Understanding Job Accessibility: A New Policy Paradigm & Tool

How do transportation policies and urban form affect a location’s level and cost of access to jobs?
- Jason Neudorf, 2014

Introduction
Accessibility reflects the ability of individuals to reach their destinations, given interactions between transportation systems, land use, and individual resources.

Neudorf used data from the 2006 Transportation Tomorrow Survey (TTS), to develop a new tool to calculate how accessibility to jobs varies by transportation mode and location, and how cost compare across these modes.

What is Accessibility Profile Analysis?
Accessibility Profile Analysis (APA) calculates how many jobs could be reached for a given cost ($) using the least cost travel mode. “Generalized Costs” include dollar estimates of the time spent traveling, and fixed costs of travel (ie. fares, gasoline). “Reachable destinations” are the number of accessible jobs for a particular transportation cost. The curves can show areas underserved by transit, identify areas with higher transportation “barriers to entry” to the local job market, and find neighbourhoods that have poor employment access and/or infrastructure deficiencies.

APA could be used to compare different transport options:

- It could be used to evaluate the best transit mode - A) bus, B) light rail, or C) subways to deliver high access to jobs, parks or recreation at a low generalized cost.

- It could be used to determine impacts to a transport system by changing a particular piece of infrastructure, like a new freeway, or replacing A) streetcars with B) subways.

When examining different travel modes, the maximum access profile can be calculated. This metric can be used to decide the best travel mode for reaching the most jobs at a particular cost. This can help people make better travel choices, and aid policymakers in addressing low-income or vulnerable group access to the local job market.

What is the TTS?
The Transportation Tomorrow Survey (TTS), is survey of travel habits and socioeconomic factors, conducted in the municipalities of the Greater Golden Horseshoe. Each municipality is divided into smaller Transportation Activity Zones (TAZ) to preform analysis.
In Beechwood, taking transit or walking was more effective for shorter trips - above $11 using a car is the best travel mode, however, transit mirrors driving closely, indicating transit service provides modal redundancy.

In Uptown Waterloo, public transit and walking were the best ways to reach jobs. This is characteristic of a core urban area, and the low initial cost to travel to jobs indicates a high amount of localized employment available within the core area.

In Doon, the only effective way to reach employment was to drive. Based on the 2006 data, this area might benefit from closer employment sources, improved walkability and transit service.

In Downtown Kitchener, transit and walking were the most cost efficient way to reach jobs. Residents have a low barrier to entry, and have an excellent walking environment available.

*Note the higher access in the urban core, where ION light rail is being built to better serve travelers*

Values based on a generalized cost of $15 across all modes