



Geo-coding of the 2012 WMATA Rail Survey

Travel Forecasting Subcommittee

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2012 WMATA Rail Survey

- Period of study: April 13 – May 25, 2012
- Forms distributed to 40% of riders
- Response rate – 23%
- Completed questionnaires – 68,353
- 85% home based trips

Data Collection

■ Data Items (**Denotes new data items)

- Station receiving card
- Origin/Destination purpose
- Mode of access/egress
- Fare type
- Exit Station
- Transfer Station**
- Home Jurisdiction
- Home address
- Home Zip-code
- Vehicles available
- Federal government employee
- Transit benefits
- Race & Hispanic Origin**
- Household Income**
- Age**

Geocoding Process

- Total records: 68,353
- 48,748 (71%) had some home geographic information
- Data inputs: Structure number, Street name, Zip, Jurisdiction of residence
- Used Navteq streets as base map
- 80% auto-matched
- Misspellings, missing Struct. #s, missing Street types, imprecise intersections

Manual Geocoding

- Strategies for matching addresses
 - fixed misspellings
 - used zip codes & Jurisdiction of Residence
 - use internet mapping services
 - added missing street types
 - added missing directionals/quadrants
 - quality control check for jurisdiction of residence
- Matched (or marked out of the region) an additional 7,400 records

Allocation Process

- Step 1: Generate allocation file by creating variables for home station and mode of access to home station
- Step 2: allocate records with partial addresses
- Step 3: fully allocate records without address info

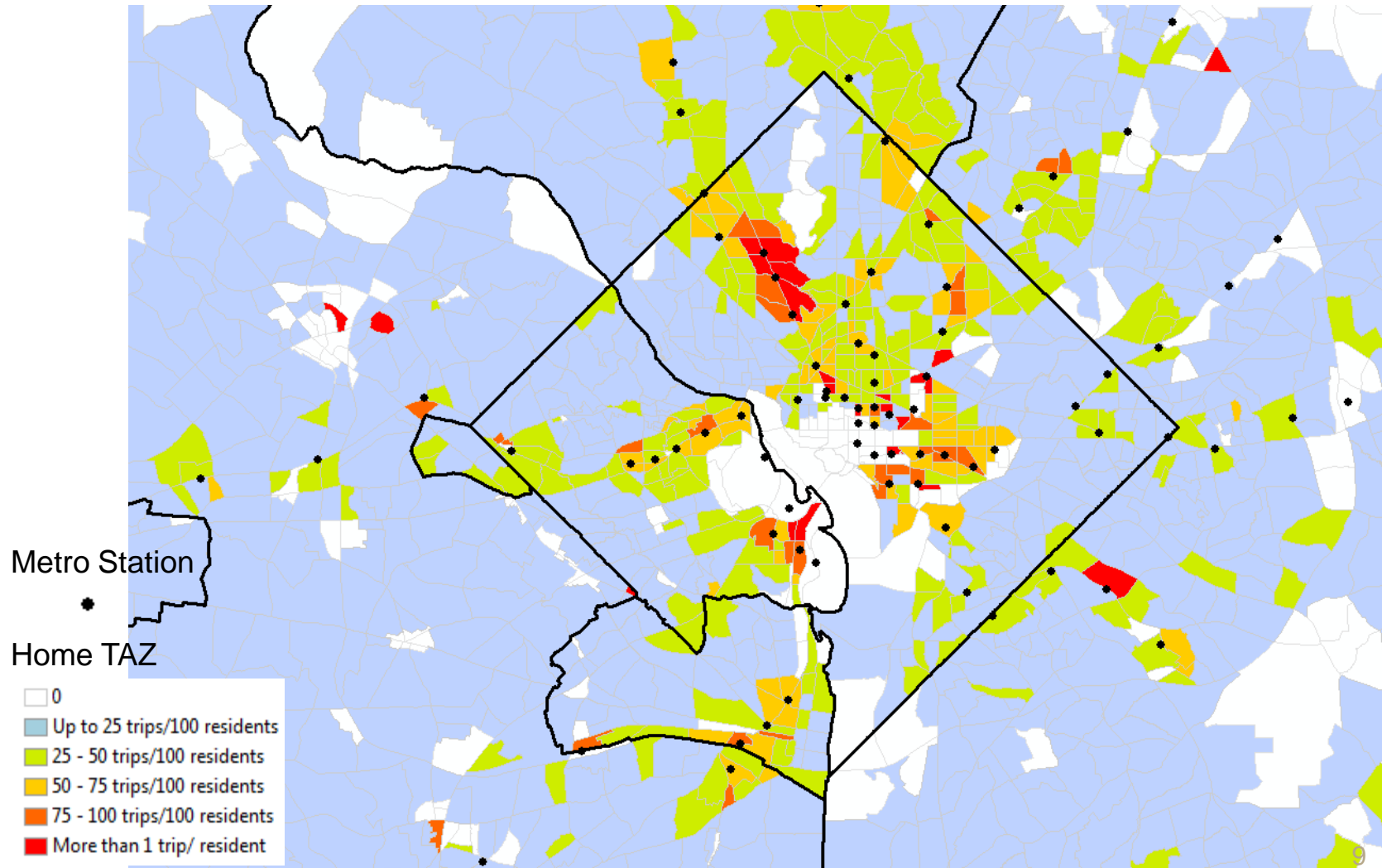
Allocation Process: Step 2

- 1,148 records with partial address information allocated using a combination of the following variables
 - Street (entire street name)
 - Street Name (1st 4 Characters)
 - Residential Zip
 - Mode of Access to home station
 - Home Metrorail Station
 - Jurisdiction of residence

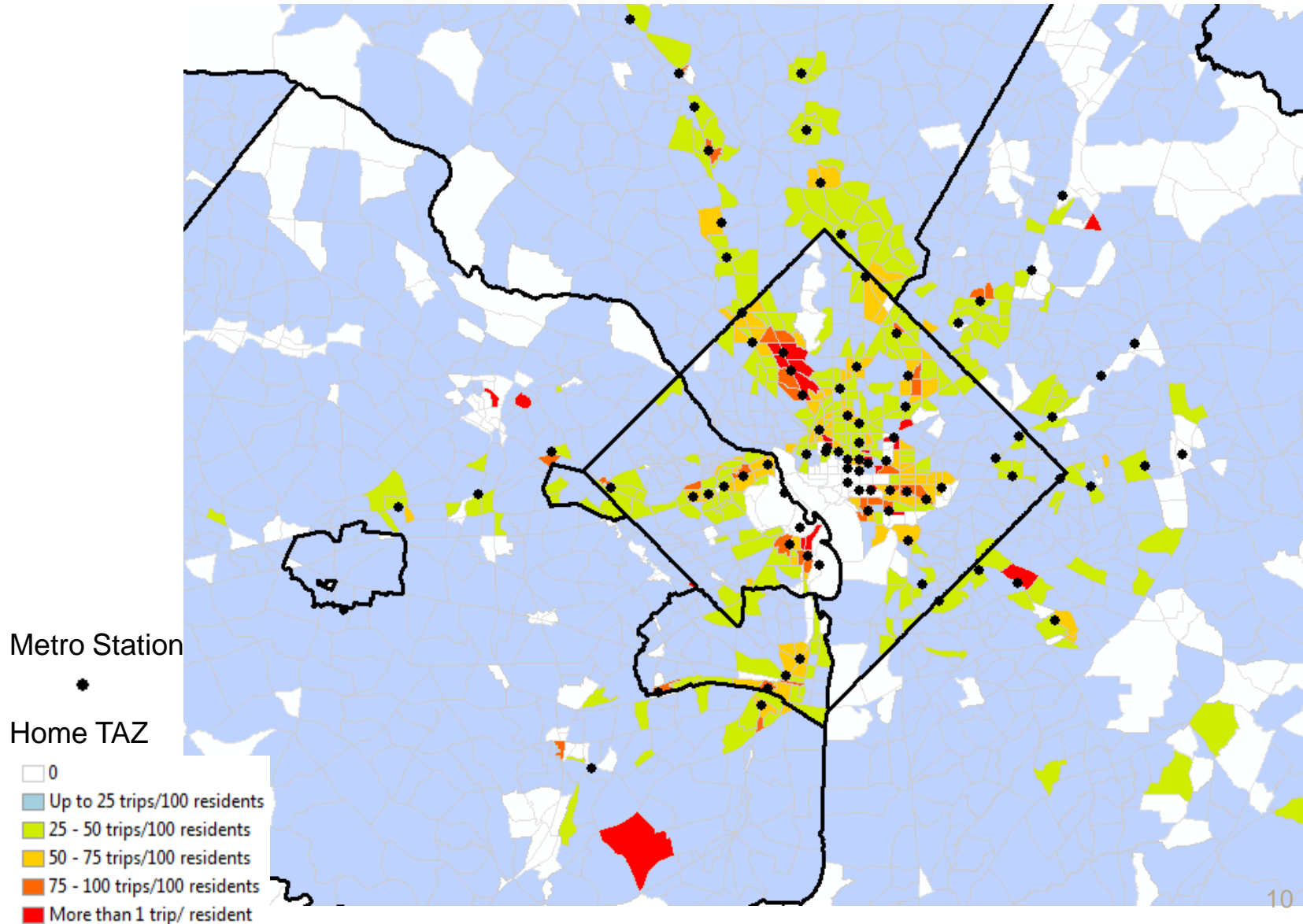
Allocation Process: Step 3

- Have to allocate from fewer variables
 - Home Zip-code
 - Mode of Access to home station
 - Home Metrorail Station
 - Jurisdiction of Residence
- 16,676 records contained only a zip-code
- 3,878 records contained no address info

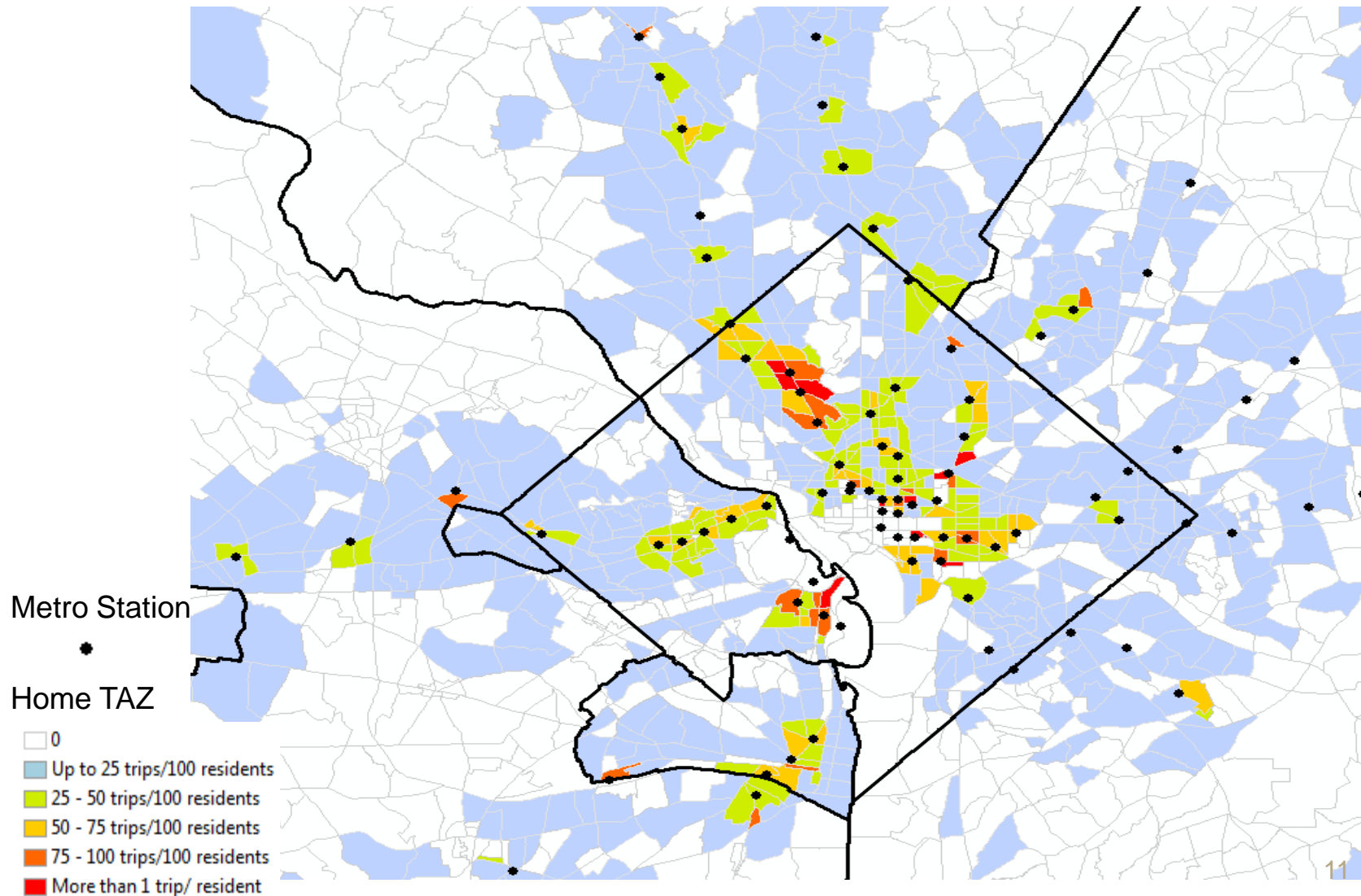
Prevalence of Metrorail usage by Home TAZ



Prevalence of Metrorail usage by Home TAZ



Metro usage by TAZ for riders who walk to their home station



Home Stations

- 85% of trips are home-based
 - By definition either the origin or destination is home, so that end of the trip is via the 'home station' with a home access/egress mode
- Example 1 - left home, walked to Courthouse, left Metrorail at Farragut West for work
 - Home Station – Courthouse
 - Home access- walk,
 - Home station jurisdiction-Arlington
 - Non-home station jurisdiction – DC
 - Purpose- Work trip (HBW)

Home Stations cont'd

- Example 2- left work for Farragut West, left Metrorail at Courthouse and walked home
 - Home Station – Courthouse
 - Home access- walk,
 - Home station jurisdiction-Arlington
 - Non-home station jurisdiction – DC
 - Purpose- Work trip (HBW)

Home Stations cont'd

- Example 3- left restaurant, got a ride to Friendship Heights, left Metrorail at Suitland, and took a bus home
 - Home Station - Suitland
 - Home access - bus
 - Home station jurisdiction - Prince George's County
 - Non-home station jurisdiction - DC (trip could likely have started in MC or DC)
 - Purpose- Shopping or Meal (HBO)

Top 10 Stations by Mode of Access (Percent) to Home Station

Highest % Non-Motorized Mode of Access	Highest % Bus/Commuter Rail Mode of Access	Highest % Auto Mode of Access
Waterfront-SEU	Pentagon	Branch Ave
Courthouse	Union Station	Largo Town Center
U Street	Anacostia	Franconia-Springfield
Shaw-Howard	Arlington Cemetery	New Carrollton
Mt. Vernon Square	L'Enfant Plaza	Greenbelt
Columbia Heights	Rhode Island Avenue	Landover
Eastern Market	West Falls Church	Glenmont
Cleveland Park	Minnesota Avenue	College Park
Capitol South	Southern Avenue	Cheverly
Woodley Park	Naylor Road	Morgan Boulevard

Top Home Stations by Number of Boardings (Weekdays)

Vienna/Fairfax GMU

Shady Grove

Union Station

Silver Spring

Pentagon

Huntington

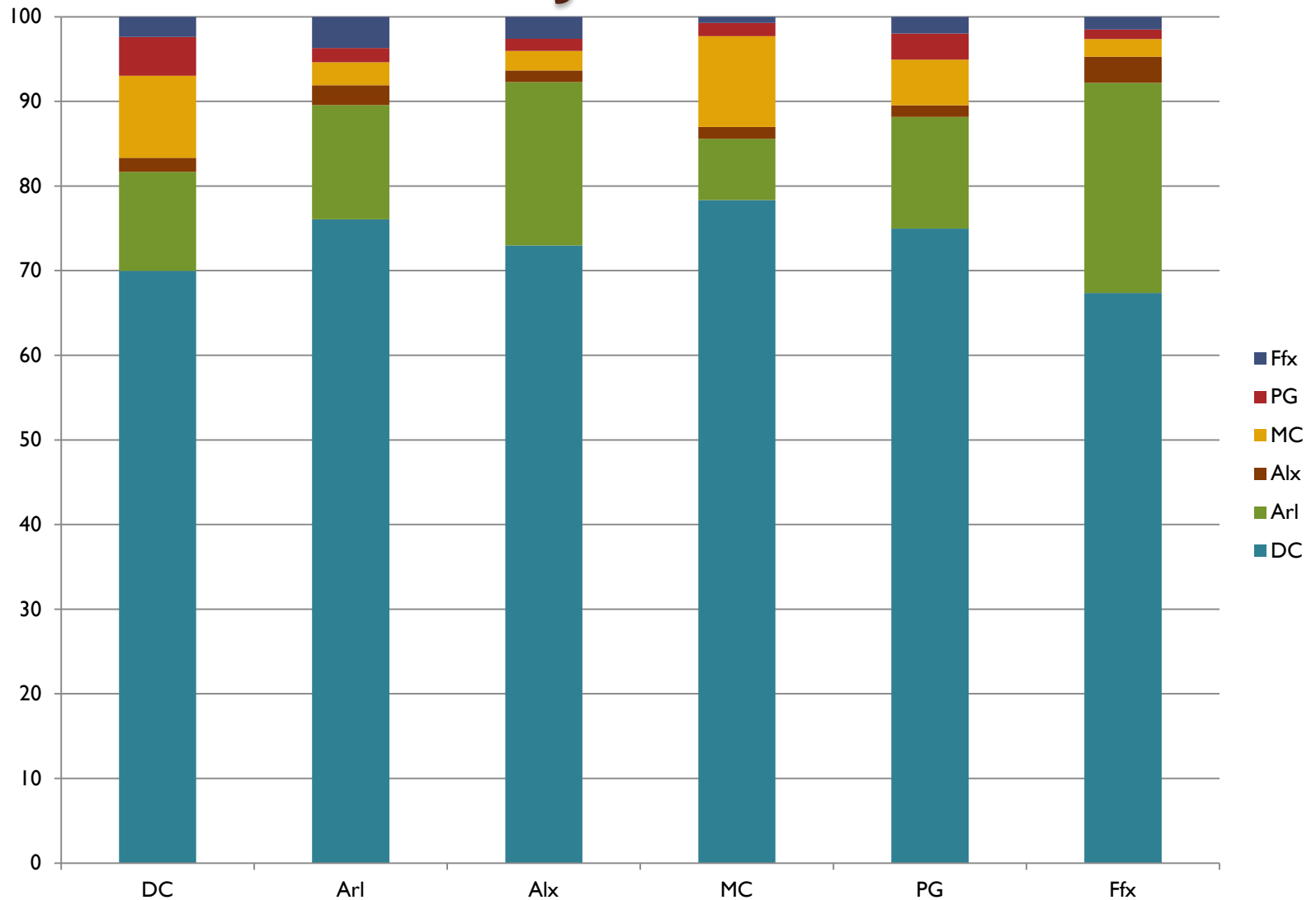
West Falls Church

Pentagon City

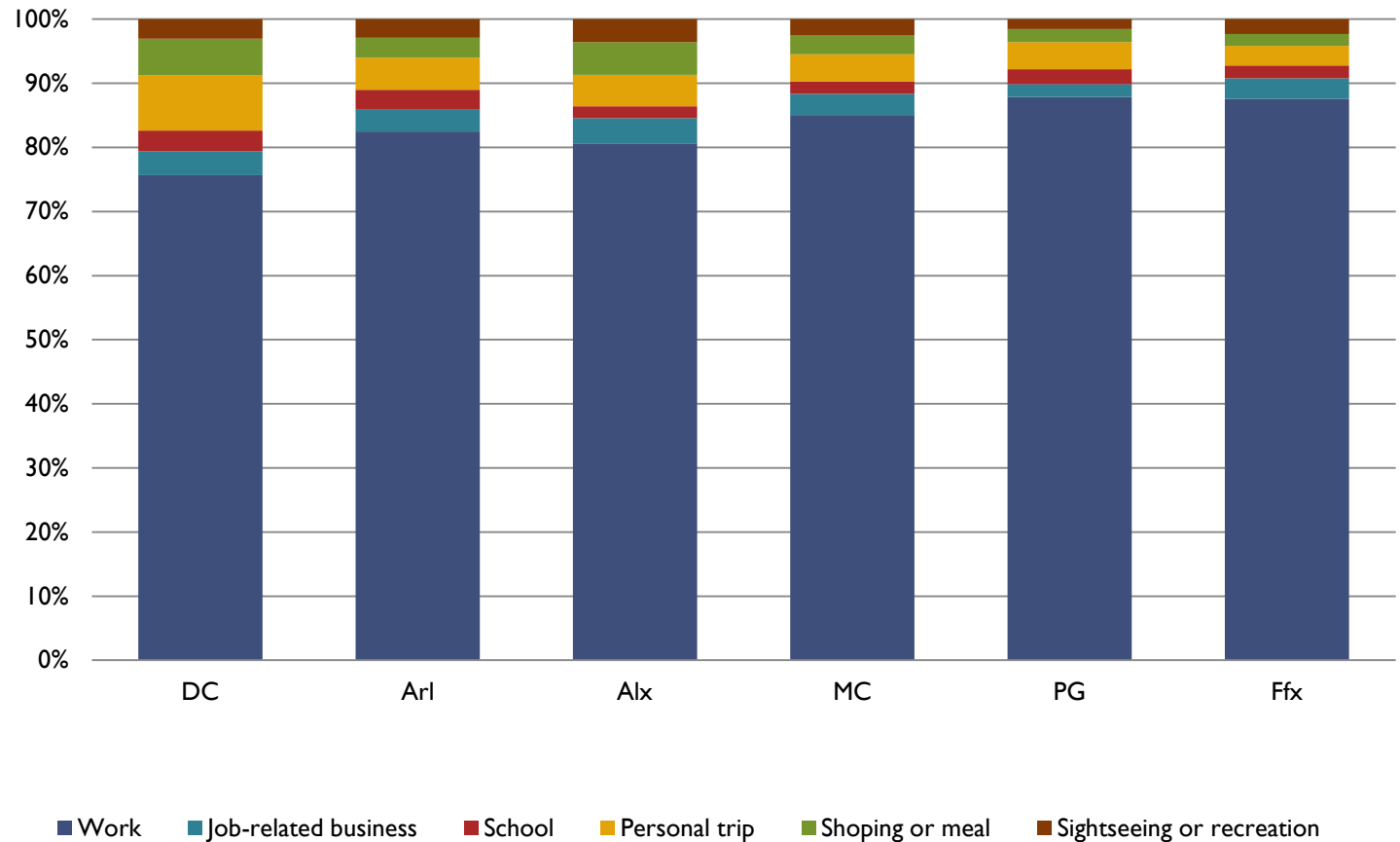
Franconia-Springfield

New Carrollton

Home Station Jurisdiction by non-home Station Jurisdiction



Purpose of Home based Trips by Home Station Jurisdiction (Home-Based Trips ONLY)





Questions?