Transportation Network Companies (TNCs) in the Washington Region

Transportation Planning Board

April 6, 2018

metro planning

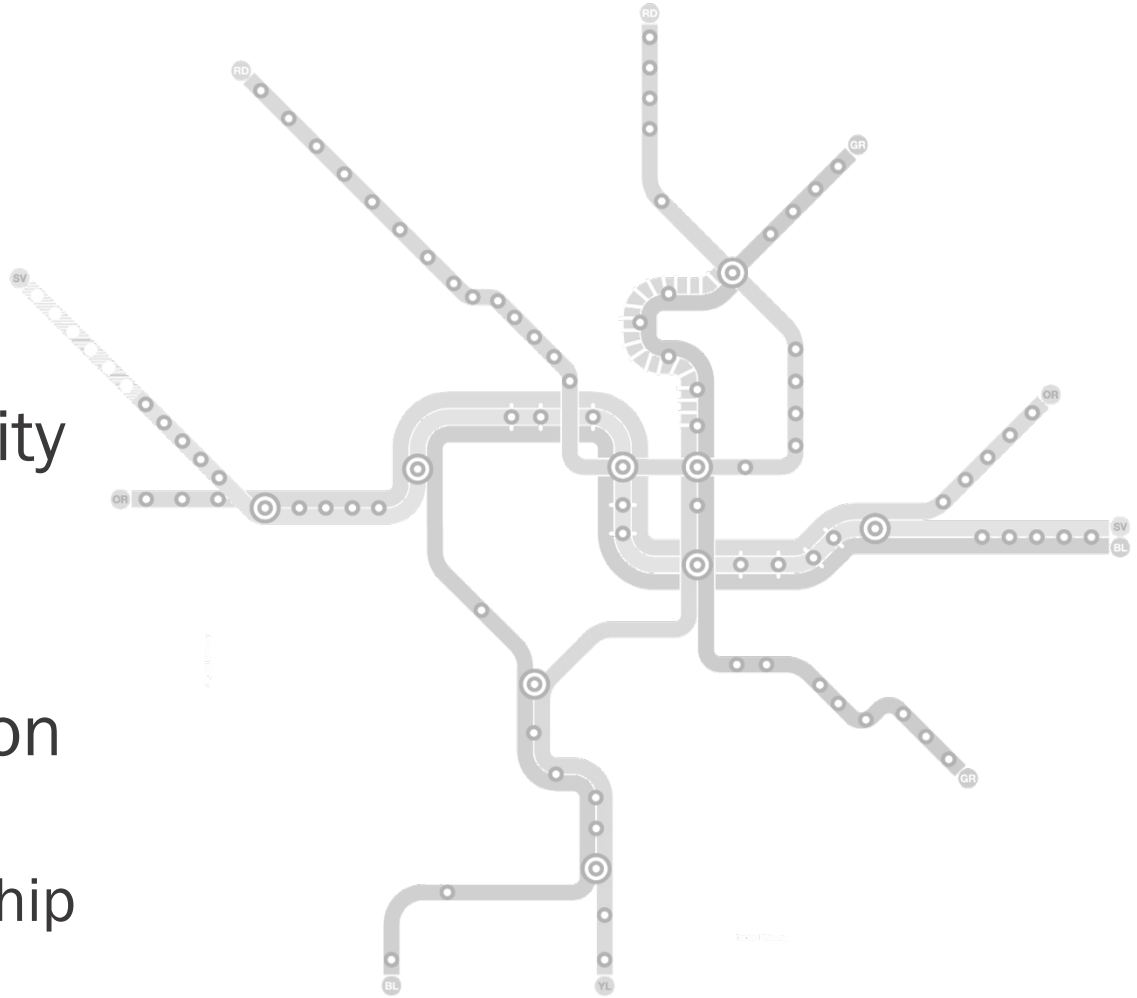
Washington Metropolitan Area Transit Authority

Purpose

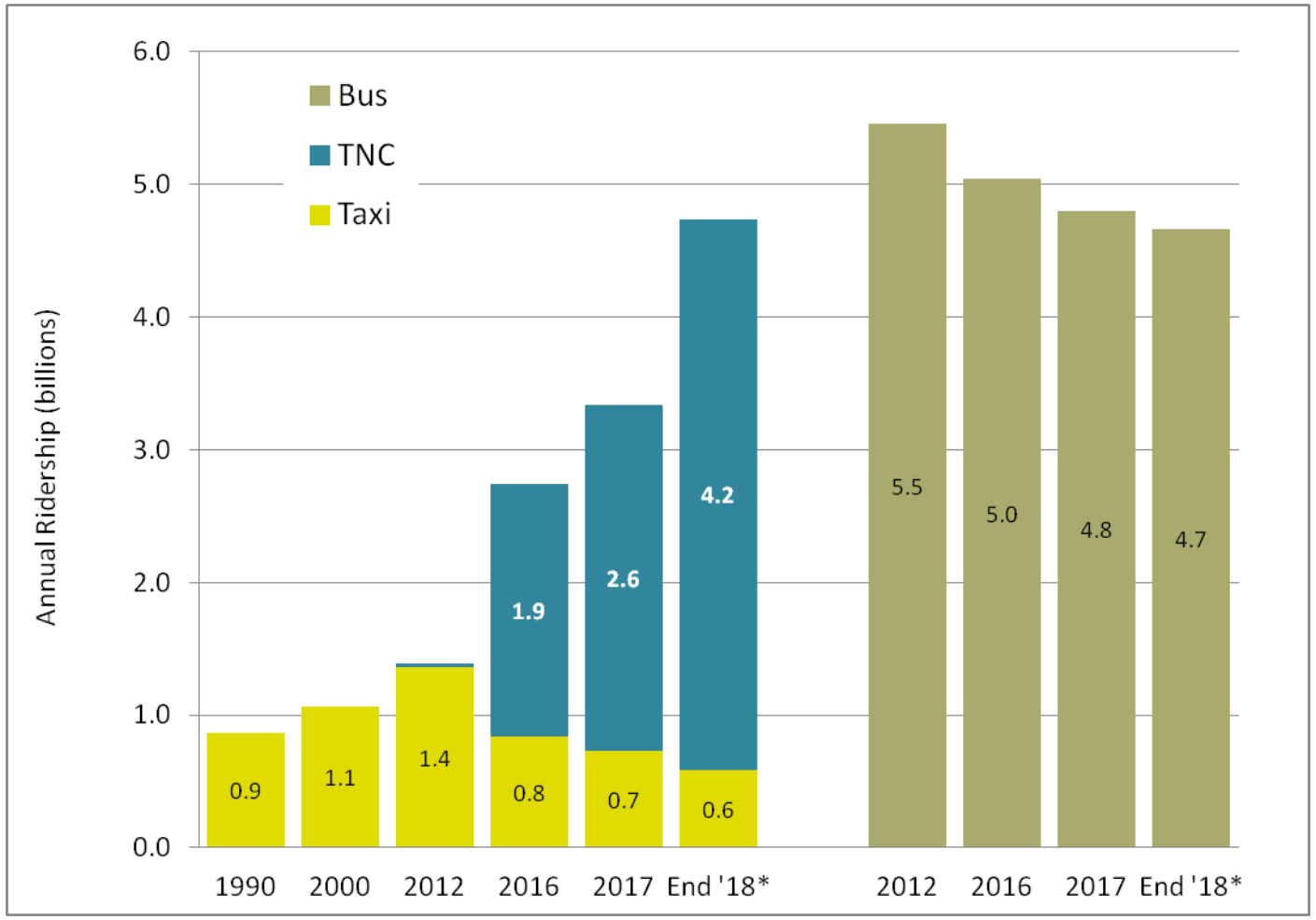
- How big are Transportation Network Companies (TNCs) like Uber and Lyft in the Washington Region?
- How are they impacting our transportation system?
- How can we better understand them?

Background

- Uber, Lyft, Via, etc. began arriving in our region in 2012
  - UberX in 2015
- TNCs now an important part of the mobility landscape
- But the public sector has very little data on their impacts:
  - Overall size, congestion, VMT, transit ridership impacts, travel markets served, rider info



TNC's Growth Nationally



- TNC plus Taxis' ridership will soon exceed all local U.S. bus ridership combined

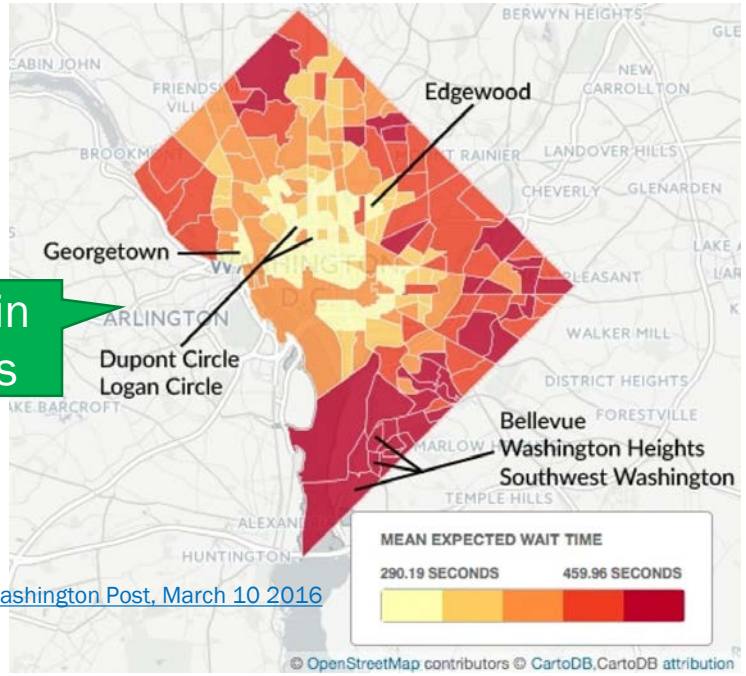
Growth and Impacts of New Mobility Services. Bruce Schaller, TRB 2018 Annual Meeting

TNC's Growth Has Been Meteoric Here

42,000 Uber drivers in DC in 2017

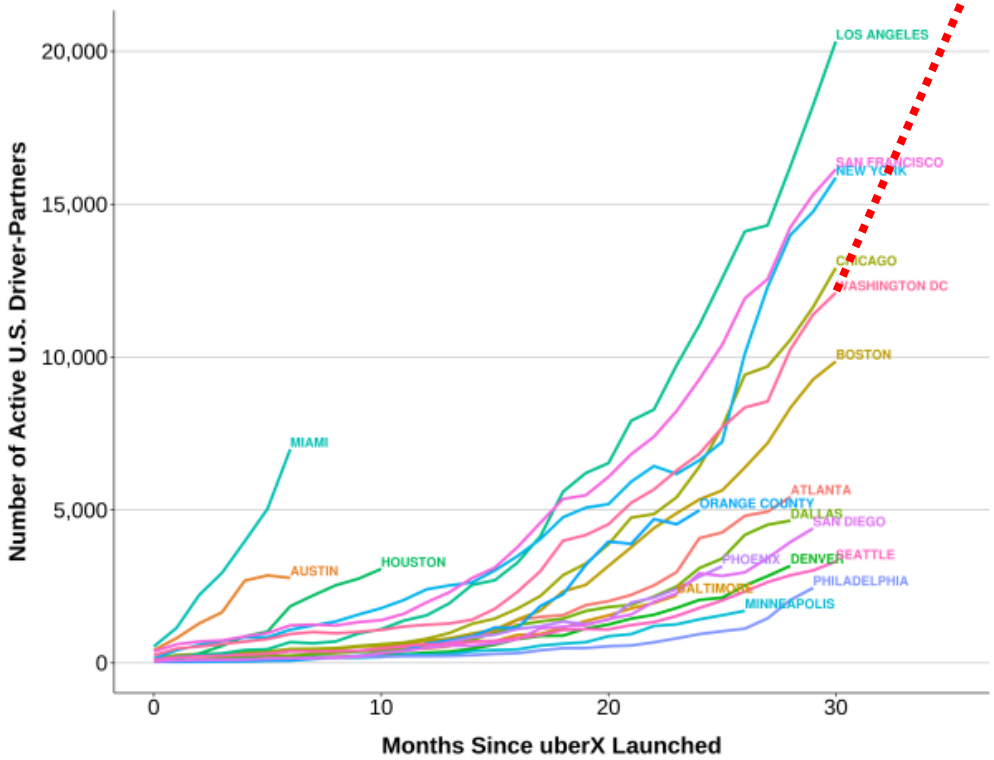
Washington Post, Dec. 3 2017

Average response times in D.C in 2016: 5-7 minutes

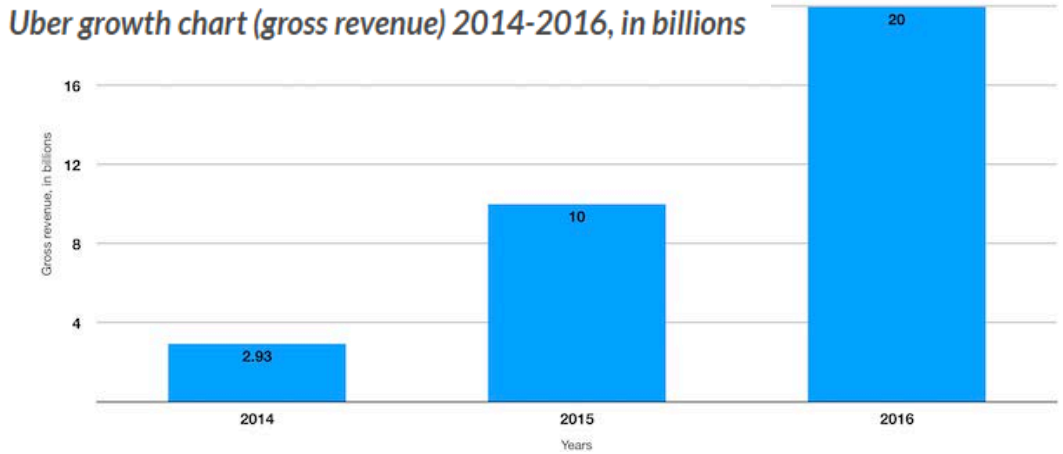


Washington Post, March 10 2016

Figure 5: Active U.S. Driver-Partners Over Time, by City



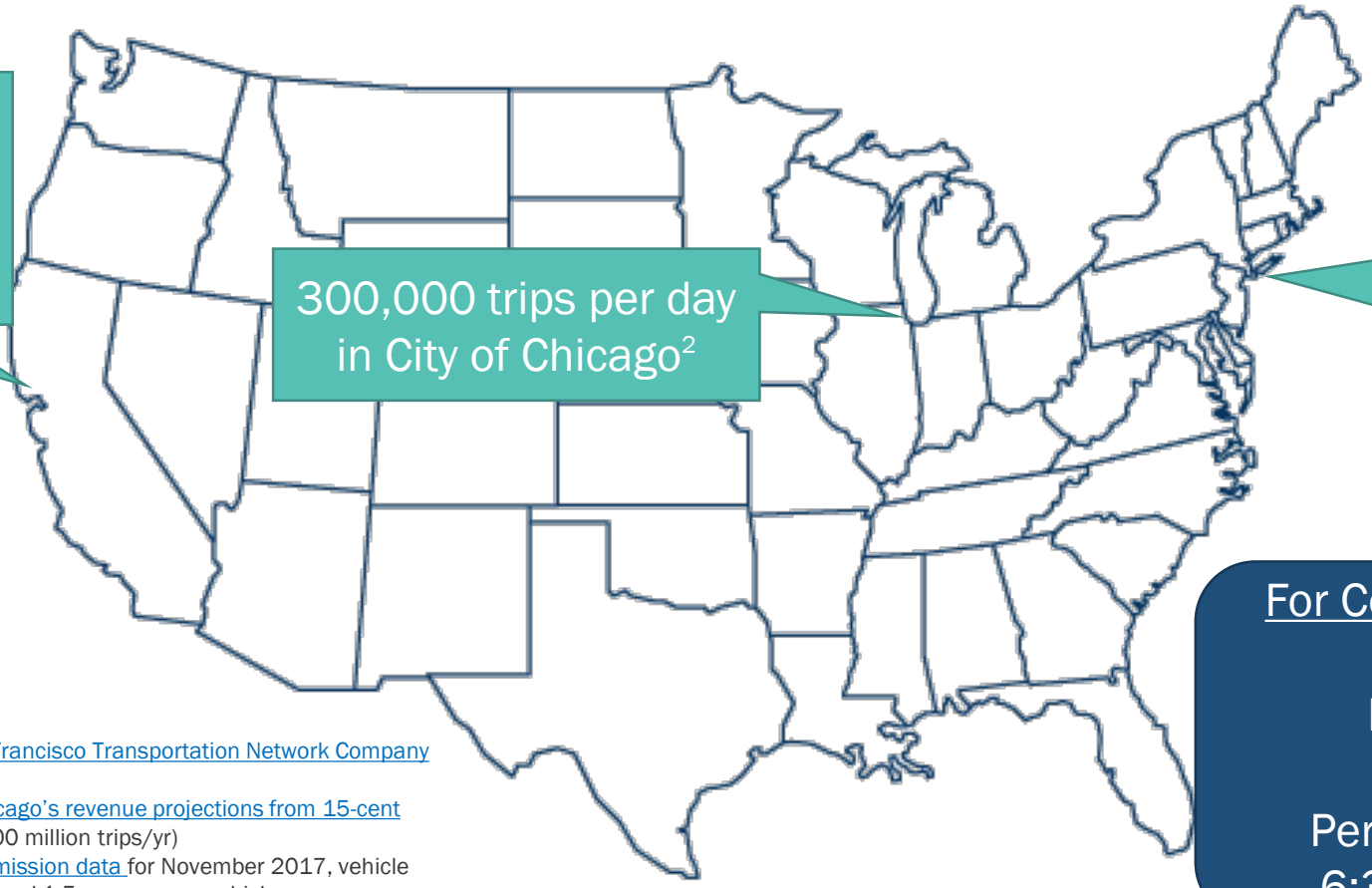
Hall and Krueger, 2015. *An Analysis of the Labor Market for Uber's Driver-Partners in the United States*



Uber Revenue and Usage Statistics, 2017

How Big are TNCs in Other Cities?

In cities where data is available, TNCs are moving hundreds of thousands of trips per day



255,000 trips per day in San Francisco County (20% of all VMT)[1]

300,000 trips per day in City of Chicago[2]

650,000 trips per day in New York City[3]

For Comparison, Trips per Day
Metrorail: 650,000
Metrobus: 400,000

Person-trips into DC core, 6:30-9:30am: 400,000[4]

1 – TNCs Today: A Profile of San Francisco Transportation Network Company Activity, SFCTA, June 2017
2 – Estimate based on City of Chicago's revenue projections from 15-cent increase in its per-trip TNC fee (100 million trips/yr)
3 - NYC Taxi and Limousine Commission data for November 2017, vehicle trips per day on Uber + Lyft, assumed 1.5 persons per vehicle
4 – MWCOG Cordon Count, 2013

How Big Are TNCs in the Washington Region?

By scaling the data from three other cities, we estimate that TNCs could be moving 200,000 to 400,000 trips per day in the Washington region

City	TNC Passenger Trips/Day	Population	Equivalent TNC Passenger Trips/Day in Our Region
City of Chicago	450,000	2.7 million	600,000
New York City	630,000	8.5 million	300,000
San Francisco City/County	255,000	900,000	250,000 in D.C. + Arlington
Washington Region	?	3.7 million	Best Guess: 200K – 400K

Washington region defined as WMATA Compact Area: 3.7 million people in DC, Arlington, Alexandria, Montgomery County, Prince George's County, Fairfax County, Fairfax City, and Falls Church

TNC Demand Patterns

TNC usage matches transit commute patterns closely during the week

Then it takes off in the evenings and weekends.

Figure B-18: TNC trip volume by hour and day, Washington DC region

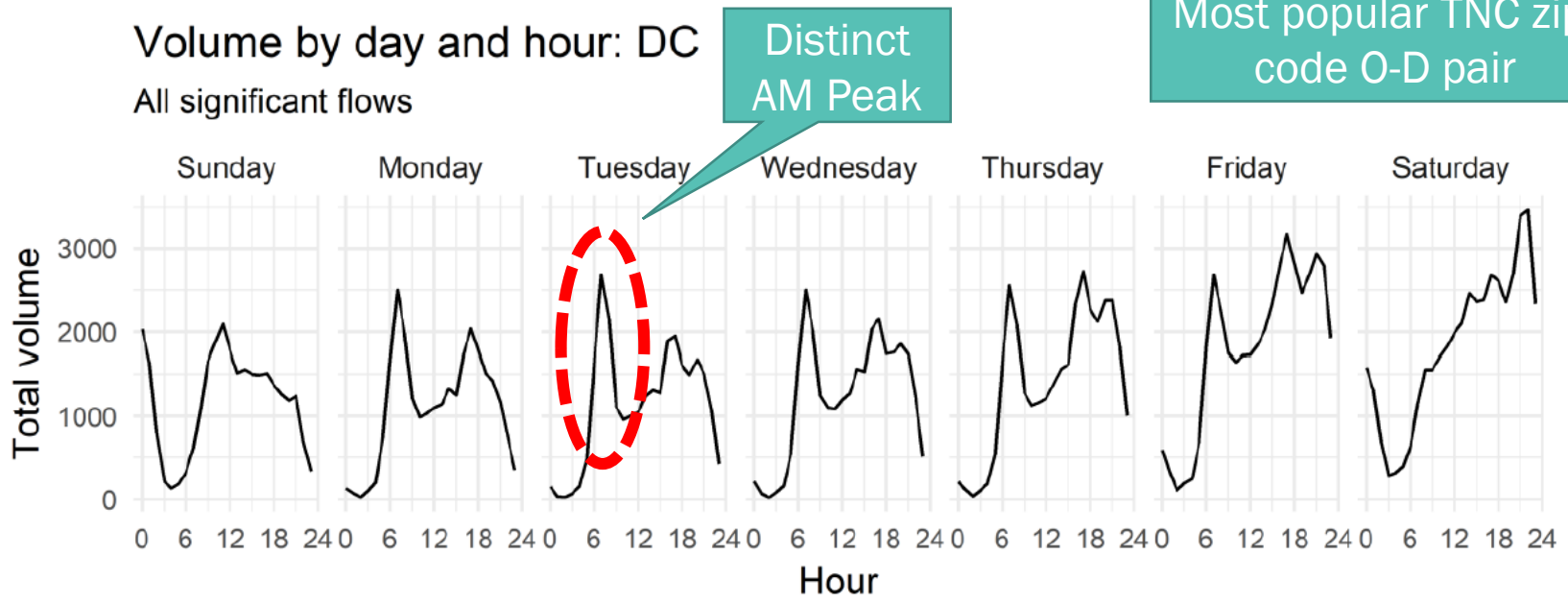


Table B-15: Top zip code flow pairs

Origin	Destination	Hourly Flows	Volume
20001	20001	160	4103
20001	20002	164	3860
20001	20009	158	3850
20002	20002	166	3781
20009	20001	158	3630
20002	20001	156	3329
20009	20009	154	2855
20009	20002	161	2492
20002	20009	145	2063
20007	20007	146	1944

TCRP Research Report 115 Pre-Publication Draft, 2018. *Broadening Understanding of the Interplay Between Public Transit, Shared Mobility, and Personal Automobiles.*

TNC Demand Patterns

TNCs are serving times and places where congestion is high, and transit options are strong. Most trips are in central D.C. and Arlington.

Figure B-22: Major TNC activity, Washington, DC, core (hourly volume greater than 50% of highest volume flow for the region). Arrows show flows between ZCTAs (darker = greater volume) colored areas indicate ZCTAs with internal single-zip flows (darker = greater volume).

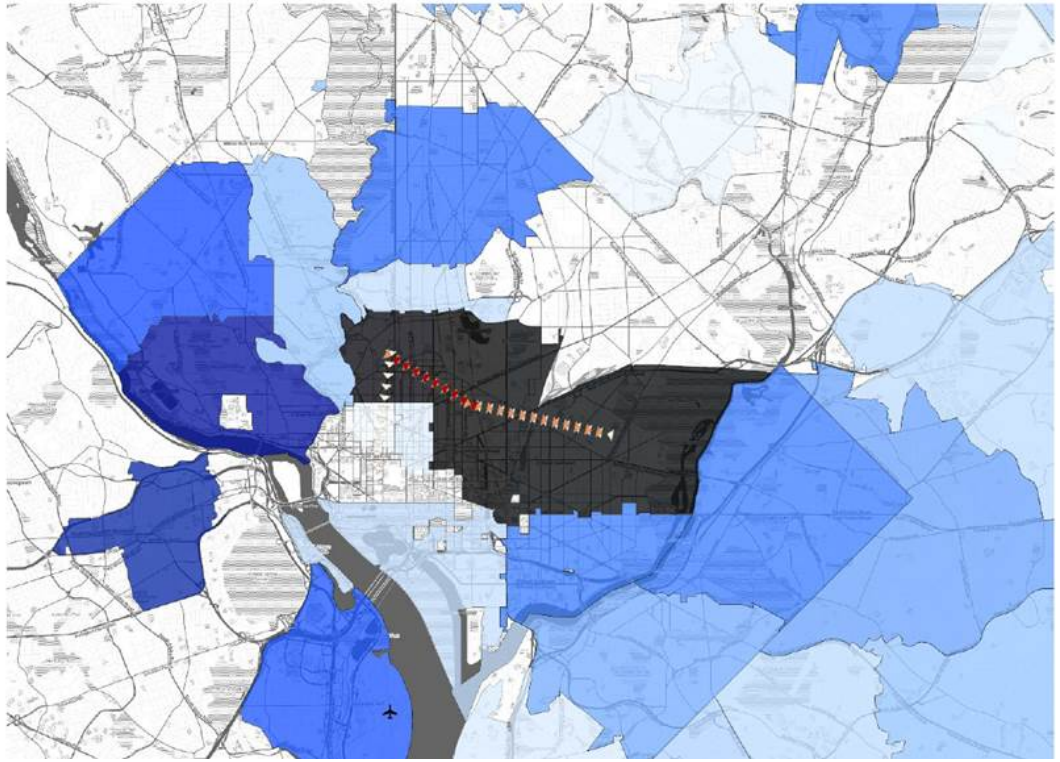
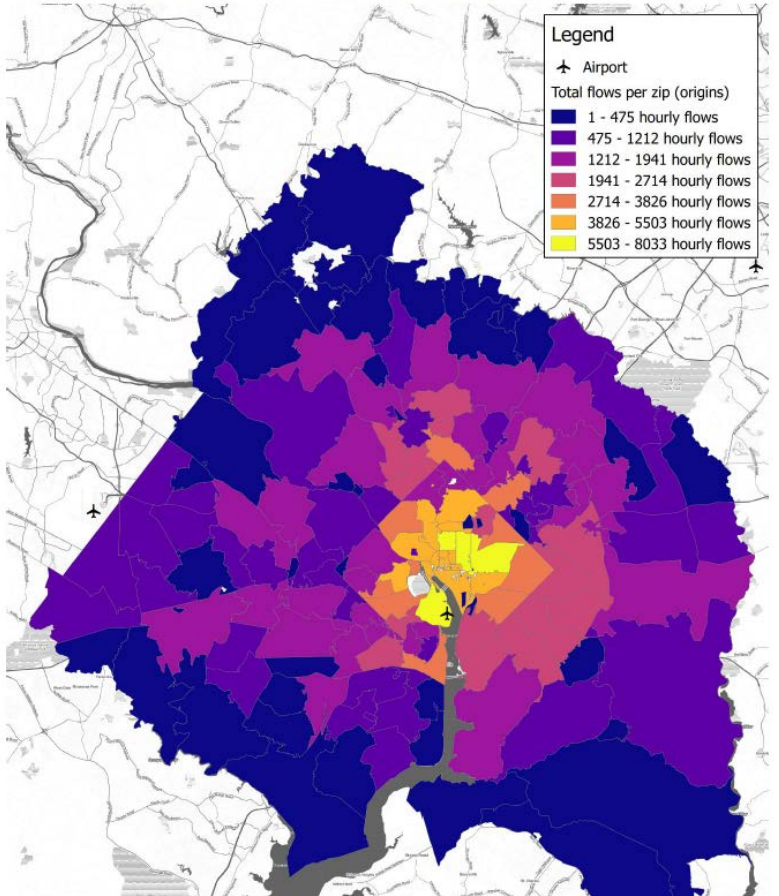


Figure B-19: TNC trip origins by zip code, Washington, DC, Region (all trips)

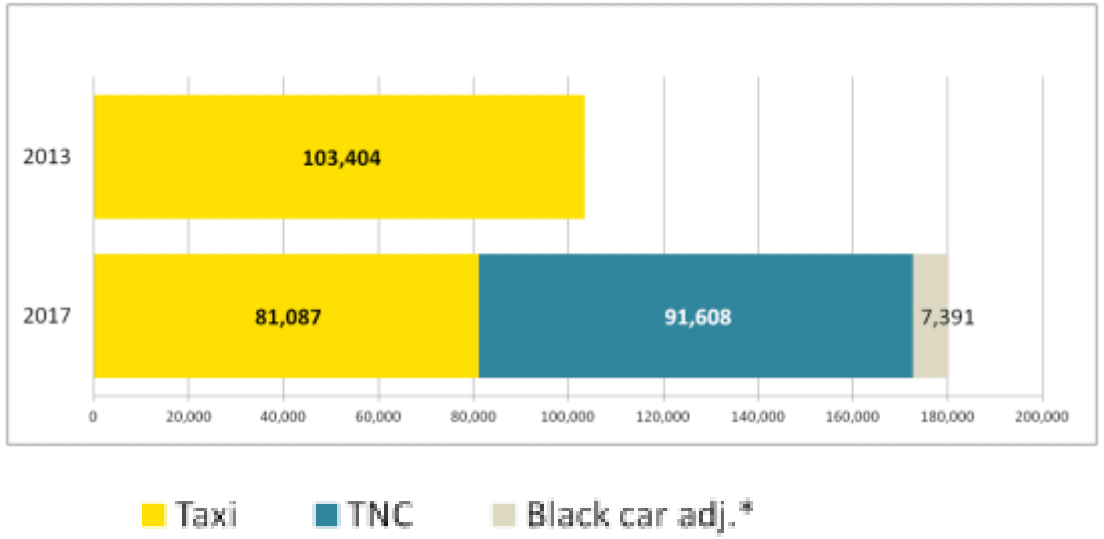


TCRP Research Report 115 Pre-Publication Draft, 2018. *Broadening Understanding of the Interplay Between Public Transit, Shared Mobility, and Personal Automobiles.*

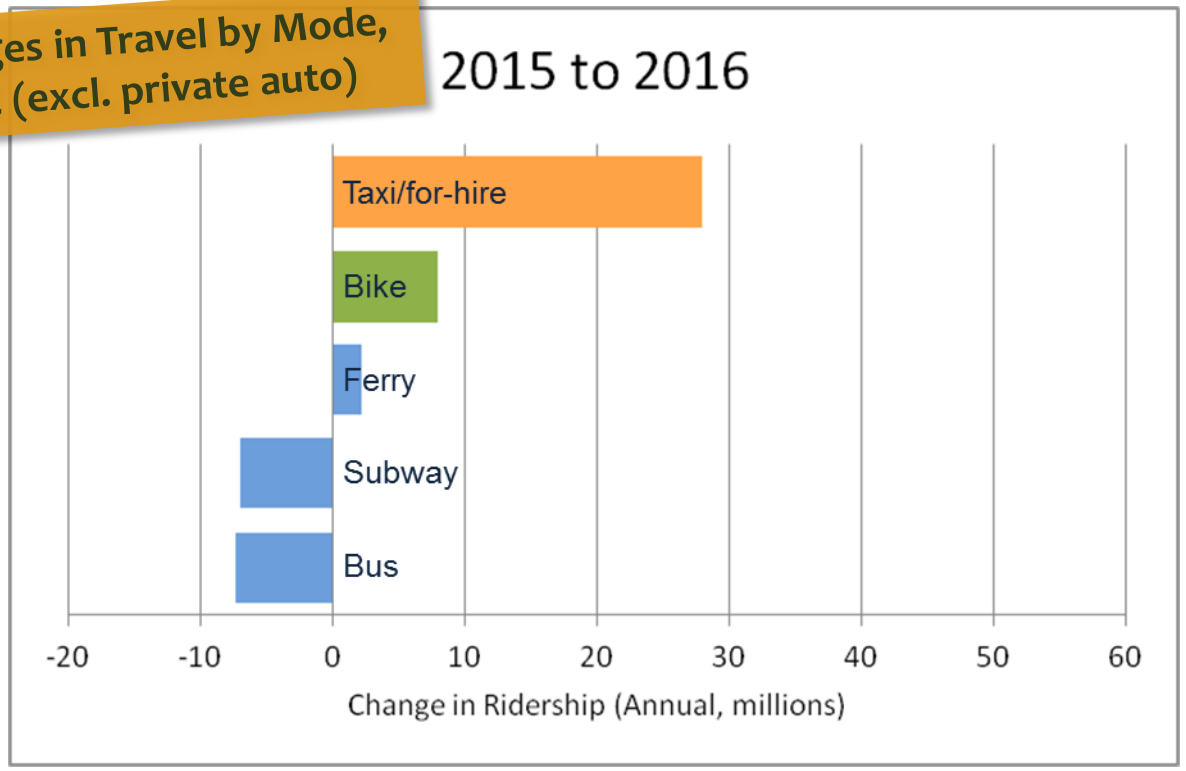
Impacts of TNCs in Other Cities

In New York, the rise of TNCs has coincided with a 15% increase in congestion, and a drop in transit ridership. Ride-sharing is uncommon.

Figure 3. Taxi and TNC vehicle hours in the Manhattan CBD, 2013-17 (59% increase)



Changes in Travel by Mode, NYC (excl. private auto)

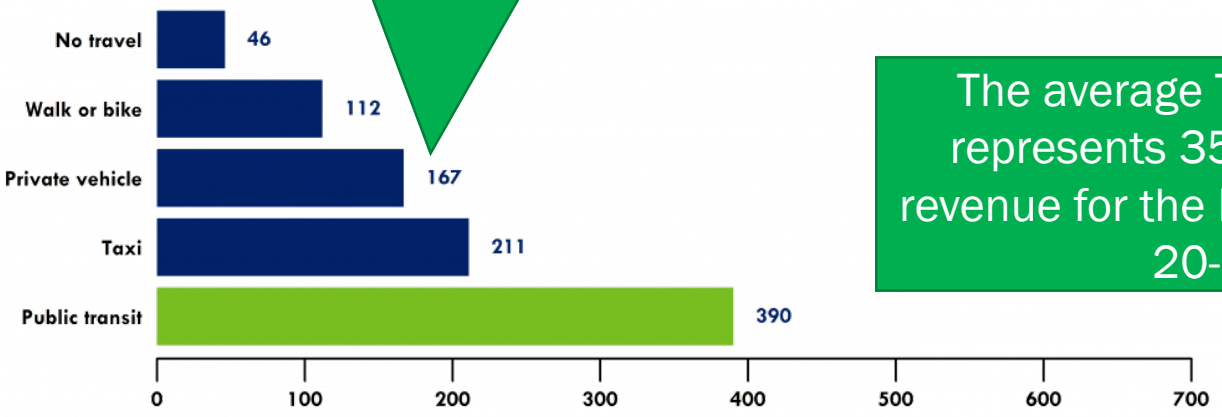


Source: Schaller Consulting, "Unsustainable? The Growth of App-Based Ride Services and Traffic, Travel and the Future of New York City."

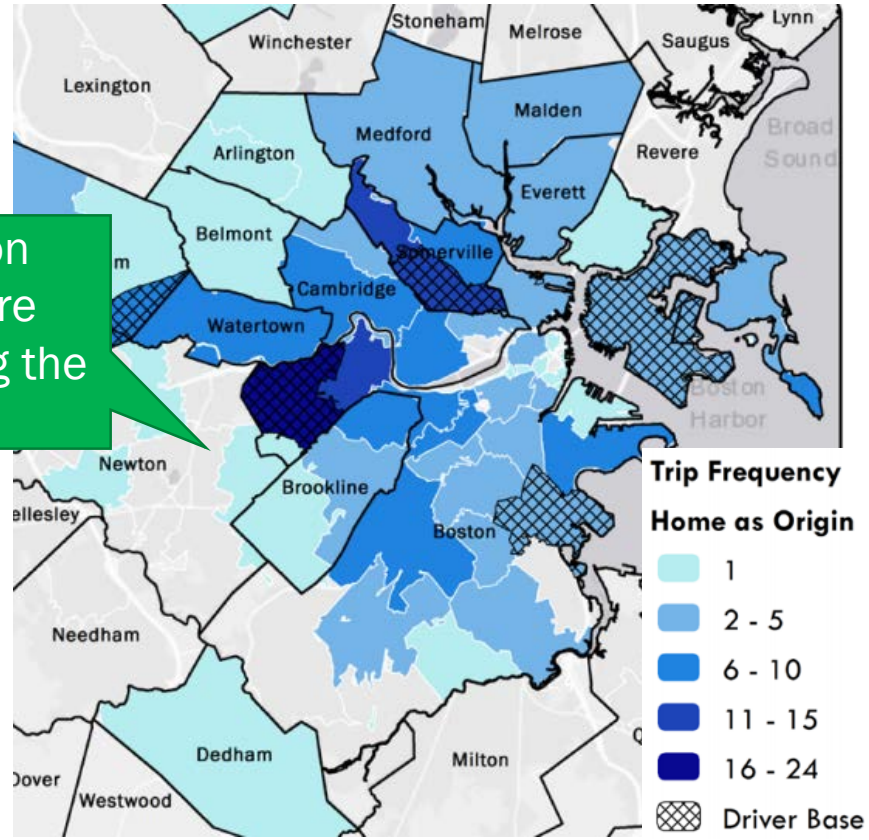
Impacts of TNCs in Other Cities

In Boston, TNCs are eroding ridership at the MBTA and increasing congestion and VMT. 60-70% of trips have 1 rider.

42% of TNC trips are replacing transit trips



The average TNC trip in Boston represents 35 cents of lost fare revenue for the MBTA, exceeding the 20-cent fee



Travel mode being substituted by ride-hailing services

Source: Fare Choices: a Survey of Ride-Hailing Passengers in Metro Boston. MAPC, 2018.

Why The Public Sector Should Understand TNCs' Impacts

Efficient Use of Public Space

Are TNCs causing congestion?

Are Riders Sharing Trips?

VMT and Emissions

Public Transit

Compete or Complement?

Filling gaps in service?

Slowing buses and blocking stops?

Equity

Serving underserved areas/times?

Impacts to Taxi and TNC Drivers?

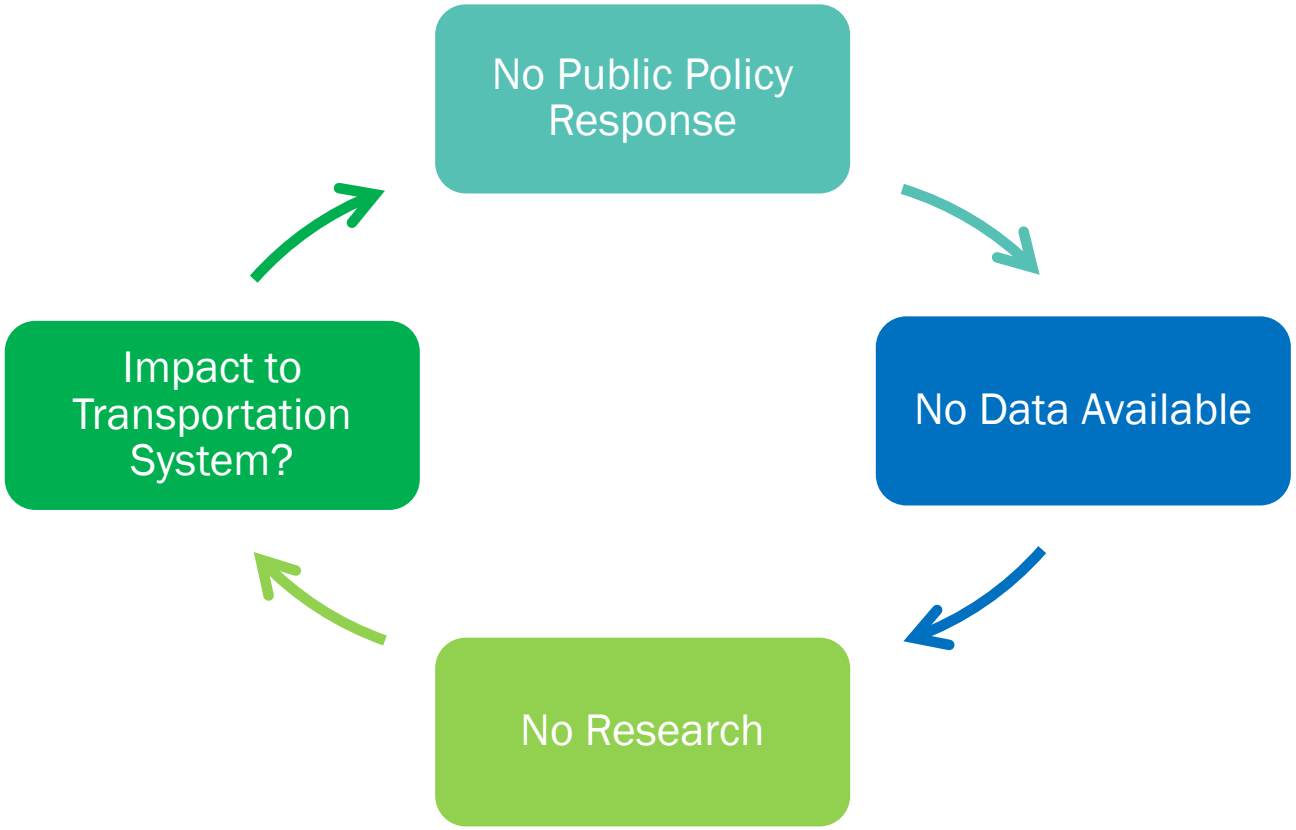
Modeling Travel Behavior

Trip purpose, demographics

Forecasting

The “No Data” Cycle

Without data on TNCs (trips, riders, impacts), the public sector is unable to understand their impact to the transportation system, and cannot inform public policy responses



Kinds of TNC Data The Public Sector Needs

Trip Volumes

- Total trips by:
  - Time of day
  - Day of week
  - Month
  - TAZ or other
  - Jurisdiction
- Travel times

Travel Markets Served

- When and where trips are made
- Origin-Destination
- Route taken
- Trip Length

Efficiency Data

- Ridesharing: Riders per Trip
- Productivity: trips per Hour per Vehicle
- Deadheading

Travel Behavior

- Trip Purpose
- Rider Demographics
- Reasons for Taking TNCs
- How Trip Would Have Been Taken Otherwise

Uber Movement supplies most of this, but is missing trip counts

Examples of Peer Cities Data Requirements

Seattle

Regulated by Records and Licensing Service. Require 2 years of data, reported quarterly, including

- Total rides provided;
- Rides originated by zip code;
- O/D of each ride by zip code;
- Rides when accessible vehicle requested

New York City

Regulated by Taxi and Limousine Commission

- Trip logs: date, time and origin for each trip
- Fares paid by transaction
- Number of passengers
- Pickup/drop-off locations by latitude and longitude

California

Regulated by CA Public Utilities Commission

- Service provided by zip code
- Hours logged by drivers;
- Miles logged by drivers

Chicago

Regulated by Dept of Business Affairs and Consumer Protection. Require monthly reporting of

- Origin/destination location and time
- Trip request data for any trip requests within City