

New Heights: What Reston's Development Means for Rent Prices

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## **Introduction**

Although the types of individuals living in a community truly determine the community's character, the cost of living in the community signals the type of individuals who inhabit that community. The vision of Reston as a "Live, Work, Play" community has always been a work in progress, but the development of the Reston Wiehle-East metro station connecting the city to the broader Washington D.C. community has sparked radical changes in the implementation of that vision. Reston as a "Live" location will forever be altered from a mixed-variety housing community to a city dominated by new high-rise apartment complexes. Understanding how housing opportunities will change over time informs how the community will change over time.

## **Problem Statement**

Multiple factors combine to determine the price of rent in a given location. Firstly, the type of product offered (in rent prices, luxury versus low-income apartments) causes upwards or downwards movement in rental prices. An increase in the overall supply of rental properties would theoretically cause prices to drop, unless the supply is matched by an increase in demand from population changes. The overall economy of Reston also influences prices, as if jobs offered in Reston bring more high-income individuals to Reston, prices would theoretically rise. Lastly, government influence may impact the types of changes that may be implemented or impose low-income housing requirements. When all of these factors are combined, will be the expected change in prices of rent in Reston over the next five years?

## **Objectives**

The objective of this project is to use quantitative and qualitative analysis to produce quantitative estimates about the shifts in demand and supply that will drive changes in price over a period of time. This will be done through gathering of quantitative evidence from publicly

available data for the Reston area and qualitative information about current trends in the Reston area relevant to changes in the price of rent. Once the data has been collected, sufficient analysis will be performed to determine a reasonably accurate estimate of the shift in rental prices in Reston over the short term.

### **Initial Supply and Demand Curves Data Setup**

To start an analysis on the supply and demand of the market, data was gathered from the Fairfax county Rental Housing Complex Analysis report. There is no data on the town of Reston specifically within the reports, but the supervisor district of Hunter Mill includes the town of Reston. The average monthly rent for Hunter Mill in 2016 was \$1,858 (Khaja, 2017, p. 7). The number of rental units in Hunter Mill in 2016 was 9,329, with a vacancy rate of 5.8% (Khaja, 2017, p. 3). Combining the number of units with the vacancy rate gives a quantity of actual units rented out to consumers of 8,788. Combining 8,788 and \$1,858 yields the intersection point on the curve.

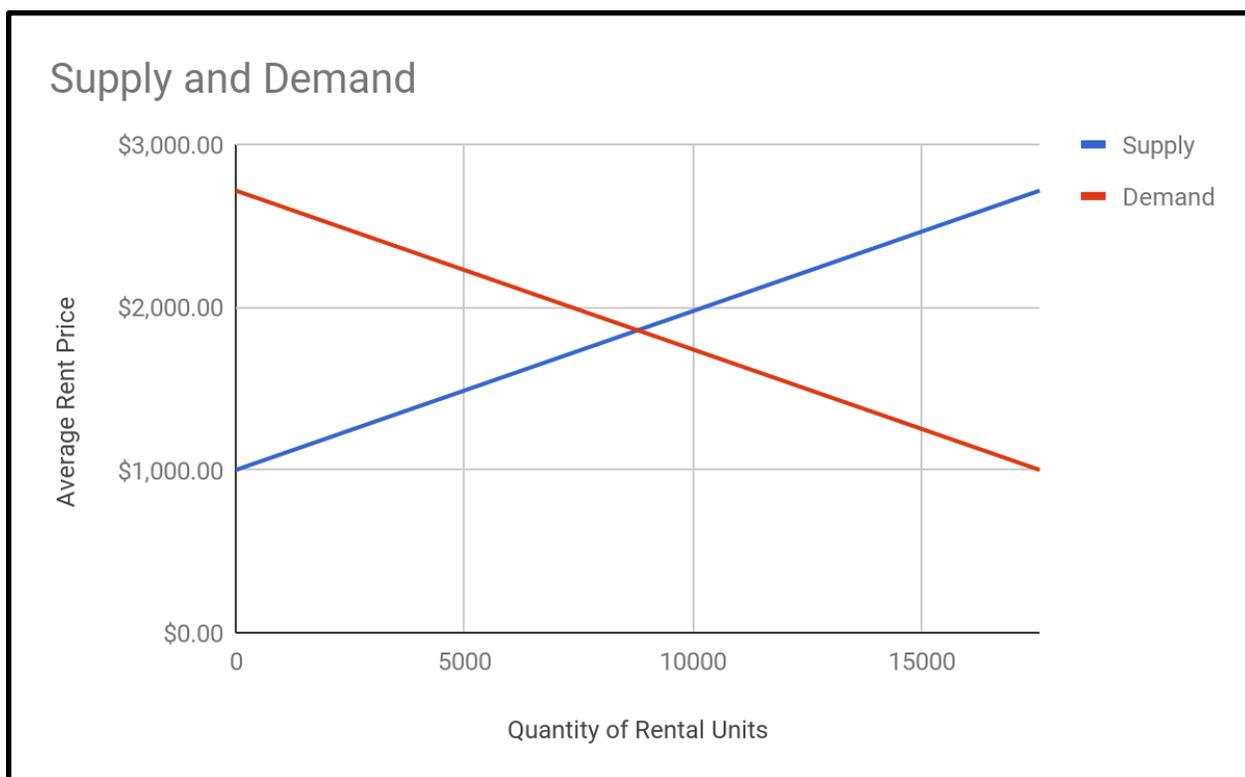
To get a simple ratio indicating the slope of the demand and supply curves, data was gathered about the percentage of rents within given ranges in Reston ("Average Rent in Reston & Rent Prices by Neighborhood - RENTCafé," 2017). This data was a simplified form of the original data just to give an approximation of the slope of demand. Assuming that as the price of rent goes down more units are rented, the approximate downward sloping trend was 0.30. That is, for every \$0.30 decrease, the quantity increased by 1. For the purposes of a simplified model, the slope was simply reversed for the supply curve, yielding an intersection at the central point found previously. Once the initial curve was configured, the various factors were analyzed to determine impact on the default supply and demand curve.

**Table 1.1**

Percent	Quantity	Price
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16%	1492.64	\$1,000
51%	4757.79	\$1,500
33%	3078.57	\$2,000

**Chart 1.1**



**Product Factors: Types of rental properties** (Studio, 1 Bedroom, 2 Bedroom, etc.)

The average rent for an apartment in Reston is \$1,875, a 1% increase compared to the previous year, when the average rent was \$1,861. Studio apartments in Reston rent for \$1,850 a month, while 1-bedroom apartments is \$1,773 a month. Similarly, the average rent for a 2-bedroom apartment is \$1,789.

**Table 1.2: Average Rent in Reston**

	All rentals	Studio	1 Bed	2 Beds	3 Beds
Average Rent	\$1,875	\$1,850	\$1,773	\$1,789	\$1,997
Y-o-Y Change	1%	-9%	-5%	1%	4%
Average Apartment Size	967 sq. ft	571 sq.ft	781 sq.ft	1,068 sq. ft	1,286 sq.ft

The average size for a Reston apartment is 967 square feet, but this number varies greatly depending on apartment type. A studio averages 571 sq. ft., while a one-bedroom apartment offers a more generous square footage: 781. 2-bedroom apartments in Reston have an average size of 1,068 sq. ft. ("Average Rent in Reston & Rent Prices by Neighborhood - RENTCafé," 2017). With these types of rental properties becoming more popular, demand is expected to increase within the range of 2% to 3%.

### **Supply Factors**

Demand for 2 bedroom apartments in Reston, VA has been the most desirable product from a market perspective, even though young professionals are buying high-rise studio apartments. A place for seniors and young families alike. People reside here because there are jobs and their kids can go to good and often brand new schools. The education of the population is high here

According to Commercial real-estate news source Bisnow's report "the areas are currently in a state where supply is outpacing demand". The apartment rents in Reston are flat and in some cases slightly negative due to the amount of new multifamily construction. It is

reported that, that around 450 BLVD apartment has not able to lease as quickly as expected. There is still some rent growth in this market but it doesn't keep up with construction costs and some of the other costs associated with it (RestonNow.com, 2017). Because of these new developers, supply is expected in increase within the range 5% to 7%.

### **Population Factors**

Reston's population is expected to increase substantially because of redevelopment of older residential and commercial properties and development generated by Metro Silver Line stations. Reston's population has grown 0.9 percent per year, therefore, Reston is expected to be one of the growth hot spots in Fairfax County (Maynard, 2017). An increase in population can be expected in increase the demand curve. Due to the increase in population in Reston year over year of 0.9%, the demand curve is expected to shift to the right by 3% in 3 years.

Average household size can sometimes determine the demand for rent. In Fairfax county, the average household size experienced no change from 1990-2010 from 2.74 average household size (Fairfax County Board of Supervisors, 2017, p. II-6). Because no changes are expected, the average household size is not expected to have an impact on the demand curve.

Reston and Fairfax county attract a large population of individuals with advanced degrees. Over the time frame from 2009 to 2013, the number of B.A. degrees completed within Fairfax county increased from 3,818 to 5,395 (Virginia Employment Commission, 2017, p. 44). Educational attainment criteria will drive demand up by a small amount, in correlation with the median income for the community also increase. With the increase in educational attainment within the community, demand is expected to increase by 1%.

### **Economic Factors**

Income is a major factor in determining demand for products. As income for consumers increases, the demand for products increases. Median income in Reston is increasing by 2.5%

every year (City-data.com, 2015). If this trend continues over the next 3 years, the demand can be expected to increase by 5% to 7%.

Reston is an area with a very high cost of living. This might deter some people from moving to Reston to live, which would drive demand down for renting in Reston. The cost of living in Reston is 36.2% more than the average cost of living in the United States. (ERI Economic Research Institute, 2017). There are no identifiable factors that might decrease the cost of living, and it would serve as a deterrent to demand for rent increasing in Reston. Because of cost of living adjustments over time, demand is expected to shift to the left by 1% to 2%.

Inflation also has an impact on rental prices. The interest rate that you can take out a mortgage determines the likelihood that an individual will choose to take out a mortgage rather than rent an apartment. Over the past few years, interest rates have been increasing (Macrotrends.net, 2017). Because interest rates in the United States are increasing, it is more likely that a person looking for a place to live chooses to rent rather than buy, because the cost of getting a mortgage is higher. The expected shift to the demand curve is an increase of 1%.

### **Governmental Factors**

The last factor used in our analysis is how choices from local government may impact supply and demand. At a public meeting, the Fairfax County Board of Supervisors explained their intention to raise density limits in Reston to up to 16 person per acre, from 13 persons per acre. There is a degree of uncertainty around this change, as it was only recently announced and has endured a large amount of community backlash, due to individuals already in the community who want Reston to remain less crowded. This rule change would allow for the addition of 3,335-12,257 apartments in Reston from what is currently able to be built (Merchant, 2017). If these rule changes go through, this would reflect an increase in supply, because it will

be easier to build housing units with more units per acre. However, due to the uncertainty around how much this will impact actual housing developers and the response of the Reston community to the changes, the supply curve is estimated to shift to the right by 2% to 5%.

### **Understanding Results in Historical Context**

A review was performed using historical data from the past 10 rent price reports available in Fairfax county's data set (Fairfax County, 2017). These parts of the data determine a range of possible values based on historical trends. The largest 3-year percent change was 2014-2016, with 16.07% increase in price over that 3-year period. The smallest increase was 2.79%, occurring between 2009-2011. This is due to the housing crash.

**Table 1.3**

Year	Hunter Mill Price	3 Year % Change
2006	\$1,350.00	0
2007	\$1,386.00	0
2008	\$1,422.00	0
2009	\$1,458.00	7.80%
2010	\$1,493.00	7.53%
2011	\$1,461.00	2.79%
2012	\$1,554.00	6.62%
2013	\$1,591.00	6.60%
2014	\$1,661.00	13.15%
2015	\$1,694.00	8.77%
2016	\$1,858.00	16.07%

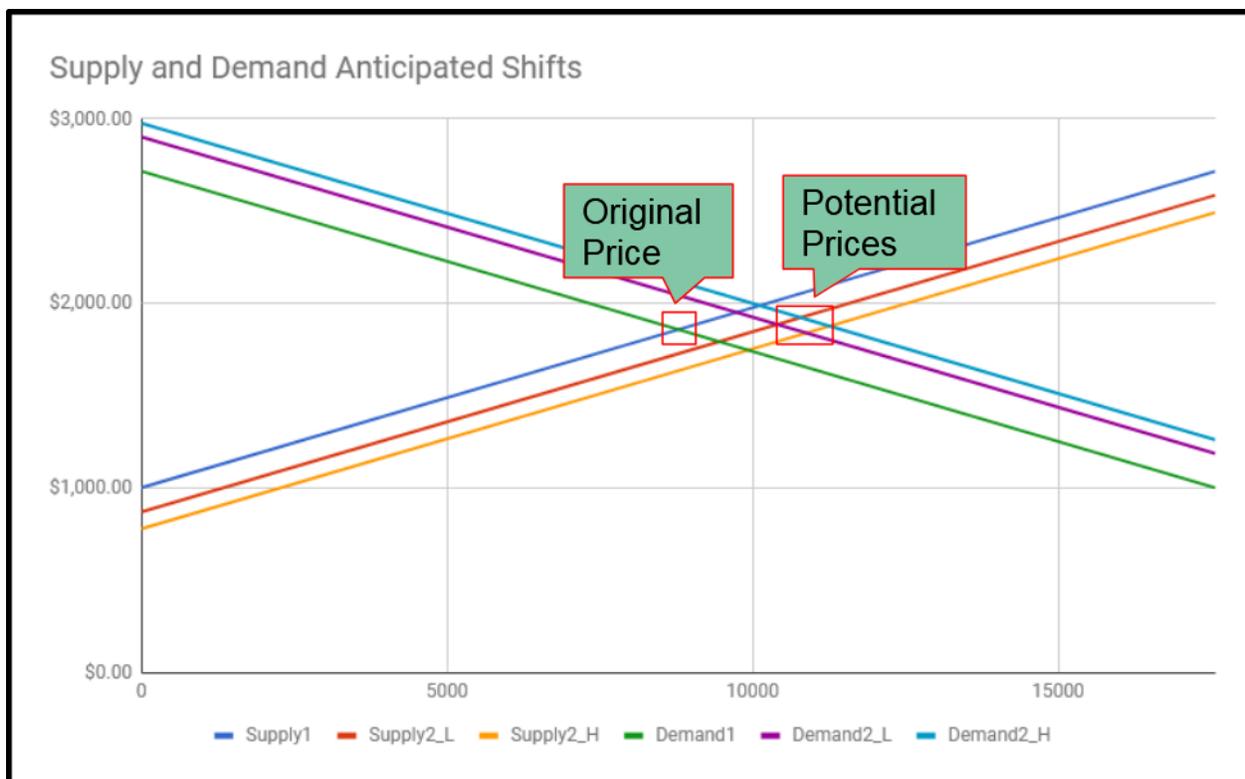
### **Final data shifts, calculations, prices, and conclusion**

Combining all of the results yields the total range in changes for both demand and supply. Once those totals are calculated, the different range in prices can best be determined by comparing the shifts of Min demand and Max supply with Min supply and Max demand.

**Table 1.4**

	Min Demand	Max Demand	Min Supply	Max Supply
Product	2	3		
Supply			5	7
Population	3	3		
Income Changes	5	7		
Inflation	1	1		
Cost of Living	-2	-1		
Government			2	5
Education	1	1		
<b>TOTAL</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>12</b>

**Chart 1.2**



After checking the shifts and intersection points for the curves, the lowest estimated price is \$1,839, a 1% decrease in price. This is definitely outside the historical trend, as it would be more than 3% less in price than the the slowest growth 3 year period in the last 10 years. The highest price expected would be \$1,923, representing a 3.5% increase in prices. This value is within the historical realm of possibility, indicating that the increase in supply is keeping up effectively with the increase in demand to live in Reston. One important note to keep in mind is that these calculations indicate a current-state condition. These calculations do not take into account any recession conditions, but it does hint that the rapid growth occurring in Reston is not necessarily recession-safe.

Regardless of how prices will change over time, one thing is for certain: the amount of housing stock will increase, perhaps by as much as 10% over the next 3 years. Even though the price change may be uncertain, more people will be living in Reston than before. This will bring a new metropolitan air to Reston, although not everyone may be accepting of their hometown

becoming a bustling city center. As for now, because the price increases are expected to be lower than previously, an individual who is debating whether or not to rent or buy now may choose to rent without as much opportunity cost as they might have had in the past.

## References

Average Rent in Reston & Rent Prices by Neighborhood - RENTCafé. (2017, December 1). Retrieved from <https://www.rentcafe.com/average-rent-market-trends/us/va/reston/>

City-data.com. (2015). Reston, Virginia profile. Retrieved December 16, 2017, from <http://www.city-data.com/city/Reston-Virginia.html>

ERI Economic Research Institute. (2017). ERI | Salary Expert - Cost of Living Data | Reston, Virginia. Retrieved December 16, 2017, from <https://www.salaryexpert.com/costoflivingdata/united-states/virginia/reston>

Fairfax County Board of Supervisors. (2017). *Demographic reports*. Retrieved from <https://www.fairfaxcounty.gov/demographics/sites/demographics/files/assets/demographicreports/fullrpt2016.pdf>

Fairfax County. (2017). Recent Reports | Demographics. Retrieved December 16, 2017, from <https://www.fairfaxcounty.gov/demographics/recent-reports>

Khaja, F. (2017). *Rental Housing Complex Analysis*. Retrieved from County of Fairfax, Virginia website: <https://www.fairfaxcounty.gov/demographics/sites/demographics/files/assets/rentalhousingreports/rent2016.pdf>

Macrotrends.net. (2017, October 30). Federal Funds Rate - 62 Year Historical Chart. Retrieved December 16, 2017, from <http://www.macrotrends.net/2015/fed-funds-rate-historical-chart>

Maynard, T. (2017, May 22). Op-Ed: Reston's Population -- Past, Present and Future. Retrieved from <https://www.restonnow.com/2017/05/22/op-ed-restons-population-past-present-and-future/>

Merchant, C. (2017, November 1). Reston enters the Upside Down when it comes to zoning. Retrieved from <https://ggwash.org/view/65387/reality-takes-a-back-seat-at-reston-zoning-meeting>

RestonNow.com. (2017, October 23). Report: Developers 'Concerned' About Number of New Reston Rental Units. Retrieved from <https://www.restonnow.com/2017/10/23/report-developers-concerned-about-number-of-new-reston-rental-units/>

TownCharts.com. (2016). Reston VA Demographics data. Retrieved from <http://www.towncharts.com/Virginia/Demographics/Reston-CDP-VA-Demographics-data.html>

Virginia Employment Commission. (2017). *Virginia Community Profile - Fairfax County*. Retrieved from [http://virginialmi.com/report\\_center/community\\_profiles/5104000059.pdf](http://virginialmi.com/report_center/community_profiles/5104000059.pdf)