Amazon in Arlington: Context
Density by Metro Area: Jobs Per Land Square Mile

Sources: U.S. Bureau of Labor Statistics; The Stephen S. Fuller Institute at the Schar School, GMU
## Density: Arlington County vs. City of Seattle

<table>
<thead>
<tr>
<th></th>
<th>Arlington County</th>
<th>Seattle City</th>
<th>Arlington as a % of Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sq. Mi.</td>
<td>26</td>
<td>83</td>
<td>31%</td>
</tr>
<tr>
<td>Residents</td>
<td>234,965</td>
<td>724,745</td>
<td>32%</td>
</tr>
<tr>
<td>--- Per Sq. Mi.</td>
<td>9,037</td>
<td>8,732</td>
<td>103%</td>
</tr>
<tr>
<td>Private Office Space (MMs SF)</td>
<td>32</td>
<td>55</td>
<td>58%</td>
</tr>
<tr>
<td>--- Per Sq. Mi.</td>
<td>1.2</td>
<td>0.7</td>
<td>186%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census; Cushman & Wakefield; The Stephen S. Fuller Institute at the Schar School, GMU
HQ2 Employment Schedule

Sources: Commonwealth of Virginia MOU; The Stephen S. Fuller Institute at the Schar School, GMU
Job Change in the Washington Region
2000 – 2018 (in thousands)

HQ2 Avg: +2,366 over 16 years
(= 7% of 2002-2017 net change)

Sources: U.S. Bureau of Labor Statistics (Not Seasonally Adjusted), The Stephen S. Fuller Institute at the Schar School, GMU
Job Change in Arlington County*
2000 – 2017 (in thousands)

Sources: U.S. Bureau of Labor Statistics (QCEW), The Stephen S. Fuller Institute at the Schar School, GMU
*Excludes military jobs
Growth vs Change
% of the Washington Region’s Workers Born in DC, VA, or MD by Industry

- Retail Trade: 44.5%
- State & Local Govt: 44.0%
- Transp. & Warehousing: 40.9%
- Accomm. & Food Svcs: 35.1%
- Admin. & Support Svcs: 35.1%
- Health Care & Social Svcs: 34.8%
- Financial Activities: 34.3%
- Information: 33.5%
- Construction: 33.3%
- Educational Svcs: 33.1%
- Other Services: 30.2%
- Transp. & Warehousing: 28.7%
- Prof. & Business Svcs: 28.6%

All = 34.7%

Sources: U.S. Census Bureau (2014-2016 ACS Microdata); The Stephen S. Fuller Institute at the Schar School, GMU
Share of Residents* That Moved in the Past Year By Place of Current Residence, 2017

Moved w/in County | Moved from Another County
---|---
Loudoun | 12.8% | 7.6%
Prince George's | 14.5% | 7.2%
Montgomery | 14.5% | 6.7%
Fairfax | 14.7% | 7.8%
Alexandria | 17.6% | 12.1%
DC | 19.1% | 9.7%
Arlington | 19.5% | 11.3%

Source: U.S. Census (2017 American Community Survey) The Stephen S. Fuller Institute at the Schar School, GMU
* Excludes children less than one year old
Number of Residents* That Moved in the Past Year
By Place of Current Residence, 2017 (000s)

Moved w/in County  Moved from Another County

<table>
<thead>
<tr>
<th>Place</th>
<th>Moved w/in County</th>
<th>Moved from Another County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandria</td>
<td>27.9</td>
<td>19.1</td>
</tr>
<tr>
<td>Arlington</td>
<td>45.1</td>
<td>26.2</td>
</tr>
<tr>
<td>Loudoun</td>
<td>50.5</td>
<td>29.8</td>
</tr>
<tr>
<td>DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prince George's</td>
<td>130.6</td>
<td>64.0</td>
</tr>
<tr>
<td>Montgomery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairfax</td>
<td>152.3</td>
<td>69.8</td>
</tr>
<tr>
<td></td>
<td>166.5</td>
<td>88.4</td>
</tr>
</tbody>
</table>

* Excludes children less than one years old

Source: U.S. Census (2017 American Community Survey) The Stephen S. Fuller Institute at the Schar School, GMU
Growth in the Washington Region: Jobs, Residents & Housing (2000 = 100)

Sources: U.S Census Bureau; U.S. Bureau of Labor Statistics; The Stephen S. Fuller Institute at the Schar School, GMU
Growth in the Washington Region: Jobs, Residents, Housing, & Home Price (2000 = 100)

Sources: U.S Census Bureau; U.S. Bureau of Labor Statistics; ShowingTime by RBI; The Stephen S. Fuller Institute at the Schar School, GMU
* Adjusted for the Consumer Price Index of all items except shelter  NOTE: Geography used for median rent in 2005-2013 excludes Culpeper and Rappahannock
Growth in the City of Alexandria: Jobs, Residents, Housing, & Home Price (2000 = 100)

Sources: U.S. Census Bureau; U.S. Bureau of Labor Statistics; ShowingTime by RBI; The Stephen S. Fuller Institute at the Schar School, GMU

* Adjusted for the Consumer Price Index of all items except shelter
Commuting and Housing Choice
Distance Between Home and Job Washington Region

Source: LEHD; The Stephen S. Fuller Institute at the Schar School, GMU
Distribution of Distance Between Home and Job
Washington Region

Source: LEHD; The Stephen S. Fuller Institute at the Schar School, GMU
Population by Age in the Washington Region

Sources: U.S. Census; The Stephen S. Fuller Institute at the Schar School, GMU
Washington Region Traffic Congestion

Sources: Texas A&M Transportation Institute; The Stephen S. Fuller Institute at the Schar School, GMU
Distribution of Distance Between Home and Job
Job in National Landing

- <10 miles: 46.9% (2002), 44.2% (2015)
- 10 to 24 miles: 34.1% (2002), 32.5% (2015)
- 25 to 50 miles: 9.2% (2002), 11.4% (2015)
- 50+ miles: 9.8% (2002), 11.9% (2015)

Source: LEHD; The Stephen S. Fuller Institute at the Schar School, GMU
Home Location of National Landing Workers in 2015

Workers Earning $40k+/year
Amazon: Forecasts of Housing Demand
### Amazon-Related Household at Full Build-Out

Assumes 37,850 HQ2 jobs

<table>
<thead>
<tr>
<th>Area</th>
<th>Household w/ an HQ2 Job</th>
<th>Household w/ a Job Supported by HQ2 Spending (1)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arlington County, VA</td>
<td>6,097</td>
<td>766</td>
<td>6,862</td>
</tr>
<tr>
<td>Alexandria City, VA</td>
<td>1,890</td>
<td>723</td>
<td>2,613</td>
</tr>
<tr>
<td>Rest of Northern Virginia</td>
<td>17,329</td>
<td>13,381</td>
<td>30,709</td>
</tr>
<tr>
<td>Rest of Virginia</td>
<td>642</td>
<td>14,967</td>
<td>15,609</td>
</tr>
<tr>
<td>D.C.</td>
<td>4,909</td>
<td>469</td>
<td>5,377</td>
</tr>
<tr>
<td>Maryland</td>
<td>6,047</td>
<td>1,515</td>
<td>7,562</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>363</td>
<td>508</td>
<td>871</td>
</tr>
<tr>
<td><strong>Total (2)</strong></td>
<td><strong>37,276</strong></td>
<td><strong>32,328</strong></td>
<td><strong>69,604</strong></td>
</tr>
</tbody>
</table>

Source: The Stephen S. Fuller Institute at the Schar School, GMU

(1) Includes payroll and operations expenditures

(2) A small share of the workers holding HQ2-related jobs are anticipated to cohabitate either with another HQ2-related worker or become part of an existing household. Therefore, the number of households is projected to be fewer than the number of jobs. Only the indirect and induced jobs located in the Commonwealth were analyzed.
Amazon-Related Owners in Select Jurisdictions
Assumes 37,850 HQ2 jobs, includes indirect & induced effects

<table>
<thead>
<tr>
<th>Owners at Full Build-Out</th>
<th>Closed Sales in 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Virginia</strong></td>
<td></td>
</tr>
<tr>
<td>Arlington County</td>
<td>2,071</td>
</tr>
<tr>
<td>Alexandria City</td>
<td>1,085</td>
</tr>
<tr>
<td>Fairfax County*</td>
<td>13,698</td>
</tr>
<tr>
<td>Prince William County**</td>
<td>4,013</td>
</tr>
<tr>
<td>Loudoun County</td>
<td>3,665</td>
</tr>
<tr>
<td>D.C.</td>
<td>2,410</td>
</tr>
<tr>
<td><strong>Maryland</strong></td>
<td></td>
</tr>
<tr>
<td>Montgomery County</td>
<td>2,737</td>
</tr>
<tr>
<td>Prince George's County</td>
<td>1,886</td>
</tr>
</tbody>
</table>

Sources: RealEstate Business Intelligence, LLC; The Stephen S. Fuller Institute at the Schar School, GMU
*Includes the cities of Fairfax and Falls Church    ** Includes the cities of Manassas and Manassas Park
Amazon-Related Renters in Select Jurisdictions
Assumes 37,850 HQ2 jobs, includes indirect & induced effects

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Renters at Full Build-Out</th>
<th>Renters in 2016</th>
<th>Total % Increase from 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Virginia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington County</td>
<td>4,792</td>
<td>57,133</td>
<td>8.4%</td>
</tr>
<tr>
<td>Alexandria City</td>
<td>1,528</td>
<td>41,808</td>
<td>3.7%</td>
</tr>
<tr>
<td>Fairfax County*</td>
<td>4,893</td>
<td>134,425</td>
<td>3.6%</td>
</tr>
<tr>
<td>Prince William County**</td>
<td>1,087</td>
<td>49,891</td>
<td>2.2%</td>
</tr>
<tr>
<td>Loudoun County</td>
<td>716</td>
<td>25,552</td>
<td>2.8%</td>
</tr>
<tr>
<td>D.C.</td>
<td>2,968</td>
<td>169,875</td>
<td>1.7%</td>
</tr>
<tr>
<td><strong>Maryland</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montgomery County</td>
<td>625</td>
<td>132,098</td>
<td>0.5%</td>
</tr>
<tr>
<td>Prince George's County</td>
<td>396</td>
<td>121,333</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census Bureau (2016 ACS Microdata); The Stephen S. Fuller Institute at the Schar School, GMU
*Includes the cities of Fairfax and Falls Church  ** Includes the cities of Manassas and Manassas Park
Distribution of Households by Household Income
Washington Region

Sources: U.S. Census Bureau (2014-2016 ACS Microdata); The Stephen S. Fuller Institute at the Schar School, GMU
NOTE: in 2016 $s
Distribution of Households by Household Income
City of Alexandria

Current Households vs. HQ2-Related Households

Sources: U.S. Census Bureau (2014-2016 ACS Microdata); The Stephen S. Fuller Institute at the Schar School, GMU
NOTE: in 2016 $s
Amazon-Related Households in Alexandria by Household Type

Source: The Stephen S. Fuller Institute at the Schar School, GMU
Amazon-Related Households by Unit Type
City of Alexandria

Source: The Stephen S. Fuller Institute at the Schar School, GMU
Amazon-Related Households in Alexandria
Unit Type & Average Income (000s of 2016 $s)

Source: The Stephen S. Fuller Institute at the Schar School, GMU
Other Factors Potentially Affecting Rental Demand in Alexandria
Virginia Tech

Very little information so far

- 350,000 SF of residential on-site
- # Students?
- Full-time vs part-time?
Population by Age Group
Washington Region, 2015

Sources: U.S. Census Bureau (v2016 Population Estimates); The Stephen S. Fuller Institute at the Schar School, GMU
Share of 25-34 Years Olds
Largest 15 Metros, 2010

Sources: U.S. Census Bureau (Vintage 2017 & 2000-2010 Intercensal Population Estimates); The Stephen S. Fuller Institute at the Schar School, GMU
Share of 25-34 Years Olds
Largest 15 Metros, 2017

Sources: U.S. Census Bureau (Vintage 2017 &2000-2010 Intercensal Population Estimates); The Stephen S. Fuller Institute at the Schar School, GMU
Percent Change in 25-34 Years Olds
Largest 15 Metros, 2016 - 2017

Sources: U.S. Census Bureau (Vintage 2017 &2000-2010 Intercensal Population Estimates); The Stephen S. Fuller Institute at the Schar School, GMU
Labor Force Participation Rate
Washington Region, 1997-2027

Sources: U.S. Bureau of Labor Statistics; U.S. Census (2014-2016 ACS); The Stephen S. Fuller Institute at the Schar School, GMU
Thank You

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