs plus maintenance costs, financing costs and other non-construction costs over a 30-year period. We noted that the construction cost component in this budget was \$1.09 billion. The \$4.4-billion initial budget was based on a class D estimate that, as noted in **Section 2.10**, is based on only 10% completion of project design.

In September 2015, Metrolinx and Infrastructure Ontario issued the Request for Qualifications to design, build, finance and maintain the Finch West LRT. In February 2016, three bidders were shortlisted to proceed to the Request for Proposal stage. In the same month, Metrolinx did an updated cost estimate and had it peer reviewed by a third-party consultant in May 2016. Metrolinx's revised estimate was only on the construction cost, which it estimated at \$1.12 billion.

Based on the winning proponent's bid, the Treasury Board approved a final budget in May 2019 of \$3.4 billion, which was 23% lower than the initial budget of \$4.4 billion. This budget included a construction cost of \$1.17 billion. Under current cost-sharing agreements, the City of Toronto will fund the day-to-day operation of the LRT through the TTC. The TTC will operate the LRT for an initial 10-year period, which may be extended. The province will, in addition to the capital construction costs, also fund the capital maintenance and financing costs.

The initial budget approved by the Treasury Board, which was based on only 10% completion of project design, accepted a certain level of risk (that is, to be within 30% of the final cost as explained in **Section 2.10**) in its precision. Based on this accepted level of risk, the initial estimate appears reasonable at this point in time.

6.2 Cost Estimate of Hurontario LRT Increased by 12% or \$600 Million from the Original Budget Approved by Treasury Board

The Hurontario LRT is an 18-kilometre line with 19 stops from the Brampton Gateway Terminal in Brampton to the Port Credit GO Station in Mississauga. Its target completion date is 2024.

In 2015, the province announced \$1.4-billion funding for the capital (construction) cost of the project that was to have 22 stops on an approximate 20-kilometre LRT line.

The original Treasury Board-approved budget in August 2016 was \$5 billion, which included capital costs, operating and maintenance costs, financing costs and other non-construction costs over a 30-year period. The initial budget was for the 20-kilometre line with 22 stops using a P3 contract. We noted that the construction cost in this \$5-billion budget was \$1.37 billion. The initial budget was based on only about 10% completion of project design.

In October 2016, Metrolinx and Infrastructure Ontario issued the Request for Qualifications (RFQ). Six submissions were received and three bidders were shortlisted to proceed to the Request for Proposals (RFP) stage. Metrolinx and Infrastructure Ontario issued the RFP in August 2017.

In December 2018, the Ministry of Transportation sought Treasury Board approval to reduce the scope of the project, which, among other things, reduced the length of the line by about two kilometres, the number of LRT vehicles from 43 to 28, and the frequency of trains during peak periods from every five minutes to every seven-and-a-half minutes. The Ministry did this because Metrolinx had received feedback from the shortlisted bidders that the cost would be substantially higher than the Treasury Board-approved initial budget. Metrolinx and the Ministry also wanted the project to remain within the original \$1.4-billion funding for capital construction costs that had been announced by the province in 2015.

The Treasury Board approved the reduced scope and reduced the line to the current 18 kilometres with 19 stops.

Between April and May 2019, Metrolinx received two qualifying bids for the project. Despite the reduction in project scope, the final bids still came in higher than the initial Treasury Board-approved budget of \$5 billion. The Ministry returned to the Treasury Board to seek a budget increase. In August 2019, the Treasury Board approved a total final project budget of \$5.6 billion, based on the winning bid. This was an increase of 12% or \$600 million more than the \$5 billion originally approved. We also noted that the construction cost in this final approved budget was increased to \$1.76 billion. This was 26% or \$360-million higher than the \$1.4 billion committed by the province in 2015 for the original scope.

Of the \$5.6-billion final budget approved by the Treasury Board, the province will fund \$4.1 billion and the cities of Mississauga and Brampton will fund the remaining \$1.53 billion.

6.3 Sheppard East LRT Cancellation Resulted in a \$57-Million Write-off

The Sheppard East LRT was to be a 13-kilometre line along Sheppard Avenue connecting the Don Mills TTC station to Morningside Avenue. In April 2019, the government announced its new GTA transit expansion plans, which included the Sheppard East Subway Extension. As a result, the Sheppard East LRT project was formally cancelled. Metrolinx wrote down \$57 million in costs relating to this project in its audited March 31, 2019, financial statements.

6.4 Cancellation of Hamilton Light Rail Transit (LRT) Project

6.4.1 Province's Original \$1-Billion Announcement Covered Only Construction Costs

In 2015, the then government made a public announcement that it would “provide up to \$1 billion to build a new light rail transit (LRT) line in Hamilton ... the province will cover 100 per cent of the capital cost of building the LRT.” The announcement did not disclose any other costs such as operating costs and financing costs, and was silent on who was to pay for these non-capital costs. When we reviewed the \$1 billion in the initial funding announcement, it covered only the construction (capital) costs to build an 11-kilometre LRT and a two-kilometre spur (secondary) line.

On December 16, 2019, the Minister of Transportation announced the cancellation of the Hamilton LRT. In remarks to reporters that day, the Minister stated the decision was made because the project would cost five times what the previous government had estimated. The 2019 estimate at the time of the Minister's announcement of \$5.5 billion covered all capital costs (including construction, vehicle, lifecycle and properties) for 14 kilometres plus operating, maintenance and other costs over a 30-year period. The construction cost component in

the 2019 estimate was \$2.094 billion—double the original \$1-billion funding figure in 2015.

The Hamilton LRT was to be built and operated using the P3 (public-private-partnership) model (discussed in **Section 2.10**) in which Metrolinx would establish the scope of the work. Infrastructure Ontario, the government agency responsible for P3 procurements, was to then tender the work to bidders from the private sector and, along with Metrolinx, negotiate a contract with the winning bidder. In the Hamilton LRT's case, the private partner for the P3 was also planned to be responsible for operating and maintaining the LRT over 30 years, which would have been funded by Hamilton. Similarly, the cities of Mississauga and Brampton are funding the operating and maintenance costs of the Hurontario LRT (see **Section 6.2**).

See **Appendix 4** for a map of the project and **Appendix 5** for a timeline of events relating to the project.

6.4.2 Rising Cost Estimates Not Made Public

The Ministry of Transportation was aware as early as 2016 that the total cost estimates for the Hamilton LRT would be higher than the \$1 billion in capital costs that had been publicly announced in 2015. The \$1 billion covered only the construction costs of the project (see **Section 6.4.1**). The Treasury Board approved budgets in December 2016 and in March 2018. The province did not communicate any budget updates to the public or to the City of Hamilton after the original 2015 announcement until the fall of 2019.

As seen in **Figure 16**, the total initial budget for the Hamilton LRT, approved by the Treasury Board in December 2016, was \$2.981 billion, consisting of \$823 million for construction costs, operating and maintaining the LRT for 30 years, vehicles and other ancillary costs. In March 2018, the Treasury Board approved a revised budget of \$3.659 billion, consisting of a \$1.083-billion construction cost. The increase in the budget was mainly because the

Figure 16: Comparison of Three Hamilton Light Rail Transit (LRT) Project Cost Estimates, 2016, 2018 and 2019 (\$ million)

Sources of data: Metrolinx, Ministry of Transportation, and Infrastructure Ontario

Cost Category	Treasury Board Budget (Dec 2016)	Treasury Board Budget (Mar 2018)	Revised Estimate by Infrastructure Ontario (Oct 2019)
	11 Km from McMaster University to Queenstone Circle	14 Km between McMaster University and Eastgate Square	14 Km between McMaster University and Eastgate Square
Construction	823	1,083	2,094
Operating and Maintenance	807	866	950
Financing	428	593	943
Other Costs*	340	438	557
Contingency	95	121	438
Lifecycle	366	436	378
Vehicle Costs	122	122	195
Total Project Costs	2,981	3,659	5,555

* Other costs include professional services, properties, enabling works and non-recoverable HST.

length of the LRT increased from 11 kilometres to 14 kilometres in order to connect the LRT to an existing transit hub.

On August 22, 2019, the Ministry of Transportation sought the Treasury Board's approval on the following options:

- cancel the procurement of the LRT and commit the \$1 billion to other transportation projects;
- continue the development of the LRT with the province increasing its commitment to cover all capital and financing costs and the City of Hamilton assuming all operating and maintenance costs; or
- continue the development of the LRT, and begin negotiations with the City of Hamilton and the federal government to seek a cost sharing arrangement.

On the same day, the Treasury Board approved the third option.

As the project was therefore still continuing at this point, an external consultant Metrolinx and Infrastructure Ontario had engaged to update the estimated capital, operating and maintenance costs

related to the Hamilton LRT continued to perform this work.

In October 2019, Metrolinx and Infrastructure Ontario updated the estimate of the total cost of the Hamilton LRT using information prepared by a third-party consultant. The revised cost estimate, which was a Class D estimate, was now \$5.5 billion or about a 50% increase over what had been approved by the Treasury Board in March 2018, which also was a Class D estimate. In **Section 6.4.5**, we assess the reasonableness of this increase in the cost estimate of the Hamilton LRT project.

On October 21, 2019, Metrolinx and Infrastructure Ontario presented the options for the Hamilton LRT project to officials in the Ministers' offices of the Ministry of Transportation and the Ministry of Infrastructure, along with the revised cost estimate prepared by Infrastructure Ontario using information provided by the third-party consultant that indicated an increase in cost. The three options presented were:

- go to the Treasury Board to request a budget increase or to request approval for cancellation immediately;

- request that the City of Hamilton and/or the federal government contribute to potential cost overages; or
- continue with the procurement process while identifying potential cost-saving opportunities.

On November 26, 2019, the Ministry of Transportation sought the Treasury Board's approval to cancel the project, which the Treasury Board approved on the same day. The submission noted that negotiations with the City would not yield the intended outcomes, and that the procurement would likely fail given uncertainty on the province's commitment and municipal support.

Through our review of information between June and December 2019, we noted several instances when Metrolinx brought up the fact to the Ministry of Transportation that interested bidders and the public did not know what the 2015 government announcement of \$1 billion had included. In a communication dated June 26, 2019, from the Metrolinx CEO to the Minister of Transportation's Chief of Staff, the CEO wrote, "There has been some confusion around the funding for Hamilton LRT which is now affecting our procurement significantly. The core issue to resolve is what the \$1 billion offer by the premier "includes" – because there have been suggestions by the government that anything above \$1 billion must be funded by Hamilton. The obvious answer is that the \$1 billion includes only the construction costs (estimated at around \$980m) – this has always been the understanding and have been around for years."

We noted that the original \$1-billion funding announcement made by the government in 2015 was based on a 2012 Environmental Project Report prepared by a third-party consultant retained by the City of Hamilton using September 2011 cost estimate data. Prior to announcing the \$1-billion funding in May 2015, the Ministry of Transportation did not reassess the project cost estimate or obtain an updated estimate. In a December 3, 2019, internal communication Infrastructure Ontario's senior management wrote, as a preparation for

media inquiries, that the public announcement of \$1 billion was "based upon a very conceptual level of design, and did not account for financing costs, operations, maintenance and lifecycle costs and was not done by IO [Infrastructure Ontario] but rather produced by the City [of Hamilton] and then adopted by the Province without a costing exercise."

The Ministry of Transportation informed us that the decision for each of the Hamilton and Hurontario LRT projects was made based on the cost estimate available at the time it went to the Treasury Board for additional funding.

The cost estimate of \$2.094 billion in 2019 for the Hamilton LRT's construction cost was 110% higher than the originally stated \$1 billion in 2015. In comparison, the Hurontario LRT's Treasury Board-approved final budget of \$1.76 billion for the construction cost was 26% higher than the originally committed \$1.4 billion. Ultimately, the Treasury Board decided to cap the funding for the Hamilton LRT at \$1 billion for the entire project, and provide total funding of \$4.1 billion for the Hurontario LRT.

6.4.3 City of Hamilton Wanted to Review Final Bids before Deciding on LRT

In making its decision whether it wanted to proceed with the LRT, the City of Hamilton needed to understand what its costs were likely to be and expected to review final bids before proceeding with the LRT project. As a result, the City of Hamilton, according to City staff, was still expecting the LRT to go ahead when the Minister announced the cancellation of the project on December 16, 2019. By that time, the project specification and the environmental assessments had been completed. The City's expectation was that the province would be responsible for all capital costs, which construction costs were part of. The City expected it would be responsible for the costs associated with operating the LRT and any related maintenance over the term of the contract.

The City also expected to retain the operating revenues generated by the LRT.

In the fall of 2017, Metrolinx provided a confidential draft estimate of the operating and maintenance costs to City of Hamilton staff, showing an estimated cost of \$17.5 million per year over the 30-year term. In May 2018, City staff presented to council their estimate of what the operating costs of the LRT might be, along with the associated revenues. Rather than using Metrolinx's estimate from 2017 or commissioning from an external consultant an up-to-date estimate, the City's estimate extrapolated from information available to the City back in 2011, now valued in 2017 dollars. The City informed us that it did not incorporate Metrolinx's estimate in its presentation to City Council because the City of Hamilton had not negotiated the details of operations, such as frequency of trains during peak hours, labour hours and wages, and extent of maintenance on vehicles. These variables have a direct impact on the cost estimate of operating and maintenance. Ultimately, the City anticipated that it would review the final bids for the LRT and then decide whether or not to go ahead with the project.

6.4.4 Project Uncertainty Led to Bidder Dropping Out

In April 2018, Metrolinx and Infrastructure Ontario issued the RFP for the Hamilton LRT project to three short-listed bidders.

As a result of the June 2018 provincial election, the provincial government changed. The RFP was put on hold after the new government announced a review of government discretionary spending. By the time the procurement process resumed in May 2019, after the new government re-affirmed its support for Hamilton's LRT project, the short-listed bidders expressed concern regarding the level of both provincial and municipal government commitment to the project.

One of the three proponents was a consortium called Ei8ht Transit Group. One of its key members, EllisDon, dropped out in May 2019 due to project

uncertainties. In June 2019, another proponent, CityLine, requested that a break fee be provided to reimburse bidding costs if the project was cancelled. CityLine also cited the uncertain political climate around the project and the uncertainty regarding the level of provincial funding support. CityLine stated that it would not participate in any further discussions until its concerns were addressed, holding up the RFP process.

In an email dated June 26, 2019, the Metrolinx CEO wrote to the Minister of Transportation's Chief of Staff, "There has been some confusion around the funding for Hamilton LRT which is now affecting our procurement significantly." In the same email, the Metrolinx CEO noted, "The Hamilton council has specifically and publicly requested clarity, inviting me to come and explain the position." The Deputy Minister of Transportation responded, "I would recommend that this invitation be politely declined."

By July 2019, Ei8ht Transit had not been successful in finding a replacement for EllisDon, and the risk was increasing that this consortium might drop out, leaving only two bidders. In November 29, 2019, Ei8ht Transit formally withdrew from the procurement process.

6.4.5 2019 Cost Estimate Reasonable, but 2016 and 2018 Estimates Not Fulsome

A significant increase in project costs between the 2016 and 2018 budget estimates for the Hamilton LRT and the 2019 estimate was due to a change in the project scope and because the earlier estimates were understated.

With the assistance of an experienced independent quantity surveyor who has a construction cost planning, estimating and cost control background, we reviewed and assessed the reasonableness of the \$5.5-billion cost estimate from December 2019. We assessed that 90% of the cost estimate, which included all of the key construction cost components and other P3 costs, was reasonable. However, we assessed that the remaining 10% (about

\$511 million) of the \$5.5-billion cost estimate that related to contingency and cost escalation amounts was underestimated by about \$70 million for a project of this type, size and complexity.

The 2019 estimate of \$5.5 billion is considered a Class D estimate, which is an estimate based on 10% project design completion (discussed in **Section 2.10**). According to Metrolinx, the contingency amount is typically budgeted to account for items that will likely be required but have not yet been identified. The December 2019 cost estimate used a 17.75% contingency rate. However, the *Canadian Federal Government's Guide to Cost Predictability in Construction* indicates that for Class D estimates, a contingency rate between 20% and 30% should be used for low- and high-complexity projects respectively. In this case, a contingency rate of at least 20% should have been used for the Hamilton LRT project and, given the size and complexity of this project, it is our opinion that a rate higher than 20% was more appropriate.

A price escalation amount is also typically budgeted to account for fluctuations in the cost of raw materials or labour. We found that the 2019 cost estimate used a 2% price escalation rate but Statistics Canada's Building Construction Price Indexes showed an average escalation rate of 3.27% from 2016 to 2019.

We also reviewed and assessed the two earlier cost estimates that were used to obtain Treasury Board approval in December 2016 and March 2018. The difference between these two Treasury Board budgets was largely due to the change in the project scope by extending the length of the LRT by three kilometres from Queenston to Eastgate Mall and adding three more stops. But we also found that both budget estimates were not a fulsome representation of the project costs and were significantly understated.

Metrolinx informed us that the 2016 and 2018 budgets represented the best available data at the time. However, we noted that these budgets used rates based mainly on rates from Finch West and Eglinton LRT projects as opposed to detailed speci-

fications, measurements and pricing. The Finch West and Eglinton LRT projects are both in Toronto and it is not accurate to base Hamilton's rates on these two projects.

In addition, the 2016 and 2018 budgets that were prepared at an early concept stage should have been subjected to rigorous peer review, market sounding and risk analysis in order to provide more accurate estimates. For example, the 2016 estimate for hazardous material, contaminated soil mitigation, and ground water treatments of \$2.5 million were not based on any geotechnical information. In 2018, the cost estimate increased to \$2.9 million. In the 2019 cost estimate, where geotechnical information was available, the cost estimate was reasonably assessed at approximately \$44 million. Also, we noted that certain key infrastructures such as support facilities, yards, shops and administration buildings were underestimated in 2016 and 2018.

6.4.6 Board Did Not Receive Timely and Sufficient Information Prior to Hamilton LRT Cancellation

The Board and the Audit, Finance and Risk Management Committee (AFaRM Committee) were not sufficiently apprised by Metrolinx management of the rising cost estimates and the Ministry's intent to cancel the project up until the decision was actually made. The AFaRM Committee is responsible for reviewing significant contracts, among other things. We noted that the increased cost estimate was included, among numerous other items, in materials for the Capital Projects Advisory Subcommittee but was not specifically discussed or brought to the attention of the AFaRM Committee or the full Board.

Metrolinx's Board was not consulted nor notified before the Minister's cancellation announcement on December 16, 2019. The last Board meeting in 2019 was on November 22, where the quarterly capital projects report did not note any issues with the Hamilton LRT project. According to the Ministry, there was no communication or consultation

between the Ministry and the Board prior to the Minister's cancellation announcement.

We noted that on June 27, 2019, Board materials showed that the approved capital construction cost budget was \$1 billion and the latest capital budget for the Hamilton LRT at the time was \$2.33 billion. The Board was not specifically informed by management that the Treasury Board approved a revised budget of \$3.659 billion in March 2018.

On June 27, 2019, Metrolinx management informed the Board that the Minister of Transportation met with the Mayor of Hamilton on March 28, 2019, and had re-affirmed the provincial commitment to moving forward with the Hamilton LRT. Management also reported that the Hamilton LRT project activities continued following the Minister's confirmation of the provincial commitment. However, the Board was not informed that one of the three shortlisted RFP proponents refused to participate in further discussions and had requested a break fee be provided to reimburse bidding costs if the project had to be cancelled, before it would continue in the process.

At three separate meetings that took place in 2019 on June 27, September 12 and November 22, the Board was provided with capital projects update reports showing that the Hamilton LRT project activities continued after the Minister of Transportation met with the Mayor of Hamilton on March 28, 2019, to re-affirm the provincial commitment.

When, in the summer of 2019, bidders raised concerns regarding the government's commitment to the project (see **Section 6.4.4**), this was not brought to the Board's attention in any formal reports. Moreover, when Metrolinx and Infrastructure Ontario received the October 2019 third-party consultant report with the latest project cost estimate, the Board was not informed by way of a written report from management.

From our discussions with Board members, we noted that the Metrolinx Board agrees that it is the Ministry's prerogative to make decisions with respect to LRTs, including project scope changes and cancellations.

6.4.7 Province Continues to Commit \$1 Billion toward Future Transportation Projects in Hamilton

As part of the December 2019 cancellation announcement, the Minister of Transportation stated that the province was still committing \$1 billion in funding toward future transportation projects for Hamilton. The Minister created a five-member task force to determine how the funding should be allocated. The task force completed its report on March 16, 2020, which the Ministry subsequently made public. The report recommended that the province invest the \$1 billion in either an LRT or a bus rapid transit (BRT) system pending further analysis of the cost benefit of each option in light of the province's funding cap.

As of March 31, 2020, Metrolinx had incurred \$171 million in costs relating to early site preparation work (for example, safety signage and perimeter fencing), professional services and acquiring 58 properties. Metrolinx is currently holding all of the properties acquired until a decision is made regarding a transportation project in Hamilton. Metrolinx estimated that an additional \$22 million is to be paid relating to decommissioning costs, break fees to be paid to the bidders for cancelling the RFP process, property demolition costs, and potential claims received from property owners and the City of Hamilton. We noted from the Memorandum of Agreement between the City of Hamilton and Metrolinx, and the agreement between Metrolinx and Infrastructure Ontario, that all Infrastructure Ontario and City of Hamilton costs relating to the project would be reimbursed by Metrolinx. The \$171 million and the \$22 million already included costs incurred by Infrastructure Ontario and the City of Hamilton. The Ministry of Transportation did not incur any specific costs related to the Hamilton LRT. There is a possibility that if the project continues, albeit on a smaller scale to fit within the province's \$1-billion funding cap, some of the costs incurred to date may be salvageable.

On May 27, 2020, the Minister of Transportation issued a directive to Metrolinx's Board Chair to work with Infrastructure Ontario to undertake further analyses. At the time of our audit, Metrolinx was working on an analysis of benefits and costs of the options recommended by the task force, and expected to submit it to the Ministry in fall 2020 for review and approval.

RECOMMENDATION 11

To obtain sufficient information to demonstrate effective Board oversight of Metrolinx, we recommend that the Chief Executive Officer provide the Board with all light rail transit projects being managed by Metrolinx on a quarterly basis, or more regularly, should costing or other issues arise throughout the life of the project.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation. Changes to Metrolinx's Board's internal governance were implemented in October 2020 to increase the Board's engagement in detailed capital project implementation matters. A new Capital Oversight Committee of the Board has been created, chaired by a Board member, to review light rail transit and other transit expansion projects. The Chief Executive Officer, Chief Capital Officer and other members of senior management will report in writing project financials and key issues to this group on a quarterly or better basis. The scrutiny and advice of the Board members on this Committee is augmented by several external capital project experts. This Committee replaces the previous Capital Oversight Subcommittee that had provided advice to the Audit, Finance and Risk Management Committee and thereby provides a closer link between the Metrolinx Board and the projects for which it is responsible.

RECOMMENDATION 12

We recommend that Metrolinx work with Infrastructure Ontario to:

- estimate the cost of future light rail transit (LRT) projects using estimation techniques consistent with industry best practices and benchmarks;
- have future cost estimates for LRT projects include all cost components such as construction, financing, maintenance and operations and other costs before the estimate is submitted to Treasury Board and any commitments to fund the projects are made by the government;
- update cost estimates regularly using most recent project specifications and new market data before the end of the procurement stage; and
- communicate all cost estimates, the content of all Treasury Board submissions and related updates to the Metrolinx Board and municipal government partners.

RESPONSE FROM METROLINX

Metrolinx accepts the Auditor General's recommendation and commits to develop project estimates in keeping with industry best practices and benchmarks. Metrolinx has worked to make such improvements to date, such as implementing industry-leading techniques such as quantitative cost risk analysis, which have allowed for more effective estimation of appropriate contingency levels rather than percentage guidelines used in the past. Where potential cost increases are forecast, Metrolinx has and commits to carefully review root causes and apply these findings to other projects. With the business case guidelines that have been implemented at Metrolinx since spring 2019, Metrolinx now applies a more rigorous process around business cases that support the assessment of these major public transit infrastructure

investments as well as advice to the Metrolinx Board and government.

Metrolinx is mandated to follow the Major Public Infrastructure Projects (MPIP) Directive from the province for two stage project approvals. The Metrolinx Initial Business Case, which provides full lifecycle analysis of the project, is used as the supporting justification providing advice to government to secure Stage 1 MPIP Approval from the Treasury Board. Similarly, before an MPIP Stage 2 – Construction approval is received, the Metrolinx Preliminary Business Case for the project is completed to support the approval. These project approvals may often happen after a provincial announcement has already occurred regarding the project; Metrolinx will endeavour to support government decision-making with fact-based data as projects are refined through the development process.

Learning from the Hamilton LRT experience as it relates to a long and, in its case, extended procurement phase that coincided with a period of relatively rapid change in the local construction market's unit pricing and risk appetite, Metrolinx recognizes the importance of being prepared to complete a review of cost estimates mid-procurement.

Metrolinx will further develop its estimating practice for large-scale multi-billion-dollar projects and future LRTs in-line with the Auditor General's recommendation to determine the appropriate milestones to review cost estimates where necessary prior to the close of the in-market period. This may include assessment of the age of the most recent estimate and rate of potential change.

Metrolinx takes seriously both its obligations to be transparent with the public and to protect financial interests of Ontario. Over the last year, Metrolinx has implemented the governance practice of budget review and endorsement to proceed to the Treasury Board, through its Metrolinx Investment Panel, and Metrolinx Board prior to the submission being tabled at

the Treasury Board. Metrolinx commits to continuing to communicate commercially confidential information to its Board, including greater use of the newly established Capital Oversight Committee as a committee of the Metrolinx Board.

Where relevant, cost estimates will be shared with key municipal partners through appropriate channels. This will be supplemented with public reporting of all financial information at the most detailed level that can be responsibly disclosed, while protecting commercially confidential information. Where there is the potential for such public financial data to differ from more detailed estimates known at that moment or from the eventual final financial data, Metrolinx has and will continue to transparently identify such instances, explaining how and why this was the case.

RECOMMENDATION 13

Given the significant risks inherent in project estimates and costs involved with the construction of light rail transit (LRT) projects, we recommend that the Ministry of Transportation independently review, with the assistance of external expertise, Metrolinx and Infrastructure Ontario's future estimates for LRT projects prior to seeking Treasury Board approvals.

MINISTRY RESPONSE

The Ministry of Transportation accepts the Auditor General's recommendation. The Ministry will work with the Ministry of Infrastructure to review budgeting practices and processes for major transit projects to help inform future improvements.

Appendix 1: Audit Criteria

Prepared by the Office of the Auditor General of Ontario

1. Effective governance and administrative structures and processes are in place to oversee and manage operations so that resources are acquired economically and used efficiently to fulfill Metrolinx's mandated responsibilities.
2. GO Transit and UP Express trains and bus services are on-time, reliable and safe and delivered to commuters in a cost-effective manner.
3. Through both the PRESTO fare payment system and an effective collaboration with other transit partners, Metrolinx leads the integration of fares and facilitates the integration of routes and schedules of regional and local transit systems in a seamless, customer-focused and cost-effective manner. Roles, responsibilities and accountability requirements of Metrolinx, the Ministry of Transportation and other transit partners are clearly defined and established.
4. Inquiries and complaints relating to GO Transit and UP Express trains, bus services and PRESTO are adequately addressed in a timely manner.
5. Cost estimates of LRT projects, including the Hamilton LRT, are prepared with sufficient due diligence and supported by detailed, comprehensive business cases, and are monitored and updated on a regular basis.
6. Operational performance measures and targets are established, monitored and compared against actual results and industry best practices, publicly reported and corrective actions are taken on a timely basis when issues are identified.
7. Competitive, fair and transparent procurement processes are followed in awarding contracts for the operation and maintenance of service vehicles and equipment. The work of consultants and contractors is properly managed to ensure compliance with performance and accountability requirements in the contracts and poor performance is properly documented and addressed in a timely manner.

Appendix 2: Timeline of Accenture Engagement and Contract Authority Increases, October 2006–May 2020

Prepared by the Office of the Auditor General of Ontario

		Contract Value (\$ million)
Oct 2006	The Ministry of Transportation (Ministry) signs a 10-year contract with Accenture to design, implement and operate an e-fare system (PRESTO).	231.7
2007	Ottawa (OC Transpo) approves PRESTO implementation on its system	
2009	Toronto Transit Commission (TTC) conditionally approves PRESTO implementation.	
Jul 2011	The Ministry transitions the Accenture contract to Metrolinx	
Sep 2012	Metrolinx Board approves an increase in contract for funding PRESTO Next Generation that includes Ottawa and the Greater Toronto and Hamilton Area (GTHA) and PRESTO development for the TTC.	473.3
Mar 2014	Metrolinx Board directs senior management to develop a strategy for procuring future services for PRESTO after the planned expiry of the Accenture contract in 2016, which included either a renegotiation with Accenture or procuring new vendor(s). The Board also approved \$100 million for TTC deployment.	100.0
Dec 2014	Metrolinx Board approves \$60 million for ongoing TTC deployment.	60.0
Apr 2015	Metrolinx Board approves \$20 million to procure devices for transit agencies and for TTC deployment.	20.0
May 2015	After hearing of the March 2014 direction from the Metrolinx Board, Accenture presents a new Master Agreement to Metrolinx with the intention of renewing the PRESTO Agreement by another nine years.	
Aug 2015	Metrolinx Board approves \$225 million for TTC capital spending, to continue procurement for other transit agencies and to expand PRESTO capacity.	225.0
Nov 2015	<p>Price Waterhouse Coopers (PwC) completes a qualitative and quantitative assessment of the new Accenture contract against market options, as per its retainment with Metrolinx. PwC recommends extending the contract with Accenture due to several considerations:</p> <ul style="list-style-type: none"> • estimated costs of procurement of up to \$10 million; • time needed to conduct the procurement process; • Metrolinx's resource constraints to procure a new vendor during the roll-out of PRESTO to transit agencies; and • potential loss of royalty-free licences for the intellectual property that Accenture developed in relation to PRESTO design and implementation. <p>PwC's report highlights that Accenture has 10 years of "institutional knowledge of the end-to-end system" and that PRESTO (as a Division of Metrolinx) had "limited visibility into how Accenture delivers services and the technical solution." PwC's cost benchmarking analysis to compare with market options indicates that the Accenture data required to accurately estimate the cost of comparable services was not provided to PwC during the benchmarking. PwC indicates that the resulting assumptions "may have a material financial impact on the benchmarking results."</p>	
Dec 2015	Metrolinx Board approves renegotiation of Accenture contract.	
Jun 2016	Metrolinx re-signs Master Supply and Services Agreement (Master Agreement) with Accenture. The new Master Agreement is effective for six years, from October 6, 2016 to October 5, 2022.	490.3
Sep 2017	Metrolinx issues Request for Proposal (RFP) for 905 Device Refresh Initiative that will replace all PRESTO devices on GO Transit and the 905 transit agencies such as ticket machines at GO stations and tap devices on buses, which are beyond their end-of-life use. The need for device refresh had been known since 2014.	

		Contract Value (\$ million)
Jan 2018	Metrolinx receives two bids for the 905 Device Refresh RFP and neither passes the evaluation score. Procurement fails. Metrolinx works with the 905 transit agencies and GO Transit to reduce the hardware requirements. Accenture is engaged to review the revised requirements against existing technology and other third-party devices. In parallel, Metrolinx conducts analysis of options, including re-tendering or using the existing PRESTO contracts, including the contract with Accenture.	
Jun 2018	At June 27, 2018 Executive Committee meeting, the Committee agrees to increase the Master Agreement contract to \$265 million (excluding tax), based on a recommendation from the Audit, Finance and Risk Management (AFaRM) Committee. This includes a \$44 million increase for the 905 Device Refresh Initiative. The Executive Committee is informed that the AFaRM Committee and the PRESTO subcommittee do not have any concerns with Metrolinx leveraging the existing Accenture contract to complete the initiative. The Metrolinx Board also approves the increase.	265.0
Oct 2018	At the Metrolinx Board meeting, the Executive Vice President and staff, along with the PRESTO subcommittee and the consultant, present the PRESTO 2025 strategy. They describe changes to operations to improve and offer better service and technology that would include new forms of payment methods and analysis of options to achieve this. The Board approves the option that would allow more players as part of the system; increase options for transit operators and commuters; move from a closed system to an open-account-based system; and reallocate future capital spending to execute the strategy. The strategy also confirms the need to re-procure in time for the 2022 contract expiry.	
Feb 2019	Metrolinx management requests and receives the AFaRM Committee's endorsement to expand Accenture's scope of services to include the replacement of existing PRESTO devices across the 905 transit agencies based on Metrolinx's analysis of procurement and technology options that showed that only Accenture could deliver the outcomes within the required time frame with minimal risk. Metrolinx concludes that going out to market would have delayed the initiative by 12 months. The AFaRM Committee is also informed that the PRESTO subcommittee does not have any concerns with Accenture's contract expansion	
Apr 2019	Metrolinx Board increases the Master Agreement by \$33 million in contract authority to complete a consolidated and outcomes-based delivery of replacement fare equipment for GO Transit and the 905 transit agencies. This means that Accenture is now responsible for deploying bus and train station equipment for GO and the 905 transit agencies.	33.0
May 2019	Metrolinx staff present the PRESTO Modernization Plan, which would execute the PRESTO 2025 Strategy, to the Board. Metrolinx plans to have Accenture undertake most of the work to upgrade its central system, to enable mobile payments and open payments (such as with a credit or debit card), and upgrade some software on all equipment used by the 905 area code transit agencies, GO Transit and UP Express. The TTC device refresh will be planned and procured separately in partnership with the TTC at a later date. Based on issues flagged at the PRESTO subcommittee and the AFaRM Committee prior to the Board meeting, Metrolinx staff express caution given the expiry of the existing Accenture Master Agreement in 2022. There is a concern that further increase in scope could compromise a level playing field during the procurement process for PRESTO services before the Accenture contract expires, and therefore all work done by Accenture must be executed such that it minimizes this risk. Metrolinx hires a full-time conflict-of-interest advisor to review and log every statement of work that is being issued to Accenture under the Modernization Plan to ensure mitigating measures are put in place to address conflict concerns. Metrolinx's procurement division sets up an internal team to monitor statements of work/tendering issued under the Modernization Plan to address possible bias toward Accenture. Metrolinx begins to develop a data room to provide visibility of PRESTO's system to potential suppliers where any information shared with Accenture will be shared with others as well.	

		Contract Value (\$ million)
Jun 2019	The Chair of the PRESTO subcommittee and the Executive Vice President of PRESTO informs the AFaRM Committee that in the June PRESTO subcommittee meeting, PRESTO staff explained that implementing open payment would require some commercial changes to the current PRESTO business model and cannot be undertaken before 2022. However, the subcommittee members and Metrolinx's CEO have pushed for faster progress with open payment, stating that the "shape of the solution needs to be identified and internal delays removed to improve functionality" so that customers can see new features and benefits sooner and not wait another three years.	
Nov 2019	Metrolinx's PRESTO management team advises the AFaRM Committee that as part of PRESTO modernization planning they have identified open credit and debit payment as a top priority for customers and other transit agencies. Management targets open payment delivery for pilots in 2020 and a full rollout thereafter.	
Oct 2019– Feb 2020	Metrolinx issues three additional statements of work under its Master Agreement to Accenture to undertake the design of the open payment pilot and assessment of maintenance work to the current PRESTO system. According to Metrolinx, all three levels of approval (the AFaRM Committee, the Executive Committee and the Metrolinx Board) were aware that Accenture had the expertise to complete this work and Metrolinx exercised its right under the Master Agreement to issue these statements of work to Accenture.	21.6
Jan 2020	PRESTO Executive Vice President confirms to the Metrolinx Board that open payment is targeted for pilot on UP Express in October 2020 and public launch thereafter.	
Apr–May 2020	The Executive Committee approves \$40 million for the PRESTO Mid-Term Modernization Plan, of which \$37.7 million is to implement open payment. Management informs the Committee that Accenture will be completing the majority of the work related to this initiative. On May 1, Accenture signs another statement of work worth \$31.5 million to execute the open payment initiative.	31.5

Appendix 3: Fare Policies at Greater Toronto and Hamilton Area and Ottawa Provincial and Municipal Transit Agencies, as of October 31, 2020

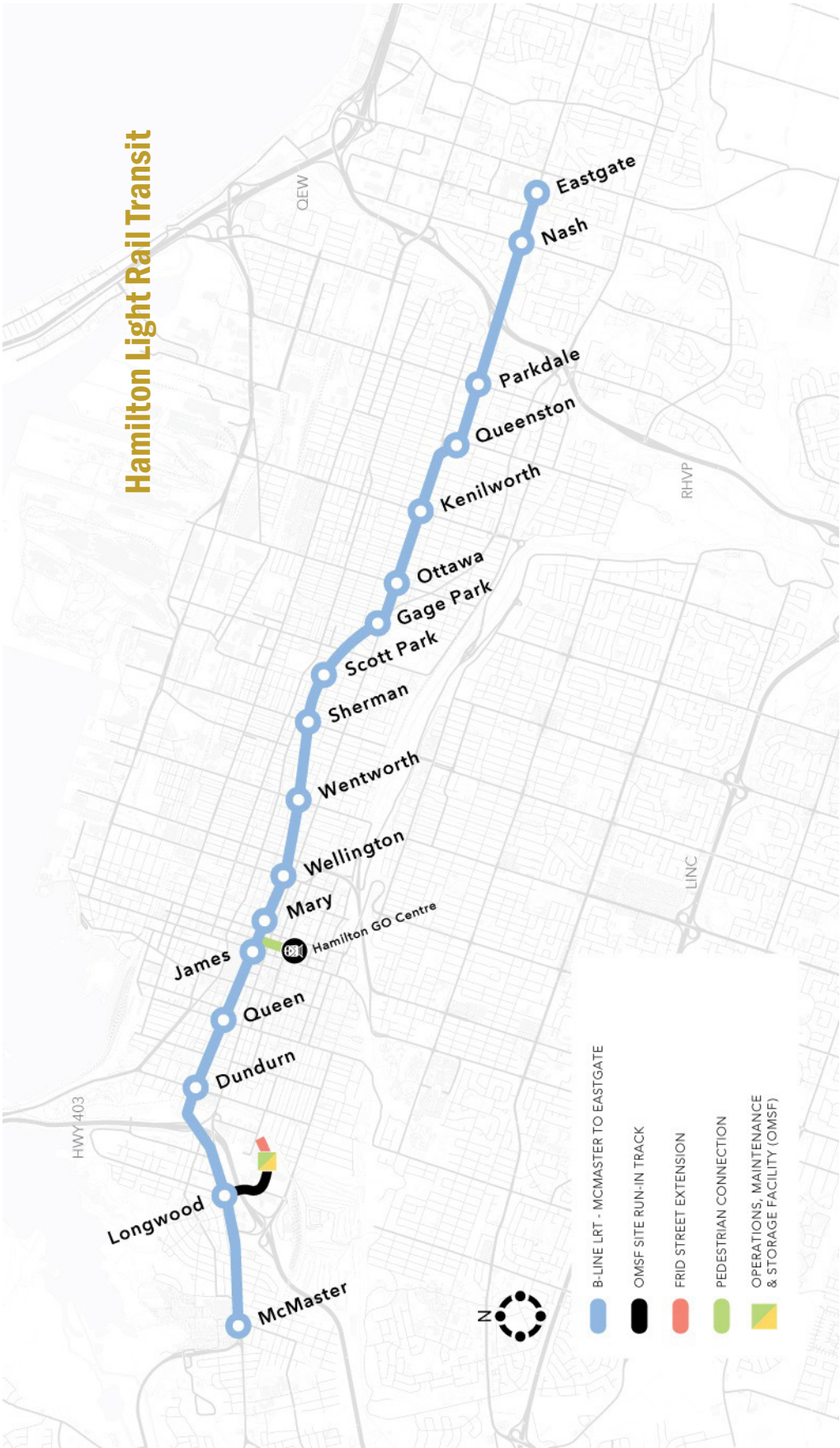
Prepared by the Office of the Auditor General of Ontario

Transit Agency	Single Ride – Cash (\$)	Single Ride – PRESTO (\$)	Daily Pass (\$)	Monthly Pass (\$)	Concessions
Brampton Transit	4.00	3.10	n/a	128.00	Discounted single ride for seniors (65+) Discounted seniors (65+) resident pass Discounted single ride and monthly passes for youth (13-19) and children (6-12) Children under 5 ride free
Burlington Transit	3.50	2.75	n/a	100.00	Discounted single ride and monthly passes for seniors (65+) Discounted single ride and monthly passes for youth (13-19) Post-secondary student U-Pass Addon Children under 12 ride free
Durham Region Transit	3.75	3.20	n/a	117.00	Y10 monthly pass for youth (13-19) and discounted fares Discounted single ride and monthly passes for seniors (65+) Children under 12 ride free U-Pass for university and college students Transit Assistance Program for Ontario Works and Ontario Disability Support Program (ODSP) clients
GO Transit	4.40 and up	3.70 and up	8.80 and up	n/a	Senior (65+) single ride tickets are half of adult tickets for paper tickets. Senior Day Passes are also available as paper tickets which cost 2x the senior paper ticket fare. Since the lowest Senior fare is \$2.20, the lowest Senior Day Pass is \$4.40 PRESTO discounts: <ul style="list-style-type: none"> Seniors pay 55% off the adult full fare with PRESTO Students (13-19)/post-secondary students pay 22.5% off the full adult fare with PRESTO Children under 12 ride free Veterans ride for free on Remembrance Day and Warrior's Day
Hamilton Street Railway	3.25	2.50	15.00	110.00	Discounted single ride and monthly pass for youth (13-19) Children under 5 ride free Discounted single ride and monthly pass for seniors (65+) Summer youth pass \$88 for youth aged 19 and under University bus pass between September and April
Mississauga Transit (MiWay)	4.00	3.10	n/a	135.00	Discounted single ride for seniors (65+) Discounted seniors (65+) monthly pass Persons with vision loss ride free Support persons ride free Veterans ride free two days of the year (Warriors' Day parade and Remembrance Day)

Transit Agency	Single Ride – Cash (\$)	Single Ride – PRESTO (\$)	Daily Pass (\$)	Monthly Pass (\$)	Concessions
Oakville Transit	4.00	3.16	n/a	131.60	Discounted PRESTO ride and monthly pass for youth (6-19) Youth Freedom Monthly pass allowing for unlimited rides during certain periods Discounted PRESTO ride and monthly pass for seniors (65+) Support person rides free Subsidized passes for low-income
OC Transpo (Ottawa)	3.60	3.55	10.75	119.50	Discounted monthly pass for seniors (65+) Discounted single ticket for seniors (65+) No charge rides Wednesday and Sundays for seniors (65+) U-Pass for Ottawa post-secondary institutions—included in school fees Reduced fare monthly pass for youths (13-19) Lower cash, PRESTO and monthly pass for children aged 6-12 Children under 5 ride free Concessions for riders on ODSP, on low income, paratransit users and blind/partially sighted
Toronto Transit Commission	3.25	3.20	13.50	156.00	Discounted single ride and monthly passes for seniors (65+). Seniors get different paper ticket versus PRESTO discounts. Seniors pay 50% off the adult full fare on paper/e-ticket, and seniors pay 53% off the adult full fare on PRESTO Discounted single ride and monthly passes for youths (13-19) and post-secondary students Kids under 12 ride free
UP Express	12.35	9.25	n/a	n/a	Discounted single and PRESTO rides for seniors (65+) Discounted single and PRESTO rides for youth (13-19) Children under 12 ride free
York Region Transit	4.25	3.88	n/a	154.00	Discounted single ride and monthly passes for seniors (65+) Discounted single ride and monthly passes for youth (13-19) Discounted single ride and monthly passes for children (1-12) Children under 5 ride free

Appendix 4: Map of Hamilton Light Rail Transit Project

Source: Metrolinx



Appendix 5: Timeline of Events for Hamilton Light Rail Transit Project

Prepared by the Office of the Auditor General of Ontario

Cost Estimates and Scope		
Feb 2007	The City of Hamilton endorses its own Hamilton Transportation Master Plan, which identifies a strategy for the growing demand of traffic on the King/Main corridor. While a Light Rapid Transit (LRT) is expected to be phased in over the long term, a Bus Rapid Transit (BRT) option is favoured due to economic factors.	
Jun 2007	The province releases the MoveOntario 2020 plan, a \$17.5 billion plan for 52 rapid transit projects in the Greater Toronto and Hamilton Area (GTHA). Of this amount, approximately \$300 million is for two Hamilton projects, one of which is the King/Main corridor project.	
Nov 2007	The City of Hamilton initiates a Rapid Transit Feasibility Study. The study is to investigate major considerations in route selection, land use, existing transit services, and analysis of the feasibility for implementing rapid transit projects in the Hamilton Transportation Master Plan, with a focus on the two routes in MoveOntario 2020.	
Oct 2008	As a result of the feasibility study, Hamilton City Council votes for the LRT as the preferred option for the King/Main corridor. The City submits the feasibility study to Metrolinx.	
Nov 2008	The Metrolinx Board of directors adopts its first Regional Transportation Plan—the Big Move. Fifteen projects are identified as “top priority” for the first 15 year period of the plan, one of which is Hamilton’s King/Main corridor. The Big Move notes that analysis of the benefits on a project-by-project basis would be done to make more precise technology choices.	
Feb 2010	Metrolinx completes the benefits case analysis for LRT, BRT (bus) and hybrid LRT/BRT options, with a cost estimate of \$784 million for the LRT option.	<ul style="list-style-type: none"> • \$784 million construction costs (2008 \$) • 14 kms from McMaster to Eastgate Square
Summer 2010	The province provides \$3 million to the City of Hamilton to complete preliminary planning and design and an environmental assessment for rapid transit in the King/Main corridor.	
Dec 2010	Bob Bratina becomes mayor of Hamilton, succeeding Fred Eisenberger, who is a strong proponent of the LRT project.	
Oct 2011	The City of Hamilton completes an environmental assessment for a 14 km LRT for the King/Main corridor.	
Feb 2012	In addition to the Environmental Project Report, the City of Hamilton releases a cost estimate report showing an \$811 million construction cost and \$14 million annual operating and maintenance cost based on information available as of September 2011.	<ul style="list-style-type: none"> • \$811 million construction costs (2011 \$) • 14 kms from McMaster to Eastgate Square
Feb 2013	Hamilton City Council approves its Rapid Ready plan and submits the King/Main LRT proposal, including the completed environmental assessment, to Metrolinx and the province for funding approval.	
May 27, 2013	Metrolinx recommends this project scope to government in its Investment Strategy and quotes a \$1 billion project cost based on Hamilton’s Environmental Project Report. The recommendations of the Investment Strategy were not adopted by the government.	<ul style="list-style-type: none"> • \$1 billion capital costs (2014 \$) • 14 kms from McMaster to Eastgate Square
Dec 2014	Fred Eisenberger is re-elected as mayor of Hamilton.	

		Cost Estimates and Scope
May 26, 2015	The province announces \$1 billion in funding for the capital costs of an LRT project in the City of Hamilton. The line would run from McMaster University to Queenston Traffic Circle, with an additional two-kilometre LRT line from downtown to West Harbour GO Station. Due to the different scope, Metrolinx and the City of Hamilton have to amend the 2011 Environmental Project Report.	<ul style="list-style-type: none"> • \$1 billion capital costs (2014 \$) • 11 kms from McMaster to Queenston; two kms from downtown to West Harbour
Mar 8, 2016	Hamilton and Metrolinx sign a Memorandum of Agreement for the Hamilton LRT that outlines the parties' roles and responsibilities in the delivery of the project.	
Dec 2016	The Treasury Board/Management Board of Cabinet approves the revised project scope and approves Metrolinx to proceed with a contract. TB/MBC approval removes the two-kilometre LRT (downtown to West Harbour Go Station) from the scope and sets the approved budget at \$2.981 billion, including construction, vehicles, financing, professional services and 30 year operations, maintenance and lifecycle capital costs.	<ul style="list-style-type: none"> • \$2.981 billion • 11 kms from McMaster to Queenston
Feb to Mar 2017	Metrolinx receives five submissions for its Request for Qualifications for the LRT project.	
Apr 2017	Hamilton City Council requests the province to increase scope by 3 km from Queenston Traffic Circle to Eastgate Square. Province agrees to the extension.	<ul style="list-style-type: none"> • Additional 3 kms from Queenston Traffic Circle to Eastgate Square
Jun 2017	Metrolinx Board approves the shortlisted proponents and releases the RFP.	
Aug 2017	The 2011 Environmental Project Report Addendum is approved.	
Dec 2017	After conducting further analysis on costs and benefits, Hamilton City Council passes a motion to proceed with the project with a Design Build Finance Operate Maintain (DBFOM) model, where the responsibilities for designing, building, financing and operating are bundled together and transferred to private sector partners.	
Mar 2018	TB/MBC approves project scope and budget adjustment for the addition of 3 km Eastgate extension to the project scope to \$3.659 billion including construction, vehicles, financing, professional services and 30-year operations, maintenance and lifecycle capital costs.	<ul style="list-style-type: none"> • \$3.659 billion • 14 kms from McMaster to Eastgate
Apr 2018	RFP is issued to three shortlisted bidders – CityLine Transit Group, Ei8ht Transit, Mobilinx	
May 2018	City of Hamilton staff present to council their estimate of the operating costs of the LRT.	
Jun 2018	Ontario General Election resulting in a change in government.	
Sep 2018	The new government places a hold on property acquisition and the RFP process as part of its review into government discretionary spending.	
Oct 2018	City of Hamilton municipal election with Mayor Fred Eisenberger re-elected for a third term.	
Mar 28, 2019	Then-Minister of Transportation Jeff Yurek meets with Mayor Fred Eisenberger and provides assurances that the Hamilton LRT has provincial support and will be moving forward. The Minister then confirms the freeze on property acquisition has been lifted.	

Cost Estimates and Scope

May 2019	<p>RFP process restarts. Potential bidder expresses concerns regarding level of commitment to the project by provincial and municipal governments, and the adequacy of \$1 billion funding commitment. EllisDon drops out of Ei8ht Transit Group. Hurontario LRT financial bids received by Infrastructure Ontario exceed initial cost estimates.</p> <p>Based on the above, Infrastructure Ontario begins procurement of a third-party cost consultant to review the budget for Hamilton LRT.</p>
Jun 2019	Infrastructure Ontario contracts with Turner & Townsend to complete a Class D capital cost estimate.
Jun 11, 2019	Metrolinx submits a Briefing Note to the Ministry of Transportation stating that it is assumed like other LRT projects, the province would fund the capital construction, lifecycle rehabilitation and related costs (\$2.8 billion) to achieve provincial asset ownership. The Municipality would be responsible for operations and maintenance over the 30-year concession period (\$866 million). If the province requires the City of Hamilton to contribute more than the operations and maintenance cost, the city council would likely reject the project causing it to be cancelled.
Jun 17, 2019	One of the three shortlisted proponents, CityLine, requests that a break fee be provided to reimburse bidding costs if the project has to be cancelled. CityLine again cites the uncertain political climate around the project and uncertainty regarding the level of provincial funding support. CityLine states that they will not participate in any further discussions until their concerns are addressed, holding up the RFP process.
Jun 26, 2019	Metrolinx CEO emails the Ministry of Transportation on “what the \$1 billion offer by the premier includes” and that Hamilton City Council has specifically and publicly requested clarity on this matter. The Deputy Minister responds that “the direction for the \$1 billion for Hamilton has not changed” and recommends that the Metrolinx CEO politely decline an invitation to meet with Hamilton City Council. Metrolinx CEO responds that if the advice is followed the procurement may fail, but still declined to meet with Hamilton.
Jun 27, 2019	Metrolinx management provides status update to its Board of Directors that the Hamilton LRT project is proceeding without issue.
Jul 2019	Infrastructure Ontario completes its own internal benchmarking exercise, taking into account bids received for the Hurontario LRT. Results show that the low end of the benchmark still exceeds the current TB/MBC approved budget.
Jul 15, 2019	Metrolinx submits a Briefing Note to the Ministry of Transportation requesting break fees to be added. The Note states that Ei8ht Transit was not successful in finding a replacement for EllisDon, and that there was an increasing risk that the consortium may drop out leaving only two other bidders. If CityLine further withdraws due to their concerns, the procurement would fail.

Cost Estimates and Scope		
Aug 22, 2019	Ministry of Transportation and Ministry of Infrastructure seek TB/MBC approval of an approach to the Hamilton LRT procurement. The submission includes three alternatives: cancel the procurement and commit \$1 billion to other transportation priorities; continue the procurement with the province assuming full capital and financing costs over the \$1 billion commitment; or continue with the procurement and begin negotiations with the City of Hamilton and the federal government to seek a cost-sharing arrangement. TB/MBC approves the third option and authorizes break fees to each proponent if the procurement is cancelled to encourage continued participation.	
Sep 12, 2019	Metrolinx management provides status update to its Board of Directors that the Hamilton LRT project is proceeding without issue.	
Oct 11, 2019	Infrastructure Ontario and Metrolinx amend the RFP to include a \$4.1-million break fee for each proponent in order to encourage continued participation by the proponents.	
Oct 21, 2019	Turner & Townsend, engaged by Infrastructure Ontario in June 2019, completes Class D cost estimate report using data from Infrastructure Ontario and Metrolinx. The class D cost estimate is \$2.32 billion for the capital cost of the project, and \$1.33 billion for the operations, maintenance and lifecycle costs. Metrolinx and Infrastructure Ontario provide updates to Ministry of Transportation and Ministry of Infrastructure's Minister's offices that the project "faces an affordability issue" based on Turner & Townsend's estimate, internal benchmarking exercise based on Hurontario and Finch West LRT projects, and feedback from the short-listed proponents (CityLine Transit Group, Ei8ht Transit and Mobilinx). Metrolinx and Infrastructure Ontario present the following options: return to TB/MBC for budget increase, request federal and municipal contributions, continue with procurement to receive actual bids, or immediately cancel procurement.	<ul style="list-style-type: none"> Metrolinx and Infrastructure Ontario updated the Turner and Townsend estimate by including the costs associated with financing, professional services, land acquisitions, and contract contingencies. These costs totalled \$1.85 billion. Total estimate \$5.5 billion.
Nov 22, 2019	Metrolinx Board of Directors receives an update of the Hamilton LRT project; however, no procurement or affordability issues were brought to their attention.	
Nov 26, 2019	Ministry of Transportation submits request to TB/MBC to authorize the cancellation of the Hamilton LRT Project. The request was approved.	
Nov 29, 2019	Ei8ht Transit formally withdraws from the procurement process.	
Dec 4-11, 2019	Ministry of Transportation, Infrastructure Ontario, and Metrolinx prepares communication strategies.	
Dec 12, 2019	Ministry of Transportation provides Turner & Townsend cost summaries to City of Hamilton. Infrastructure Ontario and Metrolinx meet with the remaining bidders. Mobilinx and CityLine are entitled to break fees of \$4.1 million each.	
Dec 16, 2019	Minister meet with Hamilton's mayor before the province announces the cancellation of the Hamilton LRT project, quoting a cost estimate of \$5.5 billion. Internal Metrolinx team and consultants are notified of the cancellation. Mayor Eisenberger states in an interview that he was not informed of the Minister's decision prior to this date, and posts an open letter asking for details and support to the \$5.5 billion estimate.	<ul style="list-style-type: none"> \$5.5 billion 14 kms from McMaster to Eastgate
Jan 23, 2020	Province announces the creation of Hamilton Transportation Task Force to look into how to invest the \$1 billion that remains committed to the City of Hamilton transportation projects.	

Cost Estimates and Scope	
Mar 16, 2020	The Hamilton Transportation Task Force submits its report to the Minister of Transportation recommending to invest the \$1 billion in an LRT or BRT as originally planned, pending further analysis required to assess the cost benefit of each option given the need to decrease the project scope in order to fit within the limited funding.
May 27, 2020	Metrolinx's Board Chair receives a directive from the Minister of Transportation to work with Infrastructure Ontario to undertake further analyses.



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