The TTC's Revenue Protection Strategy

Audit and Risk Management Committee

February 11, 2019

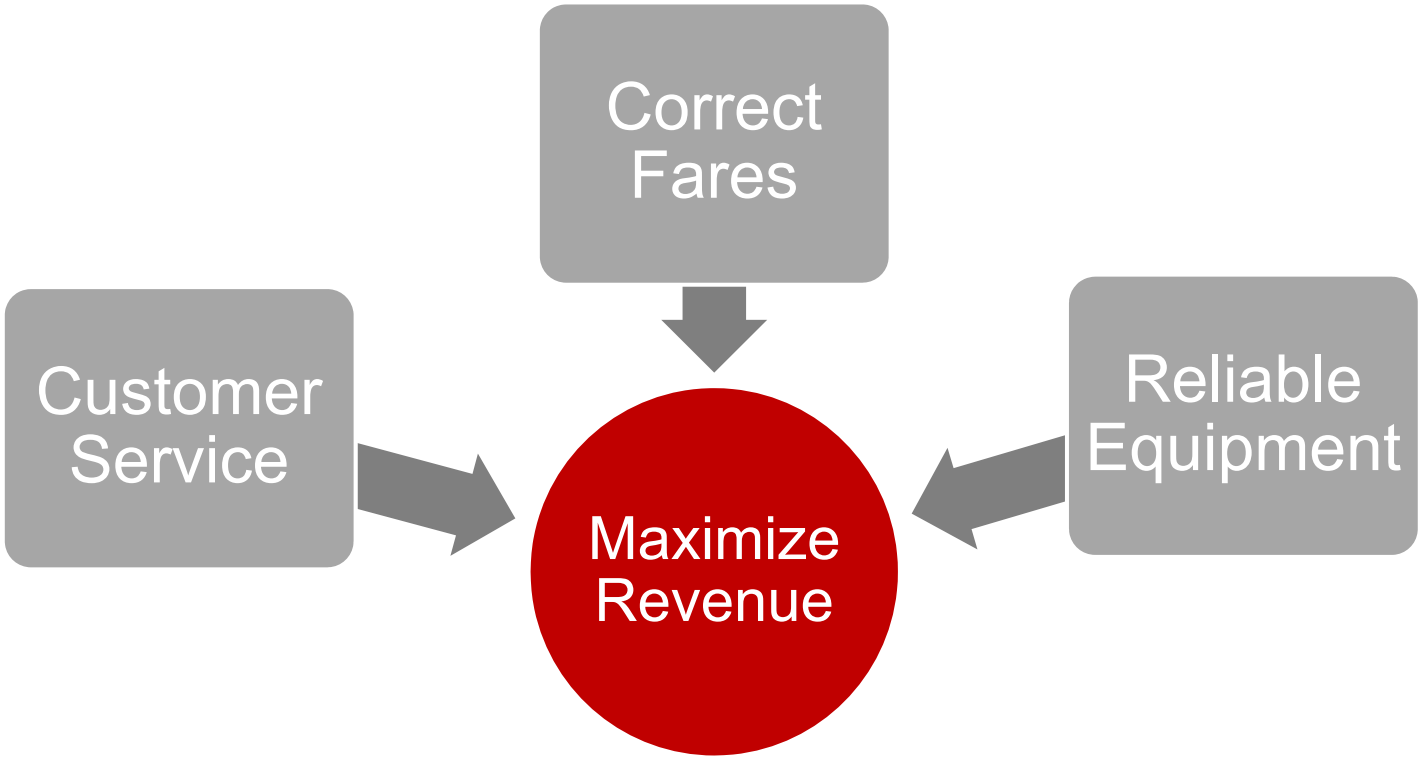
Agenda

- The TTC's Revenue Protection Strategy
  - Preparation Work in 2019
- Ensuring Fare Payment Equipment is Available and Reliable
- Revenue Control and Data Analytics
  - 2019 Ridership and Revenue
  - Presto Adoption
  - Stop Sell Impact
  - Analysis and Insights
    - Child Concession Card Insights

The TTC's Revenue Protection Strategy

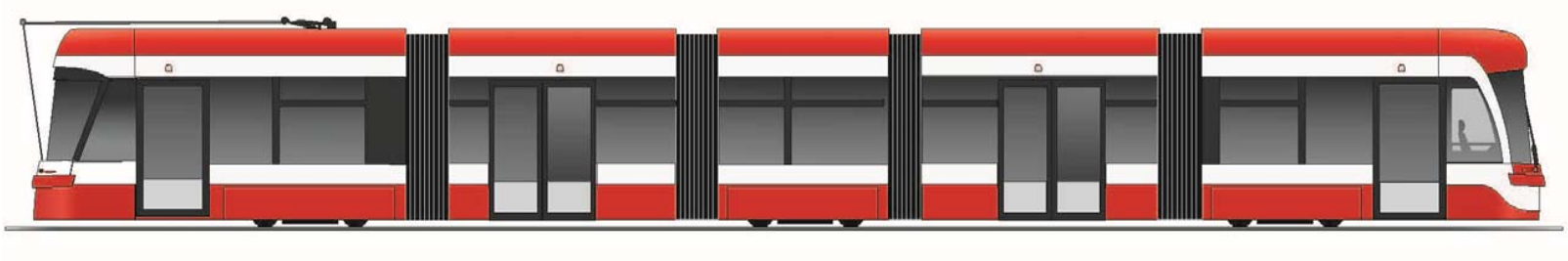
Revenue Protection Objective

Maximize revenue



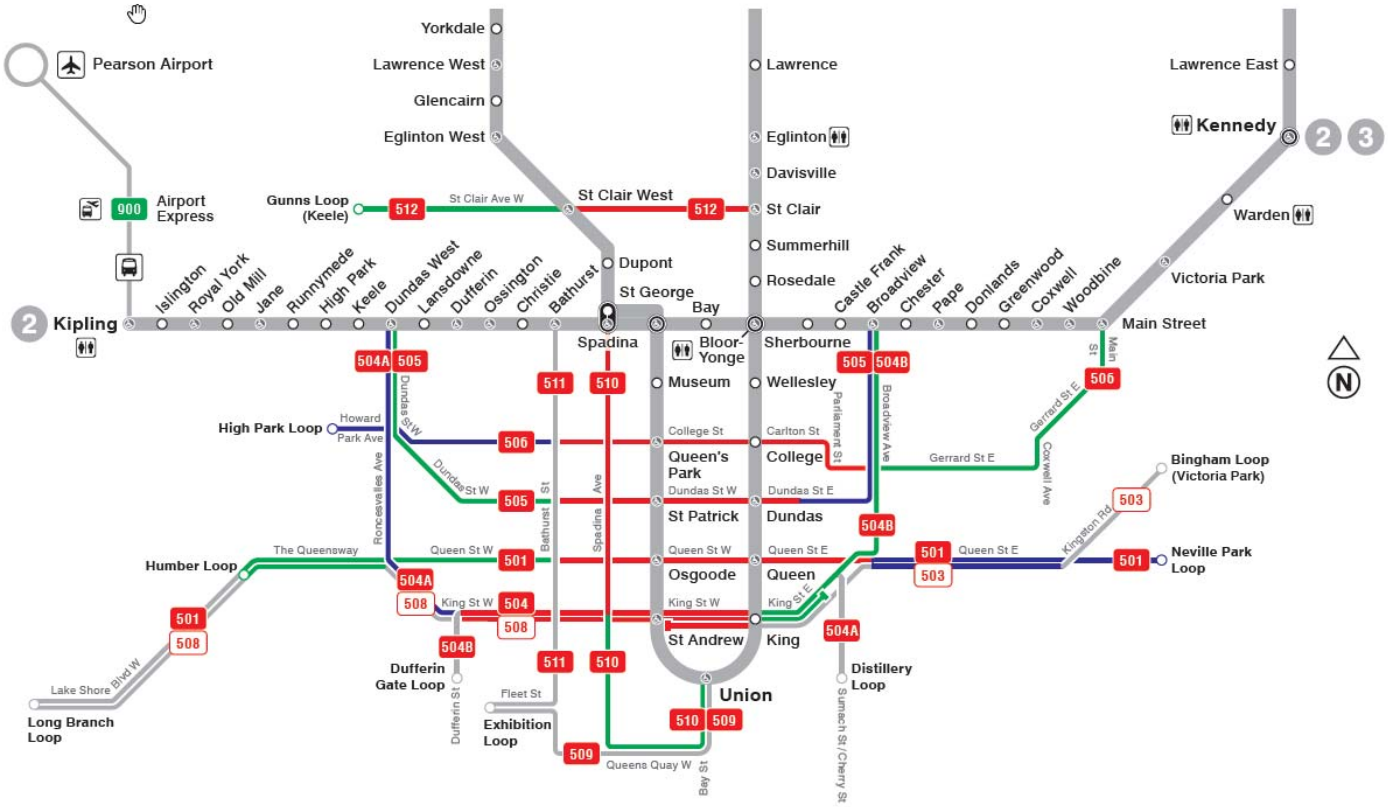
Streetcar Deployment Tactics

- Consistent resource assignment
- ‘Crush load’ inspection
- ‘U-Turn’ customer inspection
- Offboarding inspection
- Zone assignment
- Proportional network coverage

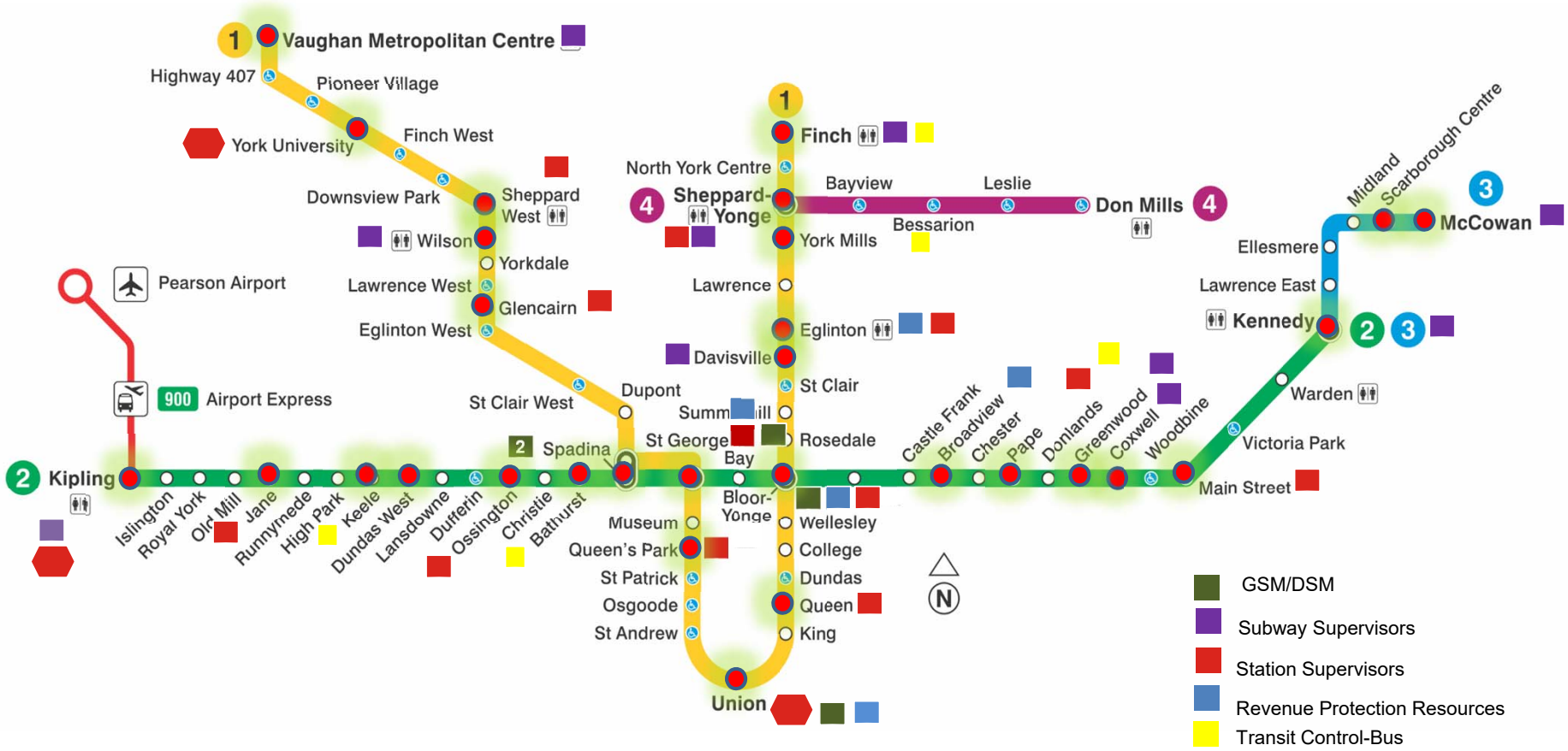


Streetcar Deployment Tactics

Zone coverage map



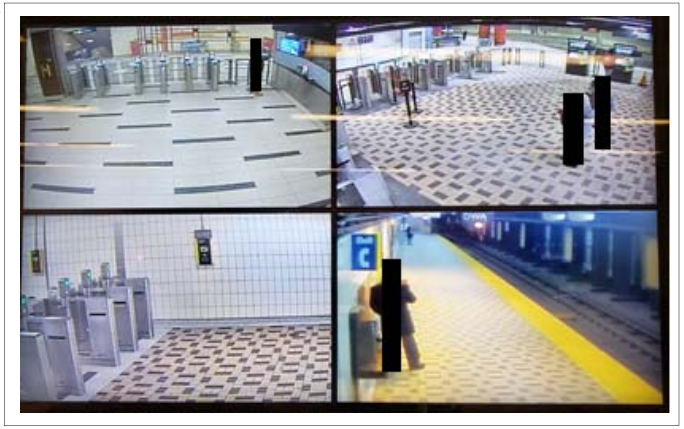
Stations Coverage Peak Post AM



Reducing Fareline Permeability – 'Locking' Farelines

Barriers installed between farelines and collector booths to decrease opportunity for station access without payment

Fare Evasion Deterrence Proof of Concept

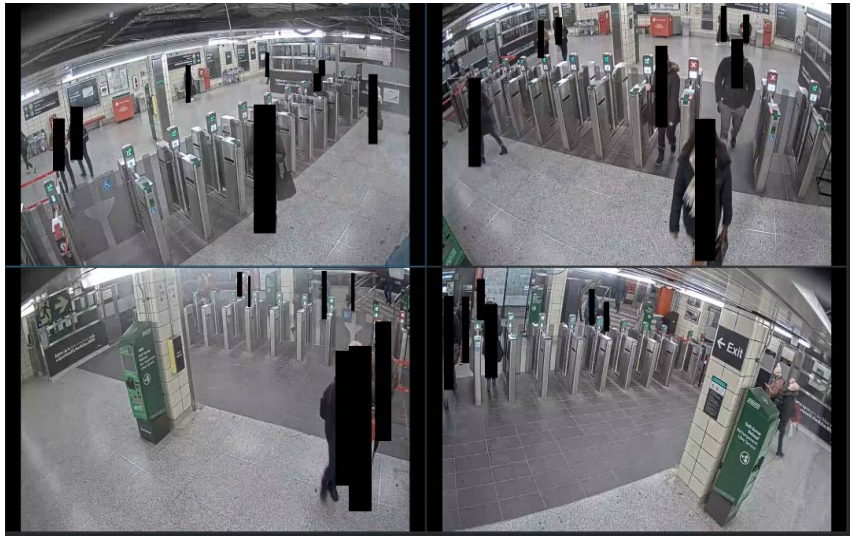


Improvements to faregate function and first line maintenance

Improving Visibility and Security in Stations

Pilot 360 degree view camera and new video management system

Sample View 1 Yonge/Bloor



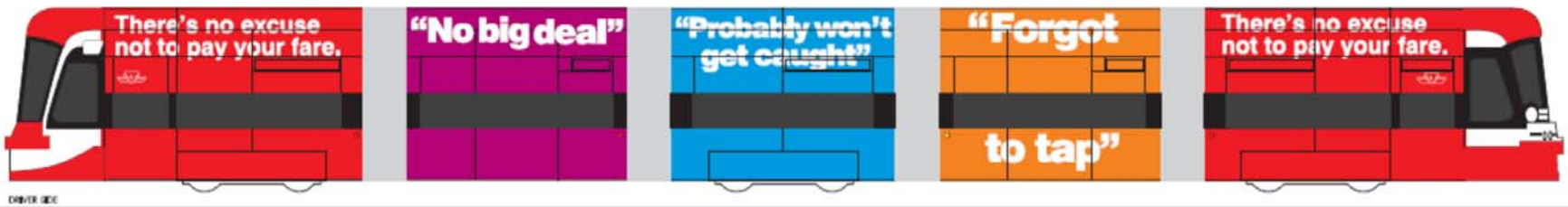
Sample View 2 Yonge/Bloor

Customer Communication Positive ‘tap every time’ Culture

Tap every time

You must tap your PRESTO card or PRESTO Ticket every time, even if you pay your fare as-you-go, or have a monthly pass loaded on your card.

Learn more at ttc.ca/presto



Ensuring Fare Payment Equipment is Available and Reliable

Reliable Fare Payment Equipment - PRESTO

Three Phase Approach

1) Incident Management:

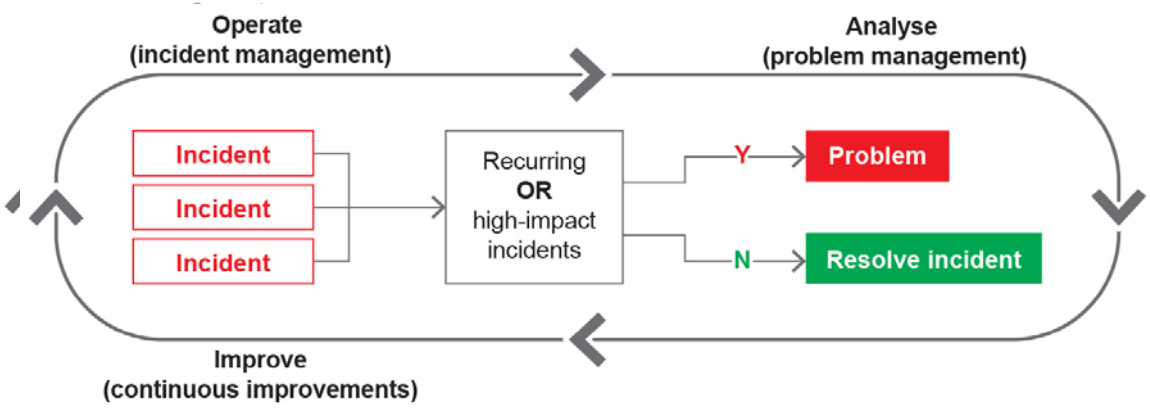
- Unplanned interruption to a service **or** reduction in the quality of a service
- Restore normal service operation as quickly as possible

2) Problem Management:

- Address recurrence of incidents

3) Continuous Improvement:

- On going program with Metrolinx
- Q4 2019 activities focused on process enhancements and stabilization



Reliable Fare Payment Equipment

Q4 2019 Improvements

- Equipment performance is based on:
  - Device functionality
  - Device maintenance/cash collection service
- Changes implemented in Q4 2019
  - Ongoing improvement program
  - Address specific AG recommendations

Improvements to daily operations/services

Increased remote and real-time monitoring

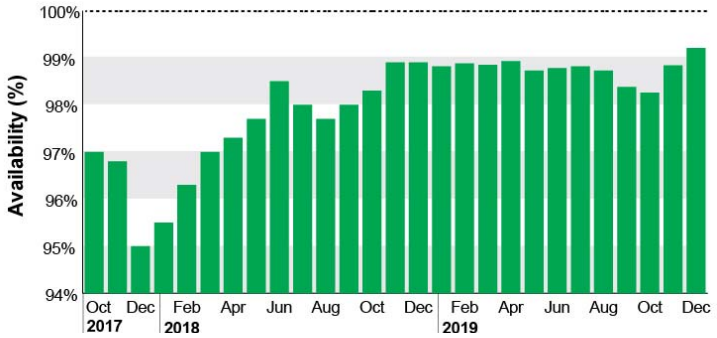
Availability reporting using real-time data

Improvements to device functionality (hardware/software)

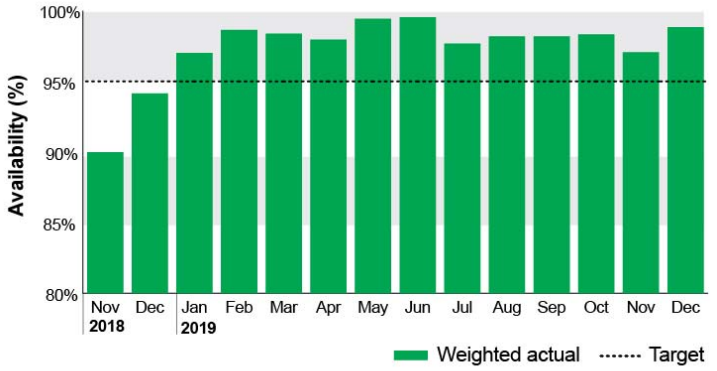
PRESTO in Streetcars

- Fare and Transfer Machines (FTM) and card readers
- Add cash collection and maintenance at third designated location
- Remote monitoring and remote device recovery
- Daily device audits by Staff prior to start of service
- Improved process to make vehicles available for PRESTO maintenance and cash collection
- Enhanced reporting/analytics
- Cash Collection
  - Trigger alerts for cash vault collection set at 75% volume
  - Increased cash collection locations in designated facilities
  - Ad hoc cash collection services

PRESTO card readers



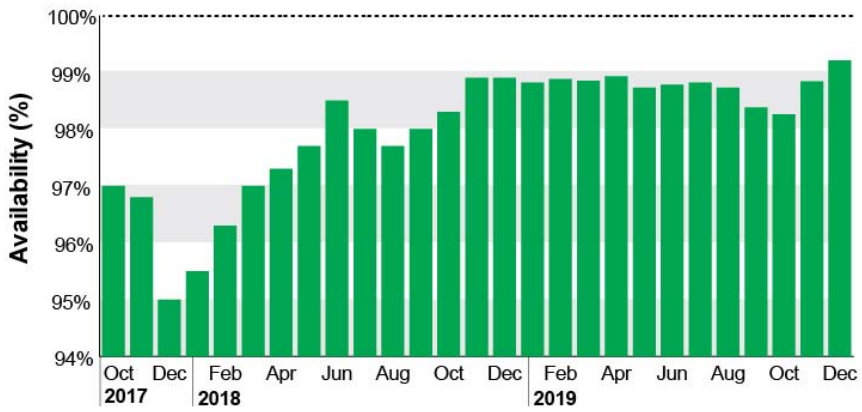
Fare Transfer Machines



PRESTO on Bus

- Remote monitoring and remote device recovery
- Daily audits of PRESTO card readers prior to start of service
- Enhanced reporting/analytics

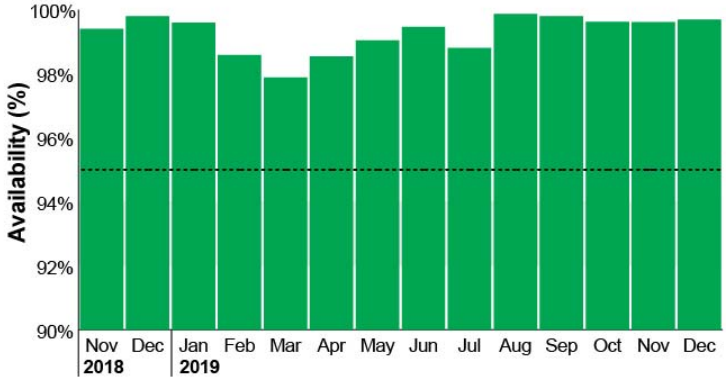
PRESTO card readers



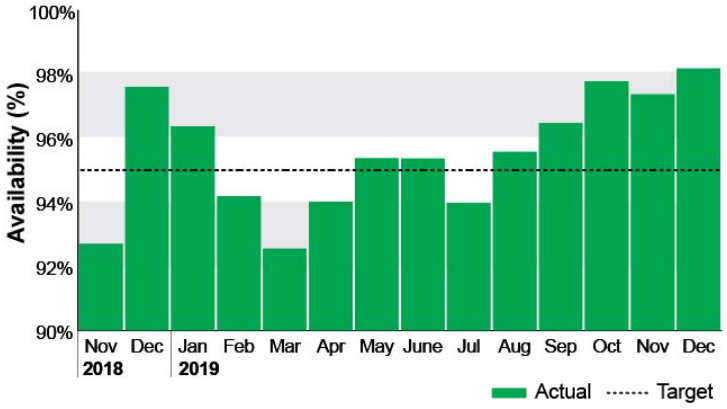
PRESTO in Stations

- Fare Vending Machines (FVM) and Self Serve Reload Machines (SSRM)
- New bank note acceptor hardware
- New SSRM software to address screen freezing
- Remote monitoring and remote device recovery
- Improve escalation process
- Use of device statistics for coordinating cash collection & maintenance
- Ad-hoc cash collection
- Enhanced reporting/analytics

Self-serve Reload Machines



Fare Vending Machines



Revenue Control & Data Analytics Insights

Key Activities

Revenue Control

- Budgeting & Forecasting
- Revenue Accounting
- Financial Controls
- PRESTO Liaison

Data Analytics

- Ridership Forecasting
- System Usage Reporting
- Organization-Wide Analytics Support
- Business Intelligence Solutions

TTC 2019 Ridership & Revenue Results

Ridership

525.5 M

System Wide

Revenue

$1.184 B*

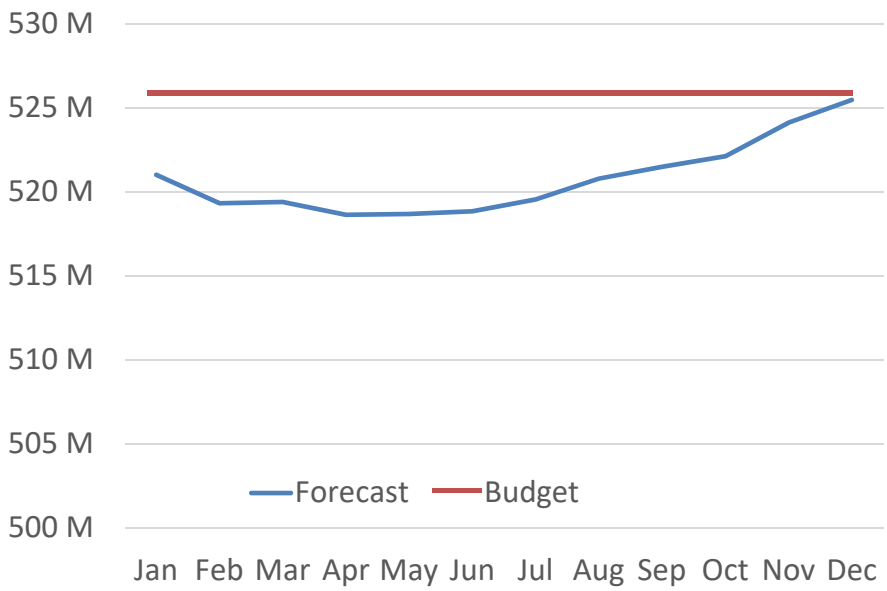
Earned
(1% below budget)

PRESTO

86.8%

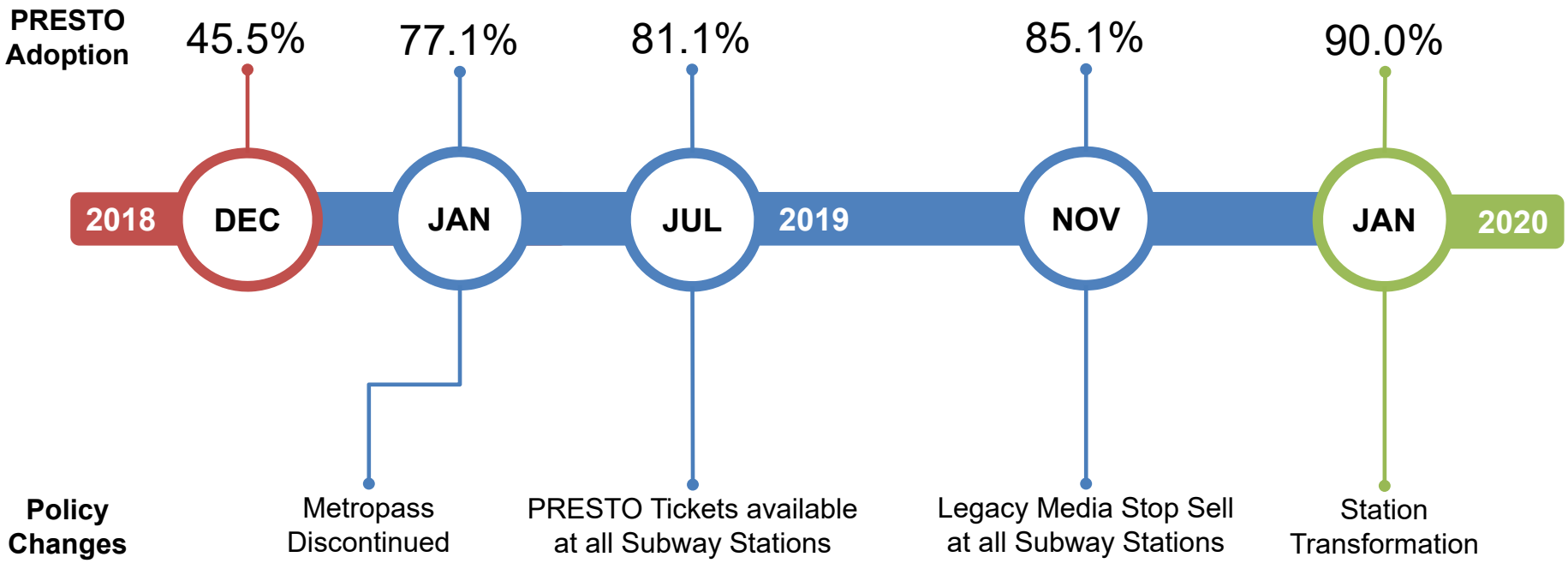
Revenue from PRESTO
(Up from 45% Dec 2018)

2019 Ridership Trend



*2019 revenue and actual vs budget is preliminary

PRESTO Adoption Has Doubled



January 2020 adoption rate is preliminary

PRESTO Adoption Enhances Analytics Capabilities

2018

- Lack historical data
- ~ 0.5 M daily taps

2019

- Build-up of data
- > 1.2 M daily taps
- More granular, timely and varied data

2020

- More robust benchmarking and budgeting
- Enhance analytical relevance
- More evidence-based decision making

PRESTO Data Analytics Building Blocks

Event

Determine the impact of policy changes and/or events

Mode

Accurately measure ridership and revenue by mode

Route

Evaluate ridership to inform service improvement along and among routes

Concession

Understand our customers to make more informed policy decisions

Time

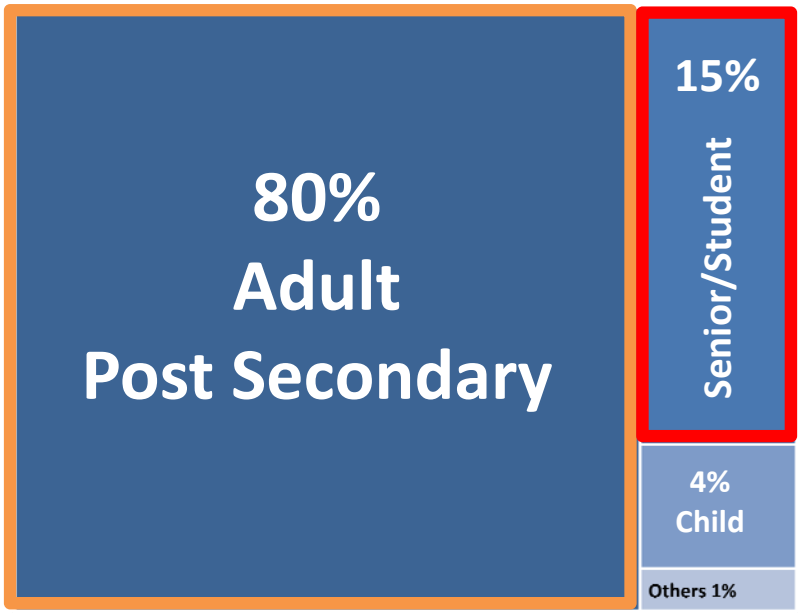
Monitor system usage by time to improve service deployment

Location

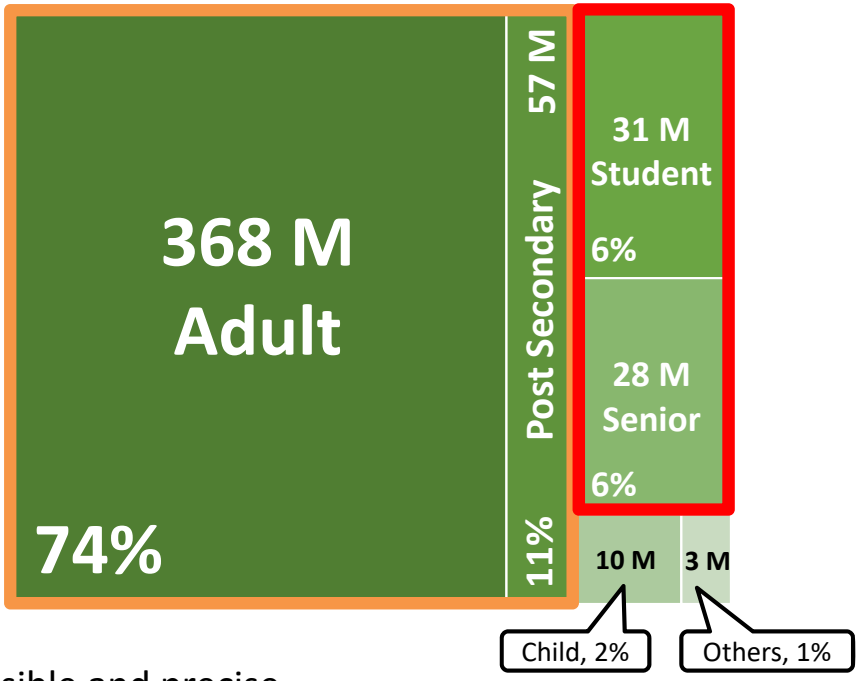
Leverage improved location data to inform revenue protection deployment

Concession Profile: Legacy Media vs PRESTO

Legacy Media

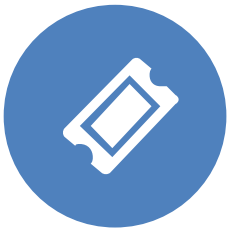


PRESTO Data



Move from sampled Legacy Media data to more accessible and precise PRESTO data allows for more detailed analysis.

Event Analysis: Legacy Media Stop Sell Impact

	Cash	Token	Legacy Ticket	PRESTO Ticket	
					
	-5.9%	-50.1%	-40.9%	+19.9%	
Before	$576,548	97,117	114,355	64,085	Nov 17- 23 2019
After	$542,457	57,361	79,292	76,837	Dec 8 – 14 2019

Mode and Route Specific Analysis: 4 Sample Stops

Revenue Protection

Support deployment strategy of fare inspectors and special constables

Service Enhancement

Provide insights on customers' usages on 504 KING (day, time, location)

504 King Streetcar December 2019

A	KING ST W AT YONGE ST W SIDE (KING STATION)	70,580
	KING ST E AT YONGE ST E SIDE (KING STATION)	52,337
B	KING ST W AT BAY ST W SIDE	36,898
C	KING ST W AT UNIVERSITY AVE W SIDE (ST ANDREW STATION)	50,301

Time: Concession Breakdown by Door

504 KING

Dec 9 - 13, 2019
6AM – 10AM

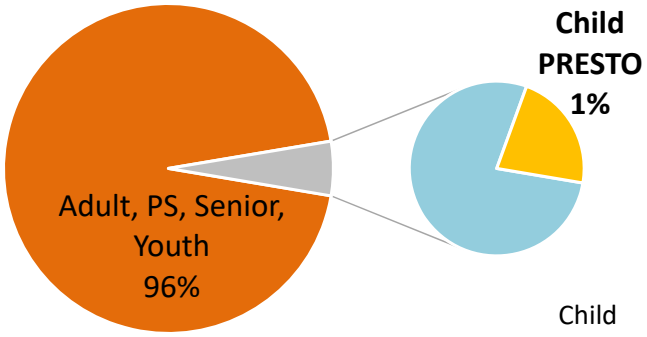
KING ST W AT
BAY ST W SIDE

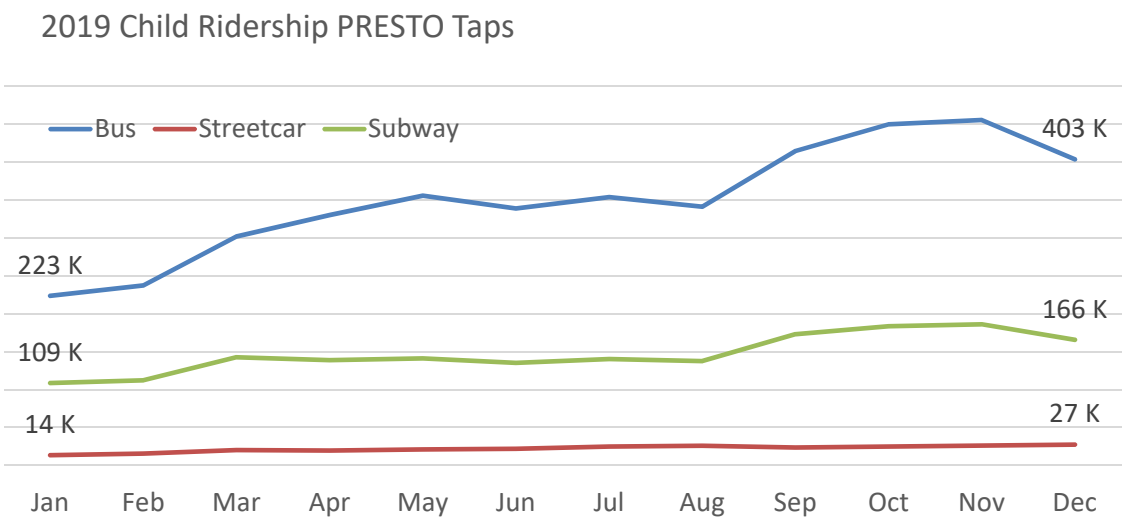
Adult	18%	36%	601	30%	16%
Post Secondary	40%	20%	15	27%	13%
Senior	8%	33%	12	42%	17%
Student	100%	0%	1	0%	0%
Child	50%	50%	2	0%	0%

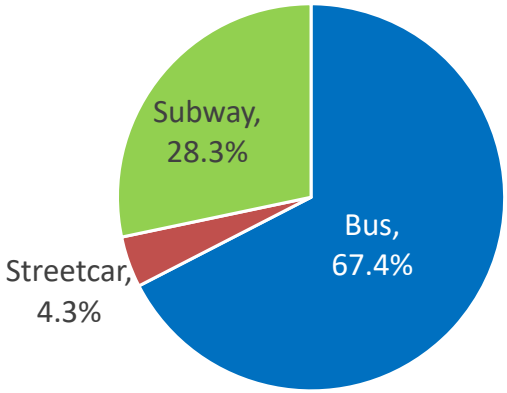
Child Concession Analysis & Insights

Child Concession Overview

2019 Ridership - Total	525.5M
2019 Ridership – Adult, Post Secondary, Senior, Youth	503.8M (96%)
2019 Ridership – Child Non-Presto	15.5M (3%)
2019 Ridership – Child PRESTO	**6.2M (1%)**



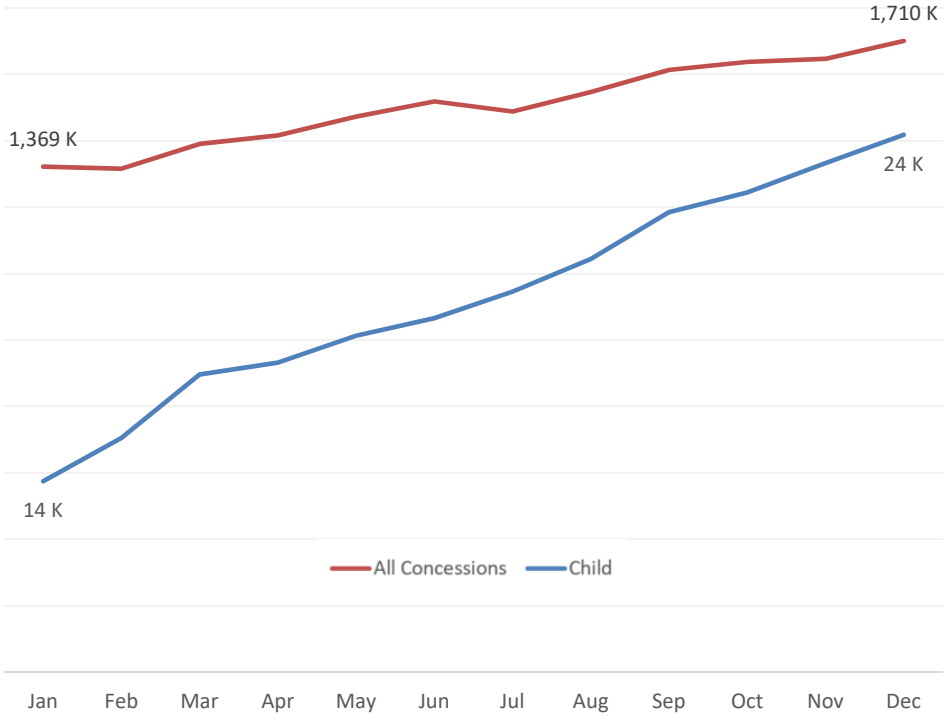




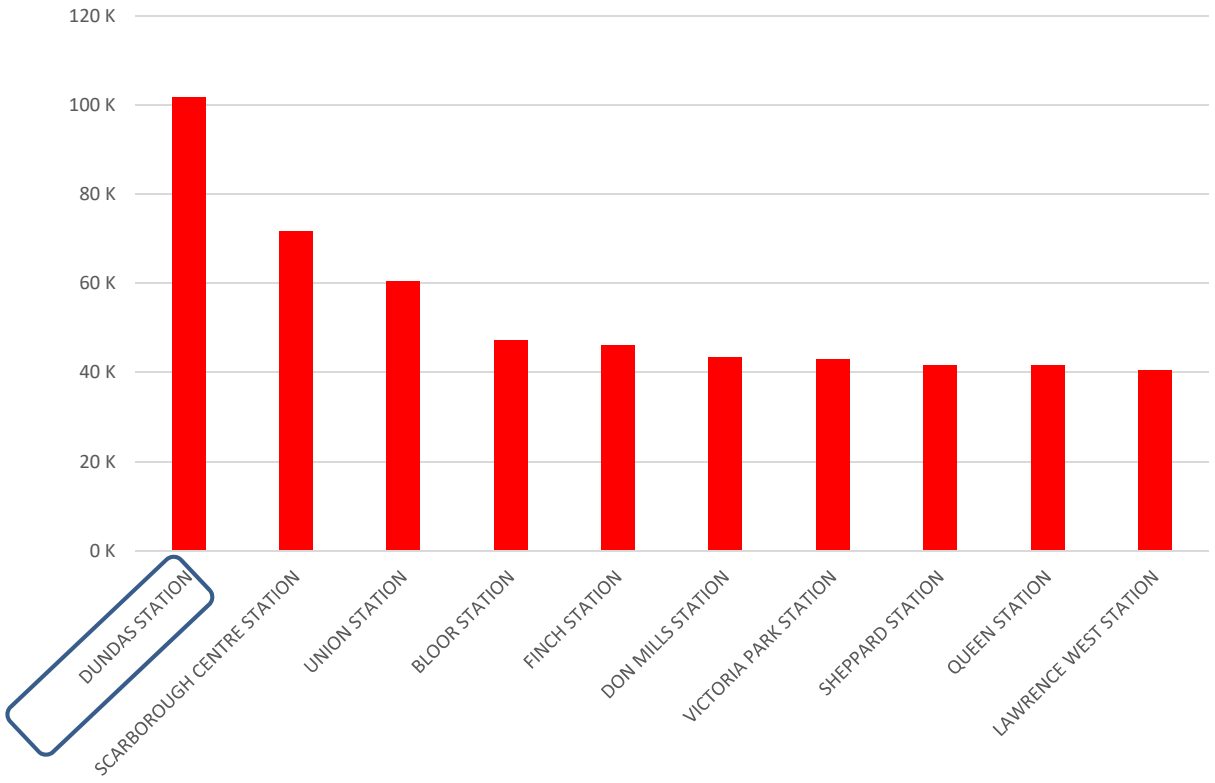
Child PRESTO: Higher Growth in 2019

All Concessions	Child Concession
1.7 M Users	24 K Users
+25%	+75%

Child card growth is faster than overall growth



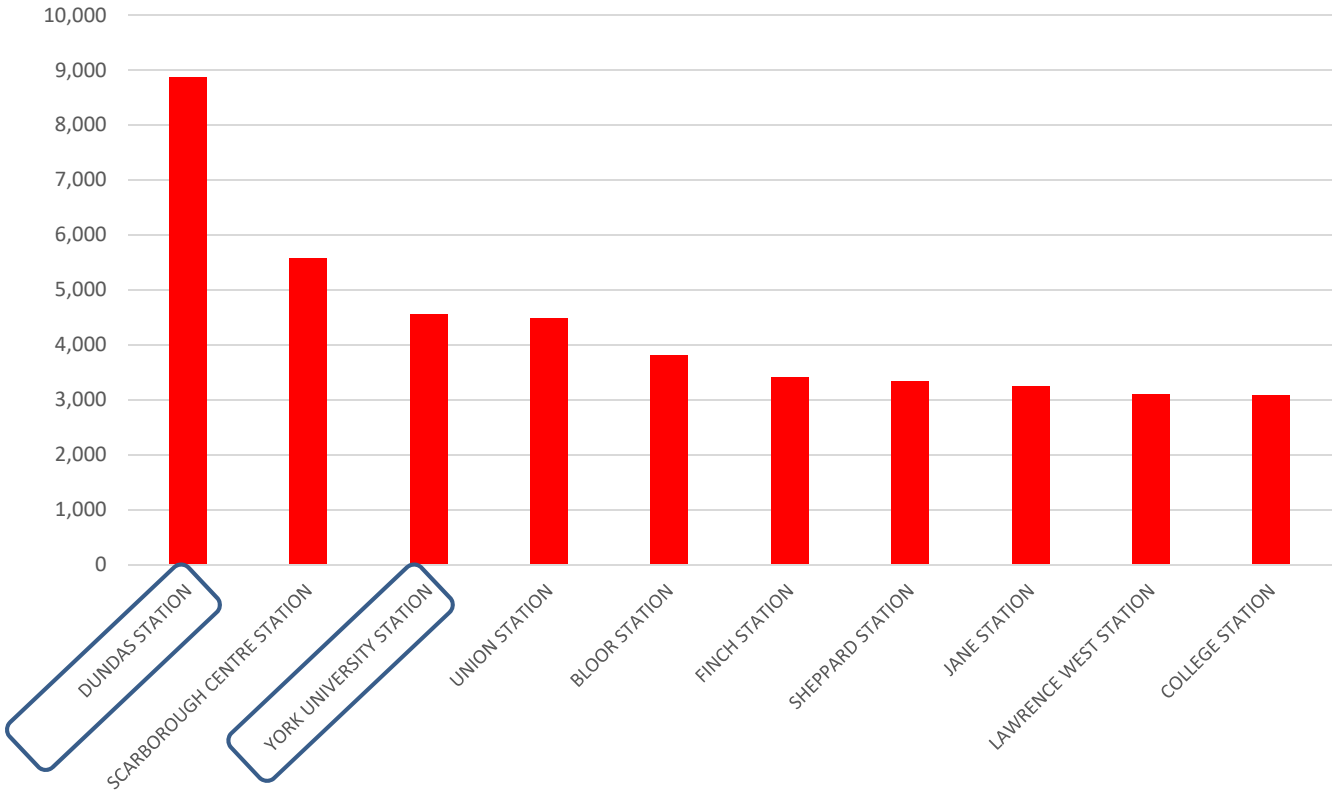
Child PRESTO: Top 10 Locations in 2019



All top 10 locations for child card usage are **Subway Stations.**

#1 Dundas Station

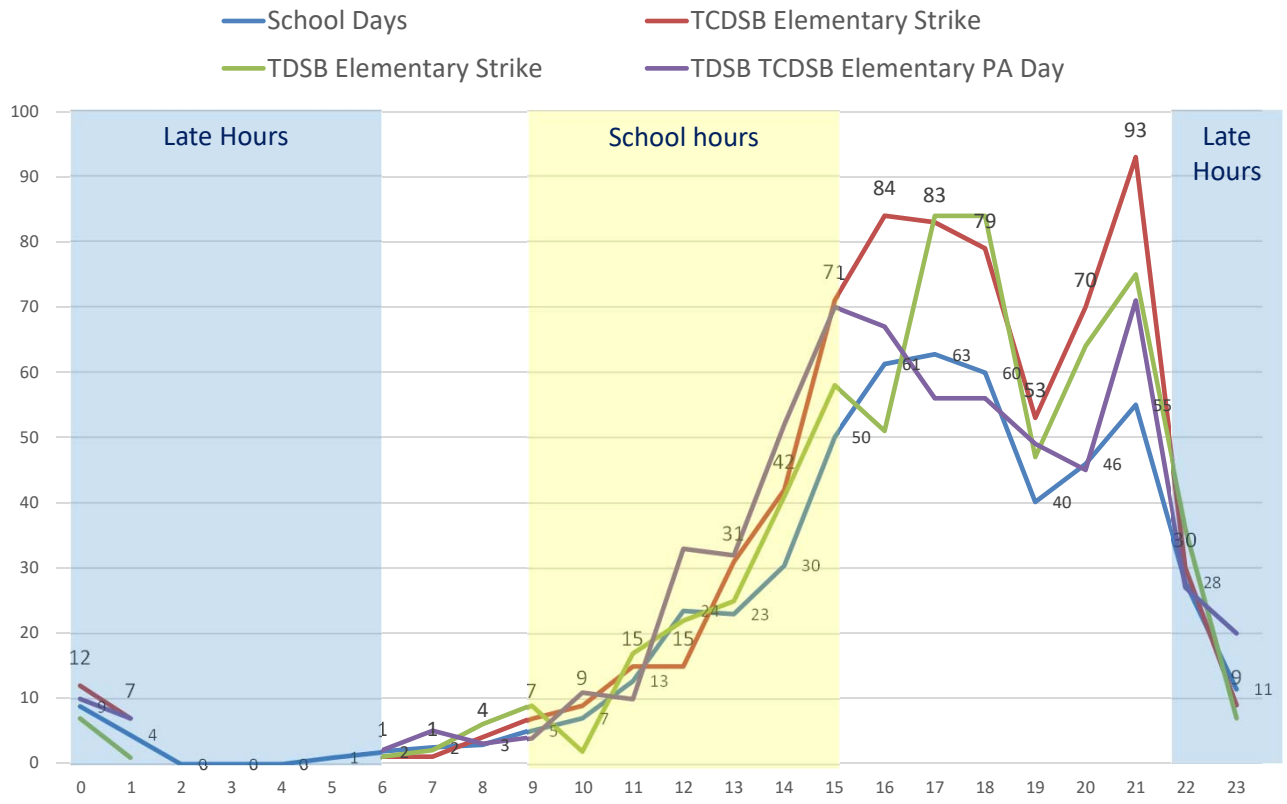
Child PRESTO: Top 10 Locations (Jan 5 – 25)



- First 3 work/school weeks in 2020
- Selected for analysis to include
  - 1 PA Day (Jan 17)
  - 2 Strike Days (Jan 20, 21)
- Similarly, all top 10 locations for child card usage in 2019 are **Subway Stations.**

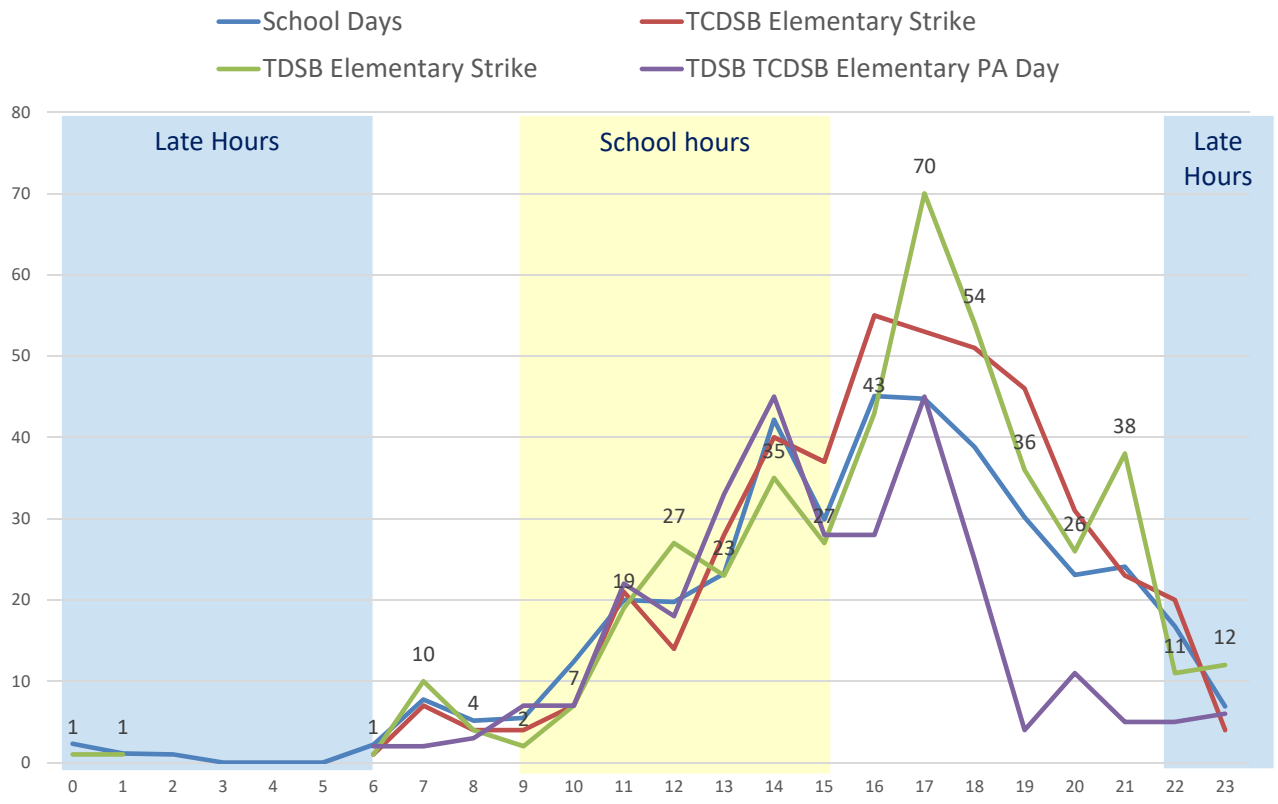
#1 Dundas Station

Child PRESTO: Dundas Station Usage by Hour (Jan 5 – 25)



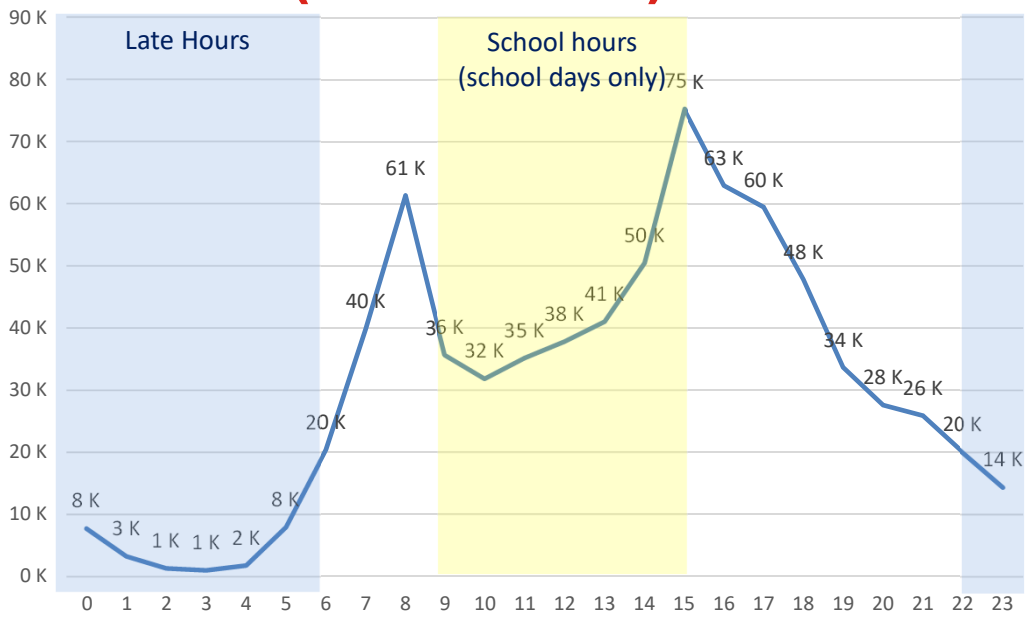
- Dundas station not likely used by children ages 0 – 12 who attend nearby schools.
- Higher usage on school closure days.
- Similar time of day usage patterns between regular school days and school closure days. vs
- Travel during late hours and school hours are not expected for child ages 0 – 12.
- Data shows potential misuse of child cards at Dundas Station.

Child PRESTO: York University Station Usage by Hour (Jan 5 – 25)

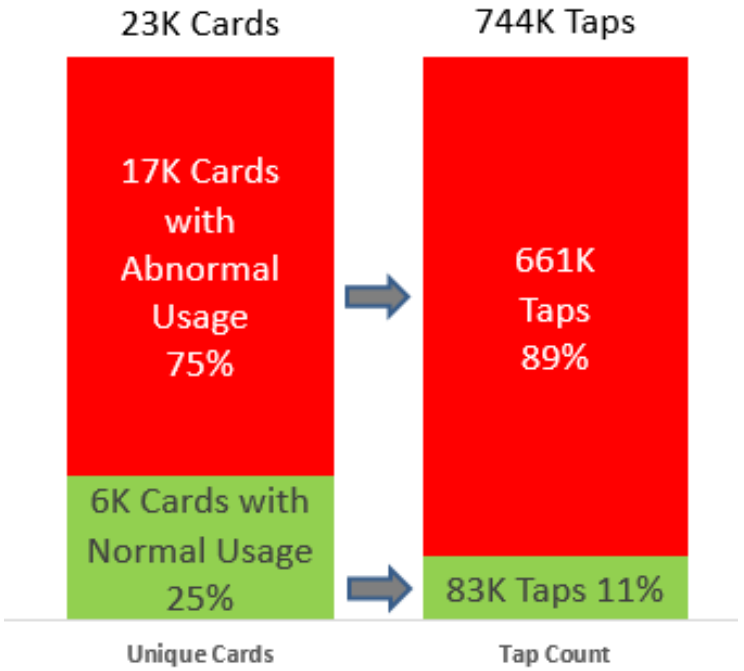


- York University station not likely used by children ages 0 – 12 who attend nearby schools.
- Similar time of day usage patterns between regular school days and school closure days. vs
- Travel during late hours and school hours are not expected for children ages 0 – 12.
- Data shows potential misuse of child card at York University Station.

Child PRESTO: Percentage of Abnormal Usage by Time (Jan 5 – 25)



Travel during late hours and school hours were observed across the network. These trips are considered abnormal for children ages 0 – 12.



- 17,000 child card were used during abnormal hours. These cards generated 89% of the total taps.
- 6,000 child cards have expected (normal) usage.

Child PRESTO: 2019 Potential Revenue Loss

Potential Misuse

89%

89% Misused	• If misuse ratio is representative of child card usage in 2019
5.5M Rides	• 89% x 6.2M PRESTO child ride • 5.5M misused child rides in 2019
$12.4M	• Average fare $2.25 • Potential Loss $12.4M