

# 2016 COUNT OF INTERCITY BUS TRAFFIC

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## Counts Conducted November and December 2016

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# Purpose

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- 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
- Collects information on trips and usage of intercity buses originating from and traveling to the region. Could inform TDM and other TPB planning efforts.



# Definition

- For the purposes of this study, Intercity Bus is defined as:
  - Privately operated bus service between the DC area and other major cities or destinations, primarily for non-commuting purposes
- This definition excludes the following:
  - Commuter buses
  - Charter buses
  - School buses



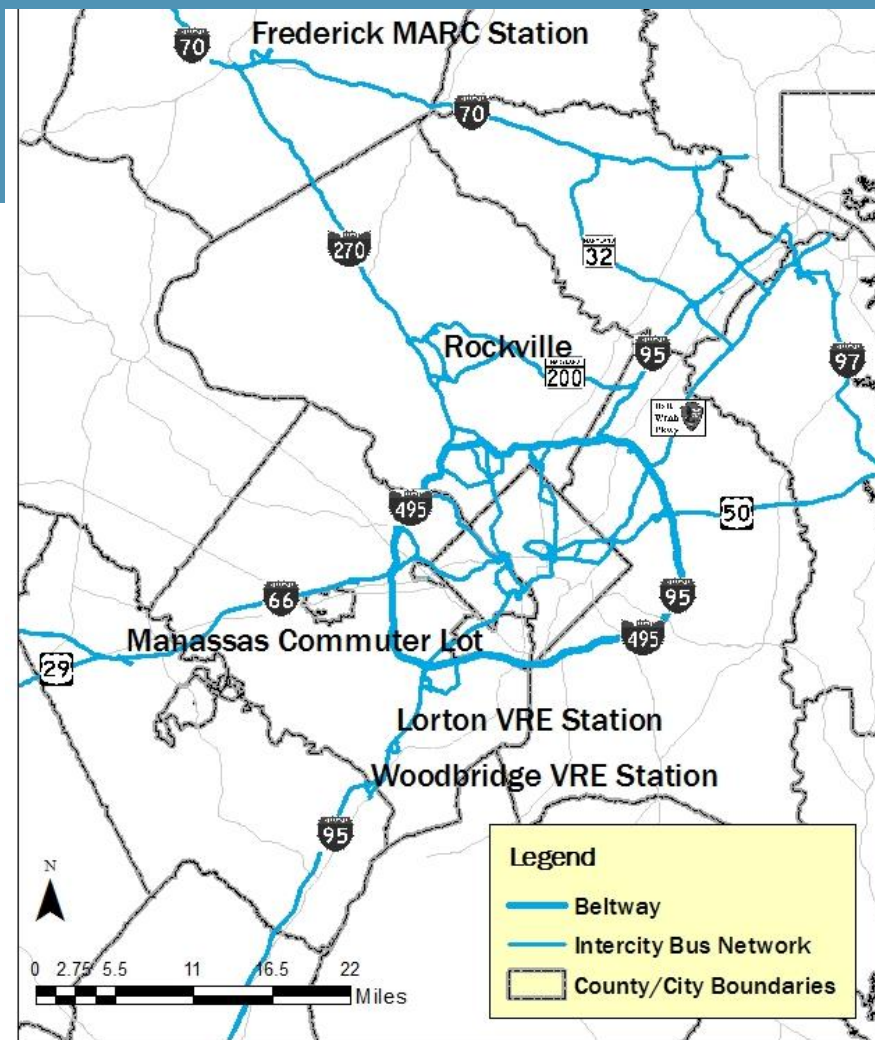
# Study Area

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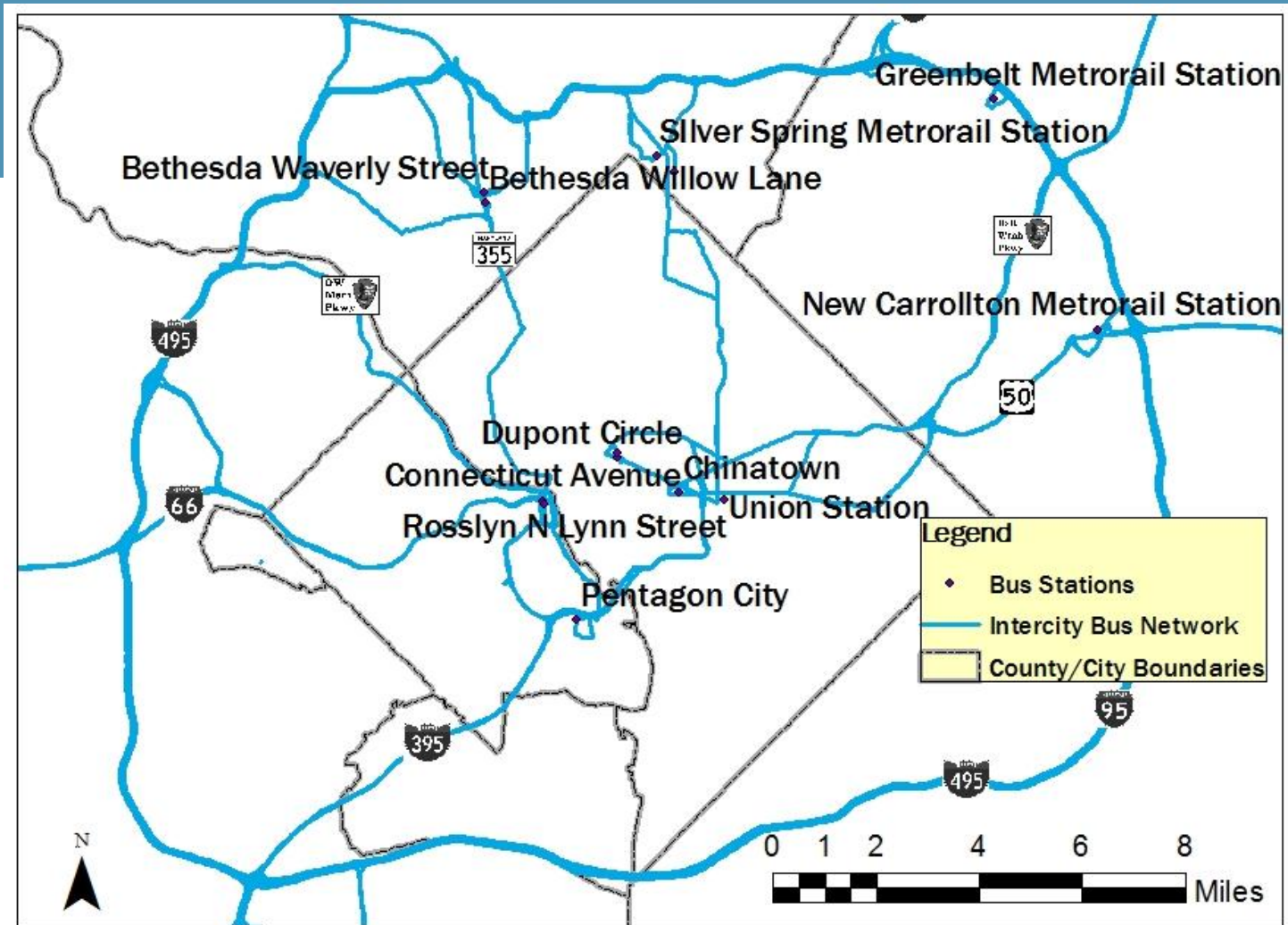
- Geography
  - Washington, DC
  - Maryland: Frederick, Montgomery, Prince George's
  - Virginia: Arlington, Fairfax, Prince William
- 14 Counting Stations/Intercity Bus Stops
  - These stations range from the bus terminal at Union Station, with well over 100 intercity buses per day, to stations with only one bus departure and one bus arrival per day
- 11 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 View



# Stations: Beltway View



# Intercity Bus Service Providers

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



# 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	<b><u>MD:</u></b> Baltimore City, White Marsh, Annapolis, Salisbury; <b><u>VA:</u></b> Fredericksburg, Richmond, Charlottesville, Christiansburg, Hampton Roads; <b><u>DE:</u></b> Wilmington, Newark <b><u>PA:</u></b> Philadelphia, Pittsburgh, Harrisburg; <b><u>NJ:</u></b> Newark; <b><u>NY:</u></b> New York City; <b><u>MA:</u></b> Boston; <b><u>WV:</u></b> Morgantown; <b><u>NC:</u></b> Raleigh/Durham, Charlotte; <b><u>GA:</u></b> Atlanta; <b><u>FL:</u></b> Jacksonville, Miami, Key West; <b><u>TN:</u></b> Knoxville; <b><u>OH:</u></b> Cleveland; <b><u>IL:</u></b> Chicago; <b><u>ON:</u></b> Toronto





# Stations and Providers

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



# 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 VA</u> : Fredericksburg, Richmond, Charlottesville; <u>MD</u> : Baltimore City; <u>NY</u> : New York City



# Count Days and Hours

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- 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

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- 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

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- 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



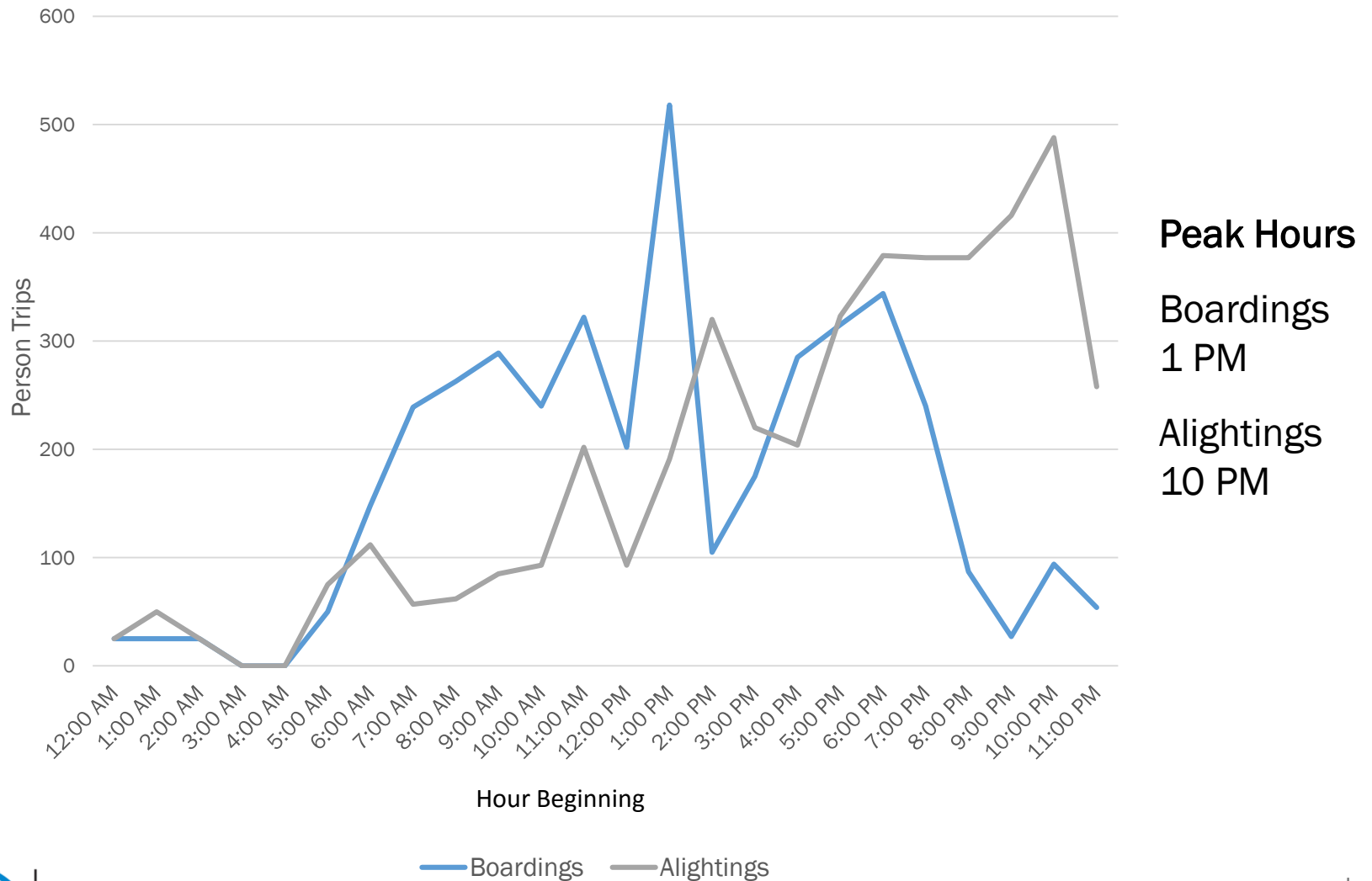
# Bus Capacity

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- 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 53-56 seat range



# Boardings and Alightings by Time of Day



# Origins and Destinations

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- 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**





# Other Intercity Bus Origins & Destinations

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- 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



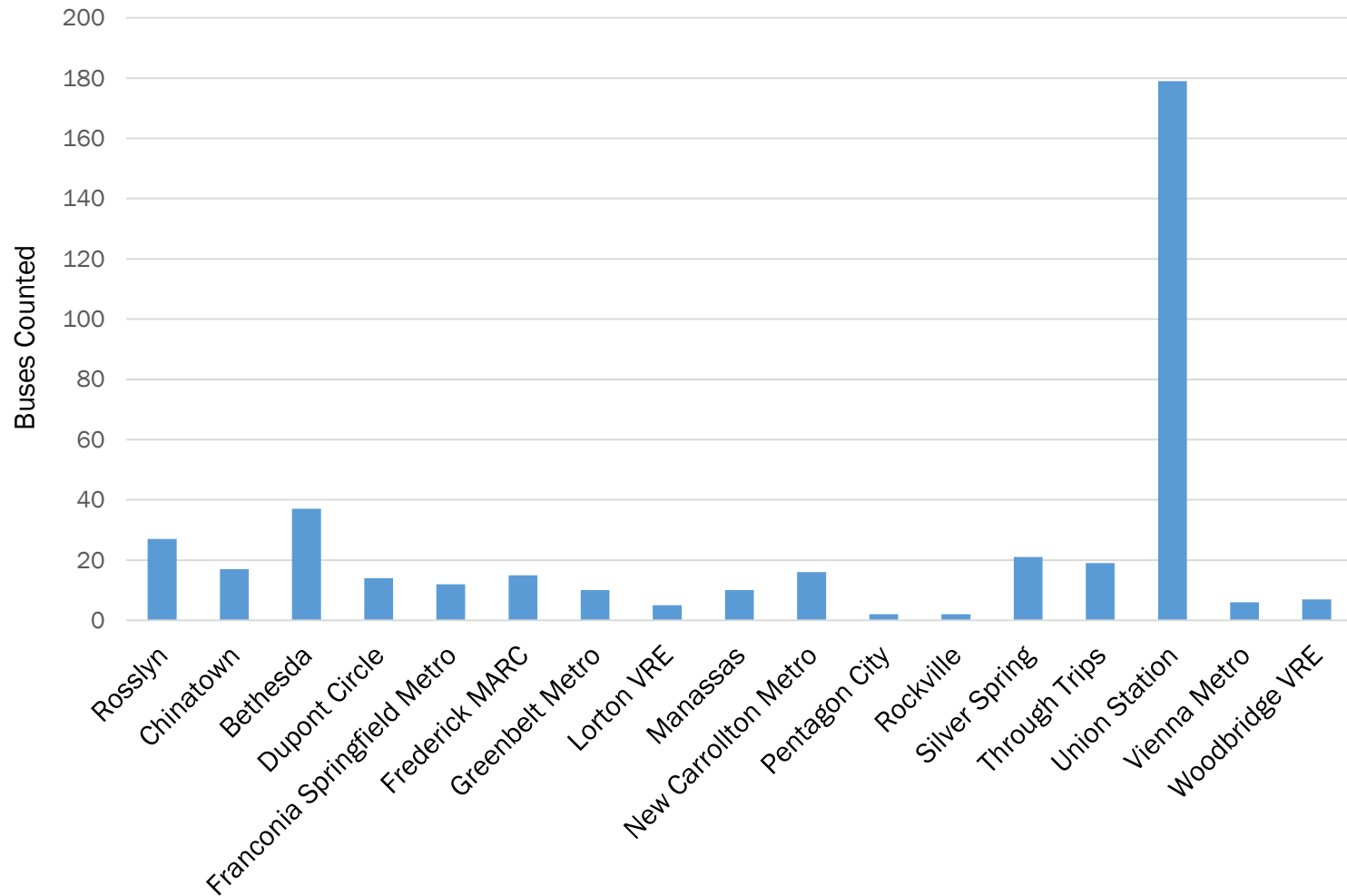
# Other Intercity Bus Origins & Destinations

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- 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

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- 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

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- 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
- Note: this comparison has its limitations given that Amtrak numbers are based on a year of patronage, whereas the bus data is derived from a much smaller sample



# Key Findings

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- 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

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- Counts for all seven days of travel
- Conduct a passenger survey based on the CASP Air Passenger Survey:
  - Boarding/Alighting & Origin/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?

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# Extra Slides

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# Methodology

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COG staff Patrick Zilliacus and Andrew Burke conducted study Nov-Dec 2016

## 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

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## Data Processing

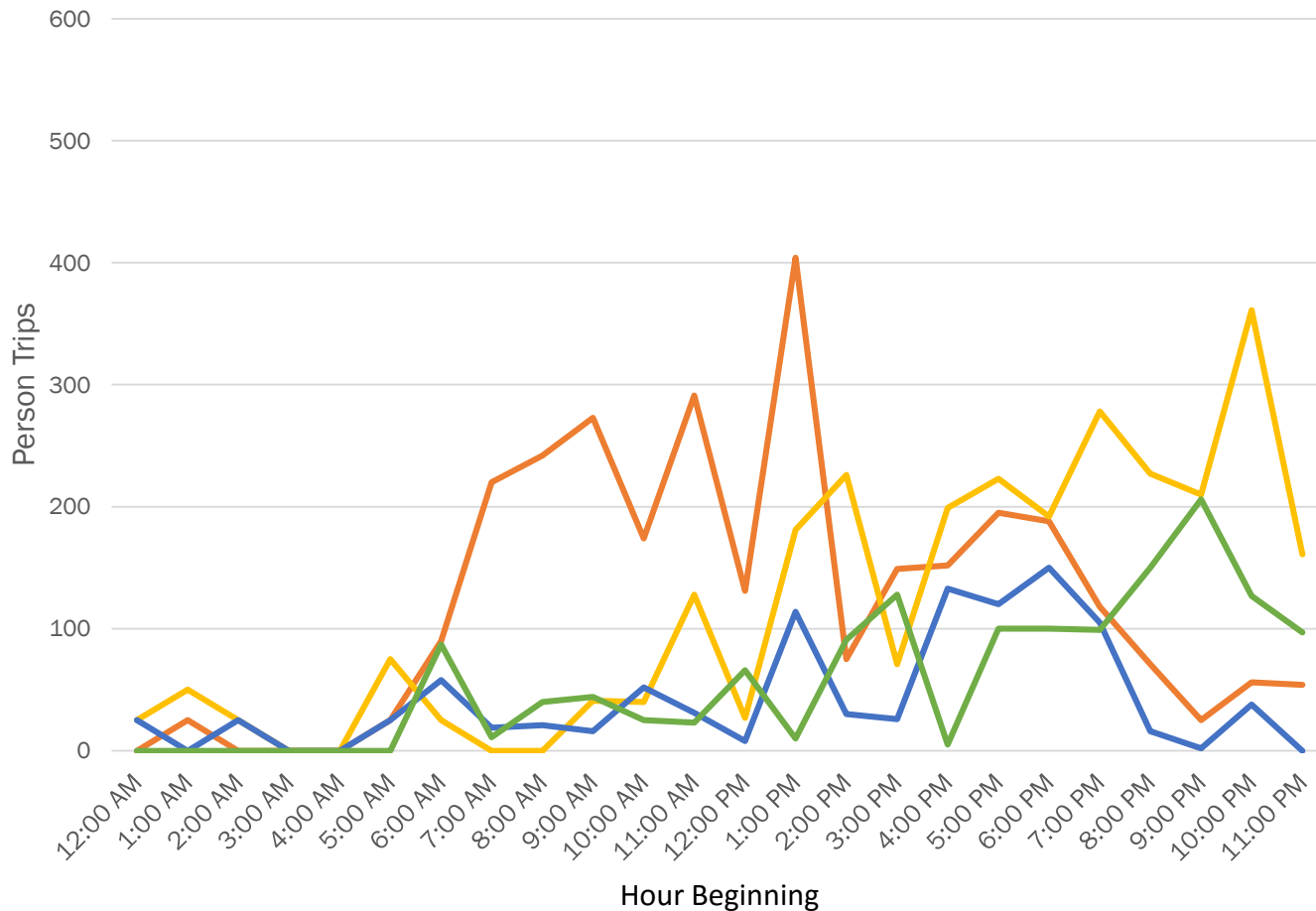
- Paper count sheets transcribed into machine for processing with SAS
- Patronage numbers for individual providers concealed

## 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



# 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

— D.C. to New York Boardings — New York to D.C. Alightings  
 — Non-New York Boardings — Non-New York Alightings



# Boardings and Alightings at Union Station

