

2016 COUNT OF INTERCITY BUS TRAFFIC

Counts Conducted November and December 2016

Arianna Koudounas
Transportation Planner

TPB Regional Public Transportation Subcommittee
March 28, 2017



Background

- New federal planning regulations finalized in May 2016 make specific mention of intercity bus travel:

“... a continuous, cooperative, and comprehensive performance-based statewide multimodal transportation planning process...that facilitates the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight including...intercity bus facilities...”

–The Federal Register, May 27, 2016

- This is the first known effort to quantify intercity bus ridership, where travelers board and alight, and origins and destinations outside of the region
- COG staff Patrick Zilliacus and Andrew Burke conducted the study in November and December of 2016

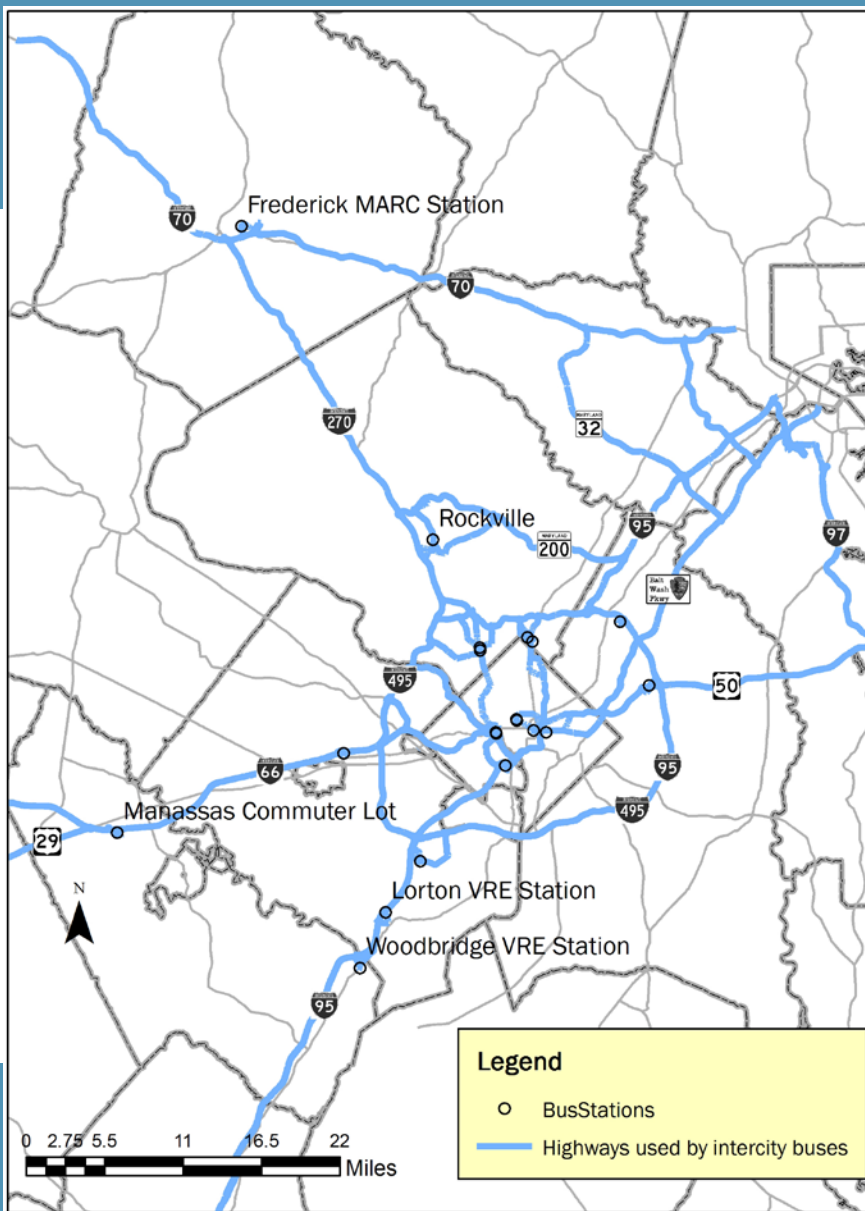


Study Area

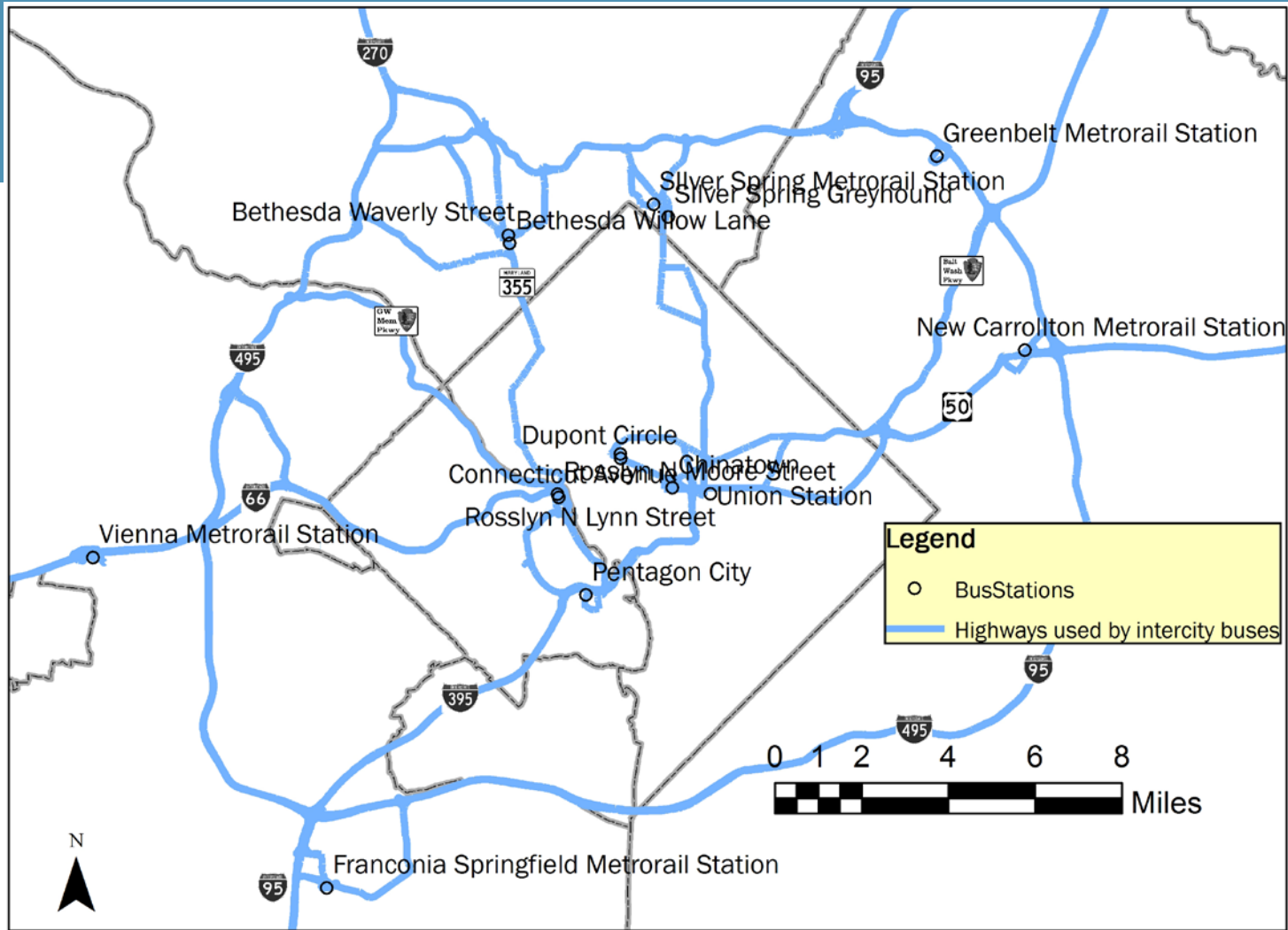
- Geography
 - Washington, DC
 - Maryland: Frederick, Montgomery, Prince George's
 - Virginia: Arlington, Fairfax, Prince William
- 14 Counting Stations/Intercity Bus Stops
 - These stations range from the bus terminal at Union Station, with well over 100 intercity buses per day, to stations with only one bus departure and one bus arrival per day
- 10 Service Providers
 - One service provider does not stop in the Washington region (Charlottesville → NY), so patronage was estimated based on observed data from other buses



Stations: Regional & Beltway View



Stations: Regional & Beltway View



Intercity Bus Service Providers

- Intercity bus service providers:
 - BayRunner
 - BestBus
 - BoltBus (Greyhound subsidiary)
 - Eastern
 - Greyhound
 - Megabus
 - Starlight Express (Charlottesville to New York City)
 - Tripper Bus
 - Vamoose
 - Washington DeLuxe
- Note: The intercity bus industry has been deregulated since the 1970s and as such, providers may add and drop service as they see fit



Stations and Providers

| County or city | Station | Providers | Destinations |
|----------------|---------------|--|---|
| Washington | Chinatown | Eastern | New York City, Richmond |
| | Dupont Circle | Best Bus, Washington DeLuxe | New York City |
| | Union Station | Best Bus, Bolt, Greyhound, Megabus, Peter Pan, Washington DeLuxe | <u>MD</u> : Baltimore City, White Marsh, Annapolis, Salisbury <u>VA</u> : Fredericksburg, Richmond, Charlottesville, Christiansburg, Hampton Roads <u>DE</u> : Wilmington, Newark <u>PA</u> : Philadelphia, Pittsburgh, Harrisburg <u>NJ</u> : Newark <u>NY</u> : New York City <u>MA</u> : Boston <u>WV</u> : Morgantown <u>NC</u> : Raleigh/Durham, Charlotte <u>GA</u> : Atlanta <u>FL</u> : Jacksonville, Miami, Key West <u>TN</u> : Knoxville <u>OH</u> : Cleveland <u>IL</u> : Chicago <u>ON</u> : Toronto |



Stations and Providers

| County or city | Station | Providers | Destinations |
|-----------------|-----------------------------------|----------------------|---|
| Frederick | Frederick MARC Station | Bayrunner, Greyhound | <u>MD</u> : Baltimore City, BWI Airport, Hagerstown, Cumberland, Grantsville <u>PA</u> : Pittsburgh <u>OH</u> : Cleveland |
| Montgomery | Bethesda- Waverly St. | Vamoose | New York City |
| | Bethesda- Willow St. | Tripper Bus | |
| | Rockville | Eastern | New York City |
| | Silver Spring (Greyhound Station) | Greyhound, Peter Pan | <u>MD</u> : Baltimore City <u>VA</u> : Fredericksburg, Richmond, Charlottesville <u>PA</u> : Philadelphia, Pittsburgh, Harrisburg <u>NC</u> : Raleigh/Durham <u>FL</u> : Jacksonville, Miami <u>OH</u> : Cleveland <u>IL</u> : Chicago |
| | Silver Spring Metro | Best Bus | New York City |
| Prince George's | Greenbelt Metro | Bolt | New York City |
| | New Carrollton Metro | Peter Pan, Greyhound | <u>MD</u> : Baltimore City, Annapolis, Salisbury <u>PA</u> : Philadelphia <u>NY</u> : NYC |



Stations and Providers

| County or city | Station | Providers | Destinations |
|----------------|-------------------------------------|---------------------|--|
| Arlington | Pentagon City | Washington DeLuxe | New York City |
| | Rosslyn - N Lynn St. | Vamoose | New York City |
| | Rosslyn - N Moore St. | Tripper Bus | |
| Fairfax County | Franconia-Springfield Metro Station | Best Bus, Greyhound | <u>VA</u> : Fredericksburg, Richmond, Charlottesville <u>MD</u> : Baltimore City <u>NY</u> : New York City |
| | Lorton VRE Station | Vamoose | New York City |
| | Vienna Metro Station | Best Bus | New York City |
| Prince William | Manassas Commuter Lot | Best Bus | New York City |
| | Woodbridge VRE Station | Greyhound | <u>Washington, DC</u> <u>VA</u> : Fredericksburg, Richmond, Charlottesville <u>MD</u> : Baltimore City <u>NY</u> : New York City |



Methodology

Field Preparation

- Conducted online research for operation time/location using Wanderu
- Contacted providers and station owners prior to conducting field work

Data Collection

- Over 400 bus trips at station stops were counted- this number of trips was meant to represent an average weekday (Wednesday-Friday) of travel.
 - Generally speaking- service provided is lower Monday-Tuesday
- Experienced urban transit bus data collection staff counted number of patrons alighting from and boarding the bus
- With permission of driver, patrons remaining on bus were also counted
- Driver asked about origins and destinations of the bus



Methodology

Data Processing

- Paper count sheets transcribed into machine for processing with SAS
- Patronage numbers for individual providers concealed

Counting Considerations and Assumptions

- To avoid double-counting (due to buses making multiple stops in region), emphasis placed on number of persons boarding and alighting from each counted bus, rather than the bus itself
- Buses crossing the region without stopping (such as Richmond, VA to New York City) were assumed to be carrying loads of 25 persons per bus, which is based on the average loads of buses that were counted
- Buses operating in the overnight period of 12 AM to 6 AM were also assumed to be carrying 25 patrons



Count Days and Hours

- Intercity bus service tends to increase from Wednesday through Friday, so emphasis was placed on those days. Collection took place in late fall.
- Counted During Weekdays with Greatest Intercity Bus Demand:
 - Wednesday, Thursday, Friday
 - Tuesday (occasionally)
- Time Counting Took Place: 6 AM to 12 AM (Midnight)
 - Most stations counted so that all hours were covered exactly once
- Days Avoided:
 - Saturday, Sunday, Monday
 - Days before major holidays (such as Wednesday before Thanksgiving)



Trips and Persons Counted

- Approximately 400 bus trips were counted (not including duplicates)
 - 4,100 persons boarding intercity buses
 - 66% in D.C.
 - 22% in Maryland
 - 12% in Virginia
 - 4,400 persons alighting from intercity buses
 - 75% in D.C.
 - 15% in Maryland
 - 10% in Virginia
 - 2,100 persons were counted as staying on board buses



Persons Staying On-Board

- 2,100 persons were counted as staying on board buses
 - Includes buses that crossed the region without stopping
 - 23% were assumed to be on buses crossing the region
 - 28% at stations in DC
 - 28% at stations in Maryland
 - 21% at stations in Virginia
- Some of the persons staying on board the buses may have been counted at a previous station boarding, or alighting at the station further along on the bus route

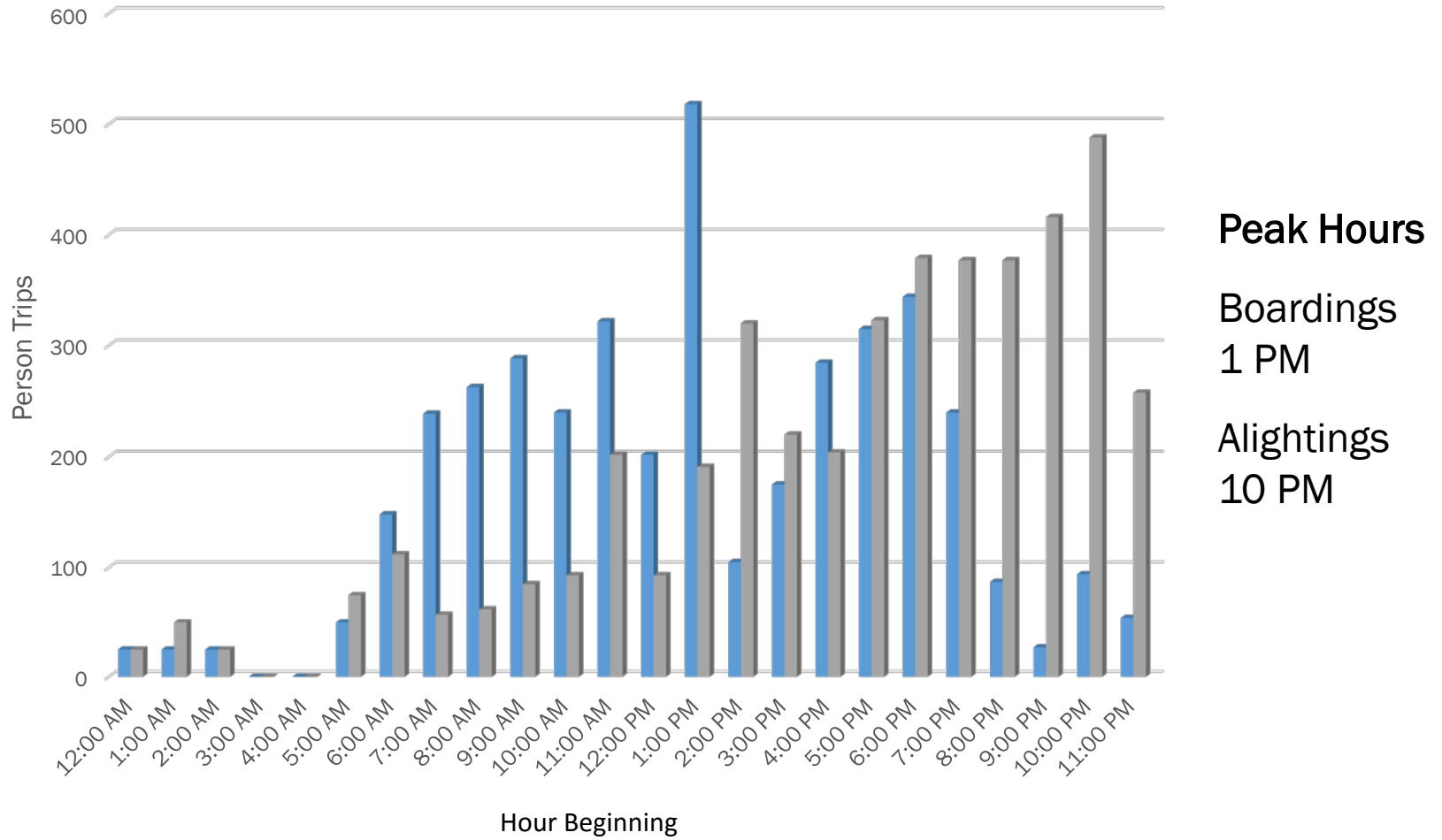


Bus Capacity

- There was quite the range of bus capacity between the providers studied:
 - 15 seats (BayRunner – a Chevy van-sized shuttle service)
 - 34 seats (Vamoose Gold – premium service)
 - 53-56 seats (Greyhound, BoltBus, Peter Pan, BestBus, etc.)
 - 81 seats (Megabus)
- Most providers fall in the middle 54-56 seat range



Boardings and Alightings by Time of Day

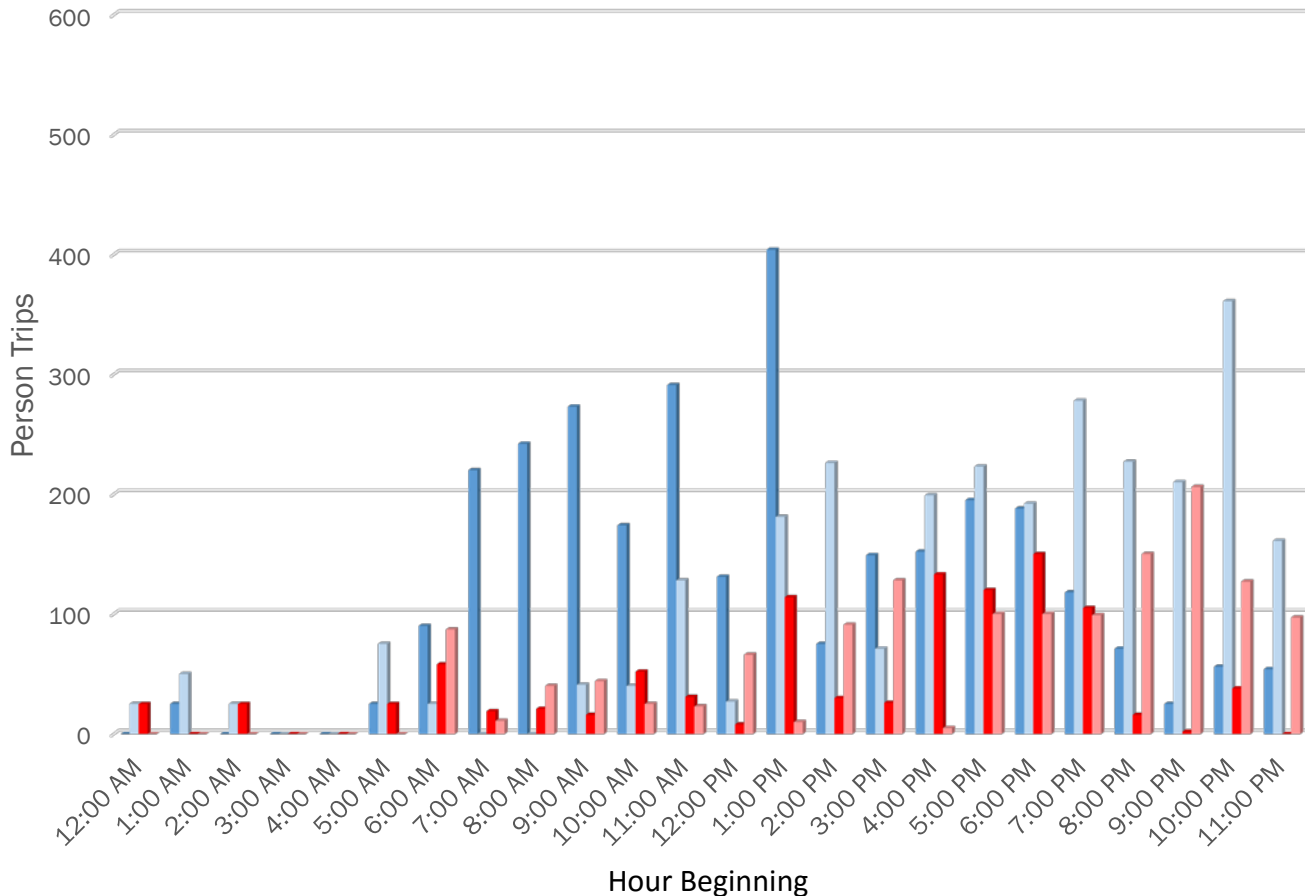


Origins and Destinations

- Of the 400 bus trips observed:
 - 200 counted in DC
 - 100 counted in Maryland
 - 70 counted in Virginia
 - 30 remaining were “through” trips for which patronage was estimated
- Dominated by travel between the Washington area and New York City
 - 75% of passengers boarding are traveling to New York City
 - 66% of passengers arriving originate from New York City or nearby
- Several of the intercity bus operators service this market **only**



NY and Non-NY Boardings and Alightings



**Peak Hours-
Boardings**

New York: 1 PM

Non-New York: 6 PM

**Peak Hours-
Alightings**

New York: 10 PM

Non-New York: 9 PM



Other Intercity Bus Origins & Destinations

- Maryland: Baltimore City, White Marsh, BWI Airport, Annapolis, Salisbury
- Virginia: Fredericksburg, Hampton Roads, Charlottesville, Christiansburg, Richmond
- Pennsylvania: Philadelphia, Harrisburg, Pittsburgh
- Delaware: Wilmington, Newark
- West Virginia: Morgantown
- Massachusetts: Boston
- Ohio: Cleveland
- Illinois: Chicago

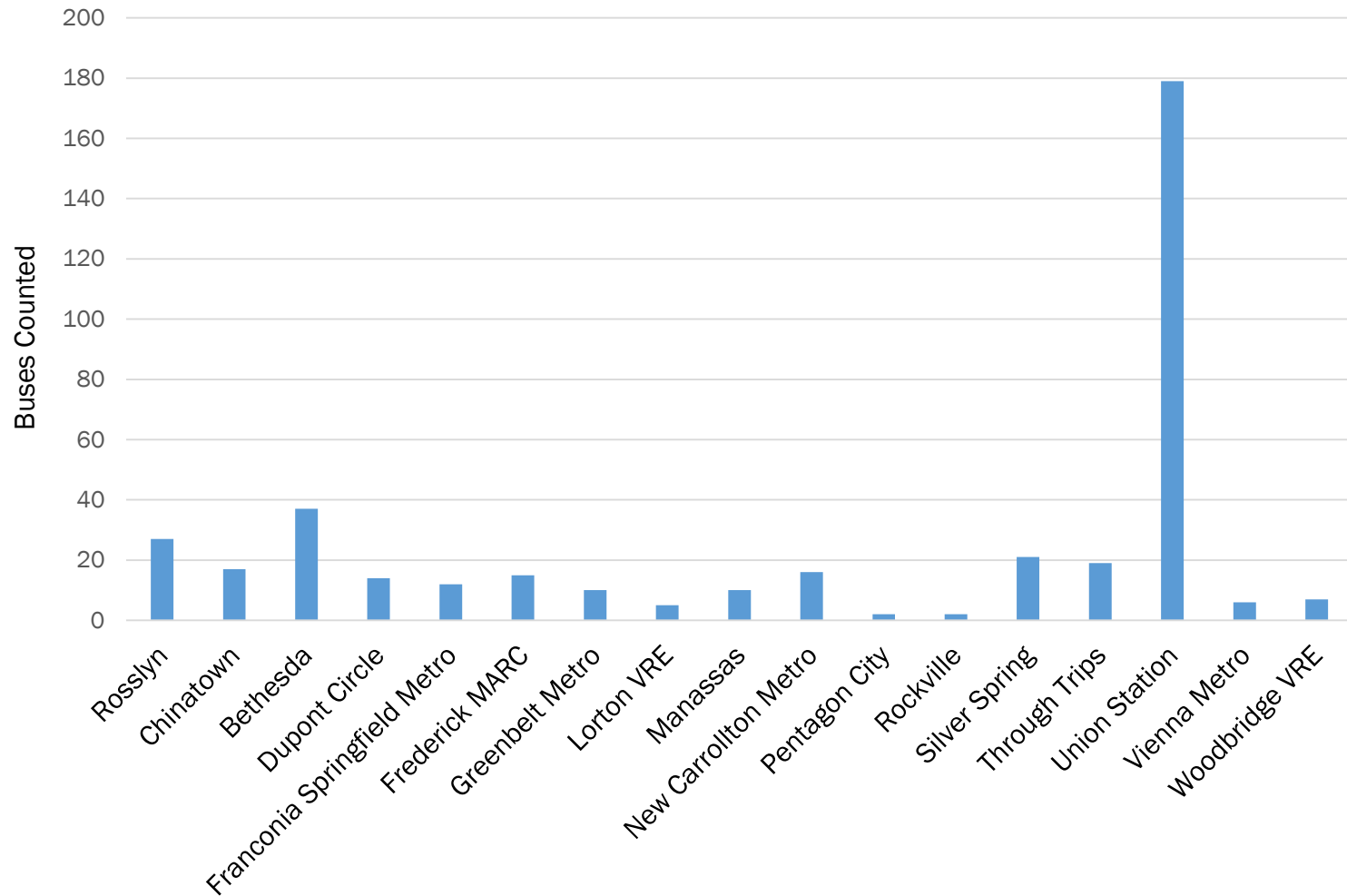


Other Intercity Bus Origins & Destinations

- North Carolina: Raleigh/Durham, Charlotte
- Georgia: Atlanta
- Tennessee: Knoxville
- Florida: Jacksonville, Miami, Key West
- Ontario: Toronto



Monitoring Stations & Buses Monitored



Intercity Bus Monitoring Stations



Union Station – Intercity Bus

- 180 (45%) of the 400 unique scheduled intercity bus trips observed as part of this project were counted at Union Station
 - Next busiest: 40 bus trips between two Bethesda curbside locations

Union Station Numbers

- 2,100 (51%) observed boardings – 1,400 (40 buses) to New York
- 3,100 (70%) observed alightings – 1,800 (60 buses) from New York
- 500 persons remaining on bus
- Peak boarding: 1 PM (same as overall)
- Peak alighting: 10 PM (same as overall)
- Boardings: Thursday (400) -v- Friday (600)
- Alightings: Thursday (300) -v- Friday (700)

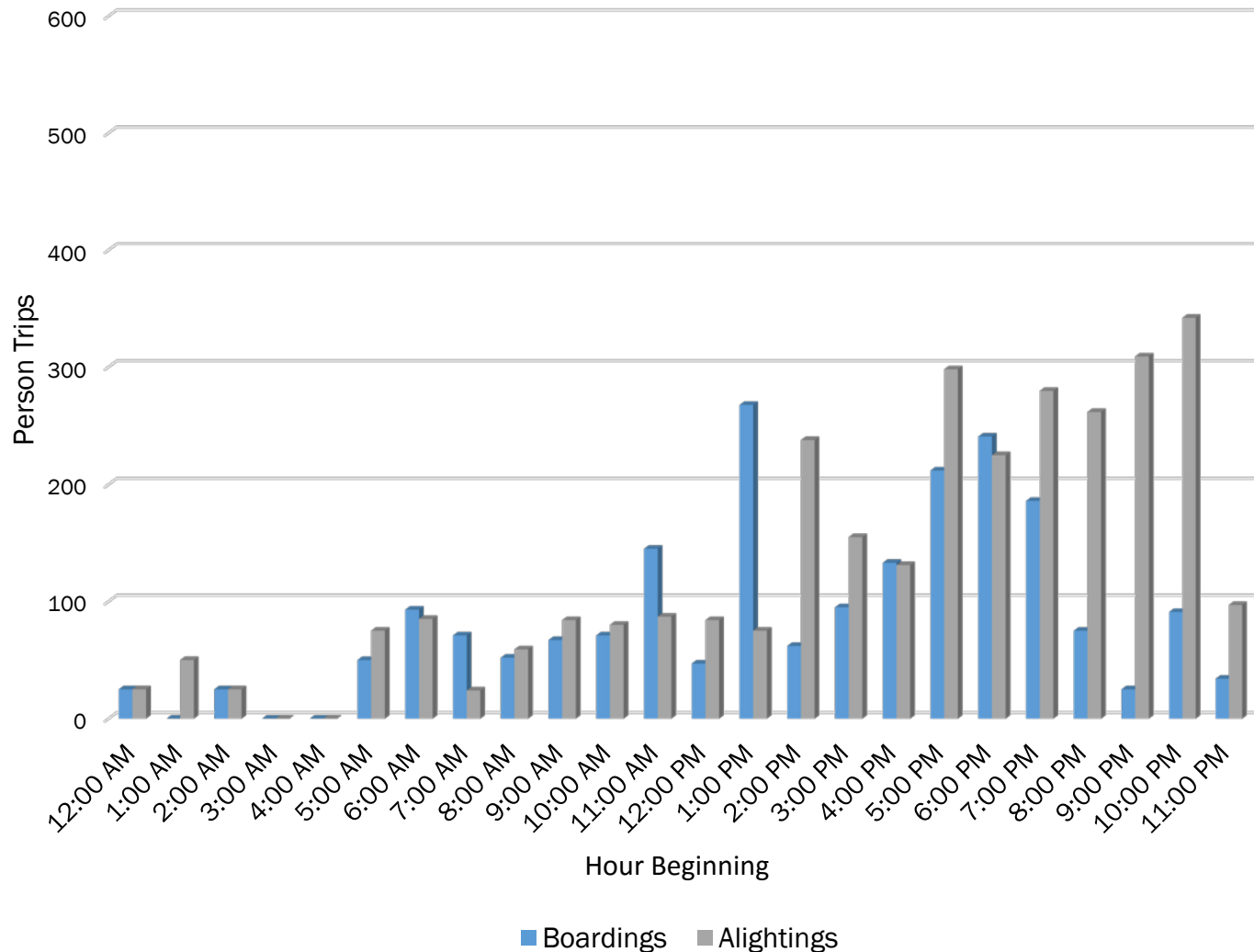


Union Station – Amtrak

- In 2016, there were 5,098,562 Amtrak boardings and alightings at Union Station; the second busiest station nationwide after New York Penn Station
- Dividing by 365 gives 14,322 daily boardings plus alightings
- There are approximately 5,200 intercity bus person trips (combined boardings and alightings) at Union Station



Boardings and Alightings at Union Station



Key Findings

- Intercity buses serve thousands of person trips regionally on a daily basis
 - 66-75% of these trips are to/from the New York City area
- Union Station is the dominant boarding/alighting point for the region
 - Ideal location: centralized for visitors; good connectivity for operators
- Several other intercity bus stops in the region that serve fewer volumes of bus traffic and person trips than Union Station
 - These volumes could increase with a centralized communications strategy/additional study of trends and demographics. In some cases, establishing a physical station (versus curbside) could also be useful
- Based on the relatively small sample size of this study, there appears to be more travel by intercity bus on Fridays than on other days of the week, though more data collection and analysis is required to confirm



Future Study Possibilities

- Conduct a passenger survey based on the CASP Air Passenger Survey:
 - Boarding or Alighting
 - Origin and Destination
 - Purpose of travel: work or leisure
 - Ground transportation to station: transit, personal car, cab, TNC, etc.
 - Knowledge of DC transit system
- Interview/survey providers concerning:
 - Peak Use, Trends in Reaching Capacity, Station Volume, etc.
- Value of additional study:
 - Inform a regional use/needs/communications assessment
 - Integrate external transit trip data into the Model



Questions, Comments?

Thank you!



Arianna Koudounas
Transportation Planner
(202) 962-3312
akoudounas@mwkog.org

mwkog.org/TPB

Metropolitan Washington Council of Governments
777 North Capitol Street NE, Suite 300
Washington, DC 20002



National Capital Region
Transportation Planning Board