Dynamic Mapping of Job and Labor Access in the NY Metropolitan Region

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3 states
31 counties
783 towns and cities
23 million residents
1929 First Regional Plan
1968 Second Regional Plan
1996 Third Regional Plan
Fourth Regional Plan Goals

- create **communities** that are dynamic, livable and resilient
- expand the region’s economic **prosperity** in an equitable and sustainable way
- **reform** the financial, institutional and regulatory structures necessary to implement smart planning decisions
Public engagement challenge

How can we relate large-scale, long-term regional issues to immediate, place-specific concerns?
Fragile Success
TAKING STOCK OF THE NEW YORK METROPOLITAN REGION

fragile-success.rpa.org
Individual Profiles

- Place of residence
- Gender
- Age
- Ethnicity
- Place of birth
- Educational attainment
- Household income
- Children in household
- Rent or own
- Employment industry
- Place of employment
- Commute mode
- Commute time
1. Health Care & Social Assistance
   - Community Hospitals

2. Health Care & Social Assistance
   - Oldenberg Medical Research Labs

3. Retail Trade
   - Selena’s Women’s Clothing

4. Educational Services
   - Mid-Queens Academy: Public School

5. Professional Services
   - DigitalLogistics: Software Developer

6. Accommodation & Food Services
   - Mi Casa: Restaurant

7. Administrative & Support Services
   - Kay Travel Unlimited

8. Finance & Insurance: Global Securities
   - Investment Bank

9. Manufacturing
   - Advertool: Fabricated Metal Plant

10. Wholesale Trade
    - Central Jersey Bottlers
Jobs for someone with a high school degree in Smithtown
Jobs for someone with a college degree in Smithtown
Health care workforce within a 45 minute transit commute of Hicksville
How many health care workers could get to Hicksville in 45 minutes if transit times were improved by 15 minutes?
Using the latest Census data as well as traffic and transit data from local transportation agencies, RPA’s new map unpacks job access with excruciating detail. Drop the pin anywhere in the tri-state area and you get a realistic picture of available jobs -- filtered by industry, education level, transit mode, and commute time.

Aside from showing unsurprising big-picture observations... the map can also uncover nuanced scenarios ripe for further study.

-Washington Post, 04.29.2014
Data sources and methodology

• Jobs/Workers/Industry/Education: 2011 LEHD Origin-Destination Employment Statistics (LODES)

• Tool development and creation: Kevin Webb of Conveyal

• Travel times (approximate a typical morning commute):
  - Public transit: publicly-available GTFS (General Transit Feed Specification) data sets
  - Biking and Walking: OpenStreetMap data set
  - Driving: OpenStreetMap (road infrastructure), OpenTripPlanner (travel times)

*NYMTC (NY Metropolitan Transportation Council) and NJTPA (NJ Transportation Planning Authority) Regional Transportation model used to determine rush hour travel times.
Challenges

• Travel times are an estimate and combine multiple transit preferences.

• Drive times: morning rush hour drive time estimates available for NY and NJ but CT only has daily average drive times (does not reflect rush hour commute).

• 2 types of public transit needed in our region: one for the urban core and another for everywhere else

• Public Transit: calculated using fastest travel time via any combination of walking and public transit use.
Access to Jobs: Live!

Access to jobs
How many jobs can you get to in the tri-state region? Move the pin to a new location and see the number change. Click on your preferred travel mode and filter by industry or education level to learn more.
Does the model reflect the lived experience?

Let’s explore my commute from Astoria, Queens to Union Square, NYC
I can’t make it to the office in 30 minutes by public transit (true) BUT I can make it in 45 minutes- success!
If I am willing to travel twice as long (I’m not) then I have access to over 300,000 more jobs!
Is it helpful that I have a college degree?
It is! I have access to almost 600,000 more jobs!
Next steps:

Use Conveyal’s Open Trip Planner to visualize future infrastructure

Consider how to incorporate job prediction

Release Access to Workforce Map