

# WASHINGTON-BALTIMORE REGIONAL AIR PASSENGER SURVEY 2017

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## Geographic Findings Draft Final Report

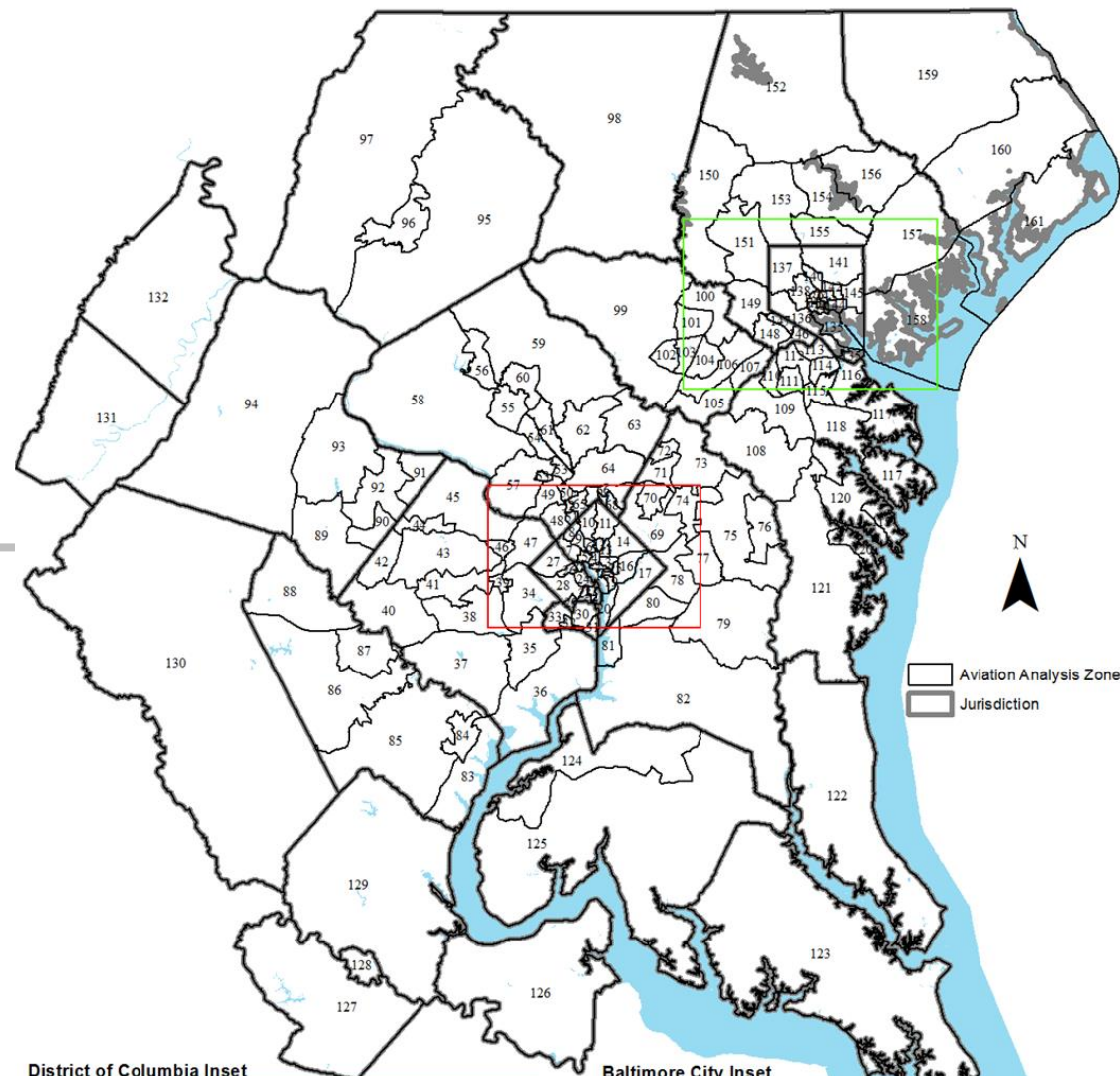
Arianna Koudounas, AICP  
Transportation Planner

TPB Technical Committee  
March 1, 2019

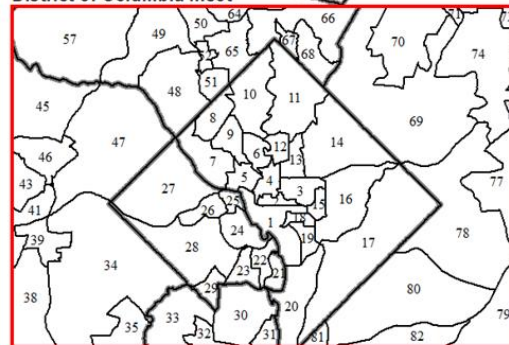
# Washington-Baltimore Air Systems Region at a Glance



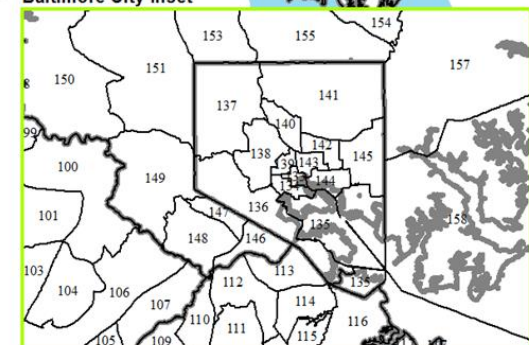
# The Region is Divided into 161 Aviation Analysis Zones (AAZs)



District of Columbia Inset



Baltimore City Inset



# Local Originating Passenger Survey Records

Geo-Coding		BWI	DCA	IAD	Total
Hand-Coded	<i>Number</i>	4,552	4,301	3,404	<b>12,257</b>
	<i>Percent</i>	76%	75%	68%	<b>73%</b>
Partial-Address	<i>Number</i>	1,405	1,379	1,596	<b>4,380</b>
	<i>Percent</i>	23%	24%	32%	<b>26%</b>
Allocated	<i>Number</i>	45	29	24	<b>98</b>
	<i>Percent</i>	1%	1%	0%	<b>1%</b>
<b>Total</b>	<i>Number</i>	<b>6,002</b>	<b>5,709</b>	<b>5,024</b>	<b>16,735</b>
	<i>Percent</i>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



# Key Findings

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## Airport Use

- 26.7 million passengers originated in the region; a 5% increase
- Maryland suburbs of DC experienced a 23% increase
- Outlying areas experienced a 10% decrease

## Airport Preference

- Greatest percentage of those traveling from preferred airport came from the Baltimore region and the outlying areas

## Trip Originations

- 93% of total trip originations are internal; 7% are external (Delaware, Pennsylvania, Eastern Maryland, Southern Virginia, and West Virginia)
- Virginia Suburbs continues to generate the highest concentration of passenger originations, but Maryland Suburbs concentration is growing

## Mode Choice

- Baltimore Core passengers travel far more by TNC (19%) than taxi (9%)

# AIRPORT SERVICE AREAS

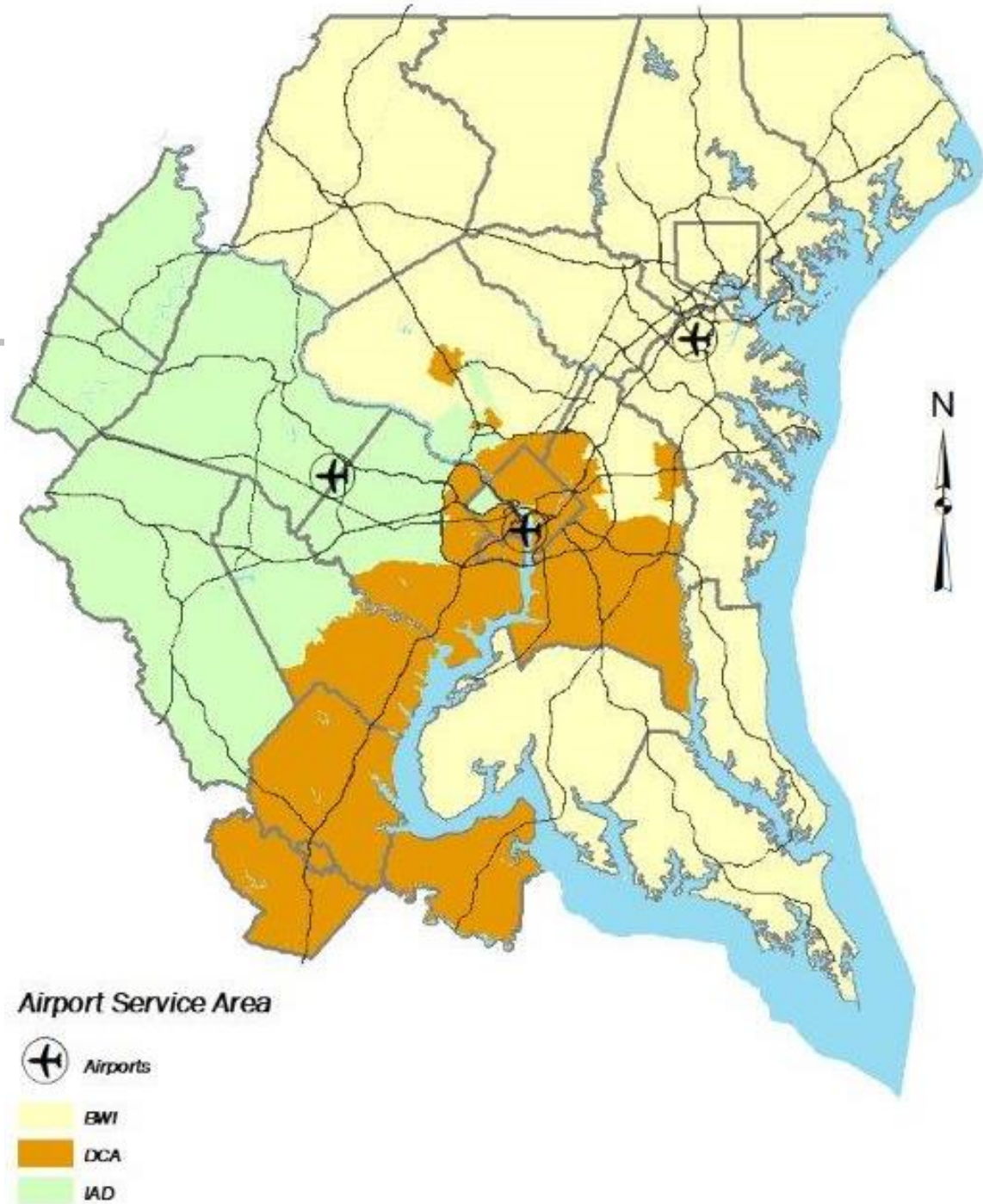
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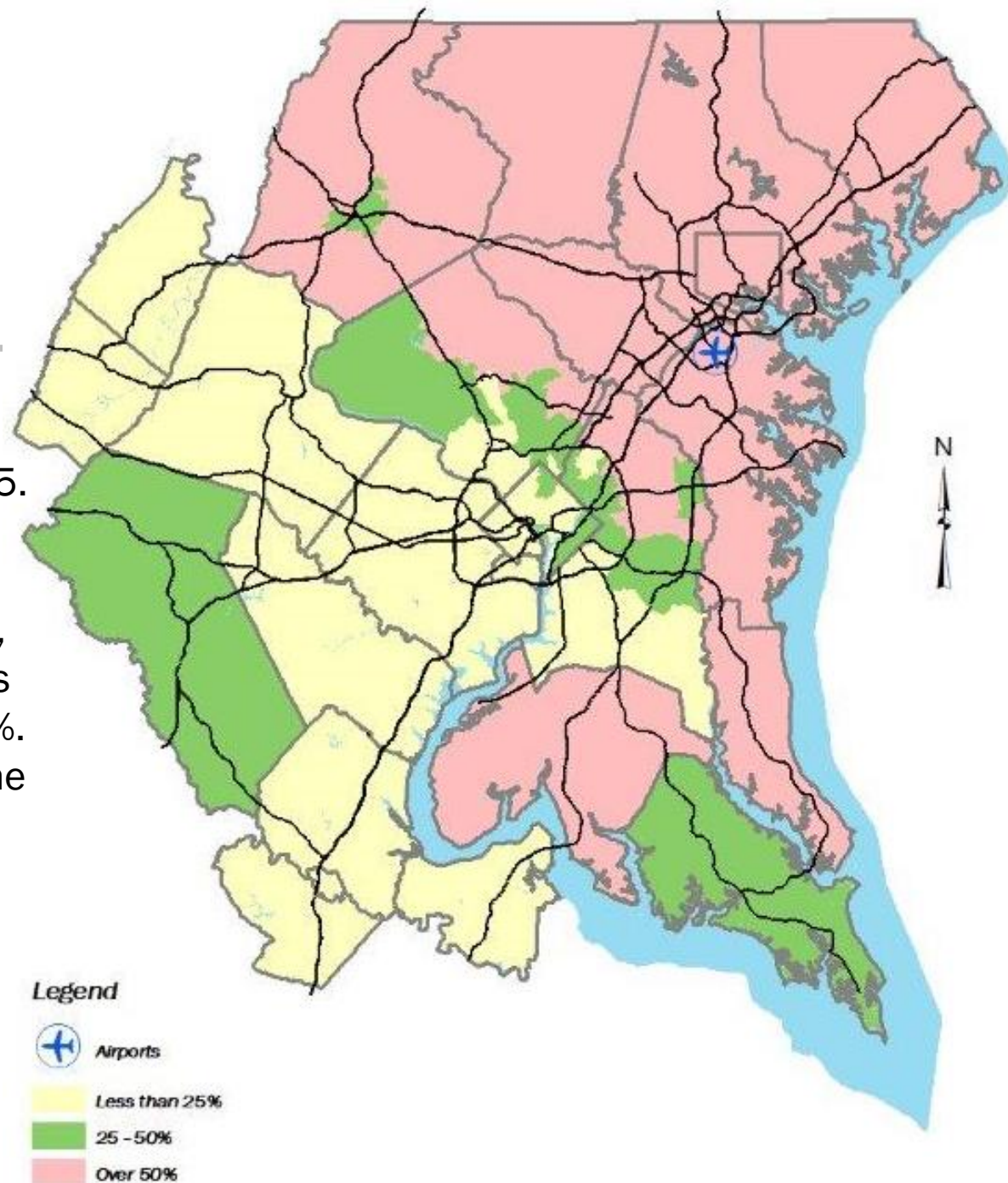
# Airport Service Area by AAZ

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# Percentage of Passengers Using BWI

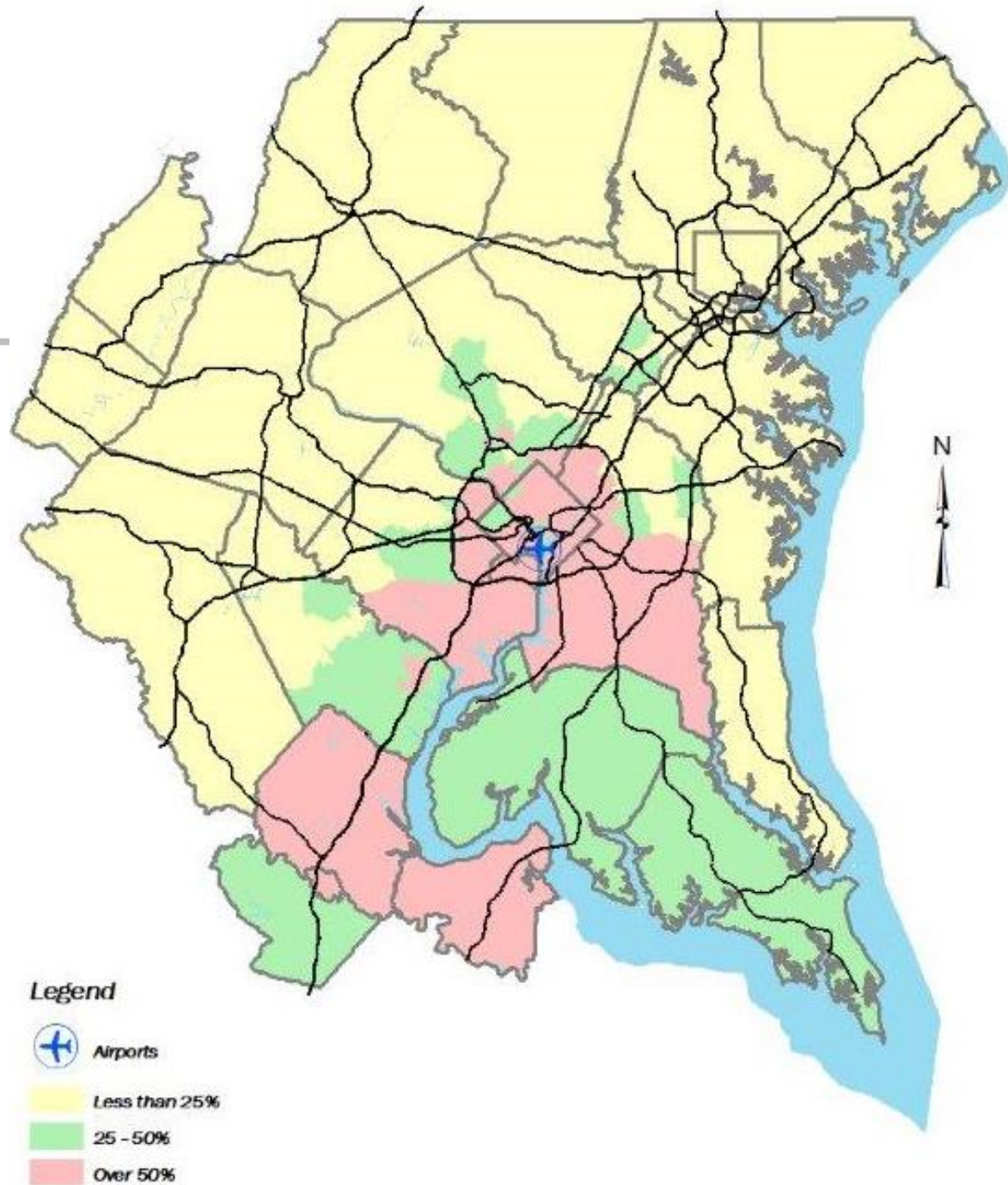
Local originations at BWI increased by 5% from 2015. Passengers traveling to BWI from the Virginia suburbs increased by 24%, from the Maryland suburbs by 16%, and from DC by 2%. Originations to BWI from the outlying jurisdictions dropped by 5%.





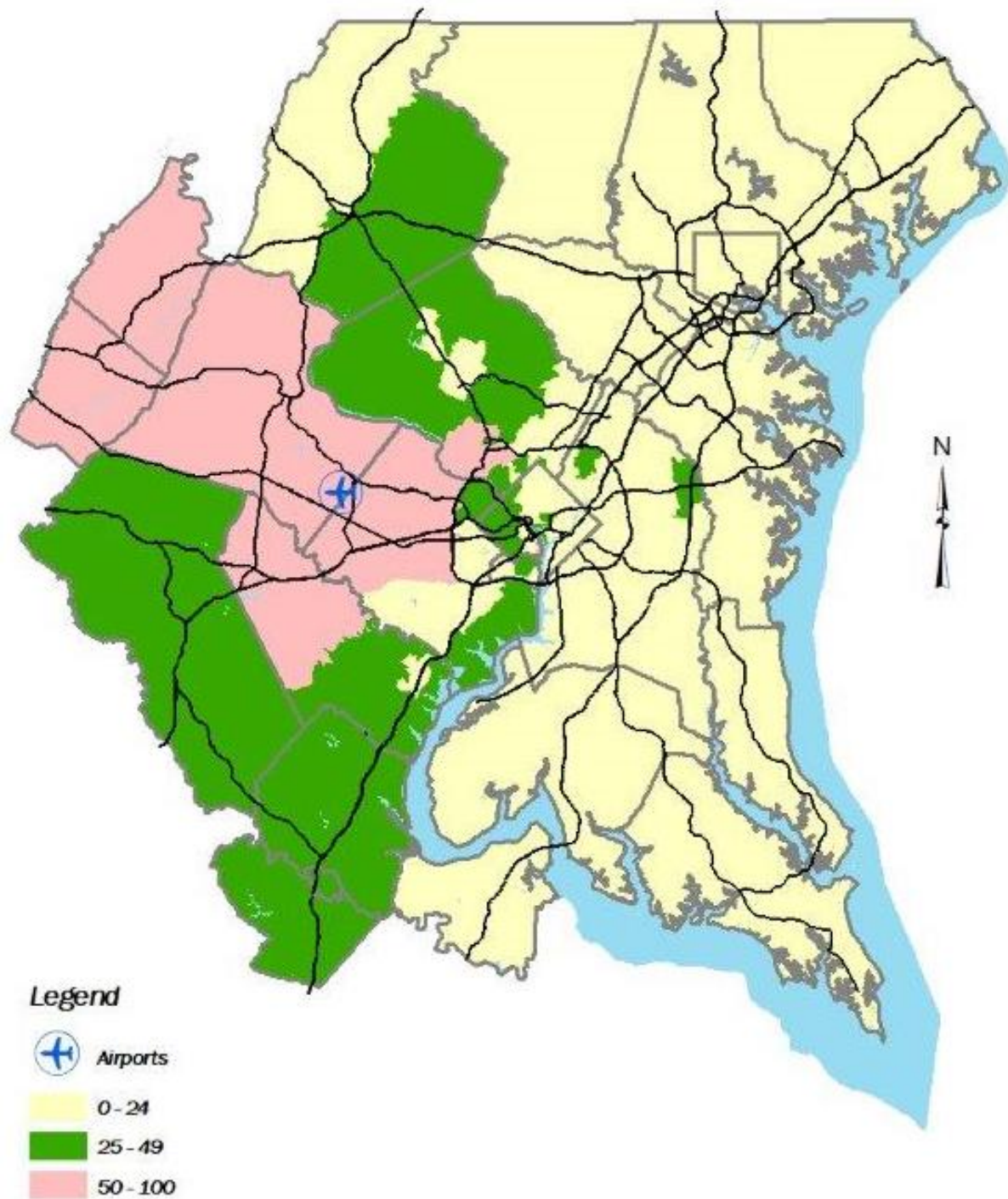
# Percentage of Passengers Using DCA

Local originations at DCA increased by 1% from 2015. 71% of the Washington Core flew out of DCA. Portions of Montgomery, Prince George's, Prince William, and Stafford Counties along the I-95 corridor account for significant numbers of passengers using DCA.



# Percentage of Passengers Using IAD

Local originations at IAD increased by 10% from 2015. 71% of IAD passengers were from the Virginia Suburbs and DC. Originations from the Maryland suburbs and the Baltimore metropolitan area increased by 59 percent and decreased by 12 percent, respectively.



# Change in Originating Air Passengers by Jurisdiction, 2015–2017 (thousands)

ORIGIN COUNTY	BWI AIRPORT			DCA Airport			IAD AIRPORT			REGION		
	2017	15-17	% Change	2017	15-17	% Change	2017	15-17	% Change	2017	15-17	% Change
Anne Arundel	1,752	187	12%	31	-32	-51%	31	-41	-57%	1,813	114	7%
Baltimore City	1,149	-114	-9%	27	-24	-47%	35	-9	-21%	1,210	-147	-11%
Baltimore County	725	-27	-4%	10	4	61%	30	9	45%	765	-13	-2%
Carroll	287	70	32%	6	2	38%	10	6	164%	303	78	34%
Harford	223	-8	-3%	1	1	105%	7	-10	-60%	231	-17	-7%
Howard	699	56	9%	89	56	167%	69	20	41%	858	132	18%
<b>BALTIMORE METRO</b>	<b>4,835</b>	<b>165</b>	<b>4%</b>	<b>165</b>	<b>6</b>	<b>4%</b>	<b>182</b>	<b>-25</b>	<b>-12%</b>	<b>5,181</b>	<b>147</b>	<b>3%</b>
Calvert	70	10	17%	21	-29	-58%	7	1	15%	97	-18	-16%
Charles	143	72	102%	97	33	51%	14	1	4%	254	105	71%
Frederick	217	27	14%	30	6	25%	118	49	72%	365	82	29%
Montgomery	851	60	8%	1,011	46	5%	912	289	46%	2,774	395	17%
Prince George's	504	73	17%	789	172	28%	242	143	144%	1,535	387	34%
<b>MARYLAND SUBURBS</b>	<b>1,784</b>	<b>242</b>	<b>16%</b>	<b>1,949</b>	<b>227</b>	<b>13%</b>	<b>1,293</b>	<b>482</b>	<b>59%</b>	<b>5,025</b>	<b>951</b>	<b>23%</b>



# Change in Originating Air Passengers by Jurisdiction, 2015–2017 (thousands) Cont'd

ORIGIN COUNTY	BWI AIRPORT			DCA Airport			IAD AIRPORT			REGION		
	2017	15-17	% Change	2017	15-17	% Change	2017	15-17	% Change	2017	15-17	% Change
Alexandria	56	22	64%	686	28	4%	250	100	67%	992	150	18%
Arlington Co.	121	41	50%	1,627	-180	-10%	550	69	14%	2,298	-71	-3%
Fairfax Co.	240	43	22%	1,426	81	6%	2,281	-32	-1%	3,948	92	2%
Loudoun Co.	32	5	17%	46	-73	-61%	679	77	13%	757	9	1%
Prince William	55	3	6%	200	-126	-39%	284	-14	-5%	539	-138	-20%
Stafford Co.	4	-13	-77%	122	50	69%	41	12	43%	167	49	42%
<b>VIRGINIA SUBURBS</b>	<b>508</b>	<b>99</b>	<b>24%</b>	<b>4,107</b>	<b>-220</b>	<b>-5%</b>	<b>4,086</b>	<b>212</b>	<b>5%</b>	<b>8,701</b>	<b>91</b>	<b>1%</b>
District of Columbia	482	8	2%	3,929	128	3%	1,031	45	5%	5,442	180	3%
Outlying Areas	115	-6	-5%	131	-14	-10%	139	-22	-14%	385	-41	-10%
Externals	1190	-96	-7%	218	0	0%	514	-39	-7%	1,922	-135	-7%
<b>TOTAL</b>	<b>8,913</b>	<b>413</b>	<b>5%</b>	<b>10,499</b>	<b>127</b>	<b>1%</b>	<b>7,245</b>	<b>652</b>	<b>10%</b>	<b>26,657</b>	<b>1,193</b>	<b>5%</b>

**Note:** Data for the Cities of Fairfax and Falls Church are included in the Fairfax County totals, and data for the Cities of Manassas and Manassas Park are included in the Prince William County totals. Outlying Areas include Clarke, Fauquier, King George, and Spotsylvania Counties in VA, the City of Fredericksburg VA, St. Mary's County in MD, and Jefferson County, WV. Externals include jurisdictions outside the air system planning region.





# Annual Internal/External Trip Originations by Airport (thousands)

Enplanement Type		BWI		DCA		IAD		Region	
		2015	2017	2015	2017	2015	2017	2015	2017
<b>Within Air System Planning Region</b>	#	7,267	7,723	10,152	10,281	6,095	6,730	23,514	24,734
(Internal)	%	85%	87%	98%	98%	92%	93%	92%	93%
<b>Outside Air System Planning Region</b>	#	1,233	1,190	219	218	497	514	1,949	1,922
(External)	%	15%	13%	2%	2%	8%	7%	8%	7%
<b>Total Enplanements</b>	#	<b>8,500</b>	<b>8,913</b>	<b>10,371</b>	<b>10,499</b>	<b>6,592</b>	<b>7,245</b>	<b>25,463</b>	<b>26,657</b>
	%	100%	100%	100%	100%	100%	100%	100%	100%

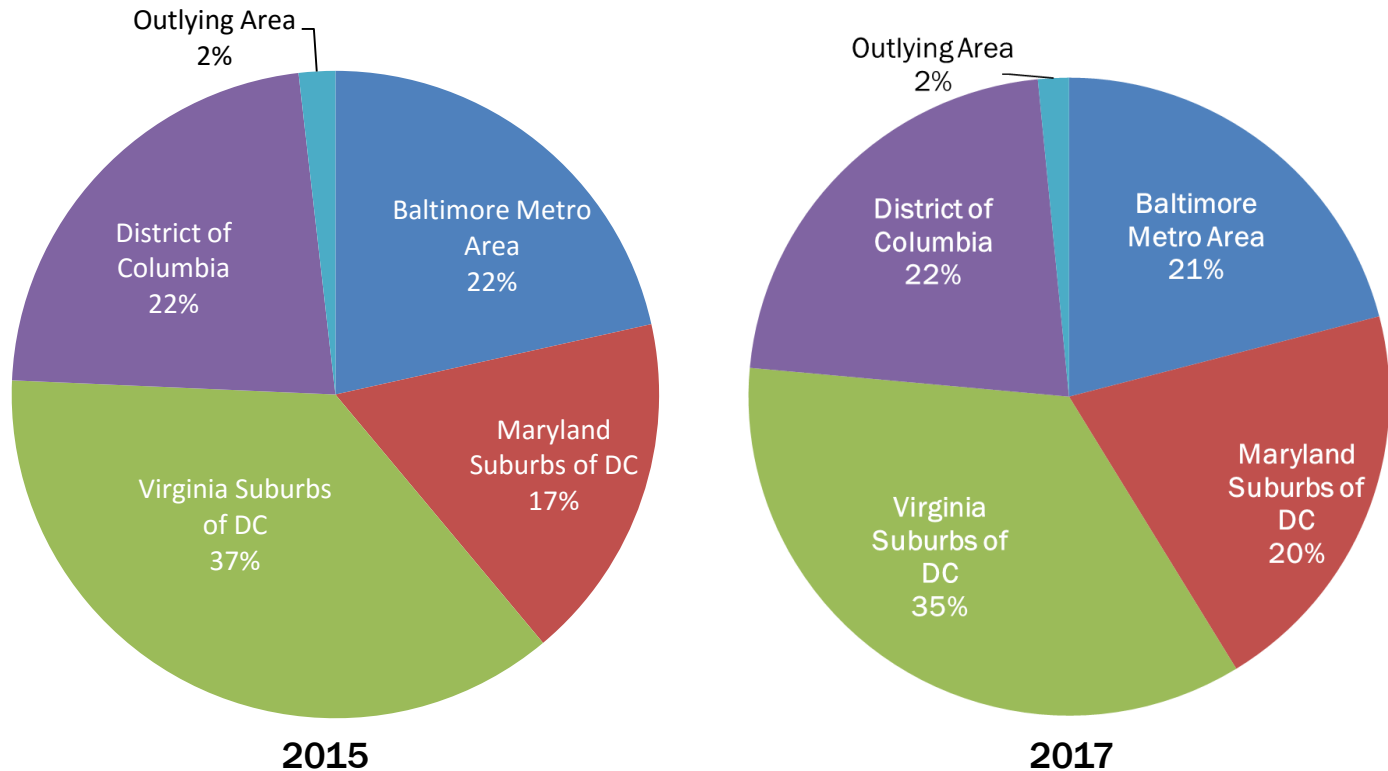


# Air Systems Region Super Districts

- Baltimore Metro Area
- District of Columbia
- Maryland Suburbs of DC
- Virginia Suburbs of DC
- Outlying Areas



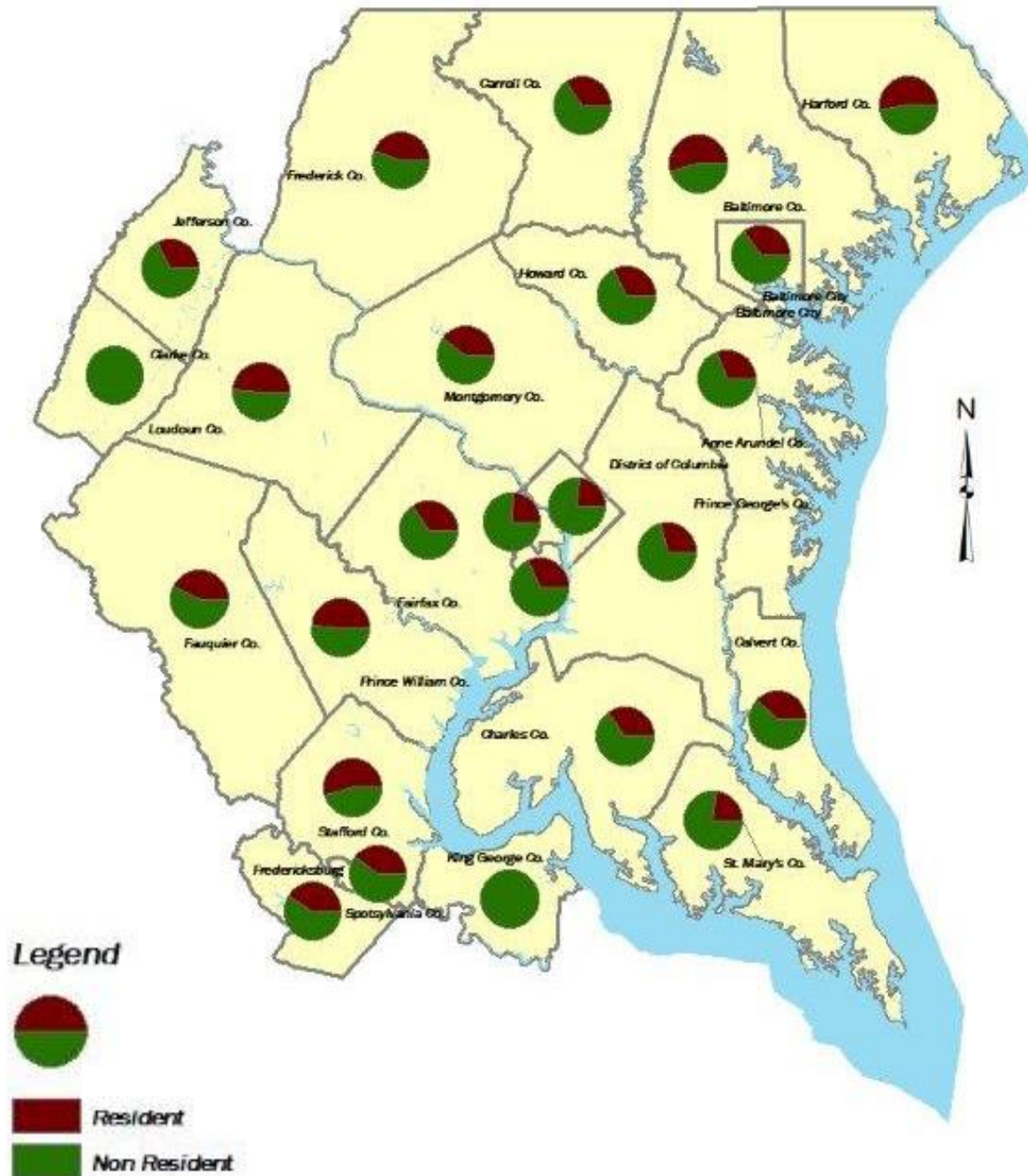
# Local Air Passenger Originations



While the Virginia Suburbs of DC continue to generate the highest concentration of passenger originations, this percentage decreased to 35% (from 37%) in 2017, while the Maryland Suburbs increased to 20% (from 17%).



# Percent Resident and Non-Resident Departing Passengers by Jurisdiction





# MODE OF ACCESS

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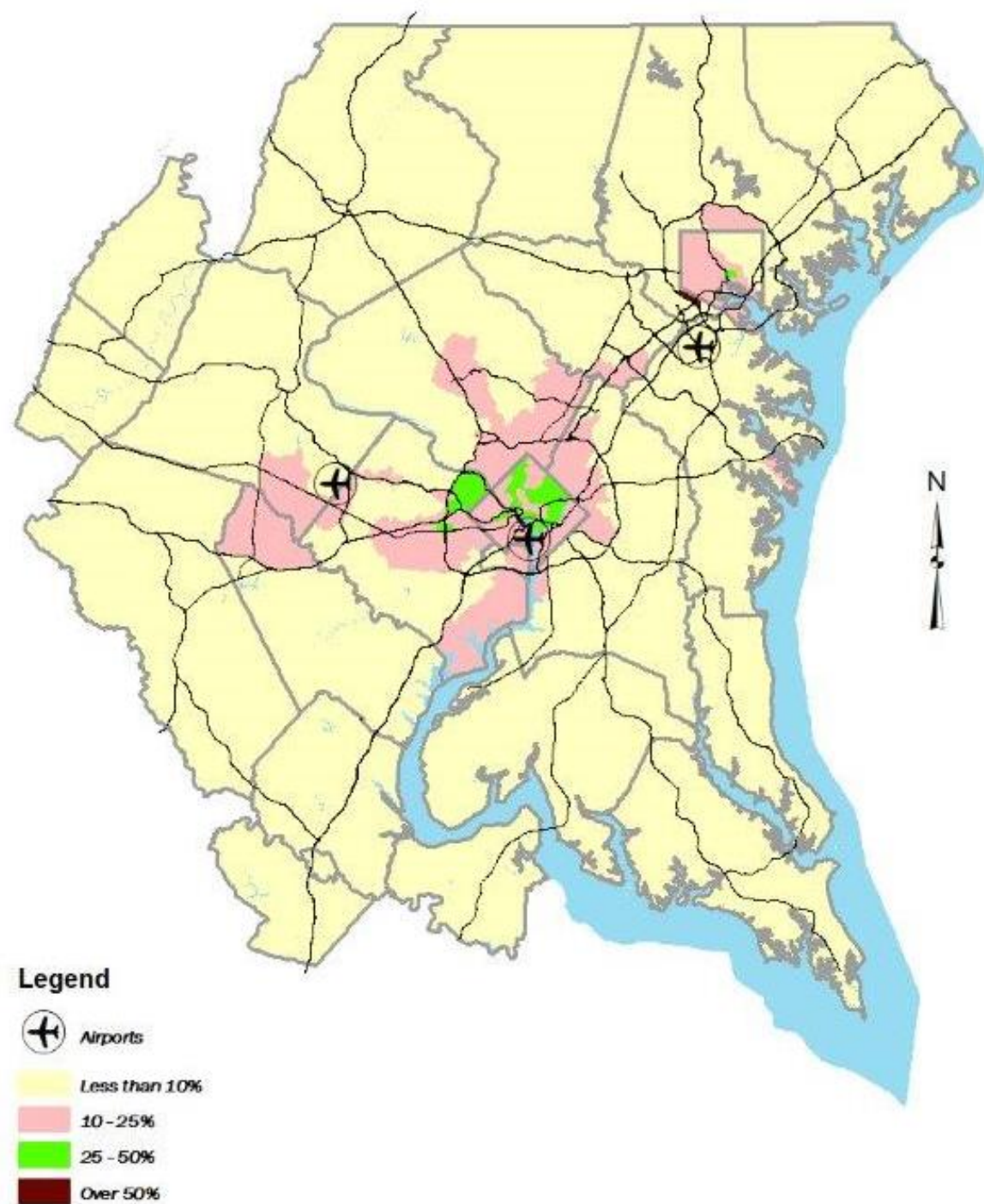
# Percentage of Passengers Using Taxicabs

11% of the region's passengers traveled by taxicab – down from 15% in 2015. The areas with the highest concentrations of taxicab usage are located within the Washington Core (20%) and the Baltimore Core (9%).



# Percentage of Passengers Using TNCs

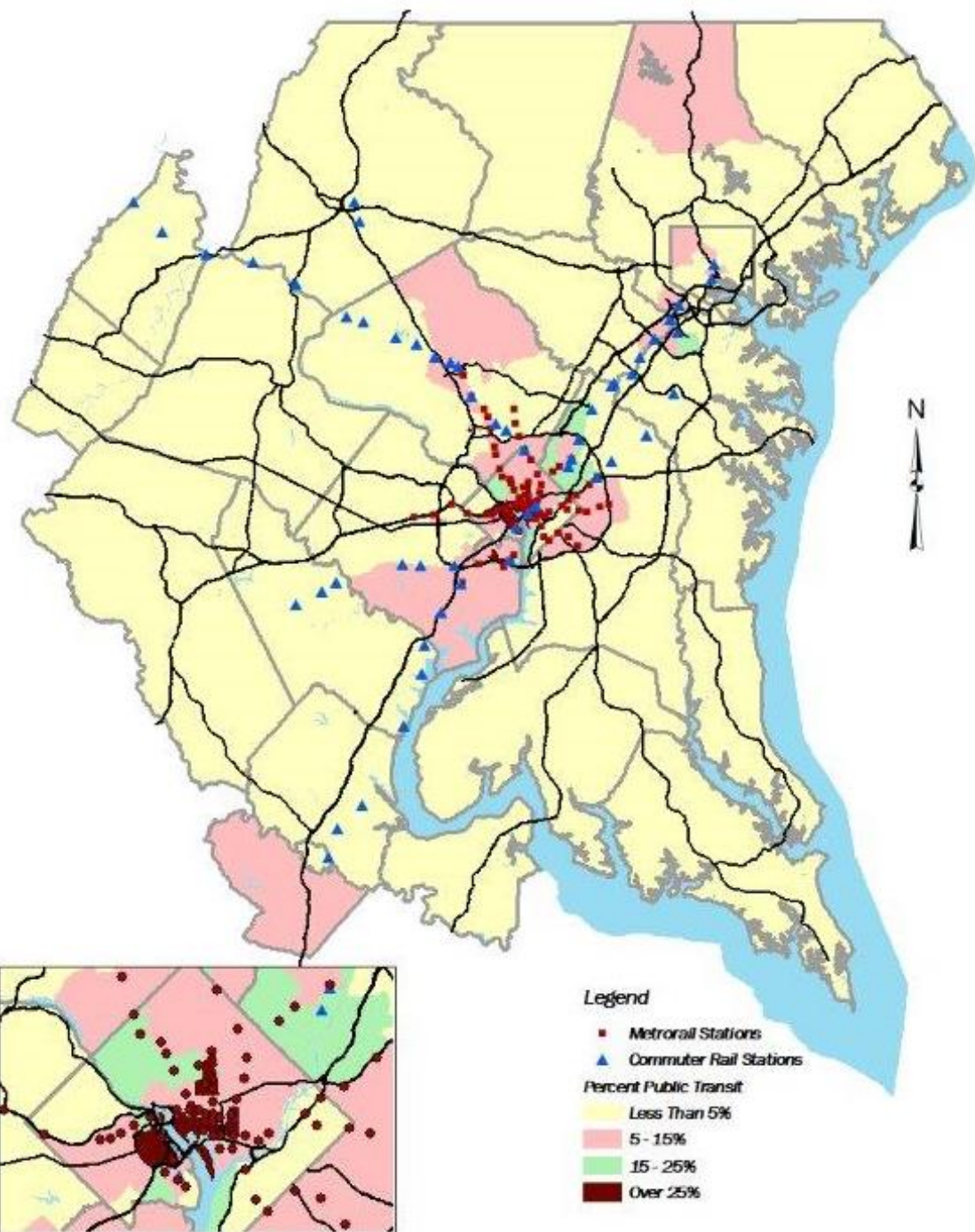
14% of the region's passengers traveled by TNC – up from 9% in 2015. 19% of the Baltimore Core and 22% Washington Core travel by TNC, respectively.





# Percentage of Passengers Using Metrorail, Commuter Rail, Metrobus, and/or Local Bus

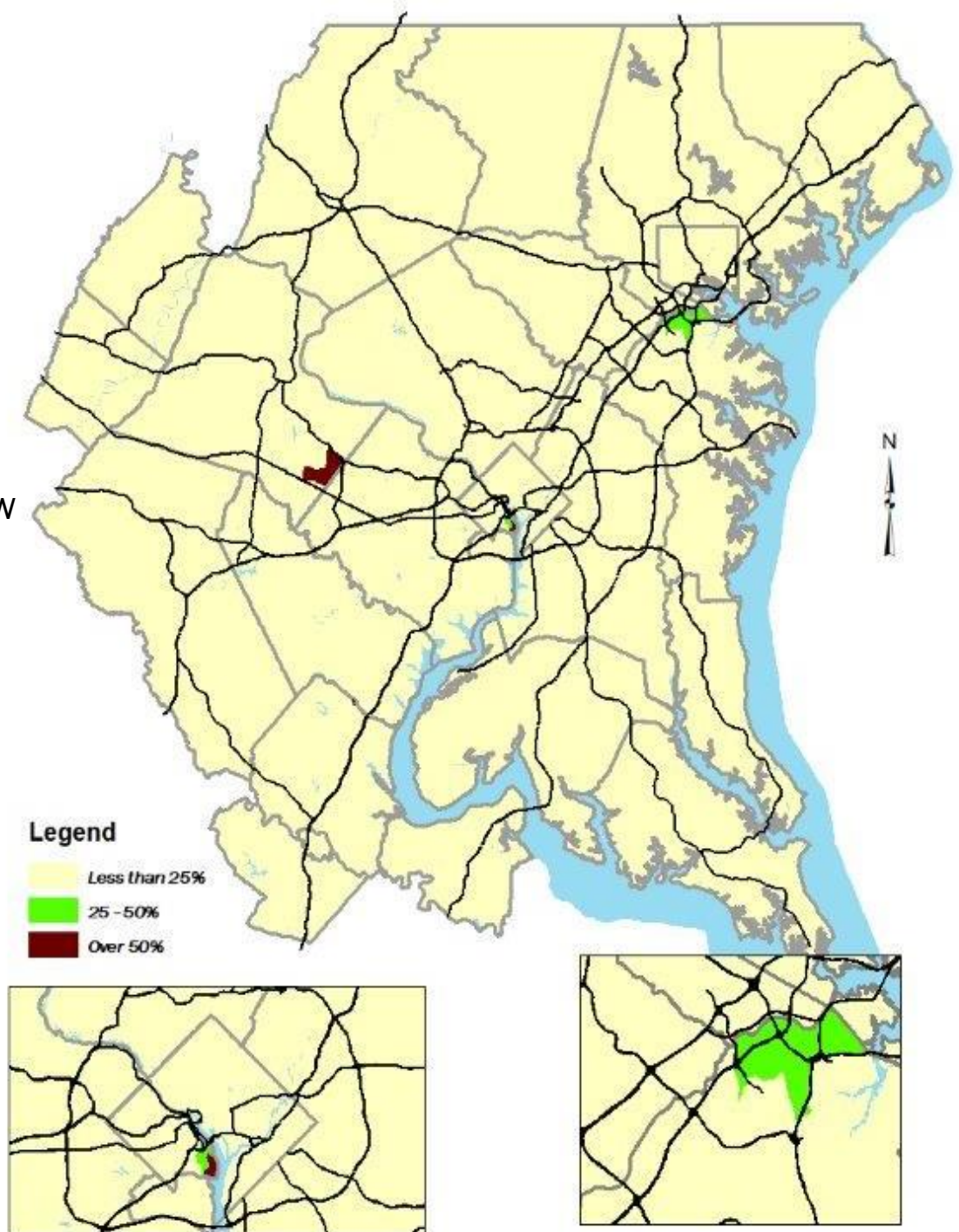
Public transportation carried 9% of the region's passengers. Usage of public transportation within the Washington Downtown Center was double the regional average and triple that of the Baltimore Downtown Center.





# Percentage of Passengers Using Airport Bus/Van/Limo

The usage of this mode was low throughout the region, with the exception of AAZs in the Downtown Core and Baltimore Core, as well as areas surrounding BWI and IAD.



# Sub-Regional Cores: Overview

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**Baltimore Core** = Baltimore City

- Baltimore Core = 4% of regional total and 23% Baltimore Metro Area

**Washington Core** = DC, Arlington, Alexandria

- Washington Core = 8.7 million passengers; 79% departed from DCA

**Travel Purpose - Business**

- 39% of passengers from Baltimore Core; 43% from Washington Core

**Mode**

- Taxicab: 9% Baltimore Core; 20% Washington Core
- TNC: 19% Baltimore Core; 22% Washington Core
- Public Transportation: 4% Baltimore Core; 14% Washington Core



# Airport Passenger Originations for Baltimore and Washington Sub-regional Cores, by Airport (thousands)

Airport Used	Baltimore Core		Washington Core		All Other		Region	
	No.	%	No.	%	No.	%	No.	%
<b>BWI</b>	1,149	95%	659	8%	7,106	43%	8,913	33%
<b>DCA</b>	27	2%	6,243	71%	4,229	25%	10,499	39%
<b>IAD</b>	35	3%	1,831	21%	5,379	32%	7,245	27%
<b>Total</b>	<b>1,210</b>	<b>100%</b>	<b>8,733</b>	<b>100%</b>	<b>16,714</b>	<b>100%</b>	<b>26,657</b>	<b>100%</b>

- 95% of passengers originating in the Baltimore Core travel out of BWI
- 71% of passengers originating in the Washington Core travel out of DCA
- 3% and 21%, respectively, travel out of IAD

# PATTERNS OF USE: PREFERENCE, PURPOSE, ORIGIN

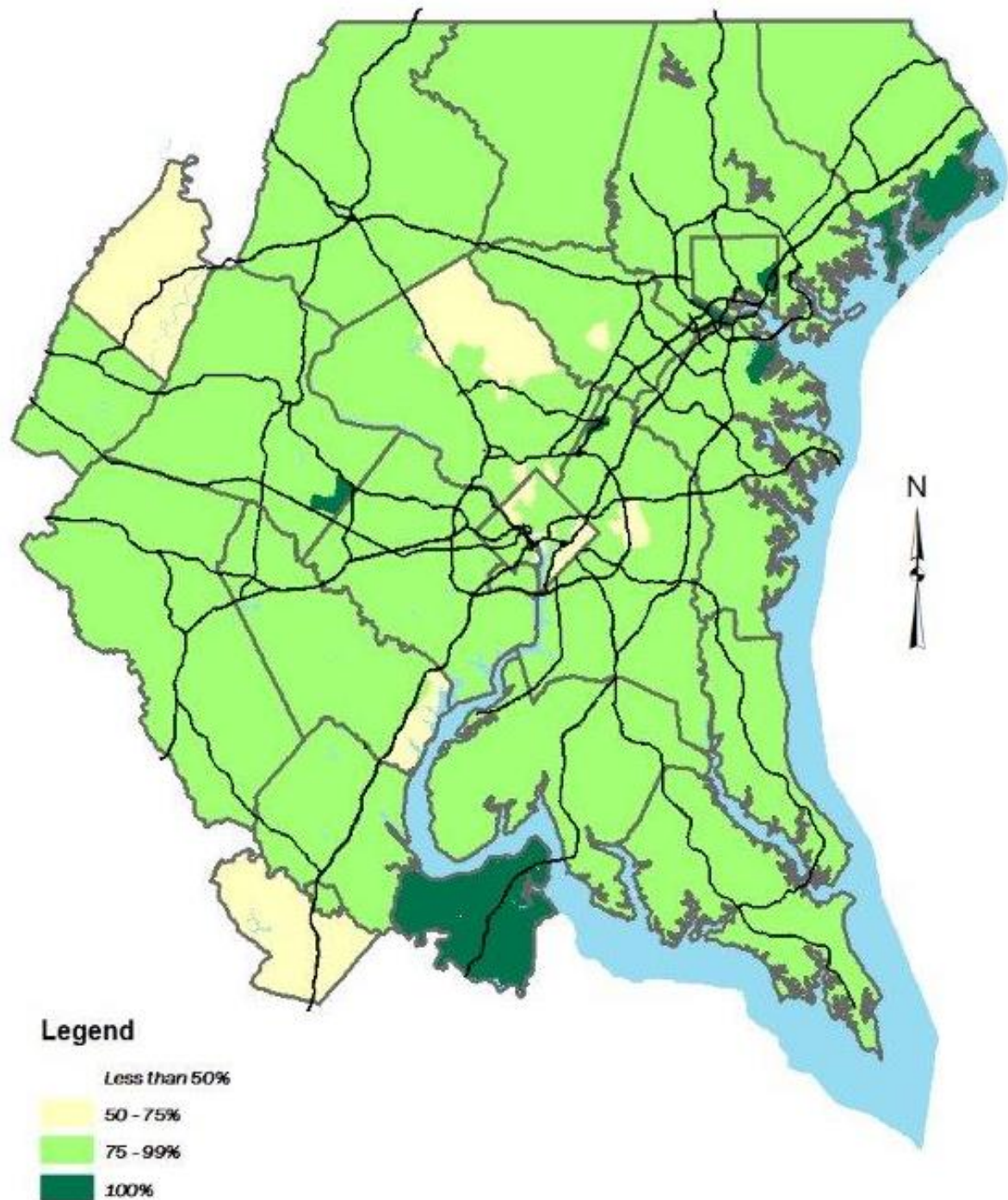
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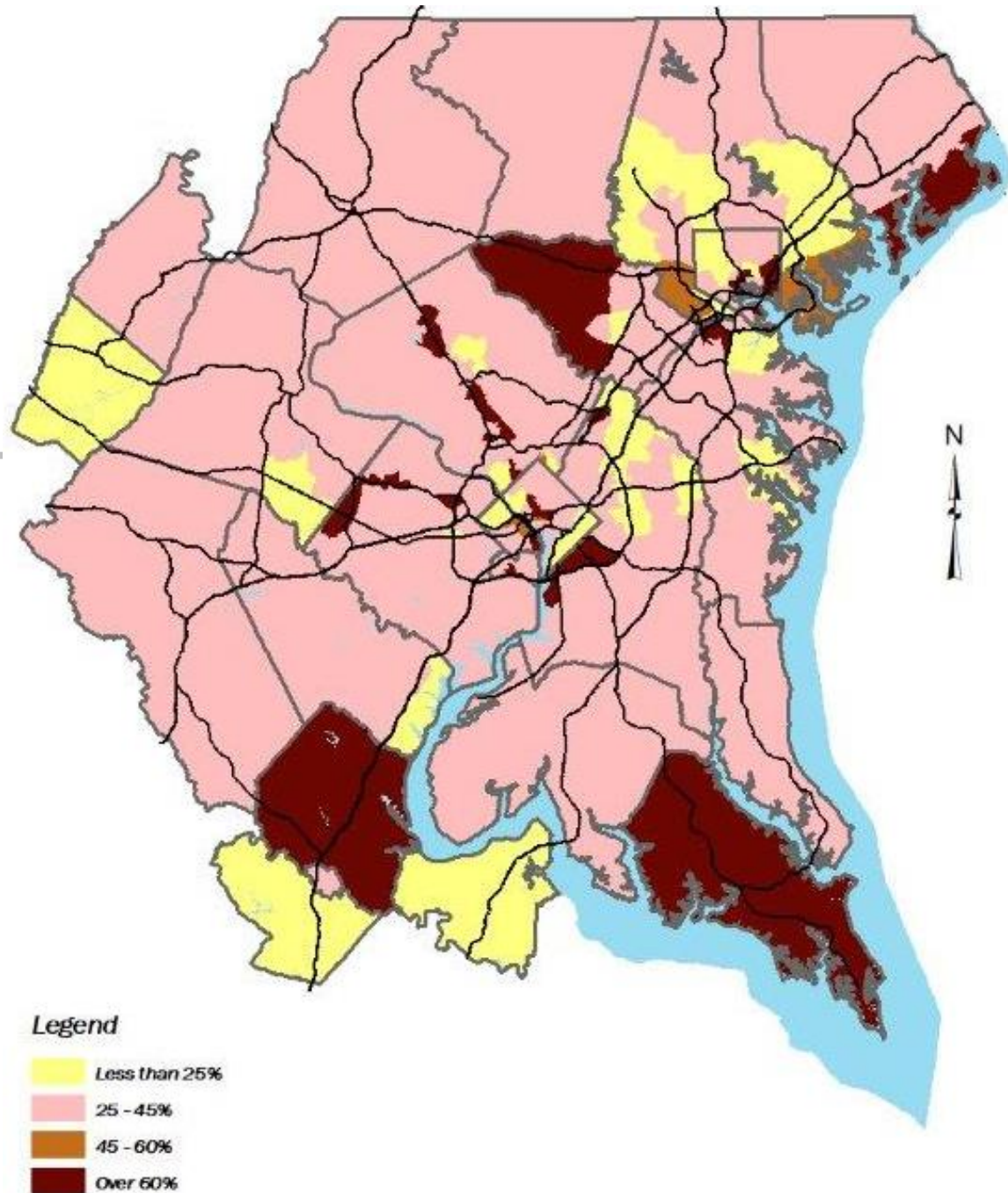
# Percentage of Passengers Flying from Preferred Airport

63% of passengers were satisfied with their airport choice; the highest percentage of which came from the Baltimore region and outlying areas.



# Percentage of Passengers Flying on Business

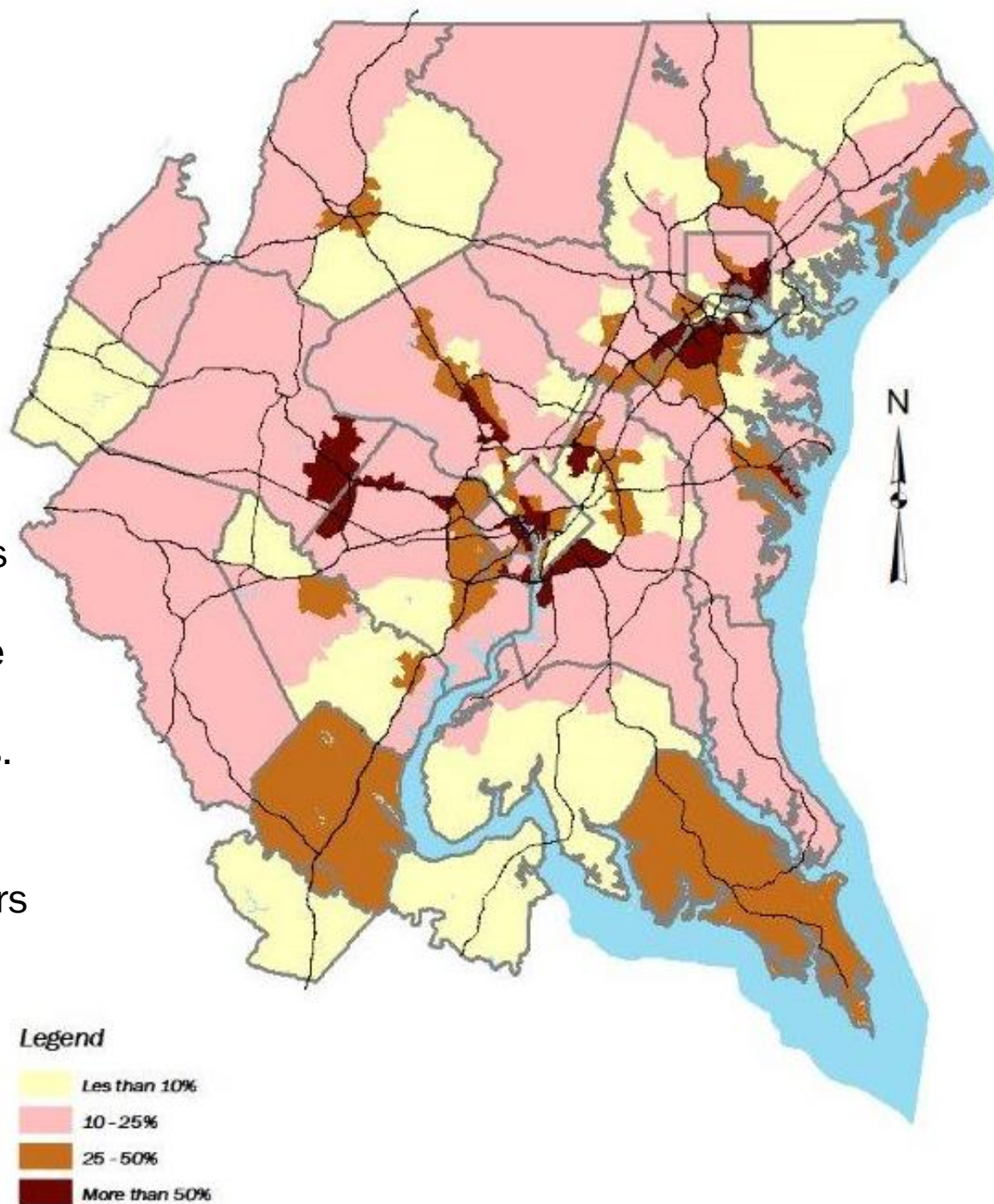
Those traveling for business are located around the Washington and Baltimore Cores, along major roadways, and near the region's military bases.





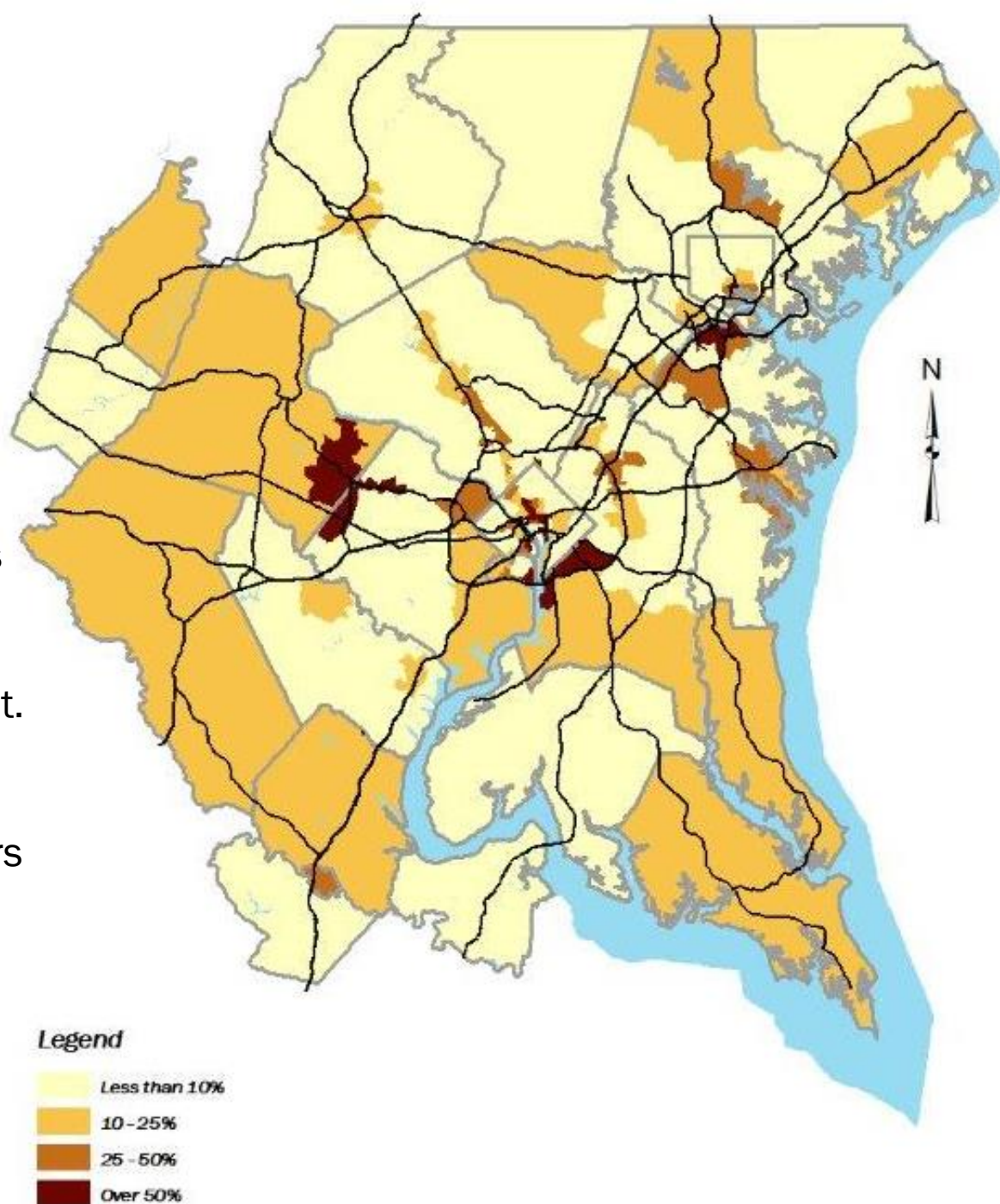
# Percentage of Passengers Leaving from Work

The greatest concentrations of passengers leaving directly from work are those with work places located closest to the three airports. 11% of Baltimore Core passengers and 12% of Washington Core passengers leave from work.



# Percentage of Passengers Leaving from Hotel/Motel

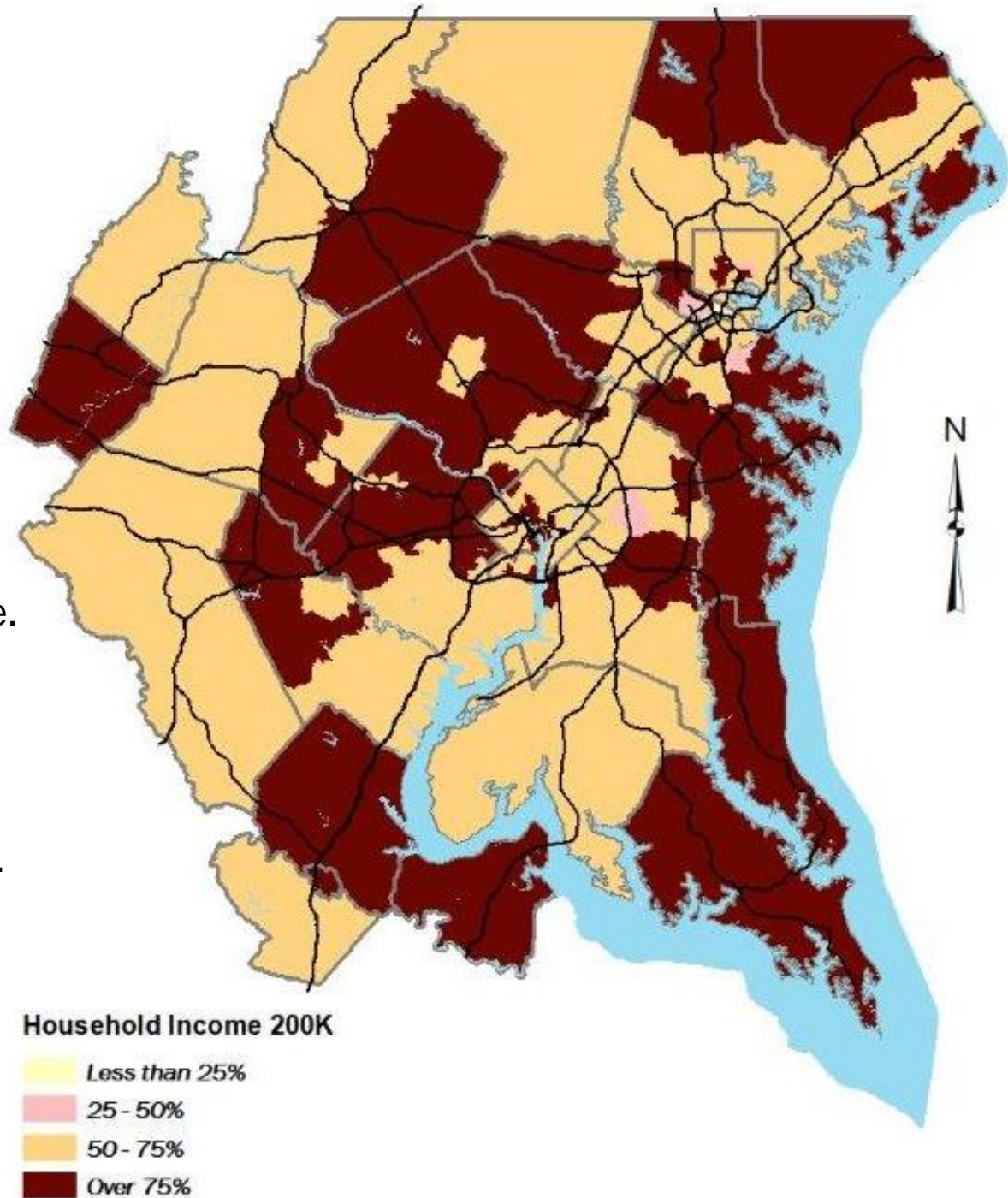
The greatest concentrations of passengers leaving from hotel/motel are those located closest to the airport. 30% of Baltimore Core passengers and 42% of Washington Core passengers leave from a hotel/motel.





# Annual Household Income

Passengers in the upper income bracket are widespread. Only a handful of zones show less than 50 percent in this income range. 73 percent of all departing air passengers from this region, including non-residents, have a household income of \$80,000 or more.



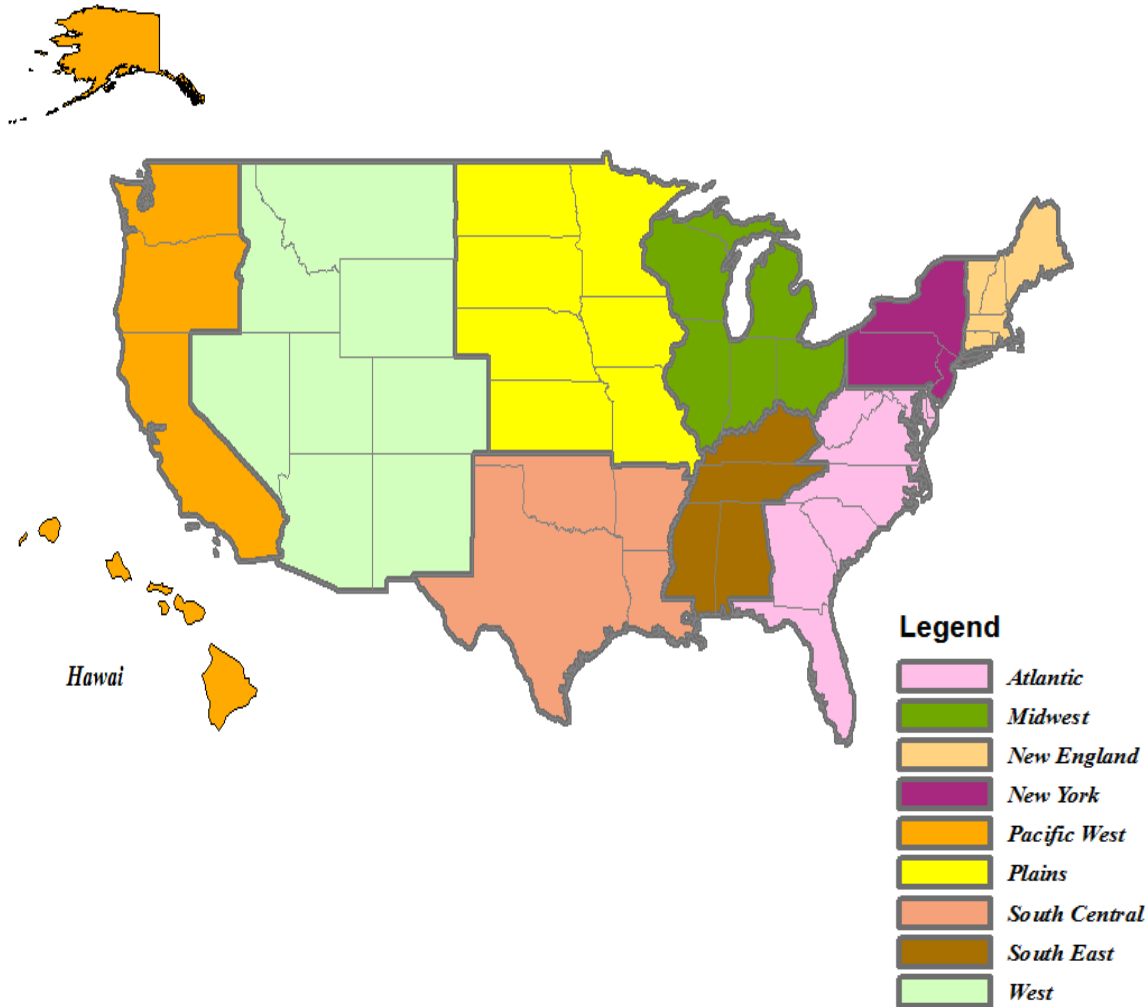


# AIR PASSENGER DESTINATIONS

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# Passenger Regional Allocations Strata



- The Atlantic and Midwest regions combined received 41% of all departing passengers
- The 2017 distribution of travel is consistent with 2015 findings

IAD remained dominant for international travel



# Annual Departing Flights by Destination Region and Airport (thousands)

Destination Region	BWI		DCA		IAD		TOTAL		Airport Share of Trips to		
	No.	% of BWI Originations	No.	% of DCA Originations	No.	% of IAD Originations	No.	% of Total Originations	BWI	DCA	IAD
Atlantic	2,843	32%	3,037	29%	1,167	16%	7,047	26%	40%	43%	17%
Midwest	1,483	17%	2,057	20%	544	8%	4,084	15%	36%	50%	13%
New England	422	5%	930	9%	421	6%	1,774	7%	24%	52%	24%
New York	896	10%	1,077	10%	263	4%	2,236	8%	40%	48%	12%
Pacific West	780	9%	486	5%	1,009	14%	2,275	9%	34%	21%	44%
Plains	284	3%	552	5%	202	3%	1,037	4%	27%	53%	19%
South Central	834	9%	1,349	13%	419	6%	2,601	10%	32%	52%	16%
Southeast	232	3%	236	2%	93	1%	561	2%	41%	42%	17%
West	706	8%	548	5%	655	9%	1,909	7%	37%	29%	34%
<b>Domestic Subtotal</b>	<b>8,479</b>	<b>95%</b>	<b>10,271</b>	<b>98%</b>	<b>4,774</b>	<b>66%</b>	<b>23,524</b>	<b>88%</b>	<b>36%</b>	<b>44%</b>	<b>20%</b>
<b>International</b>	<b>434</b>	<b>5%</b>	<b>227</b>	<b>2%</b>	<b>2,471</b>	<b>34%</b>	<b>3,133</b>	<b>12%</b>	<b>14%</b>	<b>7%</b>	<b>79%</b>
<b>Total</b>	<b>8,913</b>	<b>100%</b>	<b>10,499</b>	<b>100%</b>	<b>7,245</b>	<b>100%</b>	<b>26,657</b>	<b>100%</b>	<b>33%</b>	<b>39%</b>	<b>27%</b>

Note: Destinations refer to scheduled flight destinations and do not refer to final destination of passengers

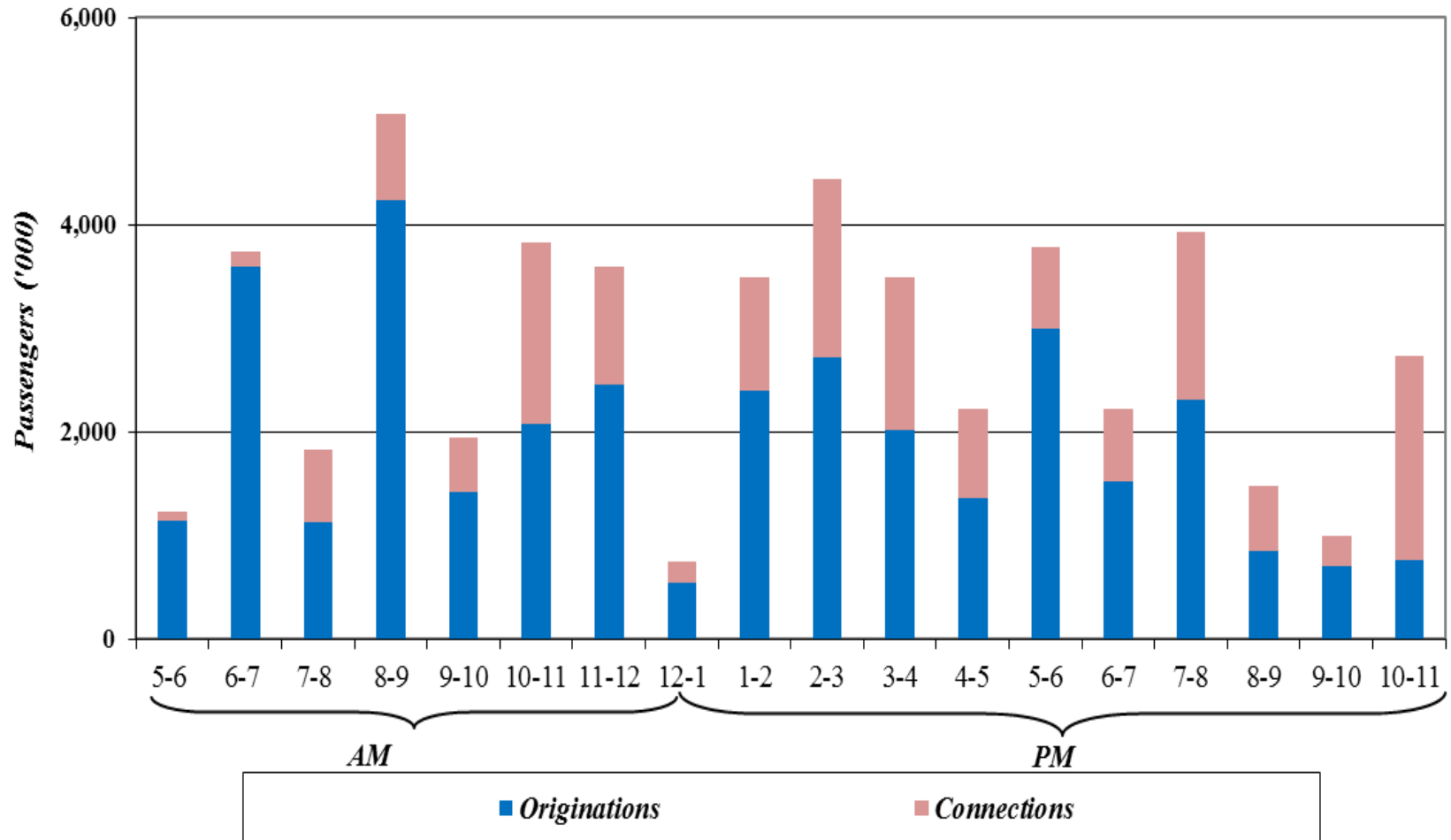


# DEPARTURES BY TIME OF DAY

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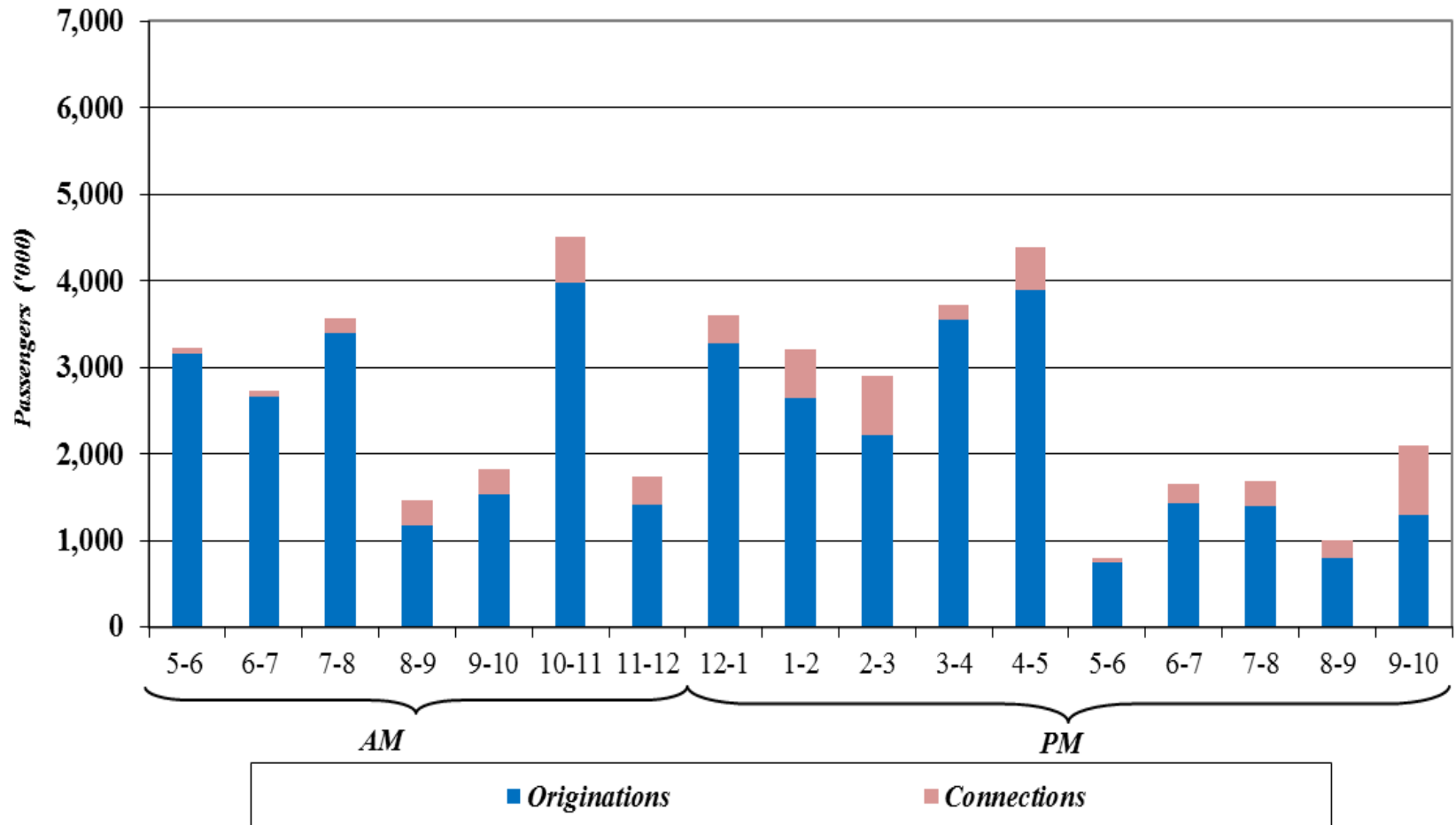


# Diurnal Passenger Distribution - BWI

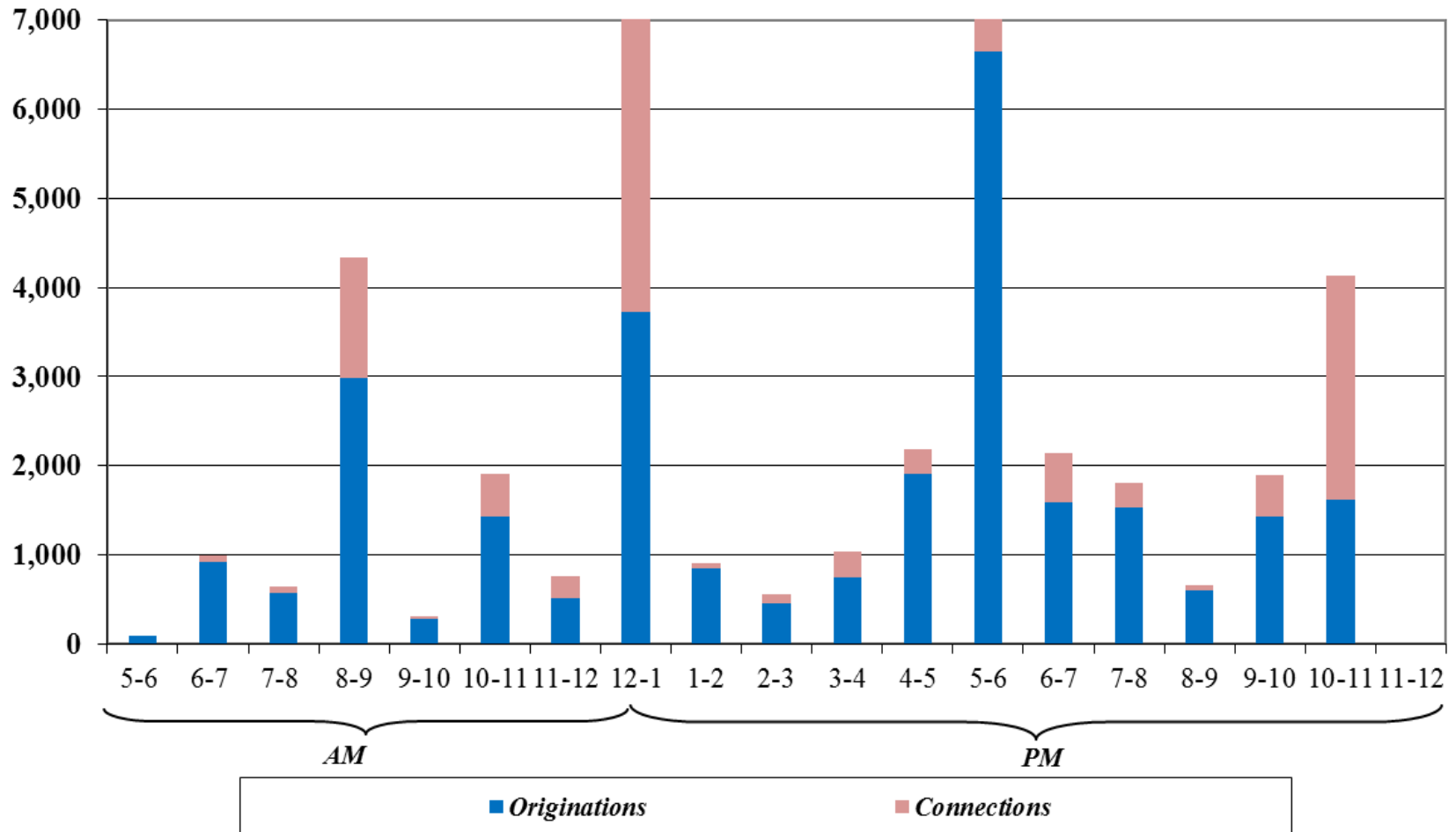




# Diurnal Passenger Distribution - DCA



# Diurnal Passenger Distribution - IAD



# Conclusions

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- The Geographic Findings Report reflects similar patterns observed in previous Air Passenger Survey Results, with the exception of shifts in travel trends based on the emergence and growth of TNCs
- The Washington-Baltimore Air Systems Region continues to perform competitively across all three airports, with 5% overall growth in local originations – a trend that is anticipated to maintain in 2019.
- As the Maryland suburbs of DC experience significant growth in local originations and outlying areas experience a significant decline, it is worth considering the range of factors that are influencing these shifts.



# Next Steps

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- Finalize Geographic Findings Report
  - TPB staff currently reviewing comments submitted by Aviation Technical Subcommittee members on February 15, 2019
- Publish Geographic Findings Report



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Transportation Planning Board