Georgetown Corridor – Airport Rail Link Ridership Forecasts

Presentation of DRAFT Final Forecasts

Jim Richards
Danielle Czauderna

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Steer Davies Gleave
www.steerdaviesgleave.com

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Introduction

Background

- Steer Davies Gleave had been supporting SNC Lavalin in the production of ridership forecasts since 2004
- In 2009 Investment Grade forecasts were produced - included extensive Stated Preference surveys to update model parameters with 1,260 travellers at LBPIA
- Metrolinx assumed sponsor role in 2010
- Agreement between Metrolinx and SNC Lavalin that Steer Davies Gleave could use the ridership model to produce updated forecasts in 2011

Scope of Work

- Comprehensive update of the 2008/09 forecasting model
- Review of underlying assumptions and refine model inputs as appropriate
- Refresh of model structure to enable more rapid and responsive tool
- Review of potential demand - air passengers and Toronto demographics
- Update of travel time and cost assumptions
- Revenue analysis including optimisation
- Operational design - demand profiles and rolling stock capacity
- Modal capture - assessment of transfer of terminal parking for GTAA

Exclusion per Committee Direction

Summary of key conclusions

- Forecasts show that the ARL will be well-used - 3.08m passengers in 2020, generating gross revenue of $57.84m (2011 prices)

Exclusion per Committee Direction

- Most (62%) of the ARL demand is abstracted from the taxi mode
- GTAA parking abstraction is low - the revenue loss of $7.52m in 2020 (2015 prices) equates to annual access charge of $2.44 if spread across all ARL users
- Train capacity with 2-car DMUs (130 seats) is adequate for most hours of the year though there will be occasions when crowding occurs - further work will be needed to assess if there is a case for early procurement of additional cars

Commercially Sensitive Information

How we got there.....

Key updates since 2009

- Updated set of air traffic forecasts developed
  - Includes profile of passengers for each hour of the day (time of day profiles)
- New distribution of trips around GTHA using GGHM and TTS population and employment forecasts
- Times on existing modes reviewed and updated
- Costs on existing modes reviewed and updated
- Change in assumptions on Eglinton LRT
- Airport rail link operational assumptions updated to reflect Metrolinx plans

Exclusion per Committee Direction

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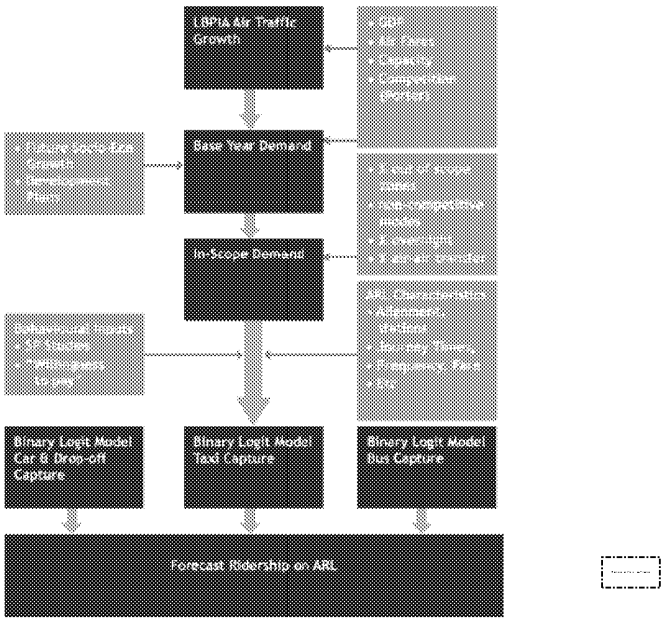
Forecasting Methodology



In-Scope zones

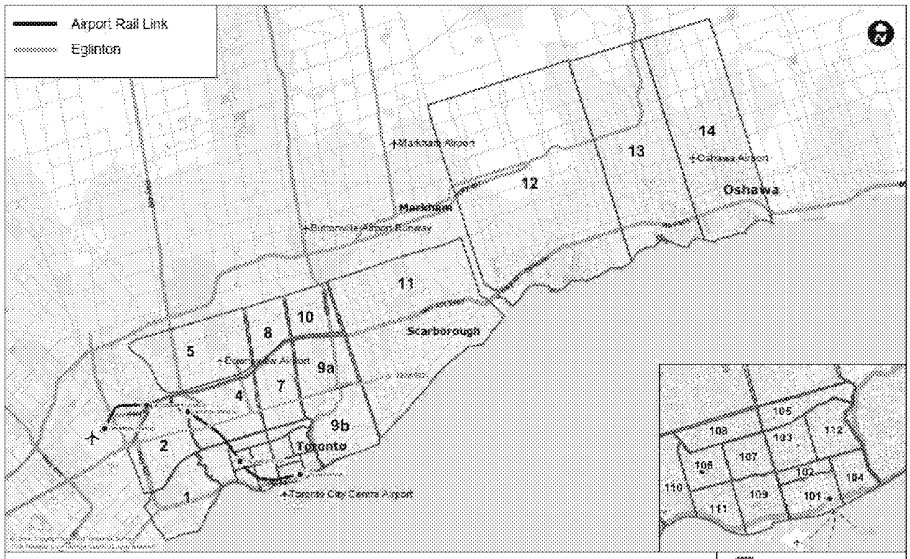


Figure 1: Location of zones

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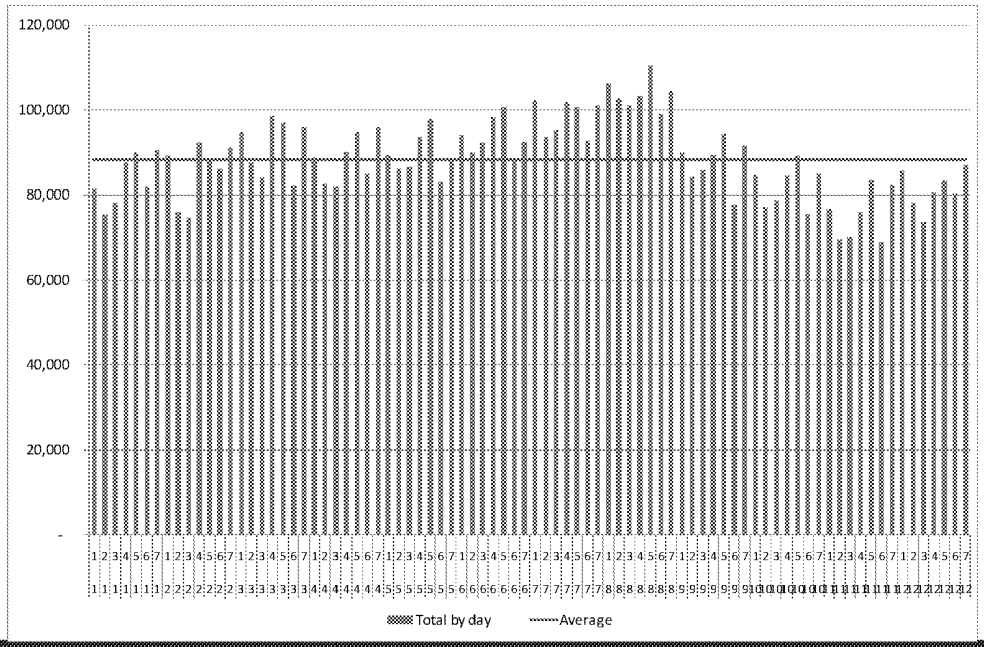
Potential Demand

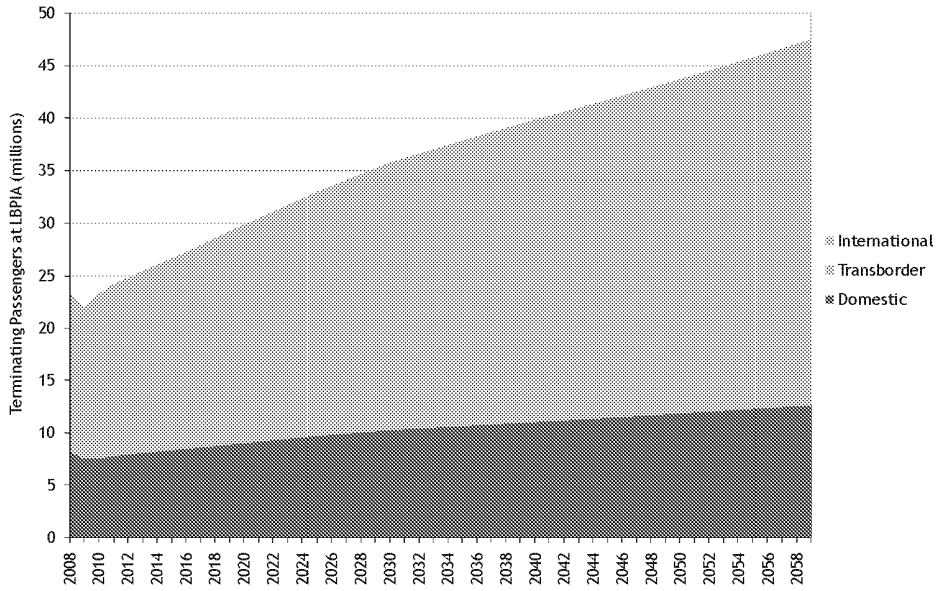
We have developed new air traffic forecasts - these are lower than GTAA forecast

- Developed new air traffic forecasts for 2011 to 2031
  - By flight sector: domestic, transborder, international
  - For the whole of the GTHA: LBPIA, Billy Bishop, Hamilton
  - For originating and departing air passengers
- Key drivers of demand: cost of air travel and GDP per capita
- Take into account competition: Porter, changes at City Airport
- Revised recession impact based on actual air traffic between 2009 and now
- Daily profile developed using 2010 passengers profiles provided by GTAA

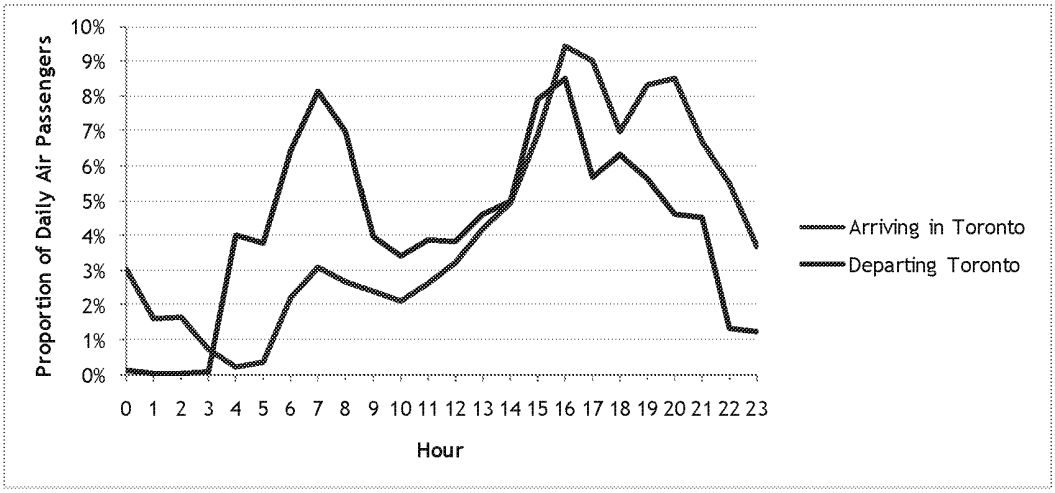
August is the busiest month for airport passengers, for all days of the week



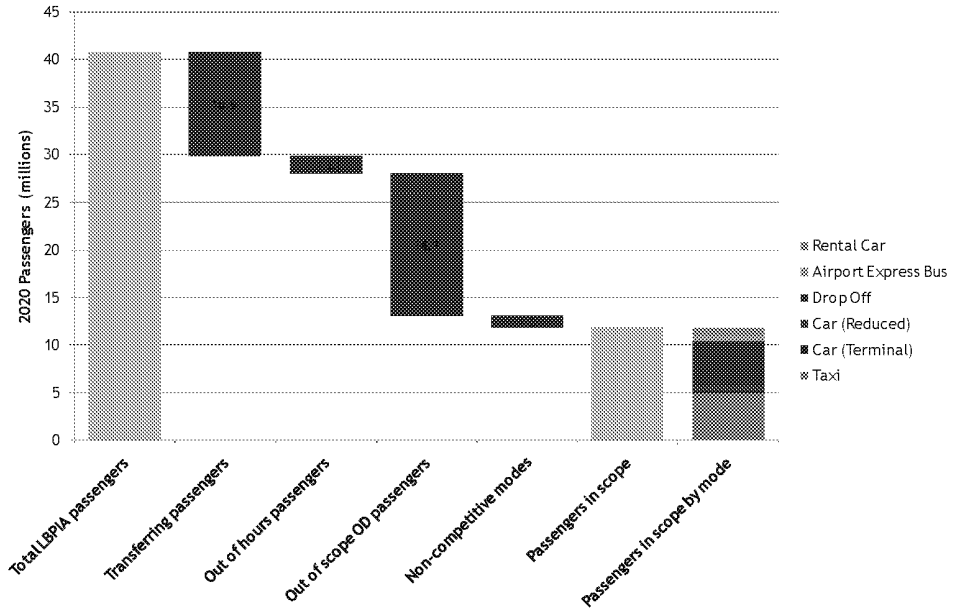
Our forecasts show strong growth in air traffic forecasts (terminating pax)



Only 6% of passengers travel between the hours of 01:00 and 05:00



Derivation of In-scope demand (2020)



Central Case Forecasts

Central Case Headlines

- For 2020, ARL forecast to carry 3.08 million passengers - this is 26.1% of the in-scope demand and 10.3% of all terminating passengers
- Highest capture rate is from express bus (70%), then taxi (39%) and parkers at terminal (22%) and reduced lot (18%)
- In terms of demand, greatest transfer to ARL is from taxi mode that accounts for 62% of the new ARL demand; 44% of all ARL demand would previously have used taxi to access/egress downtown Toronto
- Only 2% of ARL demand previously parked at the terminal
- Revenue return in 2020 assuming $20 single fare is $57.8m (2011 prices)

Exclusion per Committee Direction

Forecasting ARL Capture: ARL Service Characteristics

- Central Case assumptions:
  - Opening Date: 5th April 2015
  - Operating 365 days a year from 05:00 to 01:00
  - Stops at Union, Bloor, Weston and LBPIA
  - Opening day fare (one-way per passenger 2015 prices):
    - $20 from Union and Bloor, $15 from Weston
    - Includes taxes
  - Journey time from Union to LBPIA: 25 minutes

Exclusion per Committee Direction

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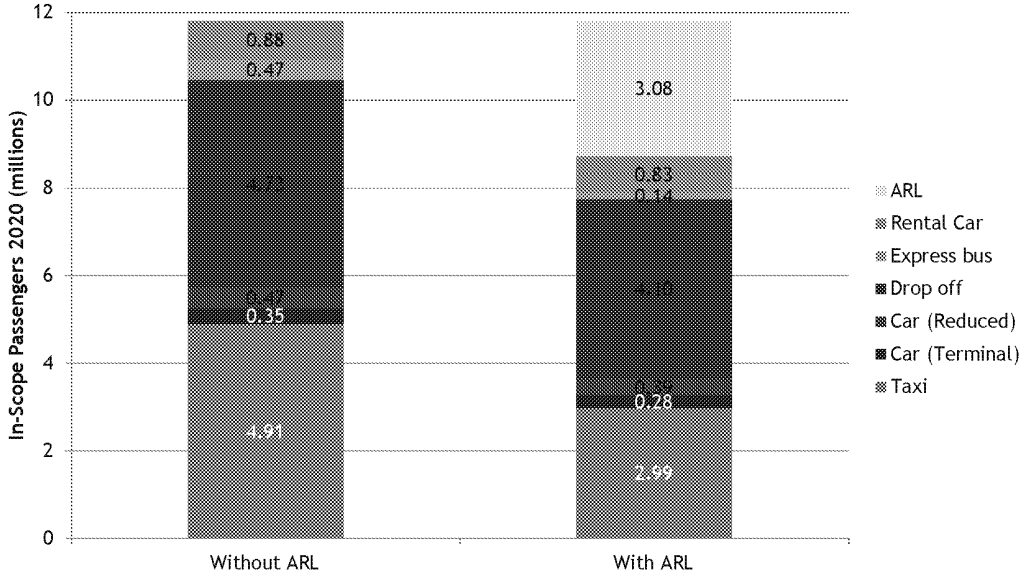
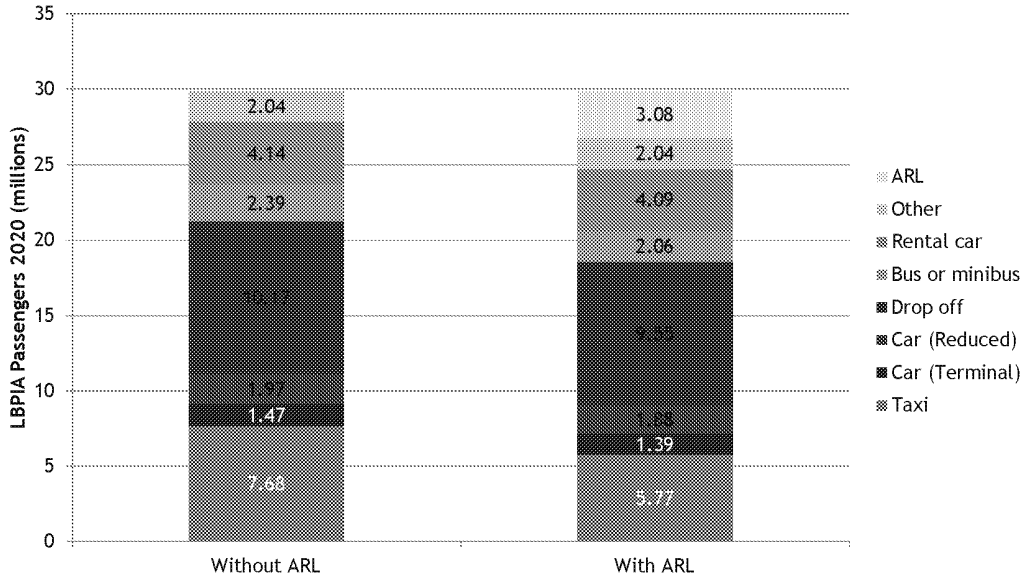
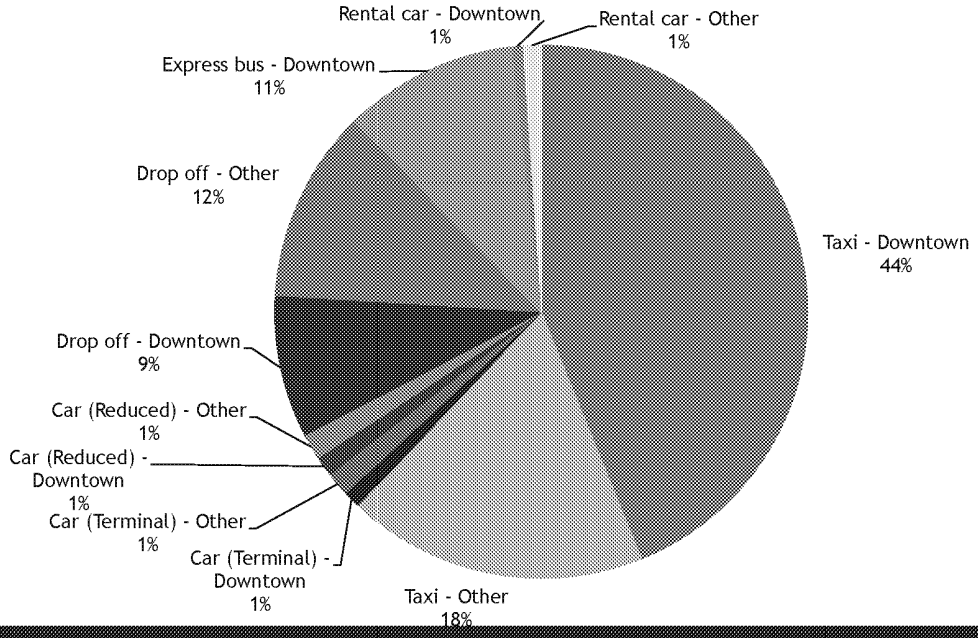
The ARL will capture 3.08 million passengers (21.6% of in-scope passengers) in 2020



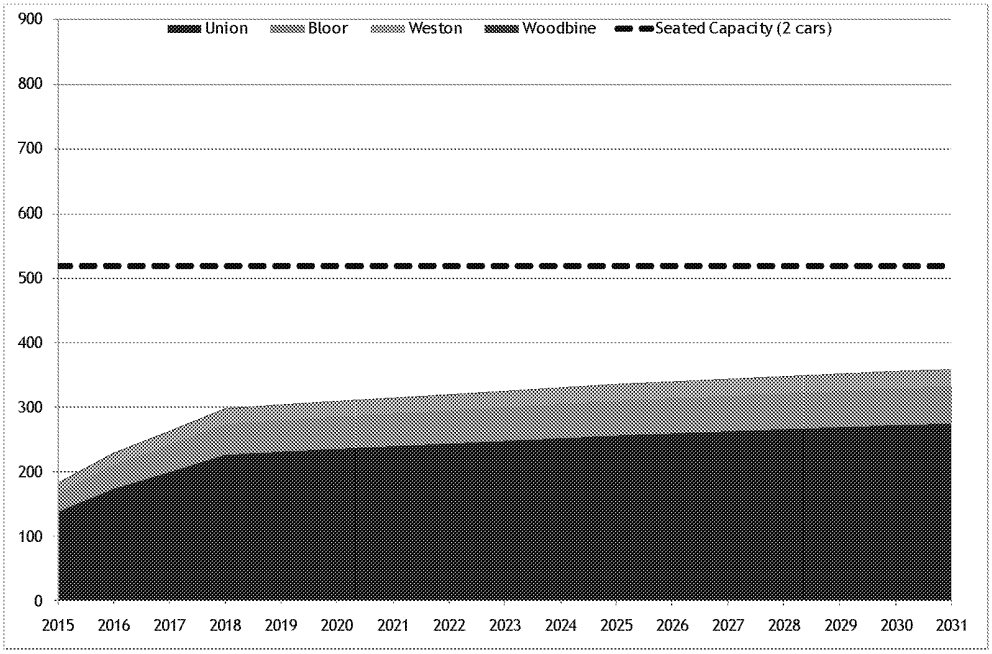
Overall ARL capture rate is 10.3% of all terminating passengers



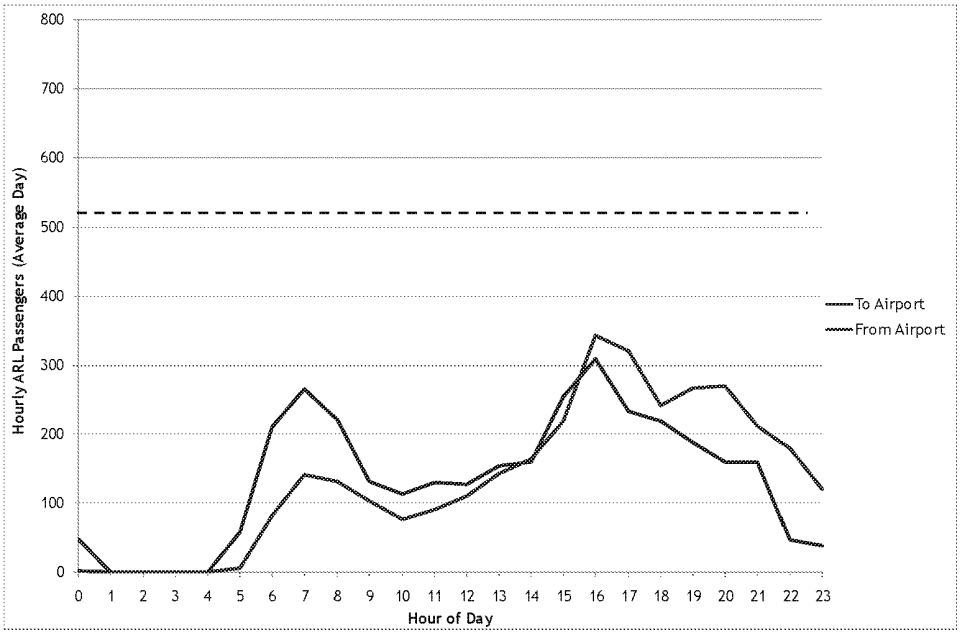
Taxi is the dominant mode from which ARL extracts demand



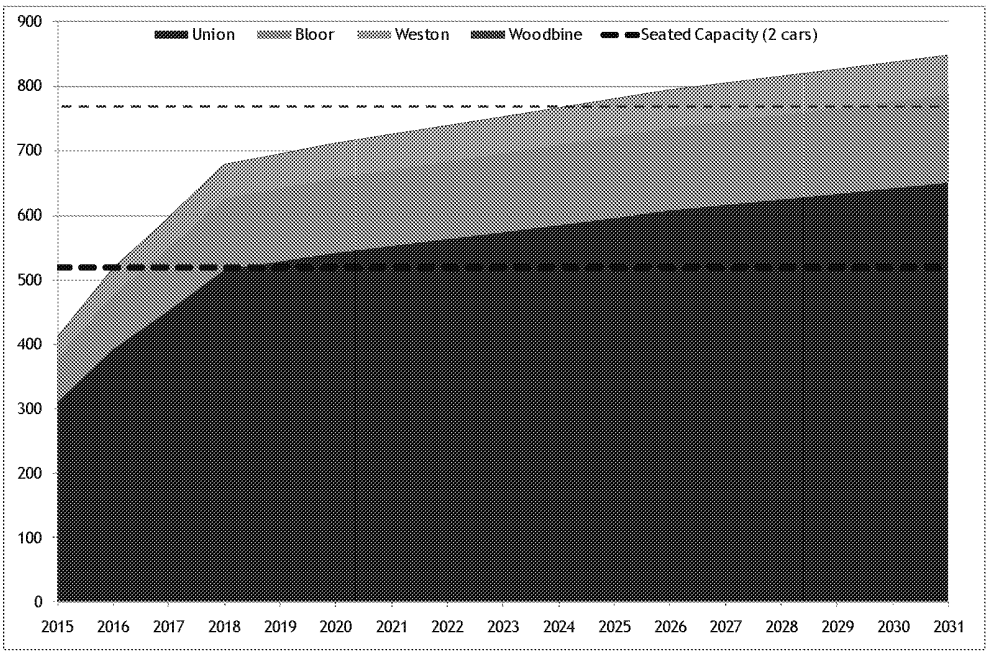
For an average day, peak hour demand can be accommodated



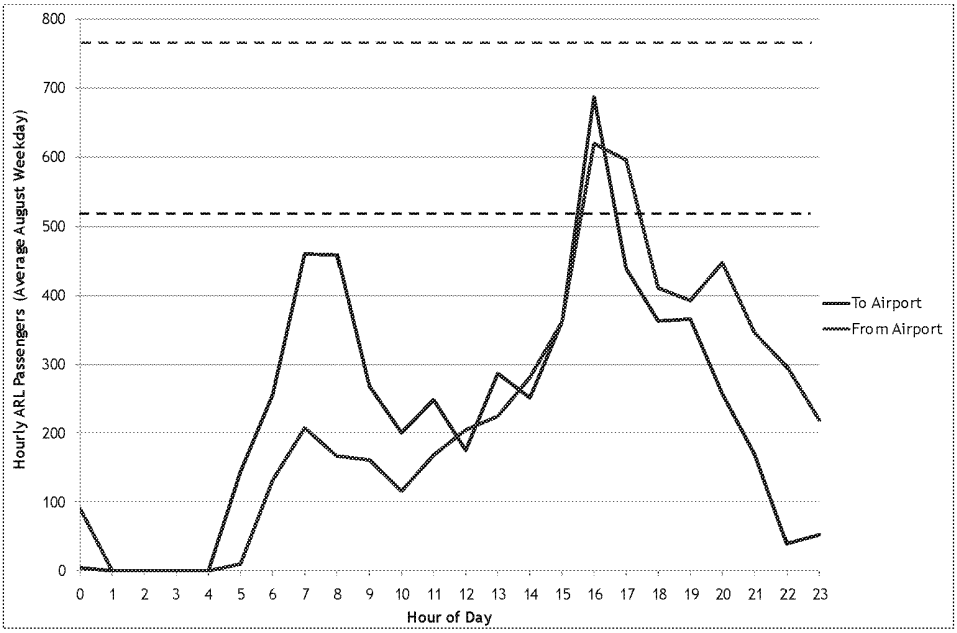
The peak passenger flow for ARL will be 16:00-17:00 for flows to and from the airport on an average day (2020)



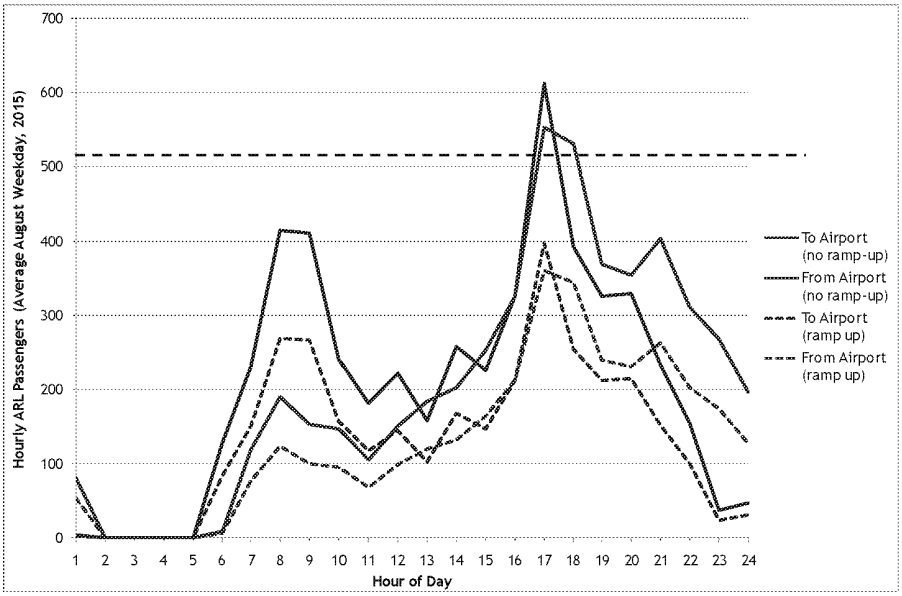
In August, the busiest month, demand exceeds capacity of a 2-car unit



The peak hour flows create significant crowding issues (2020)



This could be less of an issue in 2015, subject to ramp-up



The emerging demand forecasts indicate that the assumed 2-car fleet will be placed under pressure at certain times of the day and year

- Analysis shows that compared to the average August weekday there are 22 days that have a higher peak hour airport passenger flow
- Translating this against the ARL annual figures, there will be a significant number of days where standing will occur during the peak hours
- During any individual hour, the profile will be relatively flat compared to a normal commuter rail operation
  - but there will be peaks within the peak - this will lead to quite significant crowding
- This effect will start from early in the life of the ARL, and must strengthen the case for procuring 3-car units from the outset (or soon after operations commence); the alternative would be to raise fares

Exclusion per Committee Direction

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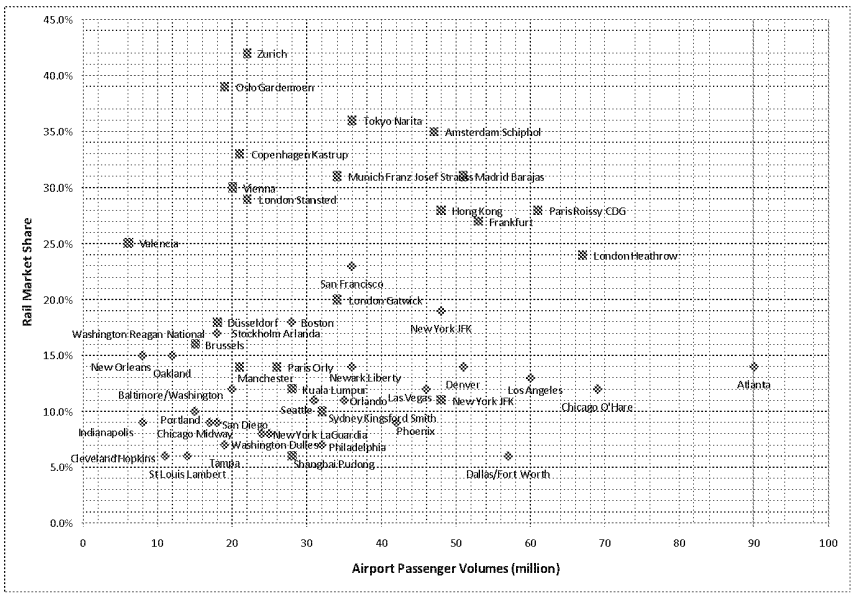
Benchmarking

Rail Mode Share & Airport Passenger Volumes



Exclusion per Committee Direction

Next Steps

- Finalise central case
- Produce forecast for Woodbine option
- Agree report structure
- Produce and circulate report
- Confirm timescales

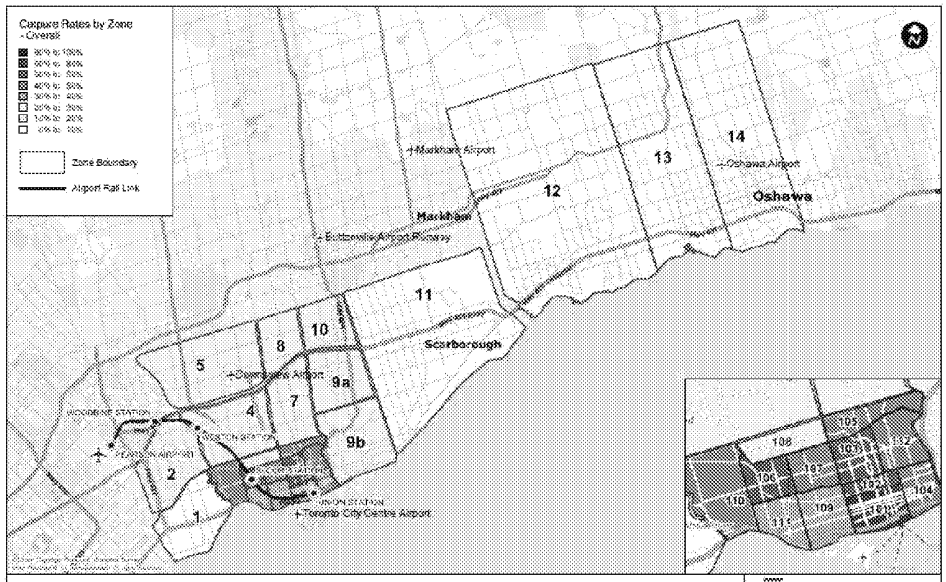
Disclaimer Notice

- The projections of traffic and revenue contained within this document represent Steer Davies Gleave's best estimates. While they are not precise forecasts, they do represent, in our view, a reasonable expectation for the future, based on the most credible information available as of the date of this report.
- However, the estimates contained within this document rely on numerous assumptions and judgements and are influenced by external circumstances that can change quickly and can affect ridership and associated revenues.
- It has been necessary to base much of this analysis on data collected by third parties. This has been independently checked whenever possible. However Steer Davies Gleave does not guarantee the accuracy of this third party data.

Exclusion per Committee Direction

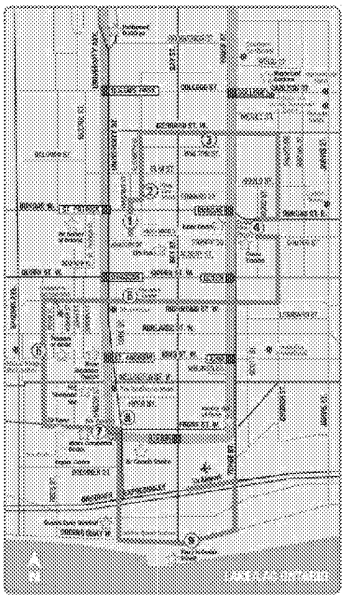
Any Questions?

Capture rates by zone: overall



How do passengers currently travel to LBPIA?

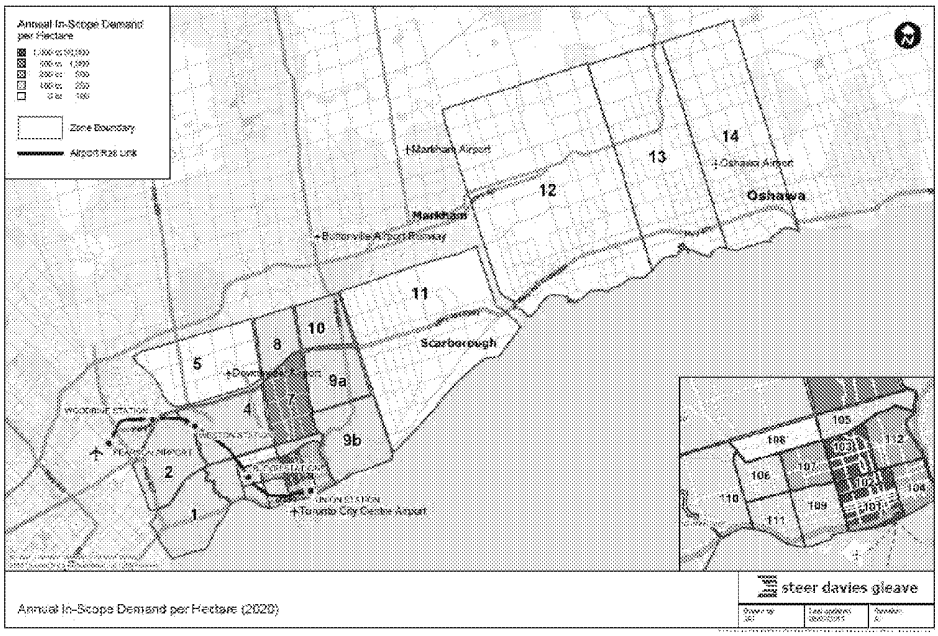
- Taxi:
  - Average fare from downtown approx $50 one way($ 2009)
  - Journey times can vary on average between 30 minutes and an hour depending on time of day
  - Current market share of passengers travelling from in-scope zones: 42%
- Airport express bus:
  - Average fare from downtown $21 one way ($ 2009)
  - Journey times: between 30 minutes and over an hour from areas downtown depending on the time of day
  - Current market share of in-scope: 4%



How do passengers currently travel to LBPIA?

- Park and Fly:
  - Parking at reduced rate lots and at the terminal
  - Average length of stay 4 nights
  - Assumed parking fees: $105/trip terminal, $67/trip reduced rate lot
  - Current market share of in-scope passengers: 7%
- Kiss and Fly: 39%
- Rental Cars: 8%
- Other modes assumed out of scope for transfer:
  - Hotel shuttles, limos, local buses including Airport Rocket

Distribution of In-Scope Demand



Annual In-Scope Demand per Hectare (2020)

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Forecasting ARL Capture

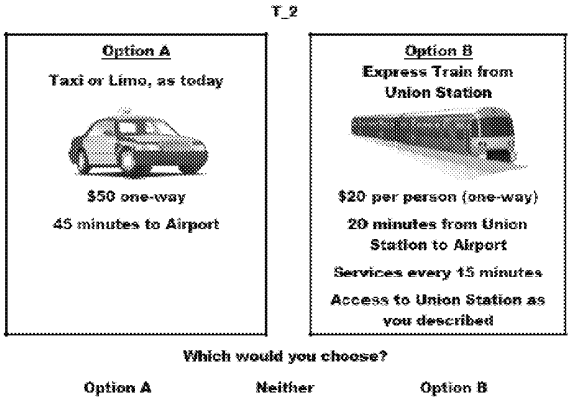
Forecasting ARL Capture: Overview

- Capture model based on a set of binary choices between ARL and existing modes of transport
- High level of segmentation representing different geographical areas in Toronto as well as a large number of different market sectors:
  - Current mode, Journey purpose, group size,
  - Residency, time of day, international or non international travel
- The total journey cost (expressed as generalised time, GT) for each group is compared - the larger the difference the higher the propensity to use ARL
- For example:
  - ARL GT = access time + access cost + waiting time + time on ARL + ARL fare

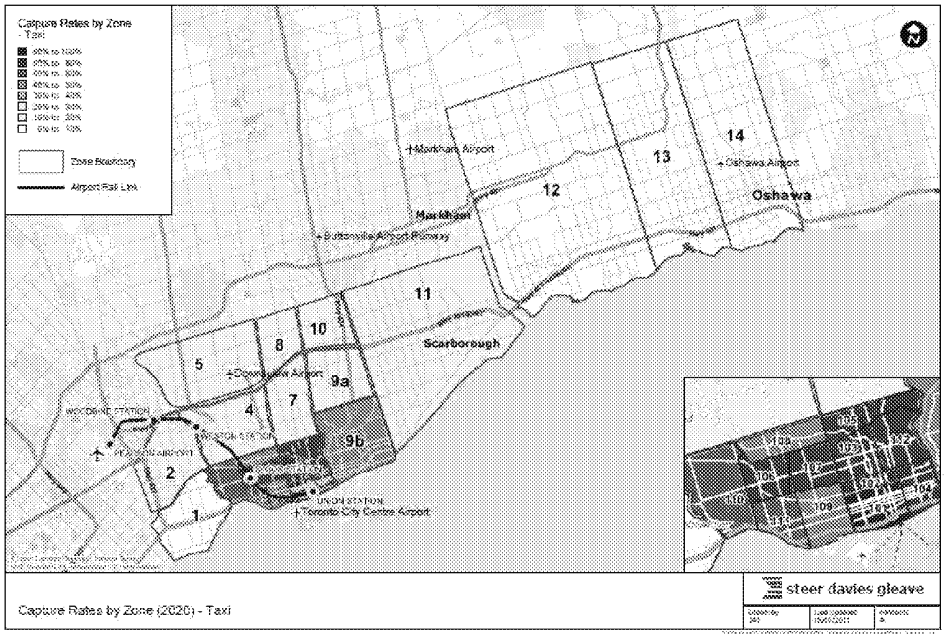
Exclusion per Committee Direction

Forecasting ARL Capture: Behavioural Parameters

- Behavioural parameters adopted from the 2009 Stated Preference survey undertaken with airport passengers on behalf of SNC Lavalin
  - Values of time
  - Modal preferences
  - Headway weights
  - Access weights



Capture rates by zone: from taxi



Capture rates by zone: from park & fly (terminal)