A Look to the Future:

Demographic Projection for Fairfax County, Virginia

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Outline

• Background
  o Current state of Fairfax County demographics
  o Questions for the future

• Methods
  o Historical trends analysis
  o Population Forecasts:
    ➢ Cohort component method for population projection
    ➢ Land use & economic projection approach

• Results
  o Historical trends
  o Age distribution
  o Economic factors: labor force, industry, occupations
  o Population characteristics: Diversity and Migration
  o Housing and land use characteristics: Where and How many?

• Conclusions and Data Suggestions
• Resources and Questions
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Fairfax County General Overview

Overview: Demographic Characteristics

- **Diversity**
- **Working Age Population**

Instructions: To see data for a chart, click on the chart and then hold down the ‘Alt’ and ‘Shift’ keys while tapping the ‘F11’ key. When all of the supervisor district boxes are unchecked, supervisor district information is displayed. Check the box in front of a supervisor district to display information for that district.

Go to:
- Economic page
- Housing page

Persons by Race/Ethnicity

- Hispanic/Latino: 186.352
- Asian/PI: 217.017
- Black, Not Hispanic: 107.540
- White, Not Hispanic: 594.203
- Other: 4.4%

English Proficiency by Language Spoken at Home

- Very well: 55.0%
- Well: 21.1%
- Not well: 17.6%
- Not at all: 6.2%

Language Spoken at Home

- Spanish (13.1%)
- Asian/PI (12.0%)
- Indo-European (8.8%)

Persons by Age and Sex

- 38.3% of residents, age 5 and older, speak a language other than English at home.

26.1% of residents are children and youth under age 20 years.

49.5% of residents are male.

12.2% of residents are senior age 65 years and older.

50.5% of residents are female.

Source: Fairfax County Economic, Demographic, and Statistical Research, 2018 data and U.S. Census Bureau, 2017 five-year American Community Survey data.

Note: Estimates may not sum to totals due to rounding.

https://www.fairfaxcounty.gov/demographics/fairfax-county-general-overview
Vibrant Economy

Strong Labor Force

https://www.fairfaxcounty.gov/demographics/fairfax-county-general-overview
Fairfax County General Overview

Overview:
Housing Characteristics

$63,969
is the annual income needed to rent the average market rate one bedroom apartment unit.

Rental Complex Housing

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Year</th>
<th>Units</th>
<th>Market Rate</th>
<th>Average Rent</th>
<th>Vacancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>One bedroom</td>
<td>2017</td>
<td>28,055</td>
<td>25,134</td>
<td>$1,500</td>
<td>5.0%</td>
</tr>
<tr>
<td>Two bedroom</td>
<td>2017</td>
<td>32,605</td>
<td>27,291</td>
<td>$1,801</td>
<td>5.1%</td>
</tr>
<tr>
<td>Other unit types</td>
<td>2017</td>
<td>17,987</td>
<td>14,707</td>
<td>$1,007</td>
<td>5.0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>78,648</td>
<td>67,222</td>
<td>$1,789</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

Median and Average Market Value of Owned Housing

- $519,560 is the overall median market value of owned housing.
- Median and Average Market Value of Owned Housing:
  - Median: $507,814
  - Average: $621,232

Housing Units by Age

- Under 10 years: 22,401
- 10 to 19 years: 52,811
- 20 to 29 years: 63,203
- 30 to 39 years: 95,167
- 40 to 49 years: 83,361
- 50 or more years: 14,322

Source: Fairfax County Economic, Demographic and Statistical Research, 2018 data unless otherwise noted.
Prepared by: Anne Pickford Cahill, Economic, Demographic and Statistical Research.

Expensive
Stable Housing Market

https://www.fairfaxcounty.gov/demographics/fairfax-county-general-overview
How will the demographic diversity change?
Will our economic growth last?
Will we have adequate labor force and job opportunities?
Are we going to have appropriate housing to accommodate residents?
What should we plan for seniors and children?
Will social and racial equity be ensured?

Where Do We Come From? What Are We? Where Are We Going?
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• Conclusions and Data Suggestions
• Resources and Questions
Historical Trend Analysis
- Decennial Census Data
- ACS data including PUMS

Integrated Parcel Lifecycle System (IPLS) Estimate & Forecast
- Administrative data
- GIS spatial data
- Tax Administration
- Zoning
- Development Plans
- Permits & Inspections
- Comprehensive plan & Plan Options
- Census & ACS Data
- Additional Data
- Water consumption
- FC Public Schools
- Group Quarters

Cohort Component Method for Population Projection
- Natality Data for Birth Rate
- Death Data for Survival Rate
  
  Source: CDC Wonder
- Migration Rate
  Calculated with Forward Residual Method
  
  - Census or 5-year ACS data
  - Birth and death data for expected population from natural growth

Employment Forecasts
- Fairfax County Demographic Reports
- Regional forecast model output
- VEC historic data
- Direct Info from Institutional Employers
- Administration Land Development Data
- BLS Employment Survey Model

IPLS Forecast

Model developed by Fairfax County
Integrated Parcel Lifecycle System (IPLS)

**Base GIS**
- Spatial Data
  - Parcels & Centroids
  - Master Address File
  - Parcel History
  - Various Geographies

**Base Administration**
- Real Estate
  - Characteristics
    - Land/Lot
    - Resid/Comm
  - Property Sales Info
  - Current Land Use
  - Rental Vacancy MF

**Development Plans**
- Site/SD Plans
  - Proposed
  - Approved
  - Project Types
  - Housing Units

**Permits & Inspections**
- Building Permits Issued
- Building Permits Under Construction
- Building Permit Inspections

**Planning**
- Comprehensive Plan
- Plan Options Units by Type
- Planned Land Use Layer

**Zoning**
- Approved
  - Rezoning
  - Housing Unit Type
  - Land Area
  - GFA
  - Proposed Rezoning

**Demographic Data**
- Create Data
  - Housing Units by Type
  - Avg. Household Size
  - Vacancy rates
    - Owner
    - Renter
  - Forecast Assumptions

**Additional Data**
- Fairfax Water
  - Consumption Report
  - Account Status
- FC Public Schools Census
  - Migration
  - Avg. HHLD Size
  - Renter Vacancy
  - CDC
  - Birth & Survival Rates

Source: Department of Management and Budget, Economic, Demographic, and Statistical Research, Fairfax County, VA.
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Labor force distributions in Fairfax County, VA (1850-2017)

- **Outside labor force cohort**
- **Not in labor force**
- **In labor force (working or seeking work)**

**Labor force cohort:**
- 1850: Males Age 16+
- 1940 – 1970: Persons Age 14+

*Source: IPUMS USA.*
Employment by Industry in Fairfax, VA (1850-2017)

- Agriculture, Forestry, and Fishing
- Retail Trade
- Manufacturing
- Construction
- Professional and Related Services

- Public Administration
- Retail Trade
- Professional and Related Services
- Construction
- Finance, Insurance, and Real Estate

2017
- Professional and Related Services
- Business and Repair Services
- Retail Trade
- Public Administration
- Finance, Insurance, and Real Estate

Source: IPUMS USA.

Historical Trend Analysis

- From 1850 to present, Fairfax County’s population has been increasing, however, the growth varies over time.
- Rapid population growth took off in 1930s. Annual growth rate peaked at nearly 10% from 1940’s through 1950’s. It gradually slowed in the next few decades and plateaued around 1% starting 2010.
- In Fairfax County, Baby boomers (1946 – 1964) contributed to the population growth.
- From 1850s to present, the types of job in Fairfax County have changed significantly due to technology advancement. The most jobs were in Agricultural industry until 1910’s; followed by Public Administration from 1920’s-1980’s, and then Professional and Related Services since 1990’s.
- Since 1950s, Fairfax County has a clear growth in diversity of race and ethnicity, from both inter-state and international migration; in the recent two decades, Asian and Pacific Islanders had the highest growth, followed closely by Hispanics, and mixed races. This led to a proportional decline in White (not Hispanic). Percentage of Black/African Americans remained stable.
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Source: Department of Management and Budget, Economic, Demographic, and Statistical Research, Fairfax County, VA.
Future Forecast

No Migration

High Birth Rate

Low Birth Rate

Source: Department of Management and Budget, Economic, Demographic, and Statistical Research, Fairfax County, VA.
Fertility Rate by Race and Ethnicity in Fairfax County, VA (2003-2017)

- Total
- White
- AsianPI
- Hispanic
- Black
- Natives

Fertility Rate by Age Group in Fairfax County, VA (2003-2017)

- Total
- 15-19
- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54

Source: CDC WONDER Online Database, 2018.

Note: Hispanic includes all races.
Survival Rate by Race and Ethnicity in Fairfax County, VA (1968-2016)

Total | White | AsianPI | Hispanic | Black | Other

Five-year Survival Rate by Age Group and Race and Ethnicity in Fairfax County, VA in the recent 5 years (2012-2016)

Total | White | AsianPI | Hispanic | Black

Note: Hispanic includes all races.

Source: CDC WONDER Online Database, 2018.
Source: Department of Management and Budget, Economic, Demographic, and Statistical Research, Fairfax County, VA.
Fairfax County, Virginia
January 2018

Year 2018
Estimate Population Density
by Census Block Group

Persons Per Acre

- Less than 5
- 5 - 9.9
- 10 - 19.9
- 20 - 49.9
- 50 and Over

Note: Population of City of Fairfax is not included.
Source: Population Density from Fairfax County Integrated Parcel Lifecycle System.

Source: Demographic Reports, 2018. County of Fairfax, Virginia.
Source: Demographic Reports, 2018. County of Fairfax, Virginia.
Fairfax County, Virginia
January 2018

2018-2045
Forecast Population Growth by Census Block Group

Population Growth
- Negative or No Growth
- 1 - 100 Persons
- 101 - 250 Persons
- 251 - 500 Persons
- Greater than 500 Persons

Note: Population of City of Fairfax is not included.
Source: Population Density from Fairfax County Integrated Parcel Lifecycle System.

Source: Demographic Reports, 2018. County of Fairfax, Virginia.
Housing Unit Forecast in Fairfax County, VA (2020-2045)

Forecast Population by Method in Fairfax County, VA (2020-2045)

Source: Demographic Reports, 2018. County of Fairfax, Virginia.

Source: Department of Management and Budget, Economic, Demographic, and Statistical Research, Fairfax County, VA.
Fairfax County, Virginia
January 2018

2015-2045 Forecast Employment Growth by Transportation Analysis Zone

Employment Growth

- Negative or No Growth
- 1 - 100
- 101 - 250
- 251 - 500
- Greater than 500

Note: Population of City of Fairfax is not included.
Source: Population Density from Fairfax County Integrated Parcel Lifecycle System.
Employment Estimate and Forecast for Fairfax County, VA (2015-2045)

Source: Department of Planning and Zoning, Fairfax County, Virginia. Employment Forecast for MWCOG, Round 9.1.
Forecast: a Look at Future

- Assuming the current rates of birth, death and migration, Fairfax County will maintain a stable and gradual population growth. For the next 30 years, the age composition will remain similar to the current state with a slight increase in seniors (65+). The working age population will remain healthy, however, the younger age group (0-19) will have a slight decline.

- Migration is the major contributor in maintaining population growth and balanced age composition.

- Overall birth or fertility rates has kept Fairfax County stable since 2000’s. The age of mother for new births has a slight increase; and there are variation in birth rate among different population groups.

- Survival rate increased in general population since 1960’s when CDC WONDER data started available. Hispanics and Asian have the highest survival rate in later ages.

- The housing growth will keep up with the population growth. The multifamily will account for most of the housing growth, in a higher concentration in transit-oriented corridors.

- Employment is projected to grow steadily, with mostly professional and service-oriented jobs.
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Conclusions

The outlook is healthy for population and job growth.

Pattern of birth and death are changing – in the recent decades, the age of mother giving birth has gone up, while the mortality rate has gone down. There are variations among different population groups.

Migration is a major contributor in our population growth and in stabilizing age composition.

Types of job have changed due to technological advancement and higher educational attainment.

Housing development is planned in line with population and job growth.
Data Suggestions

- Reliable and easy-access survey data on international population migration.


Resources

• Fairfax County Demographics
  https://www.fairfaxcounty.gov/demographics/
• Story Map (coming soon)
• US Census Bureau
  https://www.census.gov/data.html
• IPUMS, University of Minnesota
  https://www.ipums.org/
• CDC WONDER Online Database
  https://wonder.cdc.gov/
Thank you! Gracias! 고맙습니다!
شكرا جزيلا! cảm ơn bạn! 谢谢!

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