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Rotman School of Management
UNIVERSITY OF TORONTO

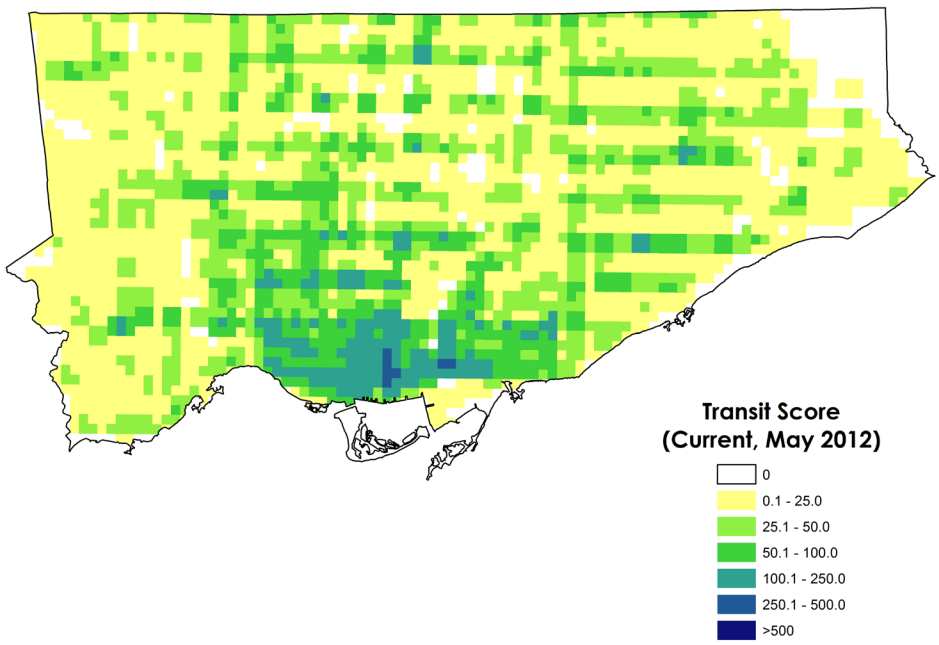
Moving Toronto Forward

While always a topic of conversation, transit in Toronto has become a lightning rod of media attention and public debate in the recent weeks (and admittedly months). Transit of all kinds remains a critical challenge to the future growth and prosperity of not only the GTHA/GGH but all of southern Ontario. Much has - and has yet to be said - about the provisioning and funding of transit for Toronto. While anyone can draw lines on a map, it takes environmental assessments, land acquisitions, careful engineering, a lot of hard work by construction and other trades workers, and billions of dollars to turn those squiggly lines into reality. In this Insight, we take a look at the potential impact that the expansion of public transit could have in Toronto. Transit planning in Toronto made its way back into the media, with Tim Hudak presenting his party's transit plan, which focuses on building underground subways.

Transit scores within Toronto's proposed transit plans

The map below (**Exhibit 1**) shown in previous Insights and here illustrates the number of transit vehicle stops within 500m of the center of each square made during an average hour during the day (hourly average determined by total number of stops between 7am and 8pm on regular weekday service). The Transit Score Index, developed at the MPI, is one tool to examine the distribution of transit access in our city. Stops are then weighted using a non-linear scale by relative vehicle capacity, so a subway is weighted by 1.0, streetcars by 0.5 and busses by 0.25. For example, a score of 20 for a square could mean that in an average hour there might be 20 subways stopping

Transit Score (Current, May 2012) — Exhibit 1



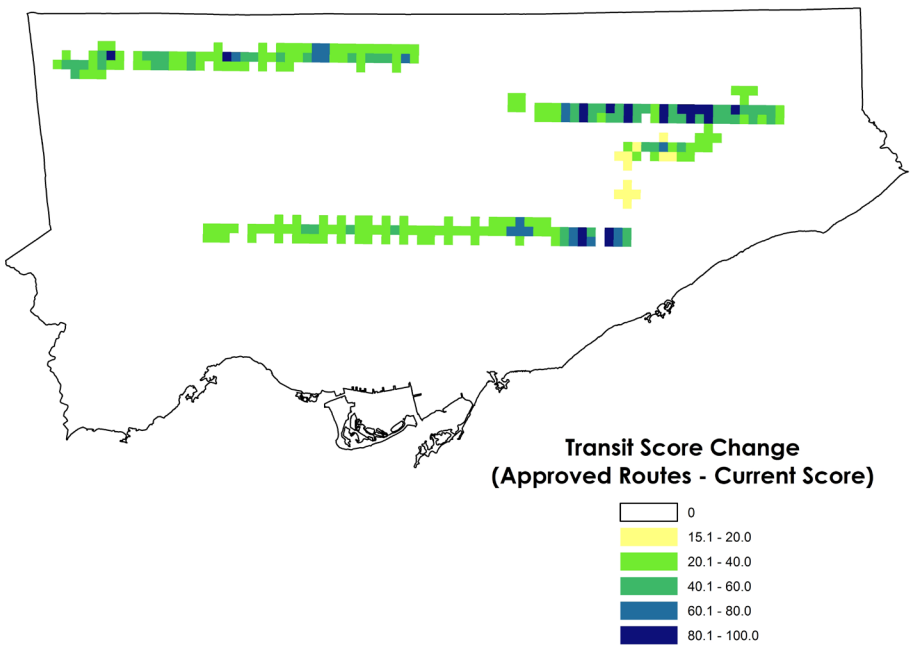
Map by Zara Matheson, Martin Prosperity Institute

(one every three minutes, either direction), 40 streetcars or 80 buses within a short walk from the center of that square. More likely is a combination, something like 20 streetcars and 40 busses. The average transit score for Toronto is 29.5. This score could represent three north-south bus stops and three east-west bus stops within the 500m distance, with a bus stopping at each every 10 minutes in both directions (30 eastbound, 30 westbound, 30 southbound, 30 northbound for a total of 120 at 0.25 scoring equals 30.0).

With this in mind, we can then examine the impact approved transit expansion (the new Eglinton, Finch, Sheppard LRTs and the SRT replacement), we used the most applicable information available, regarding the alignment of the new routes and anticipated stops. While still likely to change, they represent a pretty good approximation of what new transit opportunities will be available on their completion. We weighted LRTs at 0.75 (between subways at 1.0 and streetcars and 0.5). This weighting was selected as the LRTs have capacity that is larger than a streetcar and yet smaller than a subway. We also assumed that the existing buses on the Eglinton, Finch, and Sheppard routes would remain. The existing buses would likely change in some regard, but there would possibly still be a necessity for these buses to shadow the subway as a feeder system to bridge the gap between stations. Similar to the Yonge bus that runs north of St. Clair. The LRTs were assumed to stop every three minutes in both directions (40 total stops per hour) during rush hour and every five minutes (30 total stops per hour) during the rest of the day.

The map below (**Exhibit 2**) shows the net increase in transit availability that will be created by these three new lines and the SRT replacement. Replacing the SRT with an LRT, besides being a technical necessity, also does allow for the creation of additional stops and an expansion of that line. As expected, the increases are where the new LRT lines are being installed. This approach does not include reductions in total travel time that these new lines will create for people who currently transfer to these busses from other lines or the improved service that these lines create for the entire TTC system. As only local accessibility to transit is being mapped, the impact is shown only within 500m of the potential new stops.

Transit Score Change (Approved Routes – Current Score) Exhibit 2



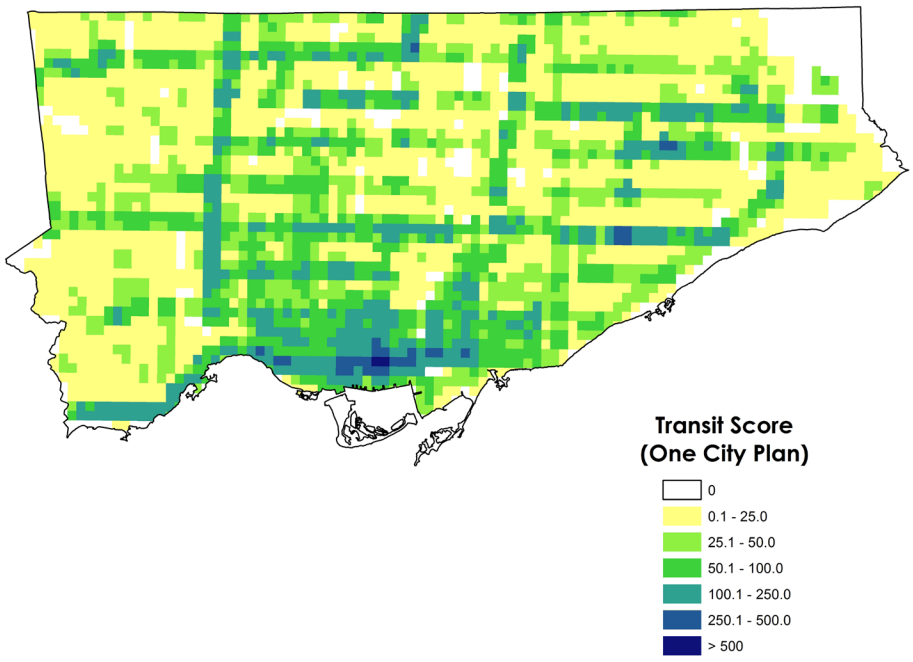
Map by Zara Matheson, Martin Prosperity Institute
Contains public sector Datasets made available under the City of Toronto's Open Data Licence v. 2.0

The final map (**Exhibit 3**) uses Councilor Karen Stintz's "One City" plan as a basis for looking at what public transit accessibility in Toronto could look like. We appreciate and understand that this particular plan is not official or even being seriously considered for approval. However, it does represent the most recent attempt at 'drawing lines on a map' and includes most elements that are generally seen as likely, desirable or necessary such as streetcar expansion to the Port Lands/waterfront, LRT replacement for the Lakeshore line, multiple connections to Pearson Airport, and a downtown relief subway. When a line was completely replaced (the Lakeshore), only the LRT scoring was kept and the current streetcar eliminated. Most of this plan is new transit. Stops were assumed to be at all major intersections – essentially places where current bus routes would intersect with new LRT or subway lines. The same weights and assumptions about stop frequencies were used.

Although small portions of Toronto would still have reduced accessibility to transit, the new plan spreads greater accessibility across the entire city. And, while accessibility is increased downtown, new major transit hubs are created at Yonge and Finch, Kennedy, and Scarborough Centre. While some places still have lower transit accessibility, they would be closer to places with greater accessibility. If 1km instead of 500m squares were used, nearly the entire city of Toronto could be a 15 minute walk away from four different transit stops where a bus or faster transit option would be going north or south or east or west every six minutes.

Different transit plans lead to different results for the citizens that use public transit. In a city such as Toronto where many areas far from the core are less serviced by transit, any proposed plan must take this into account. As displayed in this Insight, using transit scores is a successful indicator in determining the impact that specific transit plans will have on serving the city's populous. This approach can be used to further the debate of differing transit plans within Toronto.

Transit Score (One City Plan) Exhibit 3



Map by Zara Matheson, Martin Prosperity Institute

The Martin Prosperity Institute at the University of Toronto's Rotman School of Management is the world's leading think-tank on the role of sub-national factors—location, place and city-regions—in global economic prosperity. We take an integrated view of prosperity, looking beyond economic measures to include the importance of quality of place and the development of people's creative potential.