INTERCITY BUS TRAFFIC AND PATRONAGE IN THE METROPOLITAN WASHINGTON REGION

An intercity bus patronage count conducted in the fall of 2016 at 14 locations in Washington, D.C. and suburban jurisdictions of Maryland and Virginia

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

In the fall of 2016, Transportation Planning Board (TPB) staff of the Metropolitan Washington Council of Governments (COG) conducted a count of intercity bus travel to and from the Metropolitan Washington region. While TPB staff has completed various counts of bus traffic over the years, this is the first study looking specifically at intercity bus travel. The impetus for the study was primarily due to May 2016 updated regulations by the Federal Highway Administration and the Federal Transit Administration[1] which read, in part:

*The purpose of this subpart is to implement the provisions of 23 U.S.C. 135, 23 U.S.C. 150, and 49 U.S.C. 5304, as amended, which require each State to carry out a continuing, cooperative, and comprehensive performance-based statewide multimodal transportation planning process, including the development of a long-range statewide transportation plan and STIP, 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 accessible pedestrian walkways, bicycle transportation facilities, and intermodal facilities that support intercity transportation, **including intercity bus facilities** and commuter van pool providers) and that fosters economic growth and development within and between States and urbanized areas, and take into consideration resiliency needs while minimizing transportation-related fuel consumption and air pollution in all areas of the State, including those areas subject to the metropolitan transportation planning requirements of 23 U.S.C. 134 and 49 U.S.C. 5303.*

Intercity bus travel serves thousands of passengers in the Metropolitan Washington region, daily. This project is an effort to quantify those riders, where they board and alight from intercity buses, as well as gain some insight regarding their origins and destinations outside of the region. When compared to railroad and air travel, intercity bus is generally the low-cost transportation mode. In 2014, according to the American Bus Association, scheduled intercity service accounted for about 16 percent of services provided nationally.[2]

This report begins with a technical description of the project and its research methodology, followed by the key findings.

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[1] Federal Highway Administration 23 CFR Parts 450 and 771 and Federal Transit Administration 49 CFR Part 613, published in the Federal Register on May 27, 2016

[2] See the Web site of the American Bus Association: https://www.buses.org/about/facts-and-stats

TECHNICAL PROJECT DESCRIPTION

Data Collection Stations

This project counted persons boarding, alighting and continuing through on intercity buses in Washington, D.C.; Frederick, Montgomery and Prince George's Counties in Maryland; and Arlington, Fairfax and Prince William Counties in Virginia. See Figures 1 and 2 below for maps which depict the monitoring station locations.

Figure 1: Intercity Bus Monitoring Stations - Regional View
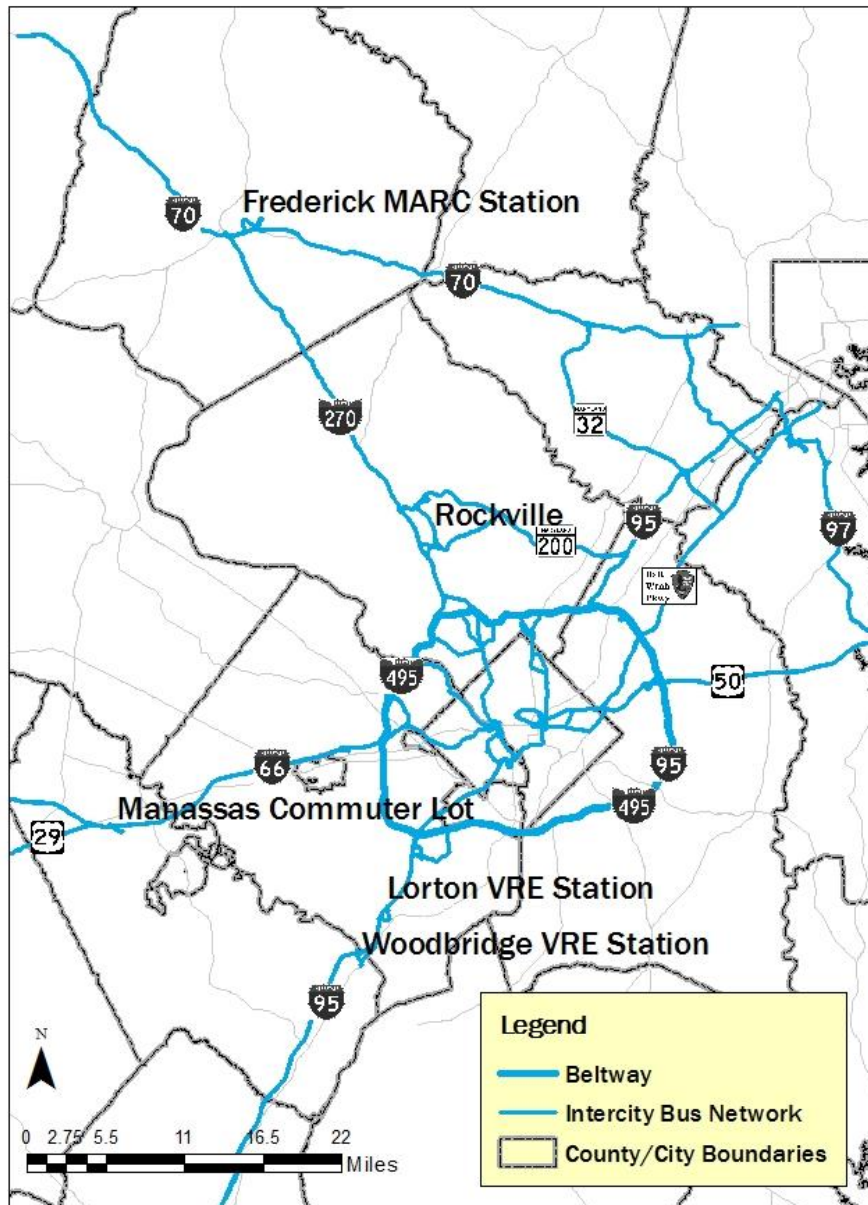
Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Figure 2: Intercity Bus Monitoring Stations - Beltway View
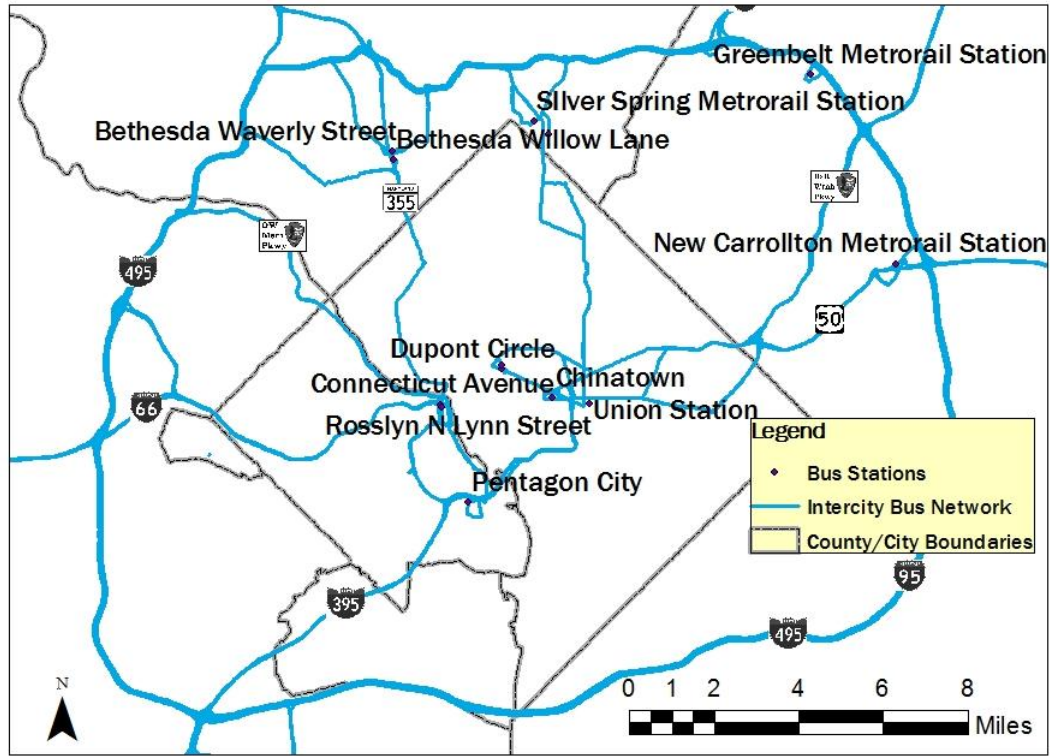
Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Bus Service Providers Included in Data Collection

Eleven intercity bus providers were included in the data collection project. One such provider does not stop in the Washington region, but instead provides through service from Charlottesville, Virginia to New York City. Thus, its patronage was estimated based on observed data from bus providers that were counted. The table below contains a list of monitoring stations and providers that were counted at each, and the subsequent table includes a description of each provider. Providers range in size from a few buses to large national fleets with hundreds or thousands of buses.

Table 1: Intercity Bus Monitoring Stations and Providers

County or city	State	Station	Providers
Washington	D.C.	Chinatown	Eastern
		Dupont Circle (two curbside locations near each other)	Best Bus Washington DeLuxe
		Union Station	Best Bus, Bolt, Greyhound, Megabus, Peter Pan, Washington DeLuxe
Frederick County	Maryland	Frederick MARC Station	Bayrunner, Greyhound
Montgomery County		Bethesda (two curbside locations near each other)	Vamoose, Tripper Bus
		Rockville	Eastern
		Silver Spring (Greyhound Station)	Greyhound, Peter Pan
		Silver Spring (Metro Station)	Best Bus
Prince George's County		Greenbelt Metro Station	Bolt
		New Carrollton Metro Station	Peter Pan, Greyhound
Arlington County	Virginia	Pentagon City	Washington DeLuxe
		Rosslyn (two curbside locations near each other)	Vamoose, Tripper Bus
Fairfax County		Franconia-Springfield Metro Station	Best Bus, Greyhound
		Lorton VRE Station	Vamoose
		Vienna Metro Station	Best Bus
Prince William County		Manassas Commuter Lot	Best Bus
		Woodbridge VRE Station	Greyhound

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Table 2: Intercity Bus Service Providers

Provider	Areas served
Bayrunner	Serves I-70 and I-68 Corridors in Maryland, between Western Maryland (including Frederick); and Baltimore City and BWI Airport (Bayrunner schedules are coordinated with Greyhound)
Best Bus	Provides service between Northern Virginia, District of Columbia and Montgomery County; and New York City
Bolt	Provides service from District of Columbia and Prince George's County; to New York City (Bolt is a subsidiary of Greyhound)
Eastern	Provides service along the I-95 corridor from Richmond, District of Columbia; and New York City, with limited service between Rockville, Maryland and New York City
Greyhound Lines, Inc.	Nationwide U.S. bus carrier with affiliates in Canada and Mexico - provides service to New York, Philadelphia, Baltimore, Frederick, Pittsburgh, Charlottesville, Richmond and Hampton Roads, in addition to many other U.S. destinations (Some Greyhound service crosses the Washington region without making station stops - Greyhound schedules in the northeastern United States are coordinated with Peter Pan Bus Lines)
Megabus	Provides service from Washington, D.C. to New York, Philadelphia, White Marsh (Baltimore County, Maryland), Newark (Delaware), Morgantown (West Virginia), Pittsburgh, Richmond (and points south, including Atlanta), Hampton Roads area of Virginia and Toronto
Peter Pan Bus Lines	Provides service between the District of Columbia and Montgomery County and New York City, with service beyond to New England (Peter Pan schedules are coordinated with Greyhound)
Starlight Express	Provides service between Charlottesville, Virginia and New York City (does not stop in the Washington area)
Tripper Bus	Provides service between Arlington and Montgomery Counties; and New York City
Vamoose	Provides service between Arlington, Fairfax and Montgomery Counties; and New York City (Vamoose provides Vamoose Gold service at a higher fare. Vamoose Gold buses have larger seats and lower seating capacities)
Washington Deluxe	Provides service between Arlington County and the District of Columbia; and New York City

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Counting Days and Hours

Intercity bus service tends to increase from Wednesday through Friday, so emphasis was placed on collecting data on these days, from 6 AM to 12 Midnight. Since data collection took place in late fall, a few counts were done on Tuesdays. Data collection was not conducted on Saturdays, Sundays, Mondays or designated federal holidays, nor on "Black Friday" after Thanksgiving Day. Most stations were counted so that all hours were covered exactly once.

Methodology

Intercity bus providers no longer provide bus schedules on paper. TPB staff conducted an extensive amount of online research to determine where and when intercity buses operate in the Washington region, and established contact with several of the providers prior to beginning field work. Prior to beginning field work at Union Station, permission was secured from the management of the Union Station Redevelopment Corporation.

Transportation data collection staff with experience counting urban transit bus patronage were hired and briefed on the nature of the project. The first count stations were then selected to allow ample time for training.

At each station, staff counted the number of patrons alighting from and boarding the bus. With the permission of the driver, the number of patrons staying on the bus were also counted. The driver was asked about origins and destinations of the bus as well. These data were recorded onto paper count sheets for later transcription. For audit trail purposes, the company name, bus number, USDOT number, state of registration and license plate numbers were also recorded.

Over 400 bus trips at stations stops were counted as part of this effort. Paper count sheets were then transcribed into machine readable format for processing with SAS software. Care was taken not to disclose patronage for individual providers, as these data are proprietary to each company. To avoid double-counting, as many of the buses make more than one stop in the Washington region, emphasis has been placed on the number of persons boarding and alighting from each counted bus rather than the bus itself.

Patronage of buses crossing the region without stopping, such as Richmond, Virginia to New York City, was assumed to be carrying loads of 25 persons per bus. This load factor is based on average loads of buses that were counted throughout the study. Patronage of buses operating in the overnight period of 12 Midnight to 6 AM were also assumed to be carrying 25 patrons.

Bus Services Beyond Project Scope

The regional intercity bus count did not include commuter bus service to suburban and exurban areas of Maryland and Virginia, nor transit bus service provided by WMATA and the local governments of the region. Sightseeing, charter bus, school bus and contract bus services were also beyond the scope of the project.

INTERCITY BUS RIDERSHIP, ORIGINS, AND DESTINATIONS

Person Trips Boarding, Alighting and Staying on Board

Approximately 4,100 persons boarding intercity buses were observed. Of those boarding, 66 percent were observed in the District of Columbia, 22 percent were in Maryland, and 12 percent were in Virginia. Overall, the peak hour for boarding passengers is 1:00 PM.

An estimated 4,400 persons were observed alighting from intercity buses. Of those alighting, 75 percent were observed in the District of Columbia, 15 percent in Maryland, and 10 percent in Virginia. Overall, the peak hour for alighting passengers is 10:00 PM.

See Figure 3 for a graphical representation of boarding and alighting patrons by hour.

About 2,100 persons were observed staying on board at stations that were counted, as well as buses that crossed the region without stopping. Of those staying on board, 23 percent were assumed to be on buses crossing the region, 28 percent were counted at stations in D.C., another 28 percent were counted at stations in Maryland, and 21 percent at stations in Virginia. Some of the persons staying on board the buses may have been counted while boarding at a previous station, or else were possibly counted as alighting at a station further along on the route of the bus.

Figure 3: Person Trips by Intercity Bus - Boardings and Alightings by Time of Day
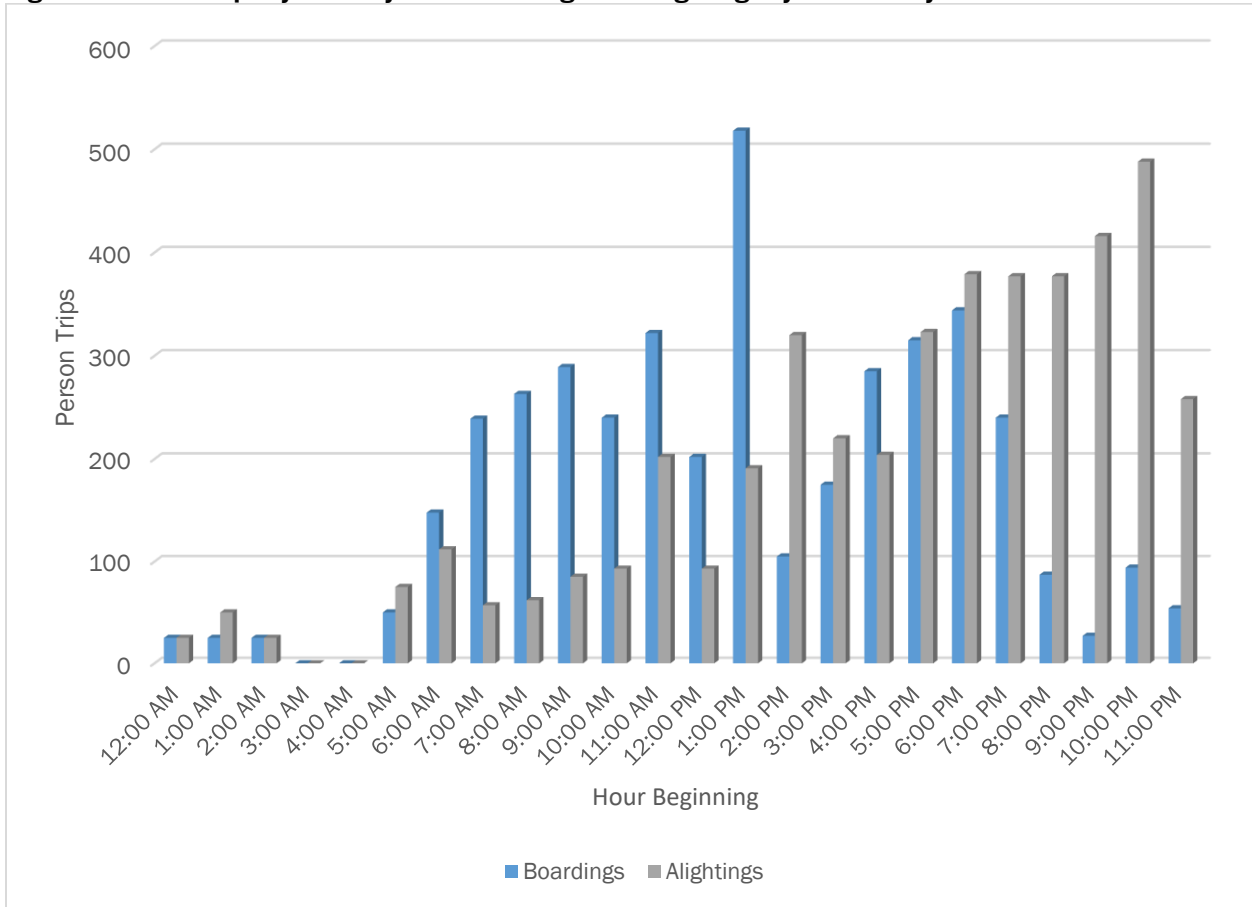
Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region
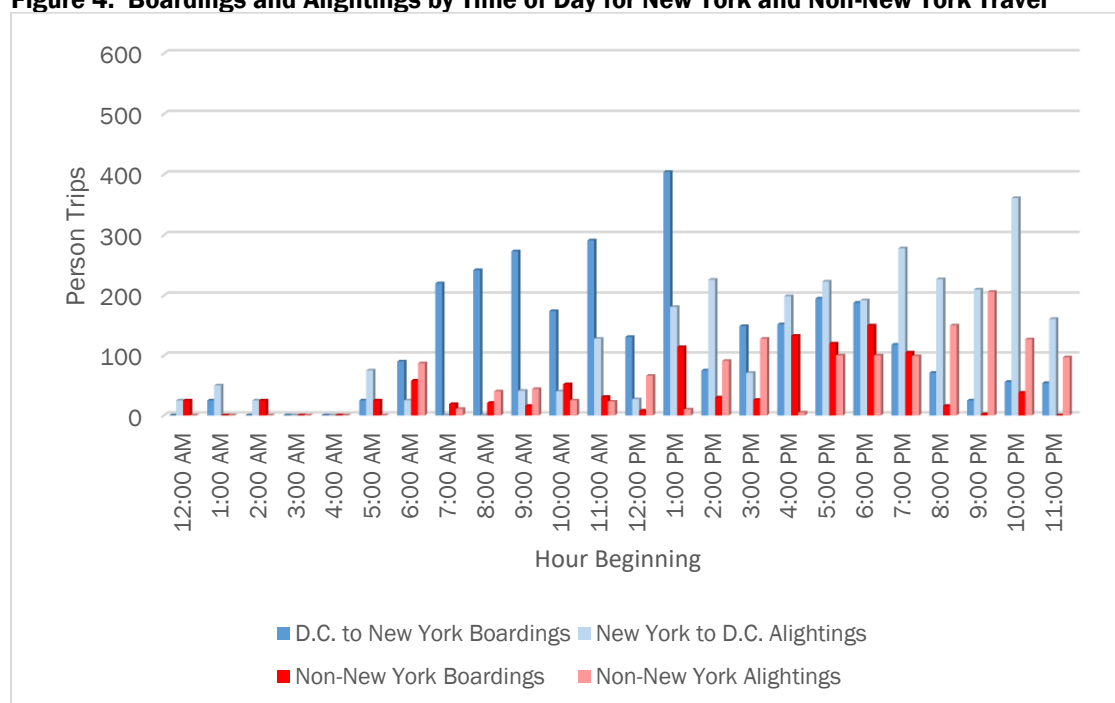
Intercity Bus Origins and Destinations

Of the estimated 400 bus trips observed, over 200 were counted at stations in the District of Columbia. Approximately 100 bus trips were counted at stations in Maryland, 70 were counted at stations in Virginia, and the remainder were "through" trips for which patronage was estimated.

Travel by intercity bus to and from the Washington region is dominated by travel between Washington (and its suburbs) and New York City (and nearby areas of northern New Jersey). Roughly 75 percent of passenger boardings account for travel to New York, while 66 percent of those arriving to the Washington Metropolitan region originate in or near New York City. Figure 4 contains a graphical description of New York and non-New York intercity bus trips.

Several of the intercity bus providers serving the Washington travel market only provide service to New York City.

Peak hour for departures to New York is 1:00 PM. Peak hour for arrivals from New York is 10:00 PM. Peak hour for departures to non-New York destinations is 6:00 PM. Peak hour for arrivals from non-New York origins is 9:00 P.M.

Figure 4: Boardings and Alightings by Time of Day for New York and Non-New York Travel

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Some of the other intercity bus origins and destinations served from Washington include Baltimore, BWI Airport, and Salisbury (Maryland); Richmond, Hampton Roads, Charlottesville and Christiansburg (Virginia); Philadelphia, Harrisburg and Pittsburgh (Pennsylvania); Morgantown (West Virginia); Raleigh/Durham (North Carolina); Cleveland (Ohio); Atlanta (Georgia); Chicago (Illinois) and Toronto (Ontario).

Union Station Bus Terminal and Other Monitoring Stations

The bus terminal at Union Station stands out as the Washington Metropolitan region's busiest intercity bus counting station. At the time of this study, Union Station is served by intercity bus providers BestBus, Bolt, Greyhound, Megabus and Washington DeLuxe.

Approximately 180 (45 percent) of the 400 unique, scheduled intercity bus stops observed as part of this project were counted at Union Station. As a point of comparison, the next busiest location for intercity buses were two curbside locations together in Bethesda, with about 40 observed bus stops. See Figure 5 below for a graphical representation of all monitored intercity bus count stations.

There were an estimated 2,100 observed boardings, 3,100 observed alightings, and 500 persons remaining on the bus during a scheduled stop at Union Station. The peak hour for boardings at Union Station is 1:00 PM, while the peak hour for alighting is 10:00 PM. See Figure 6 for a graphical representation of intercity bus boardings and alightings at Union Station only.

Staff was able to count bus traffic at Union Station in the afternoon on a Thursday and Friday. Friday data during the overlap period 4:00 PM to 7:00 PM were used to tabulate total intercity trips by bus. See Table 3 for a summary of boardings and alightings for both days.

Table 3: Boardings and Alightings for Thursday and Friday 4:00 PM to 7:00 PM at Union Station

	Boardings	Alightings
Thursday	400	300
Friday	600	700

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Figure 5: Intercity Bus Monitoring Stations by Buses Monitored
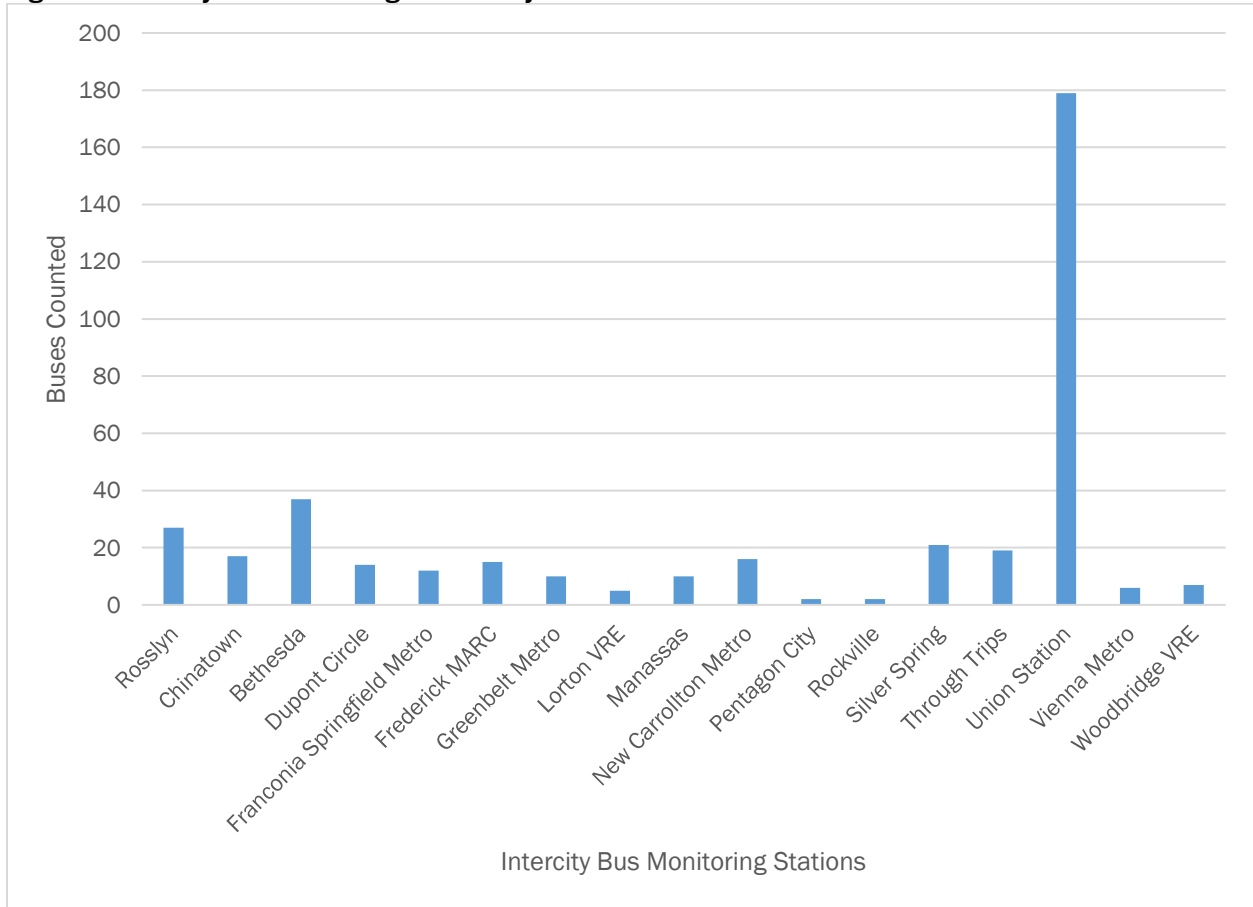
Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Figure 6: Boardings and Alightings at Union Station

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

KEY FINDINGS

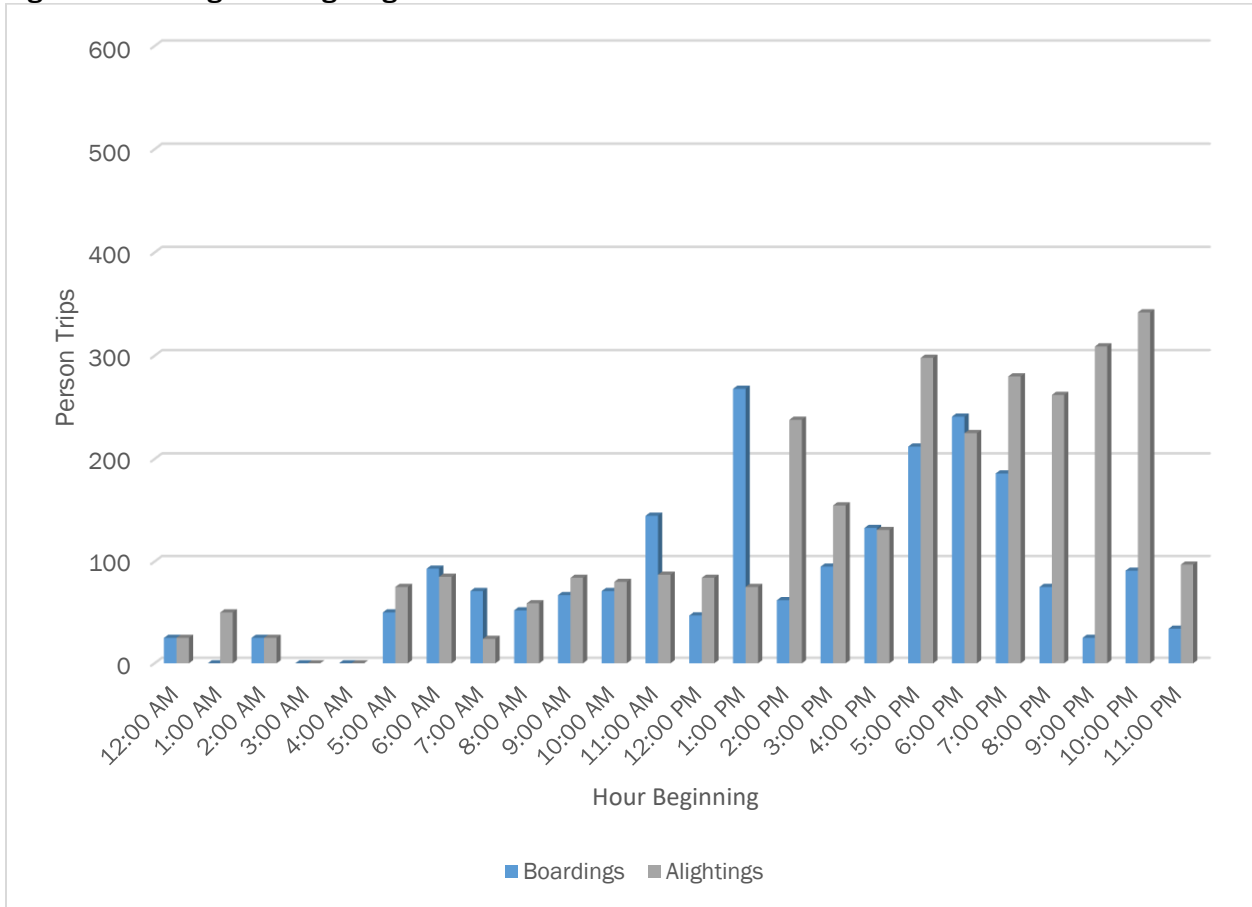- Intercity buses serve thousands of person trips in the Washington region, daily.

- A clear majority of these trips are to or from the New York City metropolitan area.

- Union Station is the dominant boarding and alighting point for intercity bus travel in the Washington region. There are several other intercity bus stops in the region, but they serve relatively few trips when compared to the volume of bus traffic and person trips at Union Station.

- Based on a small sample it appears that there is more travel by intercity bus on Fridays than on other days of the week, though more data collection and analysis is required to confirm this.

Table 4: Intercity Bus Stations by Provider and Destination

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	**MD:** Baltimore City, Annapolis, Salisbury **VA:** Fredericksburg, Richmond, Charlottesville, Christiansburg, Hampton Roads **DE:** Wilmington **PA:** Philadelphia, Pittsburgh, Harrisburg **NJ:** Newark **NY:** New York City **MA:** Boston WV: Morgantown **NC:** Raleigh/Durham, Charlotte **GA:** Atlanta **FL:** Jacksonville, Miami, Key West **TN:** Knoxville **OH:** Cleveland **IL:** Chicago **ON:** Toronto
Frederick	Frederick MARC Station	Bayrunner, Greyhound	**MD:** Baltimore City, BWI Airport, Hagerstown, Cumberland, Grantsville **PA:** Pittsburgh **OH:** Cleveland
Montgomery	Bethesda (Waverly Street)	Vamoose	New York City
	Bethesda (Willow Street)	Tripper Bus	
	Rockville	Eastern	New York City
	Silver Spring (Greyhound Station)	Greyhound, Peter Pan	**MD:** Baltimore City **VA:** Fredericksburg, Richmond, Charlottesville **PA:** Philadelphia, Pittsburgh, Harrisburg **NC:** Raleigh/Durham **FL:** Jacksonville, Miami **OH:** Cleveland **IL:** Chicago
	Silver Spring (Metro Station)	Best Bus	New York City
Prince George's	Greenbelt Metro Station	Bolt	New York City
	New Carrollton Metro Station	Peter Pan, Greyhound	**MD:** Baltimore City, Annapolis, Salisbury **PA:** Philadelphia **NY:** New York City
Arlington	Pentagon City	Washington DeLuxe	New York City
	Rosslyn (N Lynn Street)	Vamoose	New York City
	Rosslyn (N Moore Street)	Tripper Bus	
Fairfax County	Franconia-Springfield Metro Station	Best Bus, Greyhound	**VA:** Fredericksburg, Richmond, Charlottesville **MD:** Baltimore City **NY:** 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	**Washington, DC VA:** Fredericksburg, Richmond, Charlottesville **MD:** Baltimore City **NY:** New York City

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region

Table 5: Surveyed Intercity Bus Trips by Origin and Destination

State	Origins		Destinations		TOTAL	
NY	149	34%	152	35%	301	34%
DC	116	27%	116	27%	232	27%
VAX	60	14%	38	9%	98	11%
VAI	31	7%	40	9%	71	8%
PA	27	6%	31	7%	58	7%
MDX	23	5%	26	6%	49	6%
MDI	24	5%	18	4%	42	5%
NJ	3	1%	5	1%	8	1%
GA	2	0%	2	0%	4	0%
NC	1	0%	2	0%	3	0%
OH	0	0%	3	1%	3	0%
MA	1	0%	1	0%	2	0%
ONT	0	0%	2	0%	2	0%
MI	0	0%	1	0%	1	0%
TOTAL	437		437		874	

Notes:

*VAI and MDI represent locations in Virginia and Maryland inside TPB modeled region

*VAX and MDX represent locations in Virginia and Maryland outside TPB modeled region

Source: Intercity Bus Traffic and Patronage in the Metropolitan Washington Region