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To: John Livey, Deputy City Manager

From: Gregg Lintern, Acting Chief Planner and Executive Director

Re: **SmartTrack Ridership Analysis, Project Final Report**

I am pleased to send you the SmartTrack Ridership Analysis, Project Final Report.

This report encapsulates over two years of hard work developing a state-of-the-art travel demand forecasting model, GTAModel V4.0, and using it to assess the City of Toronto's future transportation planning projects. We are seeking permission to publicly release the report as it has been requested by certain stakeholders.

The model was developed and calibrated by the University of Toronto, and acts as a replacement of the City's previous model which has been in operation since 2001. It incorporates a number of improvements over the City's previous model that allow for a more rigorous analysis of transportation projects. For example, the model's ability to simulate a 24-hour travel demand instead of just the AM peak period gives City staff the ability to better understand travel patterns as they unfold throughout the day. In addition, this model has an increased flexibility in modelling different fare structures, counter-peak commuter flows, and capacity constraints. This makes GTAModel V4.0 a strong tool to assess transportation infrastructure and policy questions in the City of Toronto.

The material in this report has already evolved as a result of the continuing work done on the Relief Line Project Assessment, Eglinton East LRT and Eglinton West LRT, and SmartTrack.

The modelling results seen in this report were an important input into the Initial Business Cases that were presented to Council in July of 2016. That said, the modelling results were just one of many considerations that were taken into account in that Business Case process, which also analyzed certain qualitative measures for these transit projects (e.g., city building, social equity, etc.) As these projects reach their next milestones, and City staff

continue to refine these projects in partnership with Metrolinx, ridership analysis will be updated to reflect project updates. Appropriate documentation will be presented.

This report is organized to both explain the modelling structure and present some of the latest modelling results for the City's transit infrastructure projects. The first set of results, presented in Chapters 4 and 5, provide an update of the ridership results in the three separate appendices that were brought to Council on March 8th, 2016. These updates are as a result of continuous model maintenance and overall refinement of our technical processes. They show a number of small changes in the magnitude of certain results, but do not change the conclusions that were drawn in the original reports.

In addition to updating previously published ridership results, Chapters 4 and 5 also provide new analysis and results of the original SmartTrack concept, Relief Line Corridor Analysis, and Scarborough Subway Extension Ridership analysis. These results, which include catchment area maps and travel time savings, were helpful to City staff in the rigorous analysis of these projects.

Following this, Chapter 6 provides ridership results for the integrated RER/SmartTrack Service Concept (Options C and D), the Express Scarborough Subway Extension, and the latest Relief Line Alignment analysis. These results were a part of the Initial Business Case analyses that were completed for each of these projects in the summer months of 2016. Some of the results that are shown in Chapter 6 are as follows:

- SmartTrack Options C and D both represent an improvement over the Base RER Service Concept. In addition, both of these options offer significant "relief" to the over-crowded Yonge Line, especially at a TTC fare or higher-frequency.
- The analysis of two Relief Line Alignments (Pape to downtown via Queen Street, or, Pape to Eastern with a stop at Unilever then on to downtown via Queen) confirmed a strong usage of the line, with peak-hour ridership ranging from 26,800 to 28,700, and daily riders upwards of 165,000.
- The Scarborough Subway Extension Express option was briefly examined, finding that the extension would see approximately 7,300 peak hour, peak period, peak direction riders, and about 64,000 daily users.

It is important to note that these forecasts represent a moment in time. Since the completion of this report, numerous updates have been made to specific projects in the network, effectively changing the analysis presented herein. However, the conclusions of this report have been an important consideration in the decision-making process that City Staff has undertaken on major transit projects over the last two years.

(Original signed by)

Gregg Lintern
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