Toward Fare Integration for the GTHA: Approach and Early Findings

GTTC

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Cross-boundary Travel Matters

29% of GTHA auto trips cross municipal boundaries

- Cross-boundary traffic grew by 51% between 1991 and 2011

22% of all transit trips (28% of peak period) in the GTHA cross municipal boundaries

- 97% of peak cross boundary transit trips begin or end in Toronto

- Local transit and GO bus carry 52% of peak cross boundary trips in and out of Toronto, with GO Trains carrying the other 48%
Key Fare Issues

• **Double fare at the Toronto boundary**
  - Customers transferring between TTC and neighbouring agencies pay two full fares
  - May be “reasonable” for long trips, but a concern for people making shorter trips across the boundary

• **Double fare between TTC and GO**
  - Affects customers using TTC to access GO at the home end
  - Limits reach of GO services to Union Station

• **High fares for medium/short trips on GO compared to municipal transit**
  - Discourages use of GO for shorter trips

• **High fares for short trips**
  - Passes and transfer policies currently provide “work-around”

Addressing these requires a comprehensive solution—considering the fare structure as a whole
Local transit fare integration between Toronto and neighbouring municipalities represents significant opportunity to increase ridership in cross boundary markets.

<table>
<thead>
<tr>
<th>Travel Market</th>
<th>Total</th>
<th>Transit</th>
<th>Transit Share</th>
<th>Est. trip gains from fare and service integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regions to Toronto PD1</td>
<td>127,300</td>
<td>94,900</td>
<td>74.60%</td>
<td>3,000-8,000</td>
</tr>
<tr>
<td>Regions to other Toronto</td>
<td>237,400</td>
<td>31,500</td>
<td>13.30%</td>
<td>8,000+</td>
</tr>
<tr>
<td>All Toronto to Regions</td>
<td>154,500</td>
<td>12,400</td>
<td>8.00%</td>
<td>8,000+</td>
</tr>
<tr>
<td>Regions to Regions</td>
<td>283,300</td>
<td>9,900</td>
<td>3.50%</td>
<td>3,000-8,000</td>
</tr>
<tr>
<td>Sub Total</td>
<td>802,500</td>
<td>148,700</td>
<td>18.50%</td>
<td>22,000+</td>
</tr>
</tbody>
</table>

Source: 2011 TTR, IBI Definition of opportunities in the GTHA.
Why Now?

PRESTO throughout the GTHA will create possibilities for new regional fare approaches.

Travellers expect fares that reflect the value of their trip and remove fare barriers to travel.

Rapid transit expansion in the GTHA can be optimized by an integrated fare system.
Process to Date

- Metrolinx and MTO in consultation with all 10 transit operators, over the last 18 months have been developing the analytics to identify:
  - Common goals and objectives for a GTHA fare structure
  - Performance of alternatives that meet those common goals and objectives through a business case evaluation
- Metrolinx Board has publicly been receiving updates from staff on the progress of this work and public open houses have been completed this month.
- Premier’s Mayors and Chairs Forum has also received an update and will be involved through the Transit and Transportation Working Group, which will meet in mid-June.
Process Ahead

GTHA Fare Structure Evaluation (Jan-Fall 2016)

- Structure Evaluation
  - Development of concepts
  - Refinement of concepts (transfer policies, distance calibration, relative prices, etc)
  - Evaluation of concepts using objective-driven framework

Implementation Considerations (July 2016-mid 2017)

- Implementation considerations
  - Transit provider service and ridership
  - Revenue/net cost adjustments
  - Financial sustainability
  - Fare policy decision-making approach (governance)
  - Preferred implementation phasing and timing

June 2016: Technical update to Metrolinx Board

Fall 2016: Metrolinx Board considers recommended advice to MTO
Vision: A Delicate Balance

Vision Statement

• The GTHA Regional Fare Integration Strategy will increase customer mobility and transit ridership while maintaining the financial sustainability of GTHA's transit services.

• This strategy will remove barriers and enable transit to be perceived and experienced as one network composed of multiple systems/service providers.
Evaluation: 3 Lenses

Stakeholder Perspectives
- Customer
- Transit Agency
- Regional Policy

Project Goals
- Simplicity
- Value
- Consistency

Business Case
- Strategic
- Economic
- Financial
- Deliverability

27 Objectives
Objectives: Framework for Evaluation

1. Simplicity
   - Simplify the customer experience and agency fare management, attracting travellers to transit services throughout the GTHA.

2. Value
   - Reflect the value of the trip taken, and maintain the financial sustainability of transit services.

3. Consistency
   - Create a common fare structure with consistent definitions and rules across the GTHA.

OBJECTIVES

- Travellers perceive one GTHA transit network, multiple agencies
- Easy to understand
- Suitable for different trip and traveller types
- Adaptable to changes in service, operations, and infrastructure
- Practical to implement, manage and revise over its lifecycle
- User friendly point of purchase experience

- Reflects value of service received
- Supports transit ridership growth
- Promotes social equity
- Provides value for money on transit investments and costs
- Generates revenue in support of cost recovery plans
- Minimizes fare underpayment
- Supports economic growth and environmental sustainability

- Offers common fare concessions and products
- Provides easy fare payment for trips involving multiple services or modes
- Allows service providers to adapt to meet changing customer needs
- Distributes demand efficiently throughout the network
- Facilitates standardized fare management
A Systematic Approach

- GTAA Fare Integration work is currently focused on Fare Structure
- Fare Structure has relationships with fare payment systems, concessions, and products

Fare System Building Blocks

- **Price**
  - Fare policy

- **Products**
  - Customer targeted offerings

- **Concessions**
  - Rider discount policy

- **Fare structure**
  - Fare strategy, transfers

- **Fare media**
  - PRESTO, Mobile, Open Payment, LUMs

- **Payment infrastructure**
  - Validation, inspection
**Fare Integration Platform - PRESTO**

What does the term ‘Fare Integration’ mean to you?

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional payment method - PRESTO</td>
<td>38</td>
</tr>
<tr>
<td>Pay one fare/transaction to access different transit systems</td>
<td>33</td>
</tr>
<tr>
<td>Reduced fare when using multiple transit systems</td>
<td>23</td>
</tr>
<tr>
<td>Seamless transfer between transit systems</td>
<td>13</td>
</tr>
<tr>
<td>Distance based fares for the entire GTHA</td>
<td>10</td>
</tr>
<tr>
<td>Integrated fares for various transit systems</td>
<td>6</td>
</tr>
<tr>
<td>Same fare for all transit systems in the GTHA</td>
<td>4</td>
</tr>
</tbody>
</table>

n = total sample (2284)
Model

- Purpose-built peer-reviewed nested logit model to understand ridership and revenue impact of fare structures
- Able to reveal shifts between combinations of transit modes due to fare changes
Fare Approaches Around the World

* This chart generally illustrates fare approaches on local bus and metro systems; most “flat fare” cities also have regional transit that use fare zones or fare by distance, making them effectively hybrids.
Service Types: Relation to Markets

Service types serve different markets as revealed by data on demand by trip distance.

Markets

1. Short distance, served by
   - Local and Rapid Transit

2. Medium distance, served by
   - Rapid Transit, often with Local feeder
   - Local when Rapid Transit is not available
   - Regional (Future RER/SmartTrack)

3. Long distance served by
   - Regional (Future RER/SmartTrack)
Fare Structure Design Principles

Continuity
Fares for different service types should be comparable when the services serve the same market.

Connected Network
Fares should not penalise trips that require the use of multiple services.

Generalized Cost
Fares should be lower for slower service types than for faster service types.

Gradual Increments
Fares that vary by distance should escalate consistently or in small increments and avoid large jumps.

Large/Small Zones
- Large zones are more suitable for Local transit
- Smaller zones are more suitable for Rapid Transit and Regional
3 Fare Structure Concepts Evaluated

1. Modified Status Quo
   Modify current fare environment to address the most significant issues with the status quo

2. Zones
   Develop a new regional fare structure with fare by zone for Local and Rapid Transit, adding flexibility to pricing

3. Hybrid
   Develop a new fare structure with region-wide flat fare for Local with Rapid Transit and Regional using small zones or fare by distance

- Consistent transfer policy between municipal transit agencies
- Consistent transfer policy between municipal transit and Regional transit
- Regional base fare and Rapid Transit fares more closely aligned

Diagram:
- Zone A
- Zone B
- Zone C

Graph:
- Distance
- $
Reflecting Policy Flexibility

- Concepts can be configured to deliver different policy outcomes

- Aspirational (grow ridership and revenue)
- Revenue Neutral
- Grow revenue
- Grow ridership
- Ridership
- Revenue
Understanding Fare Equity: Transit Usage by Income

Transit trips by transit mode

- GO Transit + municipal
- GO Transit only
- Subway only
- Subway + local bus/streetcar
- Local bus/streetcar only

* Analysis of travel behaviour across the GTHA by income at the Dissemination Area (400-700 person) level using Census and TTS data in 10 groups by income
Understanding Fare Equity: Transit Trip Length by Income

Distance travelled by transit mode

Average trip length (km)

Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10
< Lower equivalent income Decile Higher equivalent income >

Local bus/streetcar only
Subway only
Subway + local bus/streetcar
GO Transit only
GO Transit + municipal (Weighted)
Average

* Analysis of travel behaviour across the GTHA by income at the Dissemination Area (400-700 person) level using Census and TTS data in 10 groups by income
Understanding Fare Equity: Double Fares by Income

Double fare municipal transit trips

- Trips crossing Toronto-905 boundary with an end in downtown Toronto (PD1); GO excluded
- Trips crossing Toronto-905 boundary with an end in Toronto outside PD1; GO excluded

* Analysis of travel behaviour across the GTHA by income at the Dissemination Area (400-700 person) level using Census and TTS data in 10 groups by income
## Impact of Potential Fare Integration Solutions

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Toronto to 905</th>
<th>Regional &lt;15km</th>
<th>Regional Rail – MSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Fare</td>
<td>322,500</td>
<td>39,700</td>
<td>101,940</td>
</tr>
<tr>
<td>High Fare Compared to Other Services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market size (2031)</td>
<td>322,500</td>
<td>39,700</td>
<td>101,940</td>
</tr>
<tr>
<td>Market % of total</td>
<td>11%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Annual Revenue</td>
<td>$433M</td>
<td>$43M</td>
<td>$197M</td>
</tr>
<tr>
<td>Revenue % of total</td>
<td>18%</td>
<td>2%</td>
<td>8%</td>
</tr>
<tr>
<td>Potential Ridership Growth</td>
<td>10-17%</td>
<td>14-16%</td>
<td>16-22%</td>
</tr>
<tr>
<td>Revenue Loss</td>
<td>18-32%</td>
<td>16-20%</td>
<td>7-12%</td>
</tr>
<tr>
<td>Revenue Loss Recovery From New Ridership</td>
<td>43-50%</td>
<td>65-70%</td>
<td>70-84%</td>
</tr>
</tbody>
</table>
Transit Route Choices

What transit should I take for my trip from 905 to downtown?

Travel decisions are heavily impacted by fare, making it important to align fares between service types.

GO Train

Local bus to Subway

Park and Ride at Subway
Fare Integration Benefits

New Transit Ridership

Integrated use of transit network

More efficient service design

Reduced VKT
One Seamless Region