

Technical Media Briefing: SmartTrack Ridership Forecasts, Release 1, Summary Report

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State of Travel Demand Forecasting

- This report represents the culmination of a year's hard work developing a new state-of-the-art travel demand forecasting model which can now be used by the City of Toronto on future transportation planning projects.
- The SmartTrack work program provided the impetus to accelerate the completion of the new model by the University of Toronto. GTAModel Version 4 replaces the City's previous model, GTAModel Version 2, which has been in use since 2001.
- The first application of this new model has been the assessment of SmartTrack ridership.



Features of New Model

GTAModel Version 4 provides numerous advancements relative to GTAModel Version 2:

1. Calibration of the model using the most recent comprehensive region-wide travel behaviour survey data available;
2. Capability to simulate full day (24 hour) travel demand;
3. Improved representation of counter-peak commuter flows:
4. Providing greater flexibility to model alternative fare structures; and
5. Introducing capacity constraints on the transit network.



SmartTrack Scenarios Modelled

A number of different assumptions about SmartTrack service characteristics were tested. These attributes have been applied to the base SmartTrack network (i.e. continuous heavy rail between Unionville and the MACC). These assumptions include alternative:

- Service frequencies
 - 5, 10 and 15 minute headways
- Fare structures
 - GO fare versus TTC fare
- Population and employment forecasts
 - Five different scenarios
- Horizon years
 - 2031 and 2041
- Western alignments
 - Continuous on Eglinton, Northern Alignment, Eglinton Crosstown Phase 2



Key Findings

The ridership forecasts show that:

- SmartTrack is capable of capturing significant ridership assuming a TTC fare and five minute service, regardless of the growth scenario or the horizon year. For example, using the base case scenario, forecasts for 2031 indicate daily boardings ranging from 282,990 to 321,436.
- SmartTrack assists in providing congestion relief on the Yonge Subway at the critical point south of Bloor. For the base SmartTrack network scenario this is currently calculated at 17% in both 2031 and 2041 with 5 minutes headways (see Table 3.1 and Appendix Table I.5 in the Summary Report).

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2031 SmartTrack Boardings and Net New System Riders

All-day boardings on the SmartTrack service by fare & headway scenarios.

SmartTrack Headway	2031 TTC Fare Scenario	2031 GO Fare Scenario
15 min	76,617	37,680
10 min	154,296	61,358
5 min	314,567	108,014

Net new transit riders (all-day)

SmartTrack Headway	2031 TTC Fare Scenario	2031 GO Fare Scenario
15 min	20,124	14,452
10 min	30,769	17,875
5 min	48,332	22,369



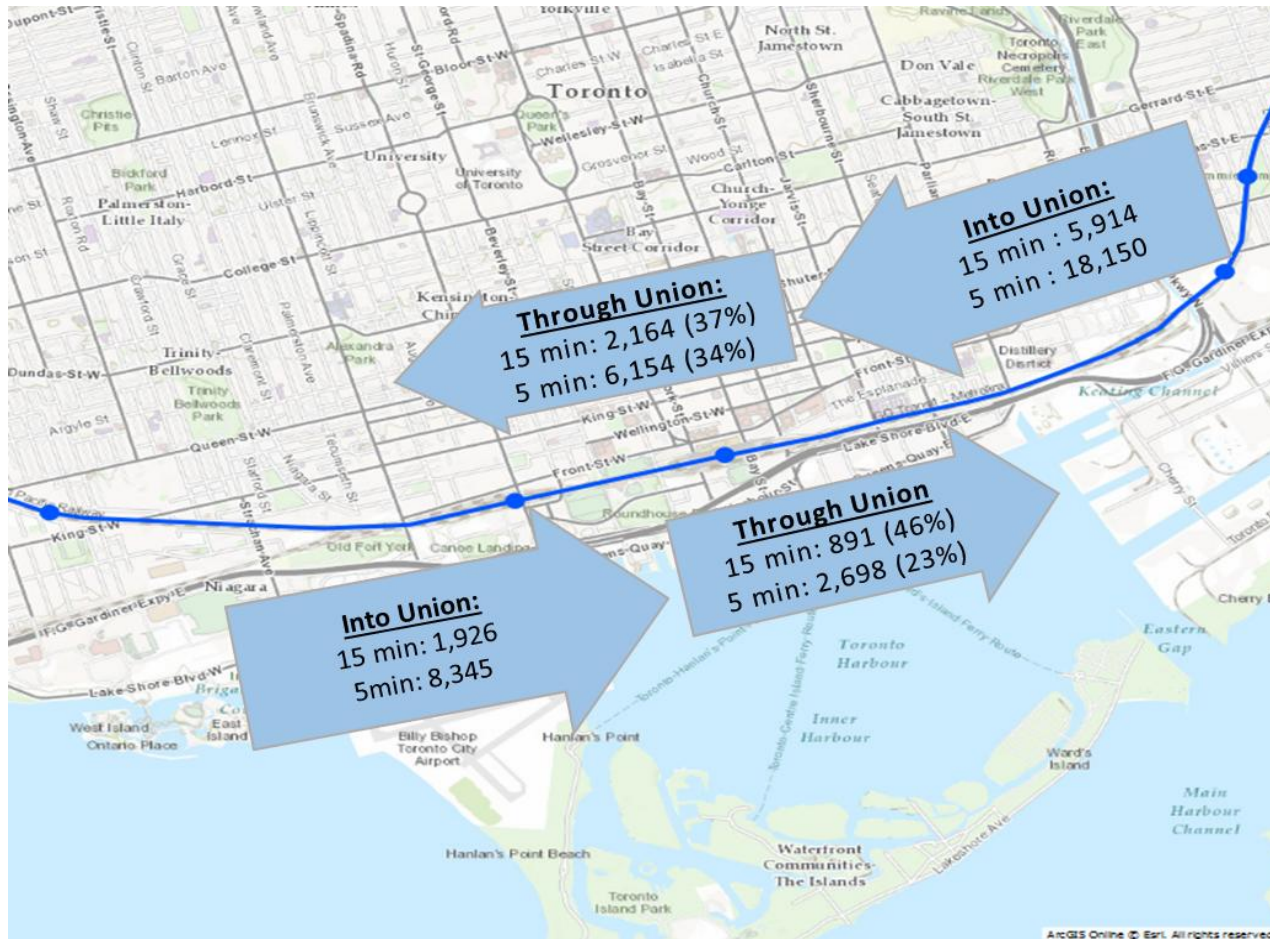
2031: Results for Different Land Use Scenarios

Land Use Scenario	SmartTrack Headway	All Day Boardings on SmartTrack	Net New System Riders
Low Population / Low Employment without SmartTrack influence	15	66,738	8,771
	10	135,021	17,741
	5	286,476	35,633
Low Population / Medium Employment without SmartTrack Influence	15	64,061	6,542
	10	131,711	15,012
	5	282,990	30,815
Low Population / Medium Employment with SmartTrack Influence	15	76,617	20,124
	10	154,296	30,769
	5	314,567	48,332
High Population / High Employment with SmartTrack Influence	15	78,252	**
	10	157,531	**
	5	321,436	**
Additional Regional Growth	15	79,660	**
	10	158,863	**
	5	320,907	**

*Assumes TTC Fare

**The base (no SmartTrack) case for this land use scenario has not yet been run and so new riders have not yet been calculated.

2031 AM Peak Hour – Through Union Volume



2031: Comparisons of Western Alignments

Western Alignment	SmartTrack Headway	All Day Boardings on SmartTrack**	Net New System Riders
Continuous on Eglinton	15	76,617	20,124
	10	154,296	30,769
	5	314,567	48,332
Northern Alignment	15	86,886	24,934
	10	170,166	36,623
	5	335,118	58,155
Eglinton Crosstown Phase 2	15	105,331	25,746
	10	177,347	35,655
	5	336,702	54,283

**For the Eglinton Crosstown Phase 2 case, these include boardings on the Crosstown portion between Mount Dennis and MACC, so as to be comparable to the heavy rail options.

Yonge Line Relief: AM Peak Hour Volume South of Bloor Southbound (2031 vs 2041)

SmartTrack Headway	2031	2041
Base	38,752	41,761
15 min	37,451	40,668
5 min	32,090	34,869

* Assumes Low population/Medium employment with SmartTrack influence land use and TTC fare on SmartTrack

SmartTrack Boardings and Net New Riders: 2031 vs 2041

All-day boardings

SmartTrack Headway	2031	2041
15 min	76,617	97,942
5 min	314,567	377,783

Net new transit riders (all-day)

SmartTrack Headway	2031	2041
15 min	20,124	50,134
5 min	48,332	84,955

* Assumes Low population/Medium employment with SmartTrack influence land use and TTC fare on SmartTrack

