

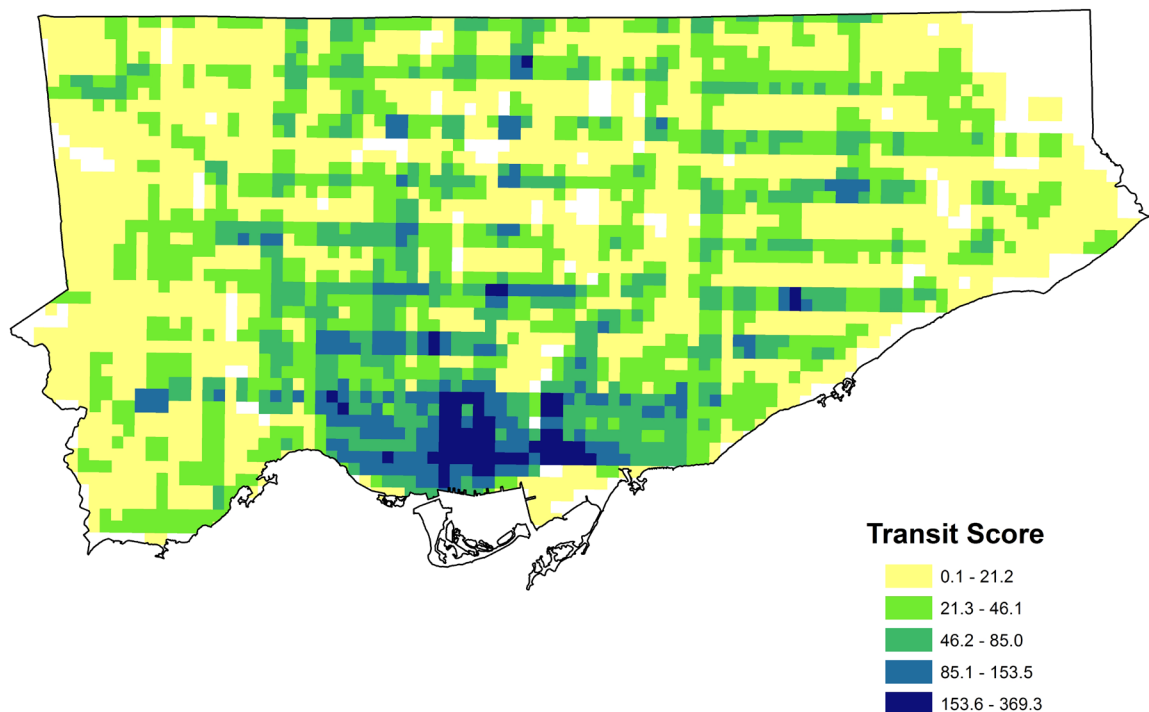
## The Many Cities of Toronto's Public Transit

In previous [insights](#), the Martin Prosperity Institute (MPI) examined transit access in the City of Toronto using a Transit Score that was determined by number of stops within 500m (less than a 10 minute walk) of the center point of a census block and how often a bus, subway, or streetcar stops there in an average hour. This analysis found that for most part, downtown Toronto had the highest transit accessibility, while the inner suburbs of the city had the lowest transit scores. The densely populated core benefits considerably from greater access to a large number of subway stations and connecting streetcars within a short distance.

Recently, the MPI updated these maps using 250x250m grids, instead of census blocks, to obtain a more uniform view of transit access across the city. The data used to generate these maps have been updated using the most recent Google Transit Feed Data available (May 2012), which includes the latest TTC service revisions.

Toronto Transit Score

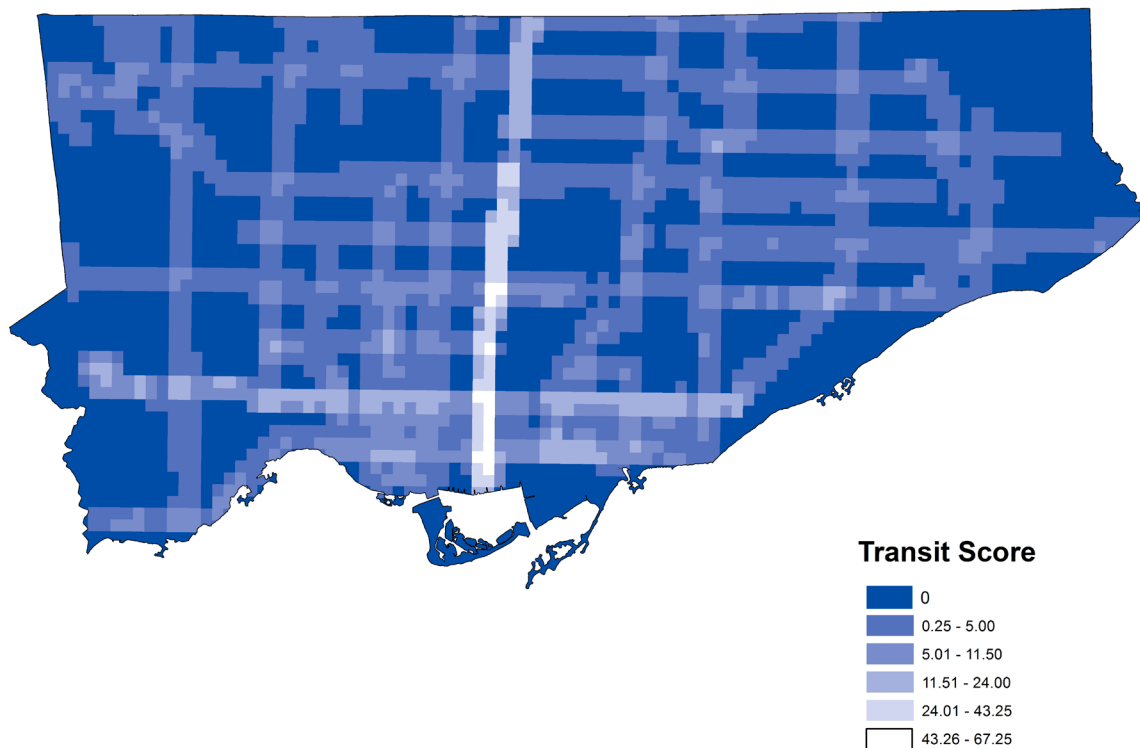
Exhibit 1



Map by Zara Matheson, Martin Prosperity Institute  
Contains public sector Datasets made available under the City of Toronto's Open Data Licence v2.0

The map above 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). Stops are then weighted by relative vehicle capacity, so a subway is weighted by 1, 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 (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. From the map we can see that the downtown is significantly better served than the city's inner suburbs. The blue areas on the map are mostly subway stops and places where people have more than one transit option, while white areas have a score of zero. 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).



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With the updated data, the MPI has also developed a transit score for the city at night using the Blue Night Network routes. The map in Exhibit 2 uses a similar methodology as the first, but instead of an average, the transit score is calculated using the total number of stops between 3am and 4am. On this map, white areas that have the highest scores and the darkest blue areas have scores of zero. The overall grid pattern of the transit system is very apparent on this map, with Yonge and Bloor streets standing out as the primary nighttime arteries. There are actually some sections along Yonge and Bloor Streets that are better served at night than during the day as buses fill in the gaps between subway stations. The average nighttime transit score for the city is 2.9. The highest nighttime scores are significantly lower than the highest daytime scores, reflecting the longer wait times between busses and streetcars and the lack of subways. There are also a number of places, mostly outside the downtown core, that had some service during the day but have none at night.

## Alternate Work and Alternate Transportation

In 2011 KPMG conducted a [core services review](#) for the City of Toronto that identified eliminating or reducing the Blue Night Network as a potential cost saving measure. Ultimately the measure was not adopted, but the concern remains. The report argued that the reduction or elimination of the blue night network “would be a major inconvenience to a relatively small number of customers. Raising/doubling of fares on Blue Night routes would be an alternative way to offset high costs of service delivery.”

Previous MPI [research](#) suggests that this “small number of customers” are predominantly those that rely on public transit the most and would have trouble finding alternative routes or adjusting to higher fares. While data is not available for Toronto, [Statistics Canada](#) reported that close to 28% of employed Canadians worked something other than a regular day shift in 2005 and that shift work is often more common in occupations such as healthcare providers, protective services, sales and service and some manufacturing jobs. Service class workers (who make up about 46% of the workforce in Toronto) tend to have low average incomes and are thus more likely to depend on public transit. According to Statistics Canada 38.7% of employed workers who made under \$50,000 per year in 2005 took public transit to work in Toronto compared to 28.8% who made \$50,000 or above. 41.4% of those who make less than \$30,000 per year use public transit as their primary mode of transportation to get to work. A 2000 [report by Statistics Canada](#) on the “Factors Affecting Urban Transit Growth” pointed out that indeed “Changes in work patterns such as “work-at-home”, shift work outside the traditional 9 to 5 time frame, the location of work sites away from downtown areas and other similar factors have given urban transit planners a multitude of challenges.” While not all shift workers would be working hours that required early morning or late night transit service, it does highlight the fact that a system based on conventional weekday working hours does not always serve everyone in need of public transit. Transit planning and service availability are based on high residential or employment density and a regular nine to five workday and these spatial and temporal distributions that are increasingly less homogeneous than in the past.

*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.*