Transit Planning in Toronto

Toronto's planners envisioned transit hubs for the city's outlying areas. Big Data helped them model the potential impact transit could have on mitigating congestion and connecting neighborhoods with key activity centers.

EXECUTIVE SUMMARY

- Toronto planners needed metrowide travel data to estimate transit potential.
- Big Data provided on-demand metrics and multiple studies for Toronto's neighborhoods.
- Planners modeled transit's impact on specific corridors, and found opportunities to shift vehicle trips to other modes.

Mission: Connect Neighborhoods to Urban Core

The City of Toronto is planning vibrant, mixed-use neighborhoods around future transit infrastructure and an active, shared mobility network beyond the urban core. To move forward, the city needed areawide travel data to create accurate projections and to estimate demand for new infrastructure.

Traditional metrics do not capture the sources, patterns, and dynamic nature of trips. However, these measurements are important for prioritizing the best tactics to transform auto-oriented networks. Planners turned to StreetLight Data to study three major areas: Don Mills Crossing, Keele-Finch Plus, and Laird in Focus. "Traditional data generally provides information for peak hours and key streets only – but cities run around the clock on all streets. StreetLight InSight provides highly accurate 24/7/365 data to understand mobility patterns anytime and anywhere in the city."

DEWAN KARIM City of Toronto



Analysis: Identify Trips to Shift to Transit

Toronto's planners used StreetLight InSight[®] for ondemand travel analytics for three major neighborhoods to connect with downtown. In particular, planners studied:

- 1. The duration and volume of trips to key activity centers from the study areas
- 2. The circuity of routes in the study areas
- 3. The best alternative modes and network improvements for the most congested routes
- 4. Travel patterns, origins, and destinations at every street and intersection
- 5. The unique behaviors, patterns, and activities of commercial trucks

Normally, data collection would take months with sensors and survey deployment and interpretation. *StreetLight InSight* metrics are derived from a much larger sample than local surveys, and are available same-day. They also provide more complete information than sensors, without intensive human labor.

Results: Build Gateway Mobility Hubs

Planners were able to identify O-D and travel times of trips to the study areas, model the impact of transit and active transportation on specific corridors, and find opportunities to shift vehicle trips to other modes.

With archival data, planners could measure traffic infiltration as well as go "back in time" to collect travel data prior to construction projects. This helped planners determine the impact of construction.

These analytics informed planning studies for "Gateway Mobility Hubs" that will provide convenient, affordable, multimodal modes and improve connections to transit options in Toronto's outskirts.

Inbound Personal Vehicle Trips



Volume and destination zones of outbound personal vehicle trips that originate in the study area. This helped planners forecast the share of vehicle trips that could be converted to transit and/or active transportation modes.

Inbound Truck Trips



Volume and origin zones of inbound commercial truck trips to the study area. This data helped planners model the impact of new infrastructure on the movement of goods.



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