

Community Impacts of Multifamily Development

Multifamily Housing Research Summary

October 2018



The Delaware Valley Regional Planning Commission

is the federally designated Metropolitan Planning Organization for a diverse nine-county region in two states: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey.



DVRPC's vision for the Greater Philadelphia Region is a prosperous, innovative, equitable, resilient, and sustainable region that increases mobility choices by investing in a safe and modern transportation system; that protects and preserves our natural resources while creating healthy communities; and that fosters greater opportunities for all.

DVRPC's mission is to achieve this vision by convening the widest array of partners to inform and facilitate data-driven decision-making. We are engaged across the region, and strive to be leaders and innovators, exploring new ideas and creating best practices.

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ABOUT THIS STUDY

The **Community Impacts of Higher Density Development** is a two-year planning study being conducted by DVRPC to investigate a variety of issues related to multifamily residential development in Greater Philadelphia. This study has been undertaken to help our county and municipal planning partners better understand the potential transportation, economic, and community impacts of various types of multifamily development. This interim document, *Multifamily Housing Research Summary*, highlights DVRPC's preliminary findings on multifamily real estate trends and household demographics. This document contains information that may be useful to planners and elected officials as they consider individual development proposals and broader regulations governing land use and community design.

Contents

1. Introduction	1
2. Regional Multifamily Development Trends	3
3. Demographic Multipliers and Statistics	21

Figures & Tables

Figure 1: Building Permits in the Philadelphia-Camden-Wilmington CBSA (1980–2017)	1
Figure 2: Composition of Housing Stock by County	4
Figure 3: Distribution of Multifamily Rental Housing Units by County	5
Figure 4: Regional Share of Multifamily Rental Housing by County	5
Figure 5: Percent of Multifamily Rental Units Built by Decade	6
Figure 6: Multifamily Rental Development Activity by Decade	7
Figure 7: Multifamily Rental Development Activity (1993 to 2017)	7
Figure 8: Percent of New Units Authorized for Structures with 5 or More Units (2008–2017)	8
Figure 9: Residential Building Permits Authorized by County (2008–2017).....	9
Figure 10: Multifamily Rental Units Constructed by Submarket (2008–2017)	10
Figure 11: Average Number of Units per New Multifamily Rental Development (1993–2017)	11
Figure 12: Average Number of Units per New Multifamily Rental Development by Submarket (2008–2017)	12
Figure 13: Number of Multifamily Rental Developments Completed by Number of Units (2008–2017)	13
Figure 14: Number of Multifamily Rental Developments Completed by Style by Decade	14
Figure 15: Share of Multifamily Rental Developments Completed by Style and County (1993–2017)	15

Figures & Tables continued

- Figure 16: Average Height of New Multifamily Rental Development By County (1993–2017) 15
- Figure 17: Share of New Multifamily Rental Units Constructed by Number of Bedrooms and Decade 16
- Figure 18: Share of New Multifamily Rental Units by County and Number of Bedrooms (1993–2017) 17
- Figure 19: Average Unit Size per New Multifamily Rental Development by Submarket (2008–2017) 18
- Figure 20: Average Unit Size of New Multifamily Rental Developments By Decade 18
- Figure 21: Average Asking Rent for All Two-Bedroom Units by Submarket (October 2018) 19
- Figure 22: PUMA Categorization by DVRPC Planning Area..... 23
- Figure 23: Average Household Size by DVRPC Planning Area (2012–2016) 27
- Figure 24: Change in Average Household Size by Number of Bedrooms Over Time in the DVRPC Region 27
- Figure 25: School-Age Children Generated by Multifamily Rentals by Planning Area and Number of Bedrooms (2012–2016) 28
- Figure 26: Comparison of School-Age Children Generated by Tenure for the DVPRC Region (2012–2016) 28
- Figure 27: Number of Vehicles Available per Multifamily Rental Household by Planning Area and Number of Bedrooms (2012–2016) 31
- Figure 28: Comparison of Age Cohorts by Tenure for All Multifamily Units in the DVRPC Region (2012–2016) 33
- Figure 29: Educational Attainment Levels for All Apartment Residents by Planning Area (2012–2016) 35
- Figure 30: Comparison of Median Household Income by Tenure for all Multifamily Units in Structures with Five or More Units (2012–2016) 39

- Table 1: Demographic Multipliers 25
- Table 2: Demographic Statistics 25
- Table 3: Average Household Size 26
- Table 4: School-Age Children 29
- Table 5: Vehicles Available per Household 30
- Table 6: Age Cohorts 32
- Table 7: Educational Attainment (Population 25 Years and Over) 34
- Table 8: Means of Transportation to Work (Population 16 Years and Over) 36
- Table 9: Travel Time to Work (Population 16 Years and Over) 37
- Table 10: Median Household Income 38
- Table 11: Occupation (Population 16 and Over) 40
- Table 12: Race and Hispanic Origin 41
- Table 13: Household Type by County 42
- Table 14: Household Type 43

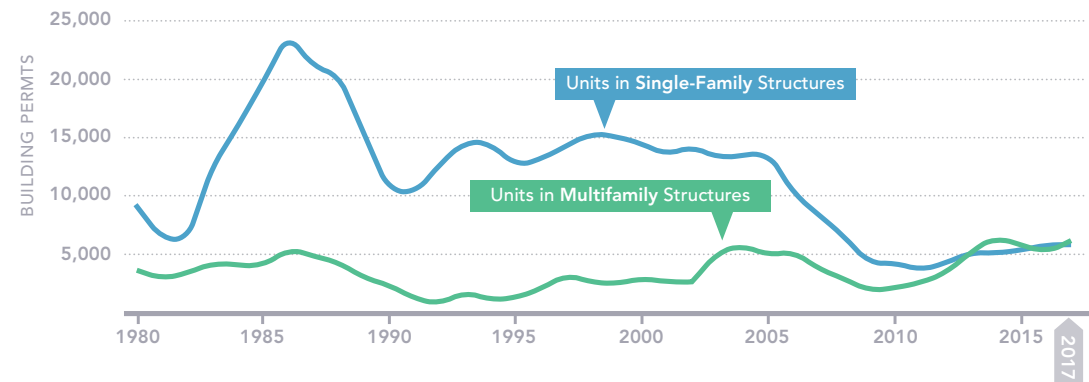
Introduction

As part of its Fiscal Year 2018 and 2019 Work Programs, DVRPC is investigating a variety of issues related to multifamily residential development in Greater Philadelphia. Entitled *Community Impacts of Higher Density Development*, this study comes at a time when more U.S. households are headed by renters than at any point since at least 1965. Between 2006 and 2016, the share of households renting rose from 31.2 percent to 36.6 percent, exceeding the recent high of 36.2 percent set in 1986 and 1988 and approaching the rate of 37 percent in 1965.¹

In the Philadelphia-Camden-Wilmington Core-Based Statistical Area (CBSA), the number of building permits issued for multifamily units surpassed those for single-family homes for the first time in 2014 and has remained competitive in subsequent years (see Figure 1). Several factors that appear to be influencing national and regional housing markets are discussed in the sidebar on page 2.

Despite growing demand for multifamily housing nationally and in our region, the local impacts of higher density residential development are frequently not well defined or understood. Additionally, proposals to build

Figure 1: Building Permits in the Philadelphia-Camden-Wilmington CBSA (1980-2017)



Source: US Department of Housing and Urban Development, State of Cities Data Systems

new multifamily housing often face community and/or political resistance based on concerns related to traffic, parking, fiscal, or aesthetic impacts. When presented with various development scenarios, municipal planners, elected officials, and citizens around Greater Philadelphia may wonder:

- Who lives in rental housing?
- Will new apartments be a drain on our town's municipal budget?
- What impact will new development have on local traffic conditions?

- How will new development affect enrollment at local schools?
- Will higher density development adversely impact the character of the area?

While some of these questions are subjective and others are difficult to answer with certainty, analyzing regional multifamily real estate development and demographic trends can provide valuable insights. This document contains a combination of data analysis and

¹ Pew Research Center, "More U.S. households are renting than at any point in 50 years" (July 19, 2017), <http://pewrsr.ch/2vBv11C>

original research as well as a literature review designed to help our county and municipal planning partners better understand the transportation, economic, and community implications of various development patterns. In addition to presenting DVRPC's preliminary findings on numerous topics, this interim product is being shared with project stakeholders to inform discussions about research and engagement priorities for the second year of this study.

Document Overview

This document is organized into three chapters. This chapter concludes by highlighting a number of demographic trends that are shaping the demand for residential real estate around the country.

Chapter 2 presents a snapshot of the production and supply of multifamily housing in our region and highlights changes in the design of multifamily properties over time. Chapter 3 details the generation of geographically specific demographic multipliers and statistics for Greater Philadelphia. These multipliers and statistics were developed in collaboration with Econsult Solutions, Inc. (ESI) and are designed to provide insights about the individuals and households residing in multifamily housing in our region.

The potential impacts of various land use patterns have been studied by numerous academic institutions and practitioners around the county. A literature review highlighting the key findings from some of the most relevant of these studies has been prepared separately.

Key Trends Shaping the Multifamily Housing Market

The United States has experienced a surge in the number of households renting their home. Since the current upswing began in 2010, the number of renter households has increased by an average of more than 800,000 annually.²

The growing demand for multifamily housing appears to be driven by a number of interconnected demographic and socioeconomic trends. The factors listed below are presented as background information that can inform stakeholder discussions related to DVRPC's *Community Impact of Higher Density Development Study*.

More people are living alone and there are fewer married couples with children.

The average household size has fallen from 2.76 people per household in 1980 to 2.54 per household in 2017. Over the same period, the share of households that are single people living alone rose from 23 percent to 28 percent.

Households with children have historically driven demand for single-family homes. Despite an overall population increase of 44 percent since 1980, there are fewer married families with kids today than in 1980. Nineteen percent of all households in 2017 are composed of married couples with kids, compared to 31 percent of all households in 1980.

Eighteen to 34-year-olds, the age group most likely to rent, have become the largest demographic group.

The sheer number of young adults is helping to fuel demand for apartments. Economic challenges facing this cohort, such as student loan debt, is often cited as a barrier to home ownership.

Many young adults are delaying household formation and marriage.

Historically, Americans have bought their first houses around the same time that they get married. However, both women and men on average are marrying for the first time five years later than they did in 1980.

Renting increasingly appeals to older Americans.

Over half of the net increase in renter households from 2006 to 2016 came from baby boomer households, headed by individuals born between 1946 and 1964. By 2030, some demographers estimate that one in five Americans will be over the age of 65.

Immigration is accounting for a larger share of population growth in many places

Immigration is a driver of apartment demand and may become even more of an influence if it eclipses natural population growth over the next decade. National Multifamily Housing Council data suggests that immigrants are more likely to rent, and more likely to rent for longer periods of time.

²National Multifamily Housing Council and National Apartment Association, *Vision 2030*, <https://weareapartments.org/data>.

Regional Multifamily Development Trends

Multifamily housing represents approximately 32 percent of the housing stock in Greater Philadelphia. However, the distribution, age, and character of this housing differ significantly from place to place around the region. This chapter uses tables, maps, and text to present a snapshot of Greater Philadelphia's multifamily housing stock. This chapter is divided into two sections: Multifamily Construction and Multifamily Properties. Each of these sections is briefly described below.

The primary data source for this chapter is CoStar™, a commercial real estate database and analytics platform. DVRPC accesses this information through a paid subscription. The analysis presented in this chapter employs a variety of time periods and geographies. In some cases, the data includes multifamily developments constructed through the end of calendar year 2017. In other cases, all multifamily developments completed through May 2018 are considered.

Data is presented at the regional and county levels. In some cases, data is organized by real estate submarkets, specific geographic boundaries used by CoStar to describe core areas that are competitive with other submarkets. There are 33 submarkets within the nine-county DVRPC region. These submarkets are mapped and identified later in this chapter.

Multifamily Construction

The first section of this chapter details multifamily construction activity in Greater Philadelphia. The figures on pages 4 through 10 deal with topics such as the composition of the region's housing stock, the distribution of multifamily housing units, and overall production. This data can help us better understand historic and recent construction activity as well as spatial patterns of development.

Multifamily Properties

The second section of this chapter illustrates how multifamily real estate products have evolved over time in our region. The figures on pages 11 through 20 deal with topics such as development and unit size, form, scale, unit, and rent. This information can help us better understand the forces that are shaping the design of multifamily developments today and anticipate future development activity.

Figure 2: Composition of Housing Stock by County

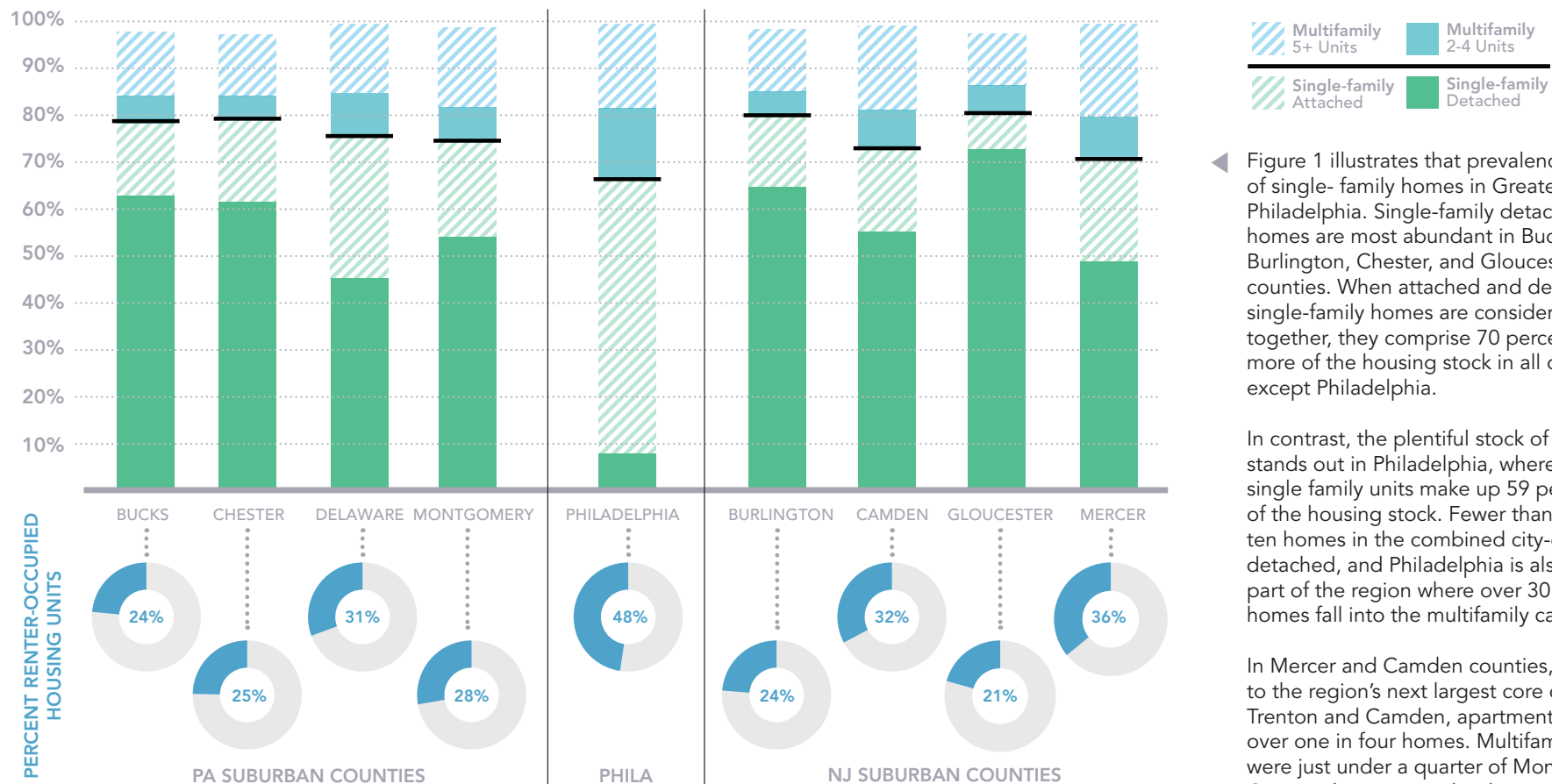


Figure 1 illustrates that prevalence of single-family homes in Greater Philadelphia. Single-family detached homes are most abundant in Bucks, Burlington, Chester, and Gloucester counties. When attached and detached single-family homes are considered together, they comprise 70 percent or more of the housing stock in all counties except Philadelphia.

In contrast, the plentiful stock of rowhomes stands out in Philadelphia, where attached single family units make up 59 percent of the housing stock. Fewer than one in ten homes in the combined city-county is detached, and Philadelphia is also the only part of the region where over 30 percent of homes fall into the multifamily category.

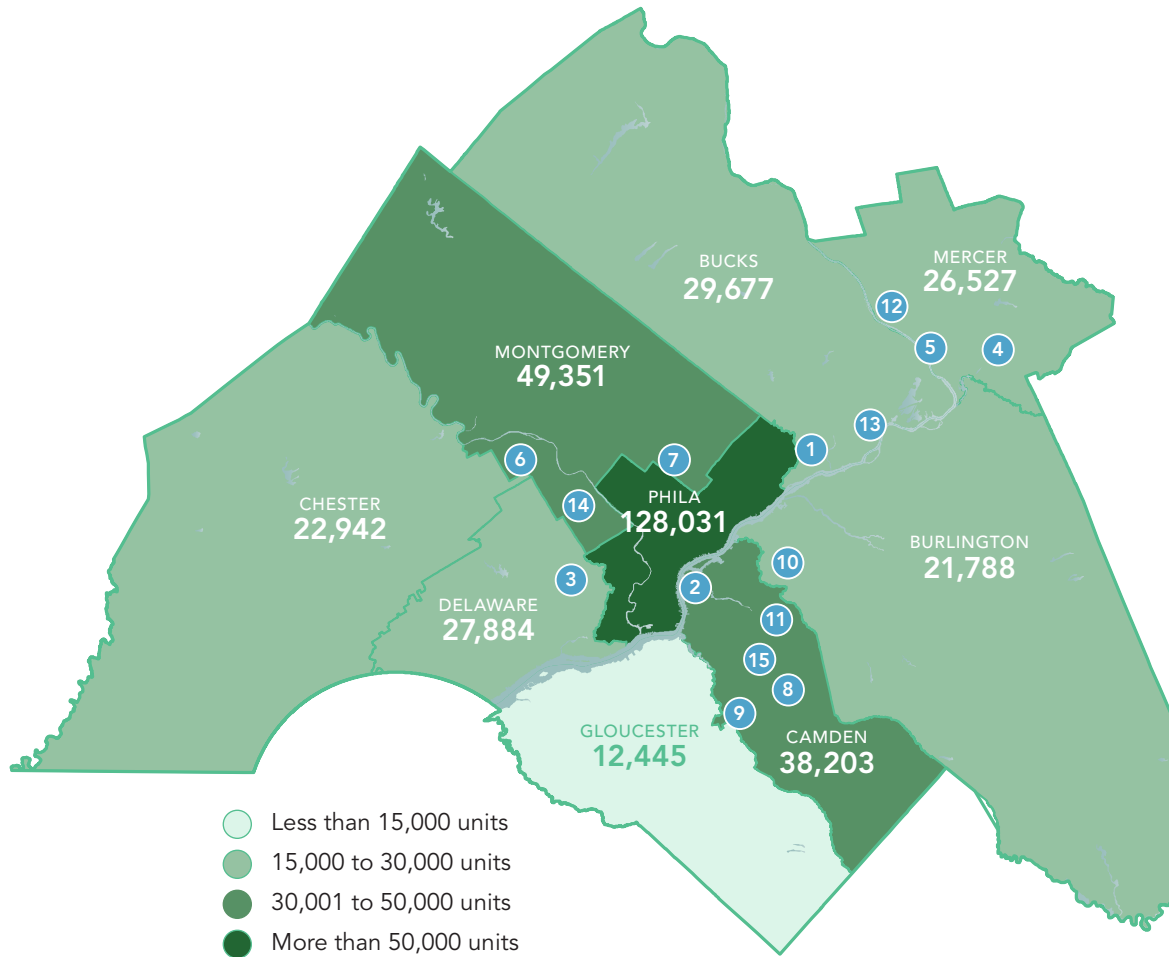
In Mercer and Camden counties, home to the region's next largest core cities of Trenton and Camden, apartments make up over one in four homes. Multifamily units were just under a quarter of Montgomery County's housing stock, where attached single family units make up another 20 percent. Delaware County's sizable share of attached single family units (30 percent) was behind only neighboring Philadelphia. Mercer County notably has the largest share of homes in structures with five or more units, about 20 percent

Source: U. S. Census Bureau, ACS 5-Year Estimates, 2012–2016

▲ The split of owners and renters somewhat parallels the breakdown of housing types. In general, where there are more apartments in the housing stock, there are more renters. While most of today's residents are homeowners—even in Philadelphia—owner-occupied units make up the vast majority of the housing stock in most suburban areas. Although some owner-occupied units may actually be multifamily condominiums, the high rates

of homeownership in most areas likely results from the predominance of single-family homes. Homeownership rates reach 70 to 80 percent in Bucks, Burlington, Chester, Gloucester, and Montgomery Counties. Home ownership in the remaining suburban counties ranges from 64 to 69 percent. Philadelphia had the highest share of renters at 48 percent, marking an almost even split of tenure types.

Figure 3: Distribution of Multifamily Rental Housing Units by County

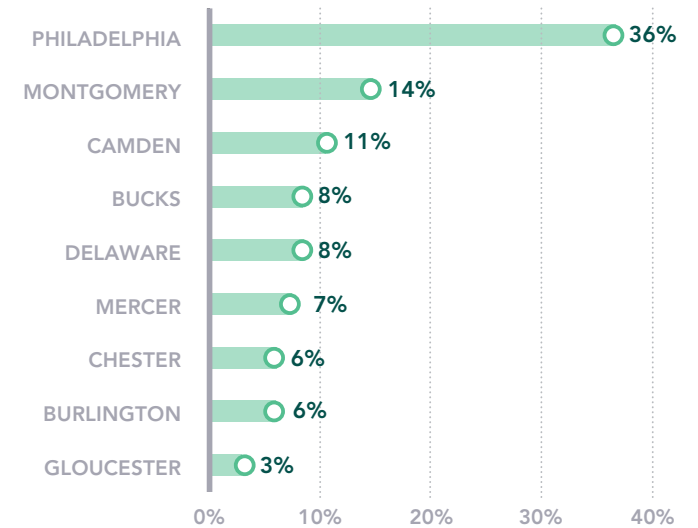


Source: CoStar Realty Information, Inc.

▲ Multifamily housing can be found throughout the region, but some counties have a larger share of the region’s apartments than others. Aggregated data from CoStar shows that Philadelphia leads the way with over a third of the region’s approximately 357,000 apartments, followed by its neighbors: Montgomery (14 percent) and Camden (11 percent) counties.

Bucks, Chester, Delaware, Mercer, and Burlington counties all contain six to eight percent of the region’s apartment inventory. Gloucester County has the smallest share of multifamily units across the region, trailing Burlington by almost 10,000 units.

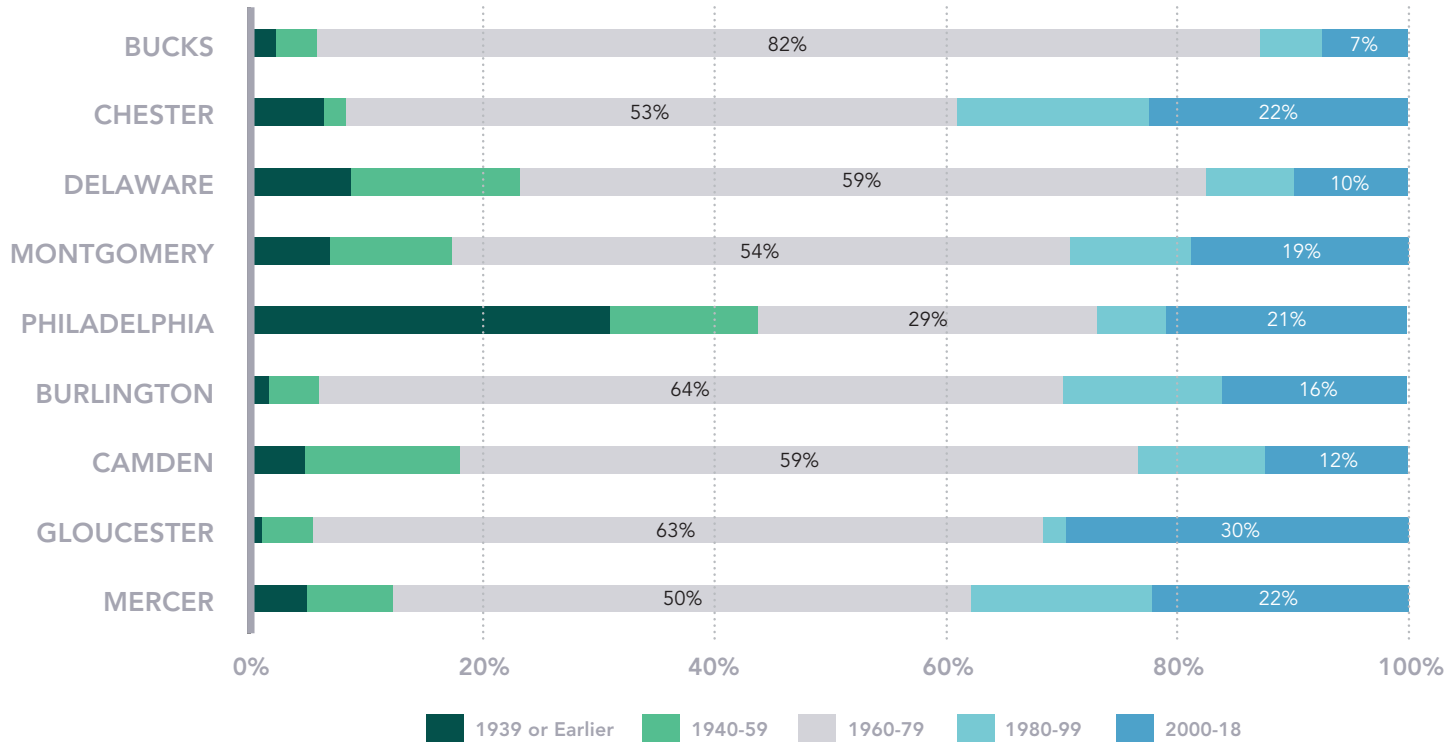
Figure 4: Regional Share of Multifamily Rental Housing by County



Municipalities Outside of Philadelphia With the Most Apartments

1. Bensalem8,534 units
2. Camden7,181 units
3. Upper Darby6,520 units
4. Hamilton6,301 units
5. Trenton6,246 units
6. Upper Merion4,803 units
7. Cheltenham4,599 units
8. Lindenwold4,537 units
9. Gloucester Twp4,364 units
10. Maple Shade4,269 units
11. Cherry Hill4,042 units
12. Ewing3,785 units
13. Bristol3,649 units
14. Lower Merion3,590 units
15. Voorhees3,226 units

Figure 5: Percent of Multifamily Rental Units Built by Decade



Source: CoStar Realty Information, Inc.

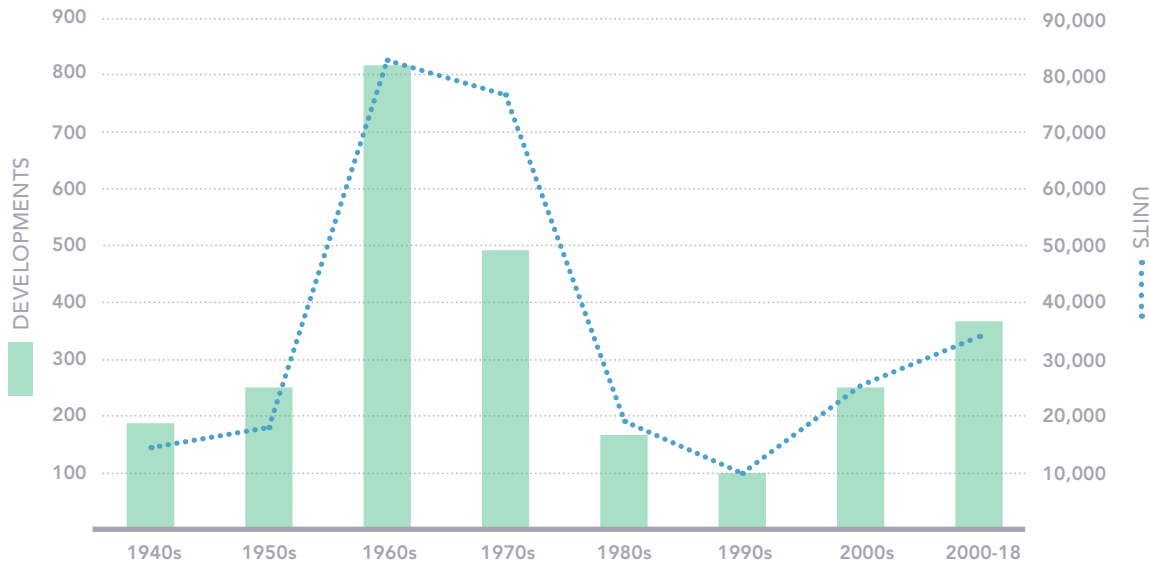
▲ In terms of community impacts, when multifamily construction occurs may be just as important as where it located. Figure 4 shows that the bulk of the region’s current multifamily housing stock was constructed in the 1960s and 1970s. This era claims at least half of all apartments for which a construction date was available in every county but Philadelphia. In Bucks County, eight in every ten apartments can be traced back to this twenty year timespan.

Philadelphia’s many existing pre-war apartment buildings account for close to a third of its multifamily units, a far greater share than any

suburban county. Delaware County comes closest to having a historic stock of suburban apartments, with about a quarter built before 1960.

However, in nearly all other counties, apartments from recent decades outnumber those built before mid-century. This trend is most apparent in Gloucester, Chester, and Mercer counties, where about one-third or more of multifamily units was built since 1980. Camden and Montgomery counties have a slightly more balanced profile, each having about 18 percent of apartments constructed before 1960 and between 20 and 30 percent built since 1980.

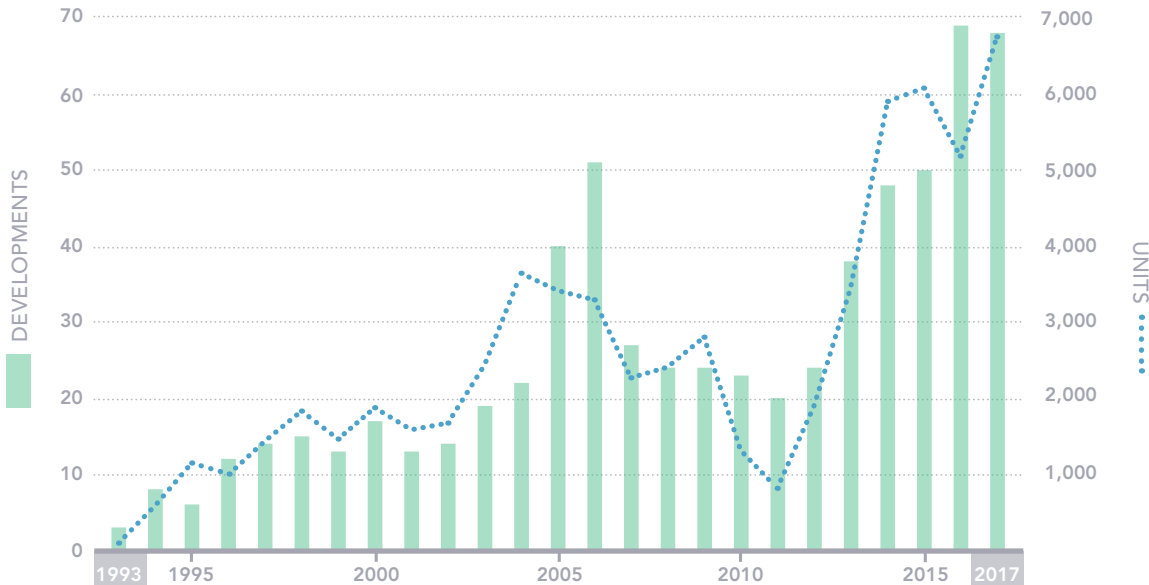
Figure 6: Multifamily Rental Development Activity by Decade



Over the last two decades, multifamily development has grown significantly. As displayed in Figure 5, the current decade has seen more construction than any other since the 1970s—over 34,000 units in approximately 367 developments.

After the relatively quiet decades of the 1980s and 1990s, recent construction activity continues to approach levels from the more prolific decades of the 1960s and 1970s.

Figure 7: Multifamily Rental Development Activity (1993 to 2017)



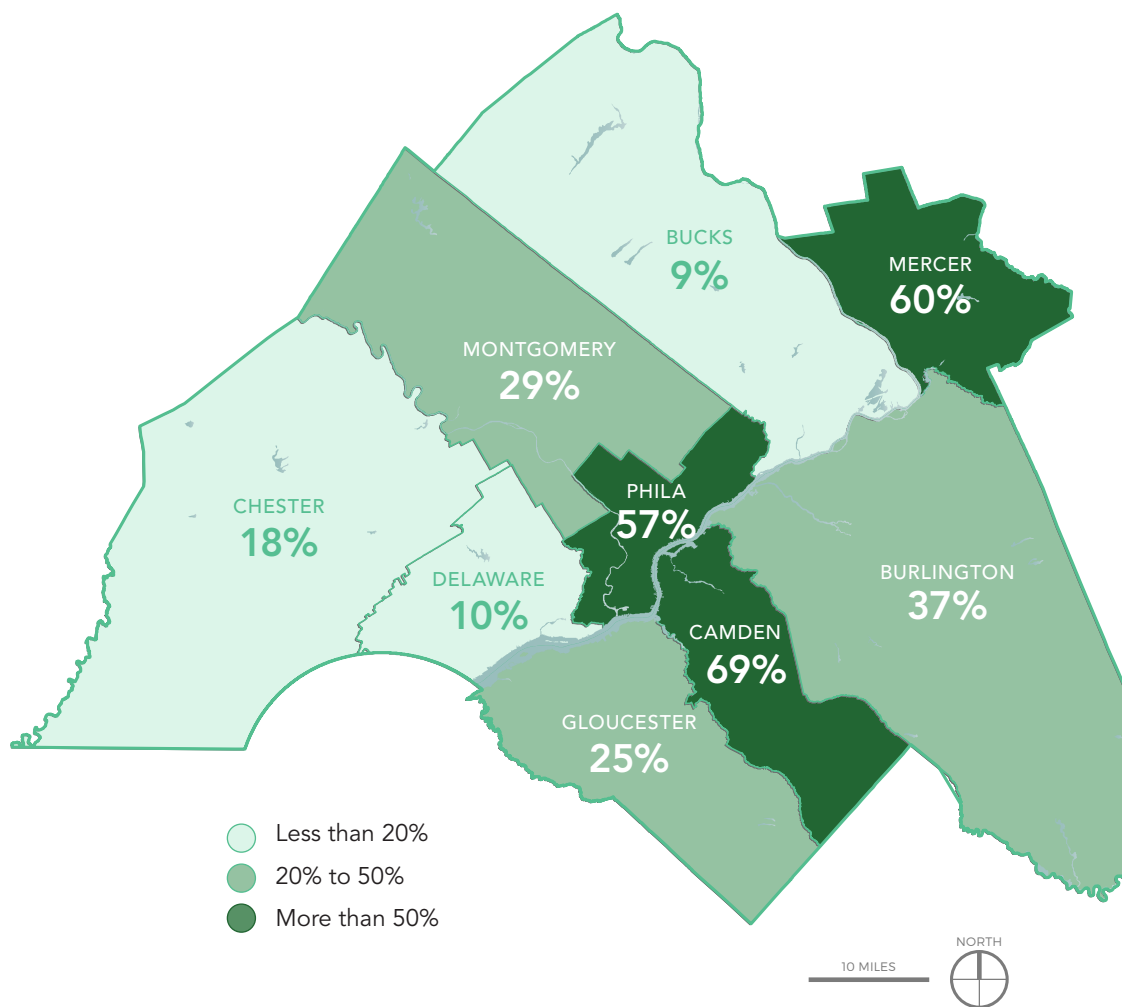
The 1990s were a slow decade for multifamily development and preceded a sharp spike in apartment construction in the mid-2000s. An early peak in 2004 yielded around 3,600 units, after nearly a decade of annual construction under 2,000 units per year. Roughly 50 multifamily communities were built in 2006 after annual deliveries came in under 20 every year from 1993 to 2003.

Production sank in 2007 during the Great Recession, dropping back to 20 developments per year and fewer than 1,000 new units by 2011. As the economy turned around in the 2010s, multifamily development soared to levels unseen since the heyday of the 1960s and '70s. The number of new developments hit a 25-year high in 2016 just shy of 70. The number of new units saw its 25-year peak in 2017 with around 6,800.

Source: CoStar Realty Information, Inc.

Source:

Figure 8: Percent of New Units Authorized for Structures with 5 or More Units (2008-2017)

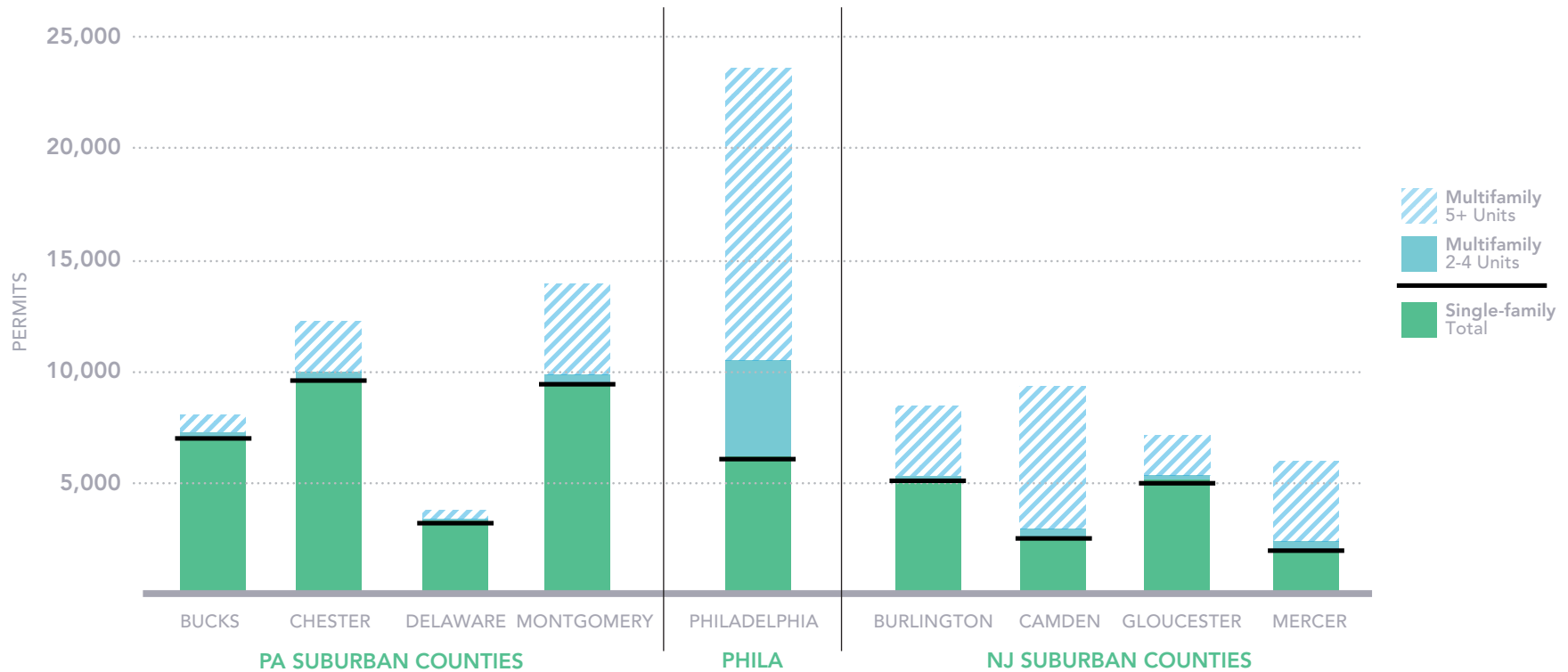


Source: U.S. Census Bureau, Residential Construction Statistics Division, May 2017

Despite the longstanding precedent of single-family home development in this region, recent trends in building permit authorization confirm an increased focus on multifamily housing development. Over two-thirds of the building permits in Philadelphia, Camden, and Mercer counties were allocated to multifamily structures, and, as the map shows, more than half of those permits have gone to structures with five or more units.

Even in more suburban counties, the rate of multifamily permit authorization has generally exceeded the share of multifamily units in the existing housing stock, especially in New Jersey. In Burlington County, more than one in every three permits was issued to five-plus unit apartment construction over the same ten year timespan, while Gloucester and Montgomery counties each had around one-quarter of building permits go toward larger multifamily units. Only in Bucks and Delaware counties were the rates of multifamily permitting less than the share of multifamily units in each county's respective housing stock as a whole.

Figure 9: Residential Building Permits Authorized by County (2008-2017)



Source: U.S. Census Bureau, Residential Construction Statistics Division, May 2017

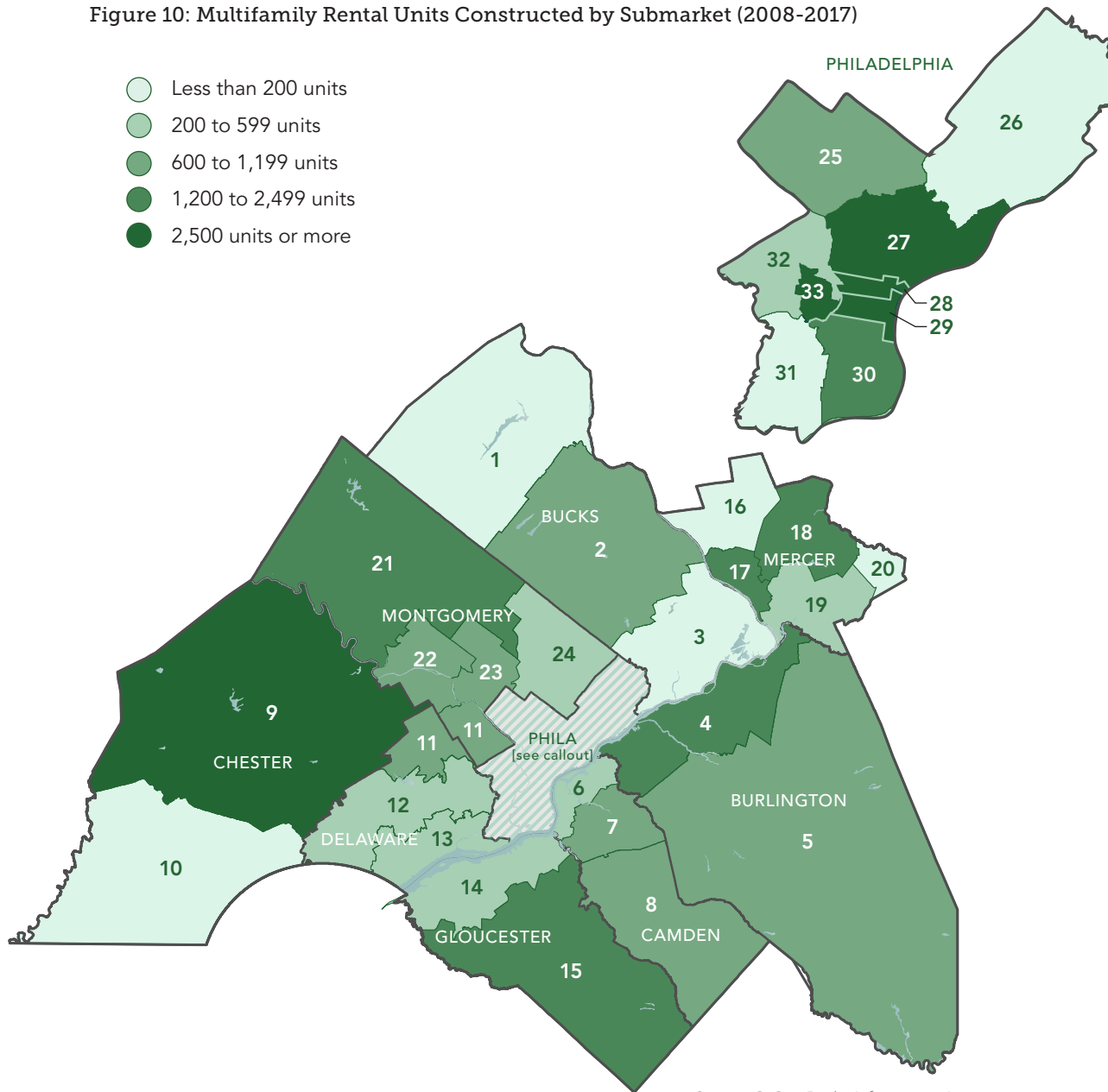
▲ Philadelphia's residential construction surge is illustrated in Figure 8. Philadelphia authorized nearly two times more permits than the second busiest county from 2008 to 2017, with about 24,400 to Montgomery County's 13,900. Its multifamily permits alone—roughly 18,200—exceeded permits for all unit types combined in every other county.

Outside of Philadelphia, Montgomery and Chester counties led in units permitted across all housing types. Each had well over 10,000 permits, but most went to single family units, including a region-leading 9,700 single family permits in Chester County.

Camden County led suburban counties in the number of multifamily permits authorized, with nearly 6,400 authorized for structures of five or more units. About 4,400 were issued in Montgomery County, making it second among for permitting five-plus unit multifamily structures, followed by Mercer (3,600) and Burlington (3,100) counties. While Delaware County had close to the smallest share of permits go toward multifamily housing, it also had the least amount of proposed development activity overall at just 3,700 total units.

Figure 10: Multifamily Rental Units Constructed by Submarket (2008-2017)

- Less than 200 units
- 200 to 599 units
- 600 to 1,199 units
- 1,200 to 2,499 units
- 2,500 units or more



Source: CoStar Realty Information, Inc.

Units Constructed by CoStar Submarkets

Bucks County

1. Upper Bucks County: 16
2. Central Bucks County: 977
3. Lower Bucks County: 60

Burlington County

4. Upper Burlington County: 1,496
5. Lower Burlington County: 909

Camden County

6. Camden/Pennsauken: 470
7. Cherry Hill/Haddonfield: 803
8. Lower Camden County: 1,095

Chester County

9. Upper Chester County: 3,377
10. Lower Chester County: 115

Delaware County

11. Main Line*: 1,125
12. Upper Delaware County: 556
13. Lower Delaware County: 208

Gloucester County

14. Upper Gloucester County: 551
15. Lower Gloucester County: 1,204

Mercer County

16. Pennington/Hopewell: 0
17. Trenton/Hamilton/Ewing: 1,396
18. Princeton/Lawrenceville: 1,395
19. Hamilton/Robbinsville: 484
20. Hightstown/East Windsor: 170

Montgomery County

- 11 Main Line*: 1,125
21. Upper Montgomery County: 1,407
22. King of Prussia/Norristown: 1,106
23. Conshohocken/Plymouth: 1,154
24. Horsham/Willow Grove: 384

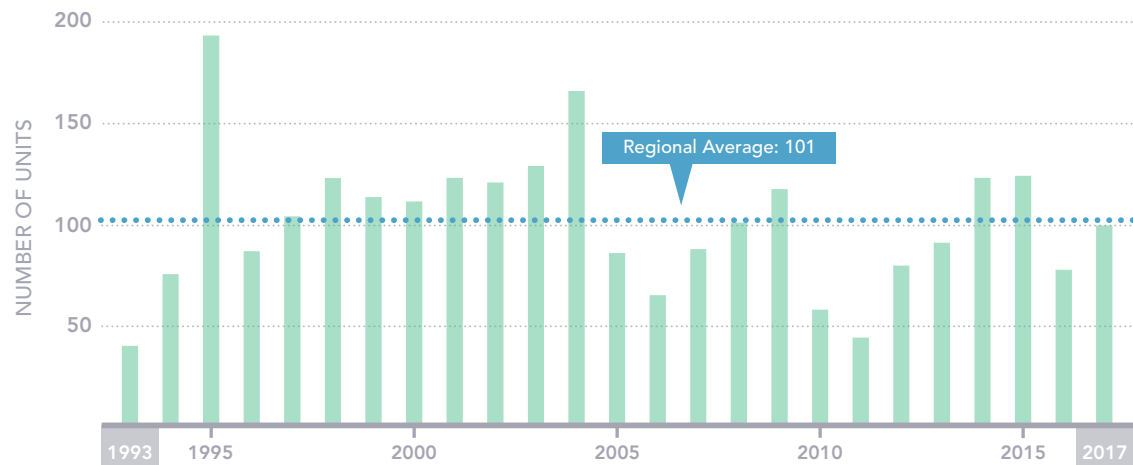
Philadelphia County

25. Northwest Philadelphia/Manayunk: 614
26. Northeast Philadelphia: 51
27. North Philadelphia: 2,528
28. Art Museum/Northern Liberties: 2,853
29. Center City: 5,590
30. South Philadelphia/Navy Yard: 1,399
31. Southwest Philadelphia: 0
32. West Philadelphia: 324
33. University City: 2,848

*The Main Line Submarket includes portion of Delaware and Montgomery counties

◀ A more detailed look at the region's real estate submarkets, delineated by CoStar analysts, shows a somewhat uneven pattern of apartment distribution across the Delaware Valley over the last ten years. Submarkets in central Philadelphia were very active in terms of multifamily construction. Interestingly, so were traditionally suburban submarkets like Upper Chester County (3,377 units) and Upper Burlington County (1,496). Development has also clustered in areas with large academic, research, and government anchor institutions, such as Trenton/Ewing, Princeton/Lawrenceville, and Lower Gloucester County. Suburban centers like Conshohocken/Plymouth Meeting and King of Prussia/Norristown also saw impressive gains, as did areas well known for livability and high quality of life, like the Main Line. New apartment deliveries were slower in outlying areas like Pennington/Hopewell, Hightstown/East Windsor, Upper Bucks County, and Lower Chester County. Other places may lack capacity for future land development, such as Lower Bucks County, Northeast Philadelphia, and Lower Delaware County.

Figure 11: Average Number of Units per New Multifamily Rental Development (1993-2017)

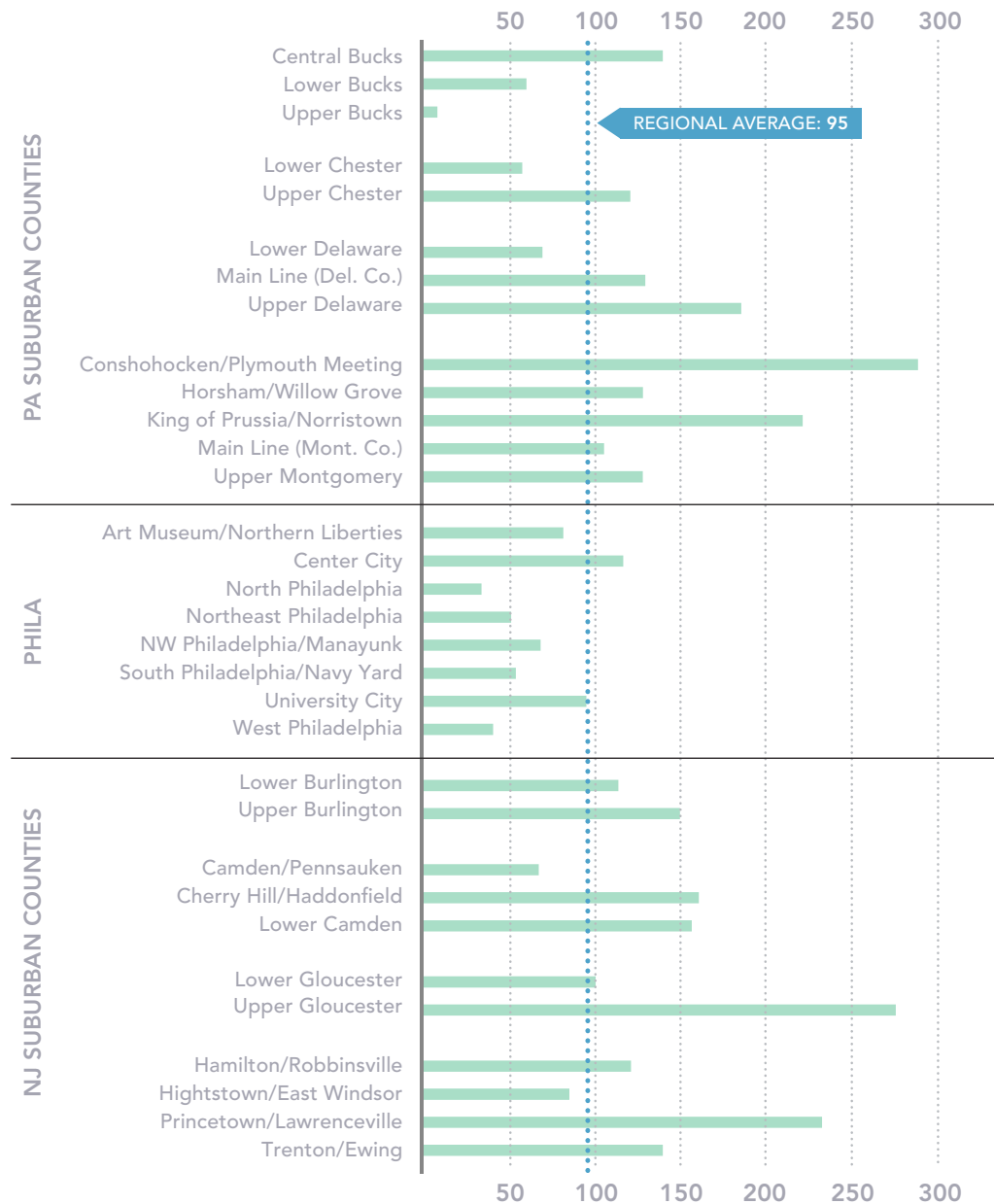


Source: CoStar Realty Information, Inc.

▲ Across the region, the average size of new multifamily developments has fluctuated between as few as 40 units to as many as 194 units in the last 25 years. But as the number of communities built annually has increased since the end of the Great Recession, this average has stabilized to a somewhat narrower range of between 75

and 125 units. The most recent data available from 2017 has an average essentially right in the middle of this range, at 99 units. Since the mid-2000s, the average number of units has only exceeded 100 on four occasions, so the trend does suggest a slightly downward trajectory for development size.

Figure 12: Average Number of Units per New Multifamily Rental Development by Submarket* (2008-



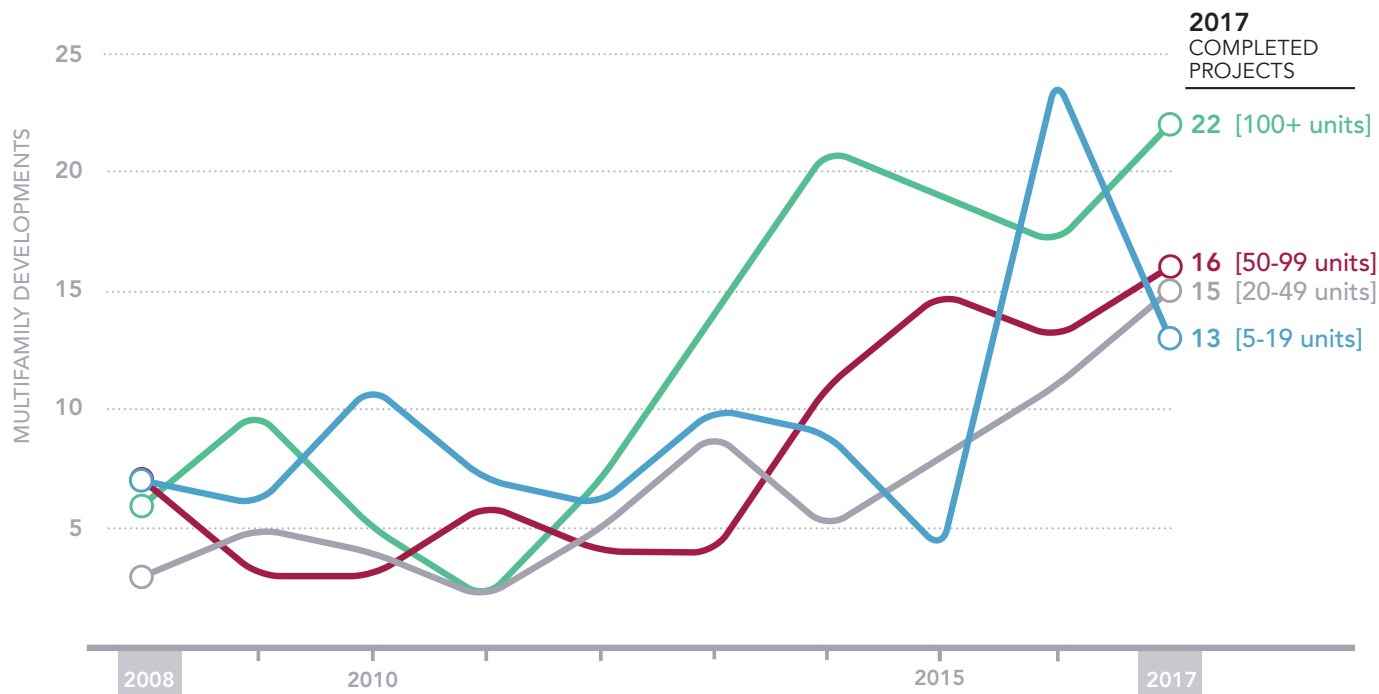
◀ The size of apartment communities has varied across the region's many submarkets. In the last ten years, multifamily developments in Mercer and Montgomery County have tended to be the largest, with the average number of units over 150. This was especially true in Conshohocken/Plymouth Meeting, King of Prussia/Norristown, and Princeton/Lawrenceville.

Upper Gloucester County also saw larger communities on average. On the other hand, Philadelphia apartment communities tended to be much smaller, generally under 100 units. Most other counties and submarkets had averages close to the regional average for number of units, or had a relatively small sample of new developments built during this ten-year timeframe.

* See Figure 9 on p. 10 for a map and list of CoStar Submarkets

Source: CoStar Realty Information, Inc.

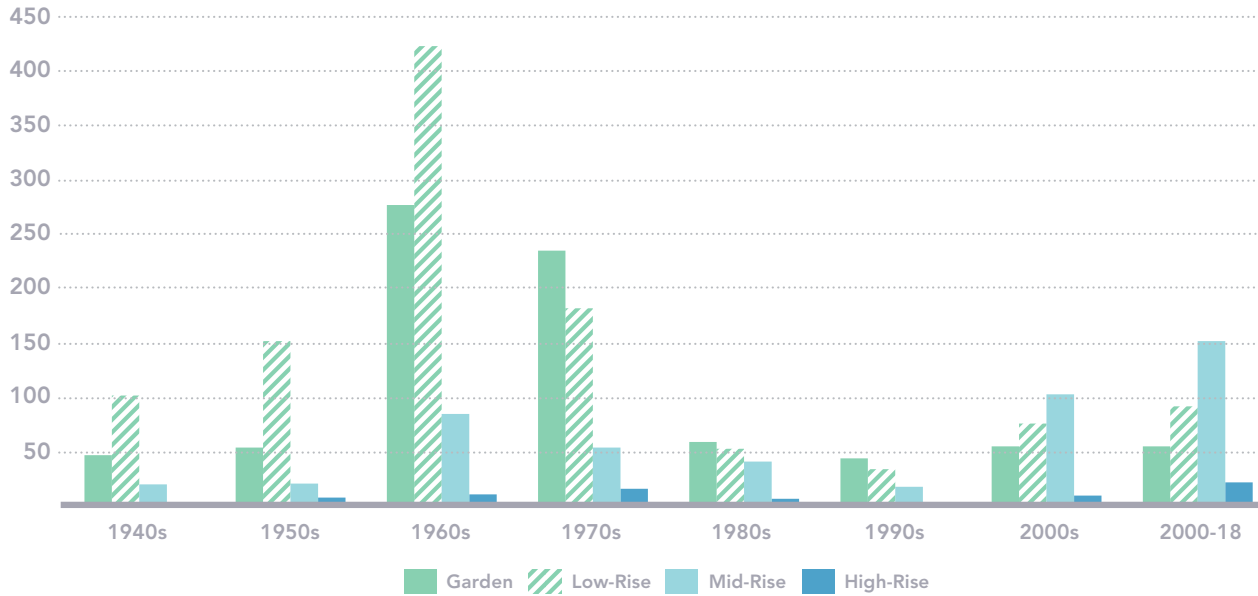
Figure 13: Number of Multifamily Rental Developments Completed by Number of Units (2008-2017)



Source: CoStar Realty Information, Inc.

▲ Much of the post-recession development activity has taken the form of larger properties of 100 units or more. As the chart shows, apartment buildings of this size soared well past smaller communities with under 50 units after 2011. Though 2016 showed a resurgence of buildings with under 20 units, developers have mostly favored communities with 50 or more units since 2014.

Figure 14: Number of Multifamily Rental Developments Completed by Style and Decade



Though this data covers multifamily developments built over many years, it includes only those properties still in use today. Among those remaining from the first few decades of the postwar era, the low-rise style is the predominant building form. The number of garden style apartments surges within 1960s-era properties, and is most prevalent among those constructed in the 1970s.

Garden apartments continue to be the most common among those that remain from the cooler development era of the 1980s and 1990s. The raw number of garden style developments is relatively stable after that, hovering near 50 from each decade.

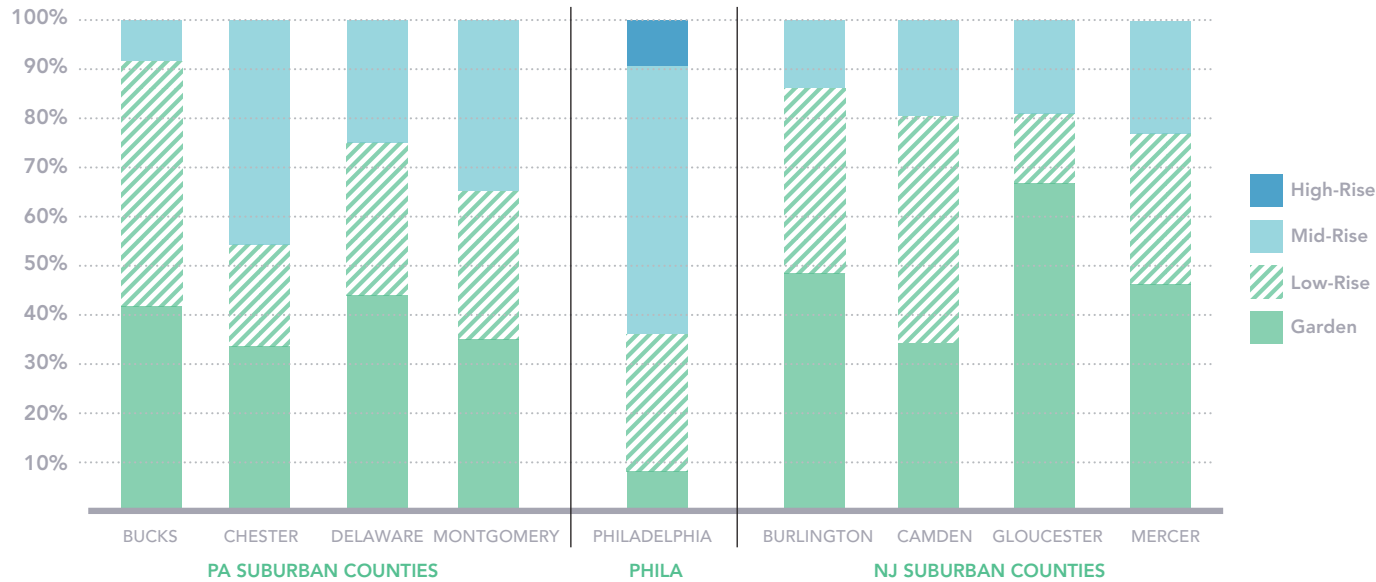
However, a noticeable shift in design preferences appears to have accompanied the resurgence in multifamily construction at the turn of the century. Mid-rise buildings emerged as the leading building form by the 2000s, topping the number of properties from all prior decades and soaring to over 150 new developments since 2010. Low-rise buildings also began to steadily increase and surpass the garden form. High-rise buildings have consistently been a relatively small share of all multifamily development, since they are common only in the urban core of Philadelphia.

COSTAR STYLE CLASSIFICATIONS

GARDEN	LOW-RISE	MID-RISE	HIGHER DENSITY HIGH-RISE
1-3 stories, 4 or more buildings	1-3 stories, 1-3 buildings	4-14 stories, 1 or more buildings	15+ stories, 1 or more buildings

Source: CoStar Realty Information, Inc.

Figure 15: Share of Multifamily Rental Developments Completed by Style and County (1993-2017)



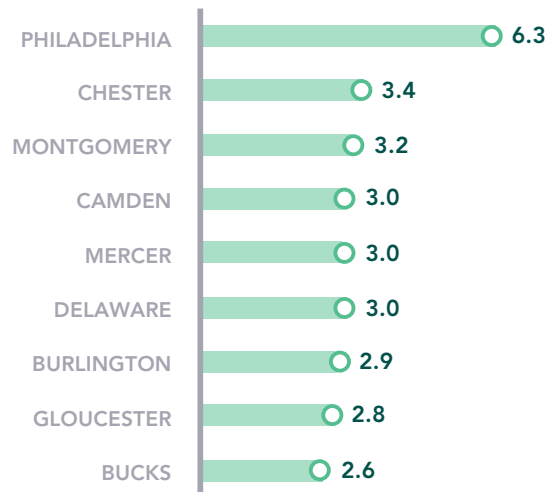
Source: CoStar Realty Information, Inc.

Over the last 25 years, development has taken different forms across the region. Bucks, Burlington, Gloucester, and Mercer counties have seen most of their development occur in garden style communities, with around two-thirds or more of all new units falling into this category. Roughly half of units built in Camden, Chester, and Delaware counties were garden apartments.

While Chester and Delaware counties each had a large share of the remaining half go toward mid-rise buildings, Camden County was more evenly split and tilted slightly toward low-rise buildings.

In both Montgomery County and Philadelphia, mid-rise communities prevailed, making up just over half of units built since 1993. The rest of Montgomery County's multifamily units were concentrated in garden communities, while high-rise buildings comprised the next largest subset in Philadelphia. No high rise units were built outside of Philadelphia.

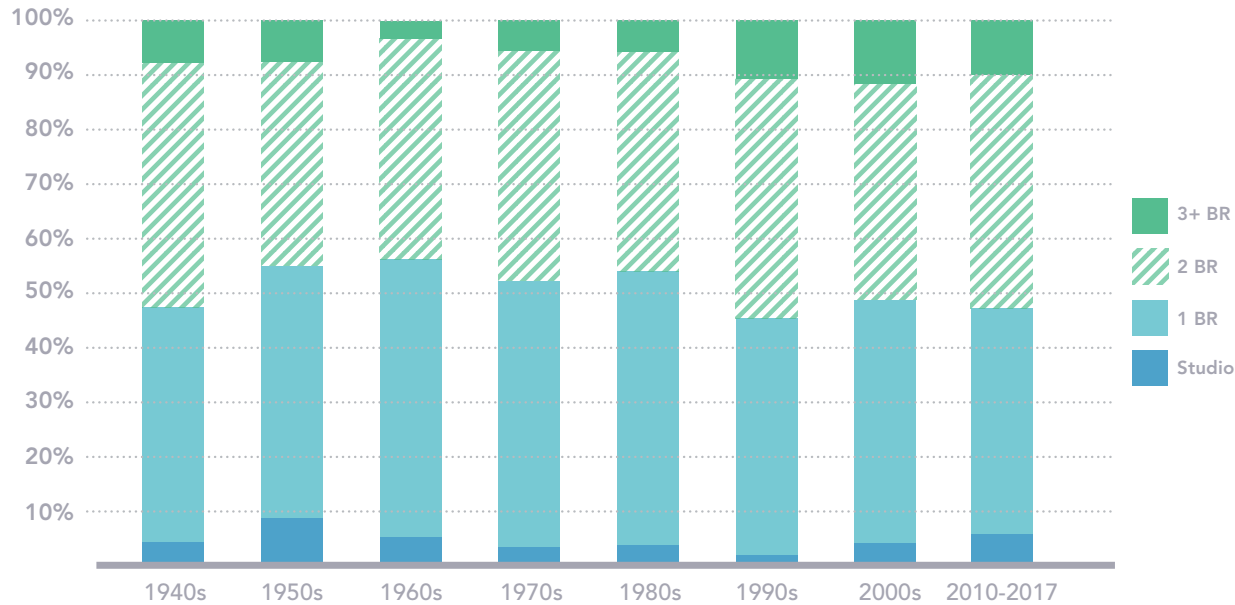
Figure 16: Average Height of New Multifamily Rental Development By County (1993-2017)



Source: CoStar Realty Information, Inc.

Building height did not vary much outside of Philadelphia, the only county where new high rises were constructed in the last 25 years. Owing to the relatively large share of mid-rise buildings, multifamily properties in Chester and Montgomery counties averaged the tallest among suburban communities, falling between three and four stories. Bucks County, where garden and low-rise apartments made up over 90 percent of new units, had the shortest structures on average at 2.6 stories.

Figure 17: Share of New Multifamily Rental Units Constructed by Number of Bedrooms and Decade



Source: CoStar Realty Information, Inc.

◀ One- and two-bedroom apartments have consistently made up the vast majority of newly constructed units. These unit types were particularly dominant throughout the middle and end of the last century, together accounting for 90 percent of those built from the 1960s to the 1980s.

Studios and three-bedroom units saw their marginal share—about 16 percent of those built in the 1950s—dwindle to just 9 percent by the 1980s. The slower development era of the 1990s saw the share of newly built one-bedroom apartments drop as some supply shifted back to larger, family-supporting units.

Meanwhile, the last two decades has seen a returned interest in efficiencies, with studios ticking up to their highest share of new units since the 1950s.

Figure 18: Share of New Multifamily Rental Units by County and Number of Bedrooms (1993-2017)

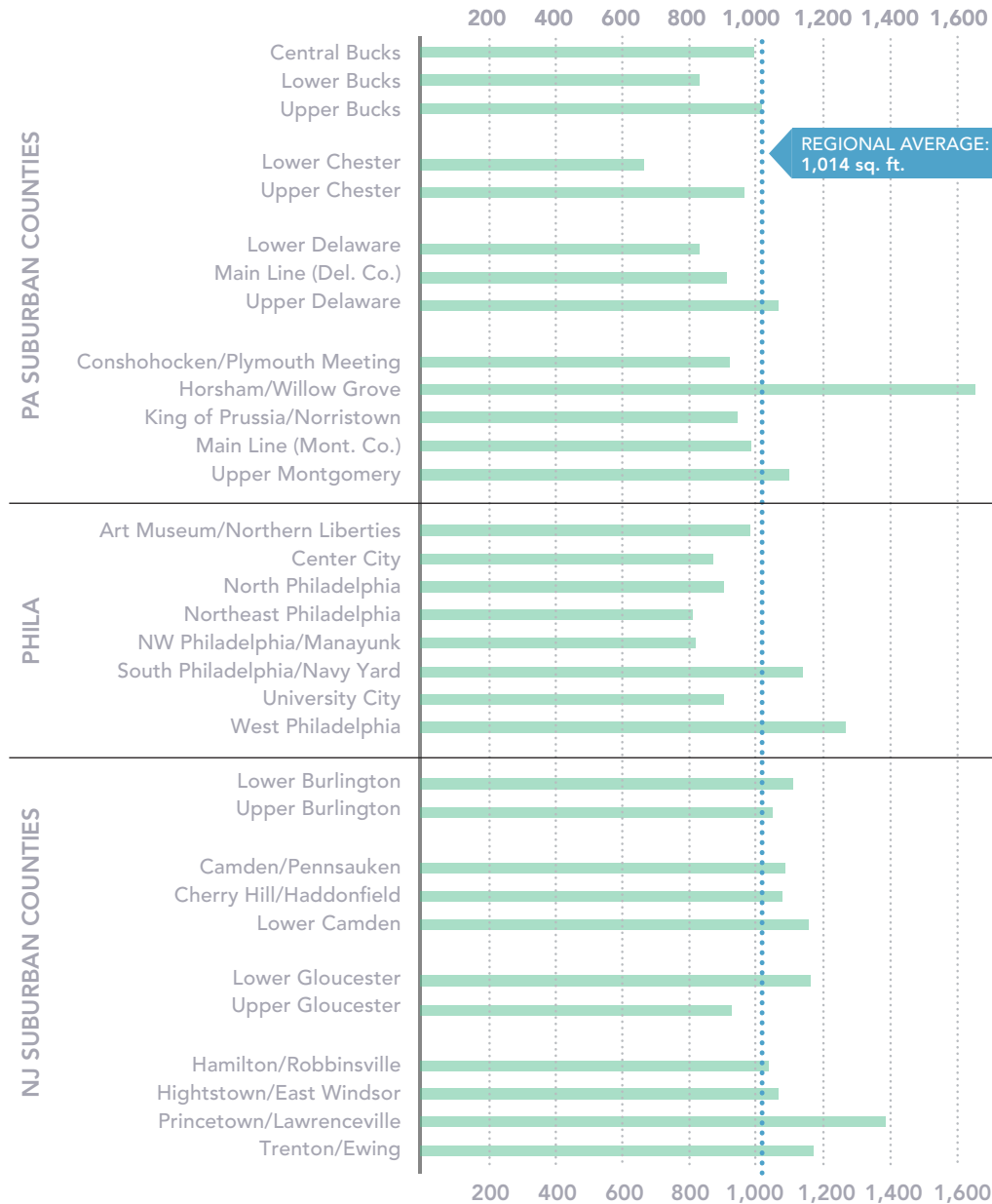


Source: CoStar Realty Information, Inc.

▲ In the last 25 years, only Philadelphia and Delaware counties have had a majority of new multifamily units designed as one-bedrooms or studios. All other counties favored two or more bedrooms per unit. Gloucester, Camden, and Mercer counties had a relatively large share of units with three or more bedrooms, exceeding 10 percent. Gloucester County was the only county to have fewer than 30 percent of its units fall into the one-bedroom or studio categories.

While smaller units dominated in Philadelphia, the city also had a sizable share of units large enough for families or large groups of renters, with a greater share of three or more bedroom units than all but two counties.

Figure 19: Average Unit Size per New Multifamily Rental Development by Submarket* (2008-2017)

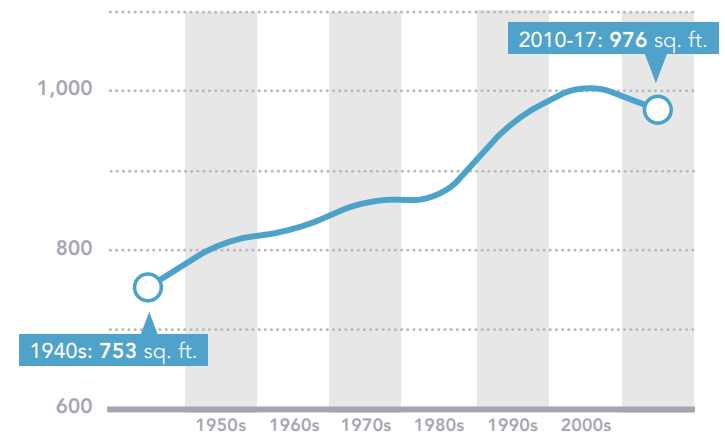


◀ The nine-county region's average unit size was just over 1,000 square feet between 2008 and 2017.

Recently built multifamily units in New Jersey tend to be larger than those in Pennsylvania. All submarkets in Burlington, Camden, and Mercer counties had larger average unit size than the region as a whole during this time period. The only NJ submarket to fall below the regional average was Upper Gloucester County, where units averaged 929 square feet.

In contrast, only Montgomery County had an average unit size exceeding the regional average, at 1,046 square feet. This can mostly be attributed to the very large apartments built in the Horsham/Willow Grove area, where average size was 1,655 square feet. Lower Chester County was the submarket with the smallest average unit size (666 square feet), but had just one property constructed during that timeframe.

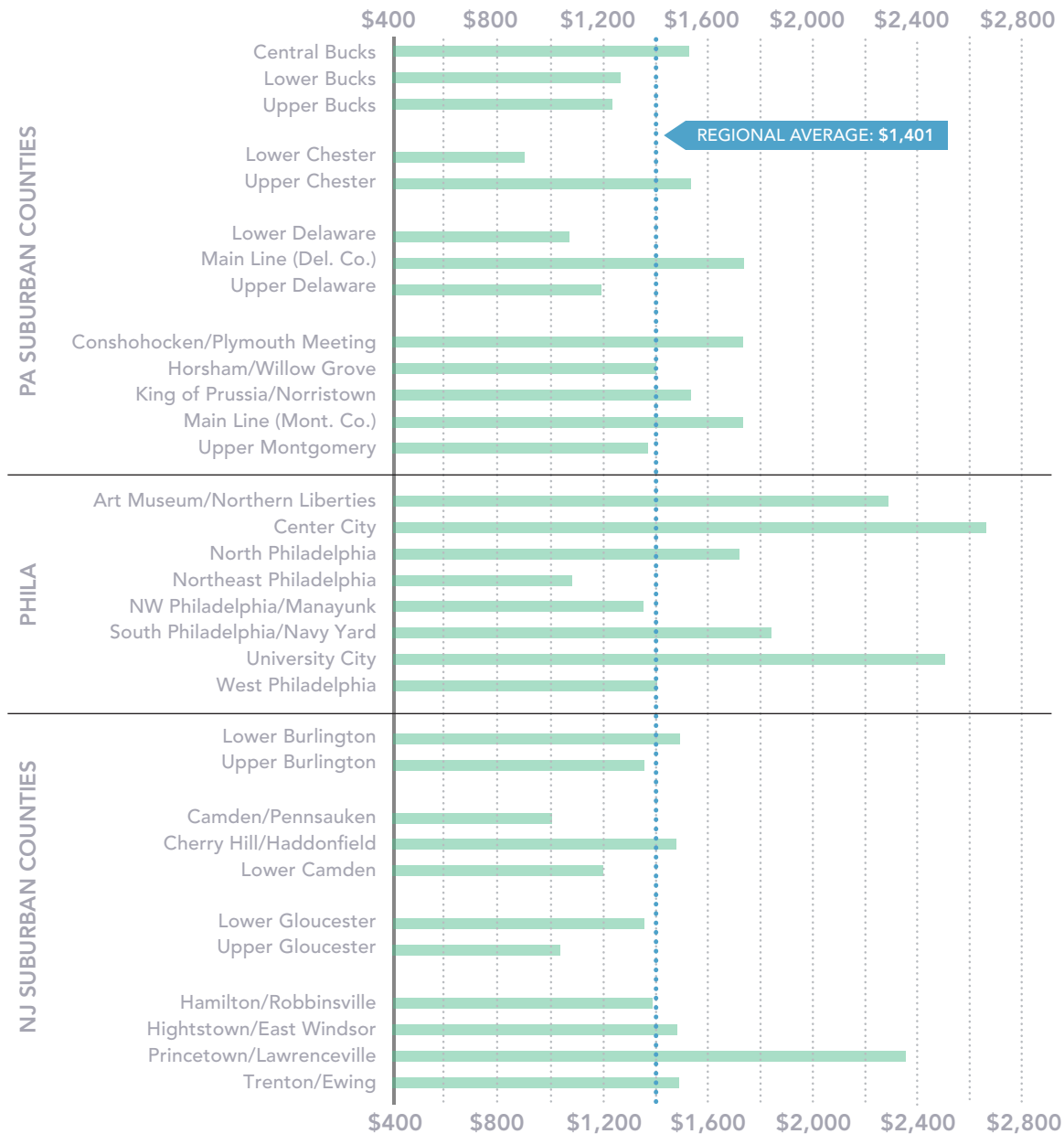
Figure 20: Average Unit Size of New Multifamily Rental Developments By Decade



Source: CoStar Realty Information, Inc.

* See Figure 9 on p. 10 for a map and list of CoStar Submarkets

Figure 21: Average Asking Rent for All Two-Bedroom Units by Submarket* (October 2018)



Source: CoStar Realty Information, Inc.

* See Figure 9 on p. 10 for a map and list of CoStar Submarkets

Demographic Multipliers and Statistics

Demographic multipliers and statistics play a critical role in the fiscal impact studies that local governments, school boards, and developers often rely on to inform land use and zoning decisions. In general terms, a residential **demographic multiplier** is the average ratio of a demographic measure per household or per housing unit. Some of the most common multipliers include average household size and the number of school-age children.

Similarly, **demographic statistics** estimate the distribution of demographic groups or characteristics by housing type. Together, these tools can be used to help gauge the potential impact of a proposed development by better understanding the household and individual characteristics associated with various housing types (single-family, townhome, multifamily), sizes (one bedroom, two bedroom, etc.), and tenure types (renter- or owner-occupied).

However, the potential usefulness of demographic multipliers can be limited by estimates that are dated or lack geographic specificity. For example, one commonly cited set of demographic multipliers, those created by the Center for Urban Policy

Research at Rutgers University for the Fannie Mae Foundation, were created in 2006 using Public Use Microdata Sample (PUMS) records capturing housing conditions between 1990 and 2000. Multipliers created during this period will not reflect current demographic conditions. Furthermore, demographic multipliers have often been produced at a state level. These statewide figures frequently mask critical local variations in population, land use context, and housing stock.

Consultant Selection Process

As part of its Community Impacts of Higher Density study, DVRPC sought to generate a series of more geographically specific, up-to-date multipliers for various multifamily housing unit types in Greater Philadelphia. After consultation with our Study Advisory Committee, DVRPC released a Request for Proposal in April 2018. After a competitive selection process, DVRPC selected Econsult Solutions, Inc. (ESI) to conduct this work. Work on this project was conducted during the spring and delivered to DVRPC in June 2018. The methodology used and data generated during this collaboration is presented below.

Methodology

DATA SOURCES

ESI generated demographic multipliers and summary statistics for this study using data derived from the 2007–2011 and 2012–2016 5-Year American Community Survey (ACS) PUMS datasets. Freely distributed by the Census Bureau, PUMS files contain the actual responses to questionnaires sent to a sample population. Through the early 2000s, PUMS was released every 10 years; since the mid-2000s, PUMS is reported every year under the ACS.

PUMS files cover the full range of population and housing unit responses, collected on individual questionnaires, for a subsample of housing units and group quarters. By combining data on the housing unit (housing records) and on the household and individuals who live in the unit (person records), researchers can generate demographic multipliers for specific household groups.

The 2007–2011 and 2012–2016 PUMS dataset is a universal dataset covering every county in the United States. Data is reported at the Public Use Microdata Area (PUMA), geographies of at least 100,000 people that

are nested within states or equivalent entities. States are able to delineate PUMAs within their borders, or use PUMA Criteria provided by the Census Bureau.

The 2012–2016 5-Year dataset was released in January 2018. It was selected because it is the most up-to-date, publicly available data from the US Census Bureau. The non-overlapping 2007–2011 dataset provides a longitudinal comparison for how demographic multipliers and summary statistics in the geography have changed over time.

Demographic multipliers have traditionally been based on a ‘recently built’ unit sample (ten year period) due to its likely relevancy to units being constructed in the near future. However, due to a number of statistical sample size issues, including the post-2005 housing downturn, relying solely on recently built units was deemed insufficient. For this study, ESI employed an alternative strategy that employs a ‘new mover’ sample to ensure adequate sample size.

The mover sample was developed by using PUMS variable MV, which indicates when the current householders moved into the unit. New movers are categorized as those who moved into their current unit within four years prior to the survey. In this analysis, the new movers sample approximates households who moved into their unit between 2009 and 2016 for the 2016 multipliers and those who moved between 2004 and 2011 for the 2011 multipliers.

HOUSING CONFIGURATIONS

This investigation focuses on occupied multifamily units, the type of housing configuration most commonly associated with higher density development. The PUMS variable BLD (units in structure) classifies each occupied housing unit as single-family detached, single-family attached, and various types of multifamily units. Traditionally, multifamily units are further grouped into two types by the number of units in the structure: two to four units, and five or more units. **The multipliers and statistics presented here focus on multifamily structures with five or more units.**

The ACS variable BDSP (number of bedrooms) was used to categorize units by number of bedrooms: studio or one-bedroom, two-bedroom, and three-bedroom. Units with four or more bedrooms were excluded due to sample size. The PUMS variable TEN (housing tenure) was used to differentiate owner- and renter-occupied units because the majority of multifamily units in the DVRPC region are renter-occupied, typically rental apartments.

GEOGRAPHIC CONSIDERATIONS

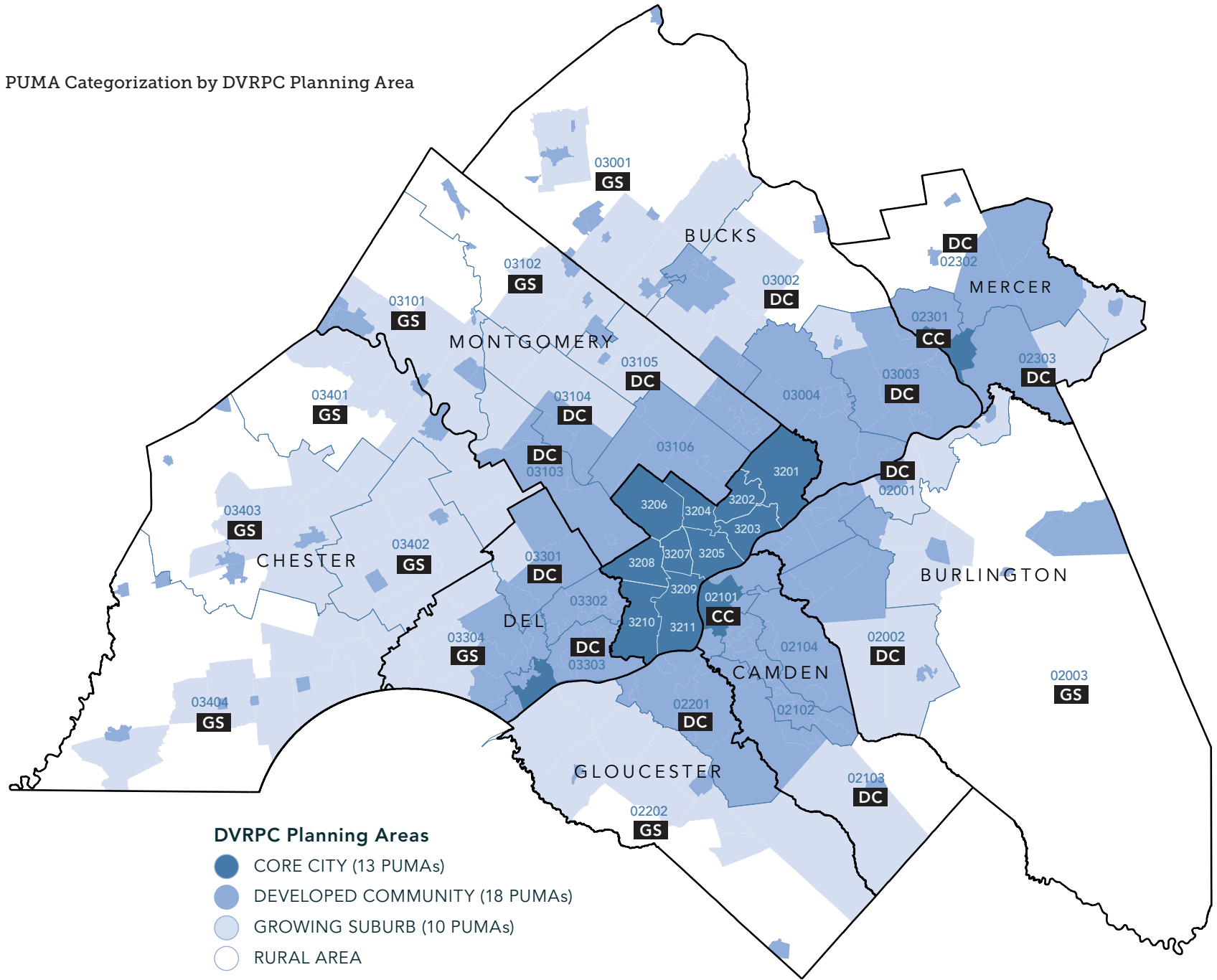
Greater Philadelphia contains 41 PUMAs. For these purposes of this study, these PUMAs are organized into seven geographies. These include:

- The aggregate nine-county DVRPC region,
- Suburban Pennsylvania (four Pennsylvania counties, excluding Philadelphia)

- Suburban New Jersey (four New Jersey Counties, excluding the cities of Camden and Trenton)
- Philadelphia County
- PUMA aggregates representing Core Cities
- PUMA aggregates representing Developed Communities
- PUMA aggregates representing Growing Suburbs

The last three geographies correspond to DVRPC Planning Areas referenced in Connections 2045 Long-Range Plan for Greater Philadelphia. These Planning Areas reflect the diversity of development patterns found in our region and present useful frameworks for evaluating demographic multipliers and statistics for subcounty portions of the region. Each PUMA that fell entirely within a single Planning Area was classified similarly. PUMAs that extend across two or more Planning Areas were assigned a Planning Area based on relevant boundaries and information from CoStar on the distribution of recently constructed multifamily developments. Figure X illustrates the categorization of each PUMA by Planning Area. The initials CC (Core Cities), DC (Developed Communities), and GS (Growing Suburbs) indicate the Planning Area assignment of PUMAs that cross Planning Area boundaries.

Figure 22: PUMA Categorization by DVRPC Planning Area



Data Products and Presentation

In total, ESI developed three demographic multipliers and nine summary statistics for each study geography (see Tables 1 and 2 for a list of each variable and relevant specifications).

The remainder of this chapter is dedicated to tables and charts summarizing the multipliers and statistics generated by ESI. Although data was gathered for renter- and owner-occupied units for all multipliers and statistics, **these figures emphasize data related to rental units due to overall relevance and space constraints.** Similarly, all multipliers and statistics were calculated for two non-overlapping ACS time periods. Due to the same space and relevance concerns, **the more recent 2012 to 2016 time frame is the focus of the analysis in this chapter.** DVRPC will distribute a digital spreadsheet to project stakeholders shortly after the next study advisory committee meeting in late October. This spreadsheet will contain all information generated during this project, include data on owner-occupied units and both ACS time periods.

For the purposes of comparison, relevant data benchmarks are provided alongside the multifamily rental demographics and statistics presented in this chapter. For our demographic multipliers, these benchmarks include multipliers for single-family homes (attached and detached) in each of the study geographies. These single-family multipliers were calculated by ESI as part of this study effort. For several of the demographic statistics, the benchmarks include comparable

measures for each of the nine counties in the DVRPC region. These county-level statistics gathered from the 2012–2016 American Community Survey Five-Year Estimate are included to provide additional context for evaluating these multifamily indicators. In all cases, the tables and cells containing benchmark data are shaded green for easy identification.

Table 1: Demographic Multipliers

Multiplier	Specifications
Average Household Size	No differentiation
School-Age Children	Ages 5 to 10
	Ages 11 to 13
	Ages 14 to 17
Vehicles Available per Household	No differentiation

Table 2: Demographic Statistics

Category	Specifications
Age Cohorts	Ages 0 to 4
	Ages 5 to 17
	Ages 18 to 24
	Ages 25 to 34
	Ages 35 to 54
	Ages 55 to 64
	65 and over
Educational Attainment (Population 25 and over)	Less than high school graduate
	High school graduate
	Some college or Associate's Degree
	Bachelor's degree or higher
Means of Commute (Population 16 and over)	Public transit
	Bike
	Walk
	Work from home
	Car, truck, or van
	Taxicab
	Other
Commuting Time (Population 16 and over)	Less than 30 minutes
	30 to 59 minutes
	60 or more minutes
Income	Median household income
	Per capital household income

Category	Specifications
Occupation (Population 16 and over)	Management, Business, Finance
	Engineering, Computer, Science
	Social Work, Law, Education
	Entertainment
	Health Care
	Service
	Sales & Office
	Agriculture, Construction, Production, Repair
	Transportation
	Unemployed
Race	White alone
	Black or African-American alone
	American Indian and Alaskan Native alone
	Asian, Native Hawaiian, and Other Pacific alone
	Some other race alone
	Two or more races
Hispanic Origin	Not Hispanic or Latino
	Hispanic or Latino
Household Type	Living alone
	Married couple
	Not living alone
	Other family

Average Household Size

A household includes all the persons who occupy a housing unit as their usual place of residence. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied as separate living quarters.

This multiplier is based on the count of people in occupied housing units. All people occupying the housing unit are counted, including the householder, occupants related to the householder, and lodgers, roomers, boarders, and so forth.

Table 3: Average Household Size

Geography	2012-2016 PUMS Data					2007-2011 PUMS Data				
	Single-Family	Multifamily Apartments Renter-Occupied, 5+ Units in Structure				Single-Family	Multifamily Apartments Renter-Occupied, 5+ Units in Structure			
	All	All	Studio/1 BR	2 BR	3 BR	All	All	1 BR/Studio	2 BR	3 BR
DVRPC Region	2.90	1.74	1.33	2.30	3.28	2.92	1.71	1.31	2.23	3.41
Suburban PA	2.91	1.78	1.34	2.29	3.49	2.94	1.75	1.29	2.15	3.55
Suburban NJ	3.04	1.88	1.39	2.45	3.53	2.99	1.84	1.42	2.38	3.65
Philadelphia	2.76	1.59	1.29	2.14	2.82	2.80	1.57	1.26	2.19	2.72
Core Cities	2.84	1.61	1.28	2.21	2.94	2.88	1.60	1.28	2.21	2.94
Developed Communities	2.96	1.83	1.40	2.35	3.37	2.96	1.78	1.34	2.27	3.58
Growing Suburbs	2.90	1.79	1.30	2.30	3.72	2.92	1.79	1.32	2.15	3.41

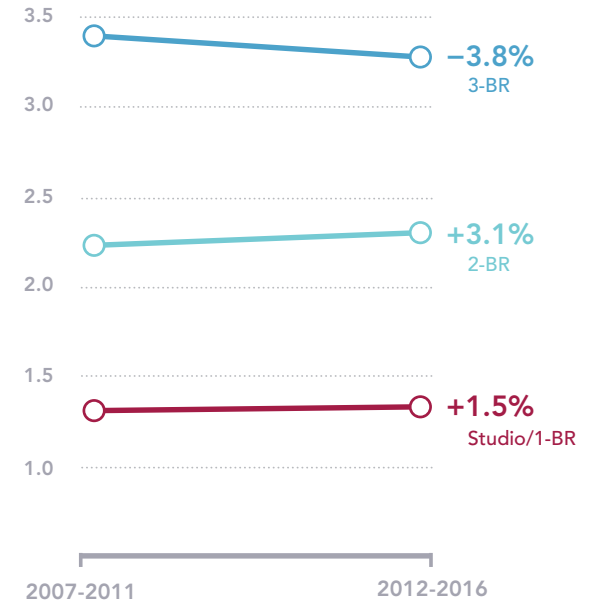
Source: ESI using data derived from the 2007–2011 and 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Figure 23: Average Household Size by DVRPC Planning Area (2012–2016)



Source: U. S. Census Bureau, 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Figure 24: Change in Average Household Size by Unit Type Over Time in the DVRPC Region



Source: U. S. Census Bureau, 2007–2011 and 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

School-Age Children

This multiplier is based on an estimate of the number of persons in the household of school age, defined as those 5 to 17 years old. These school-age children are presented by age groups that generally represent differing school levels: age 5 to 10 (kindergarten through elementary school), age 11 to 13 (middle school), and age 14 to 17 (high school).

Figure 25: School-Age Children Generated by Multifamily Rentals by Planning Area and Number of Bedrooms (2012– 2016)

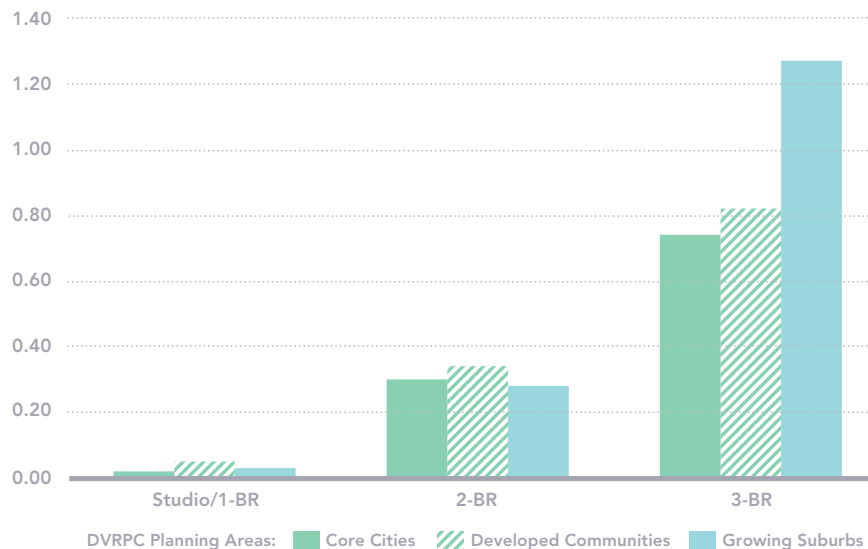
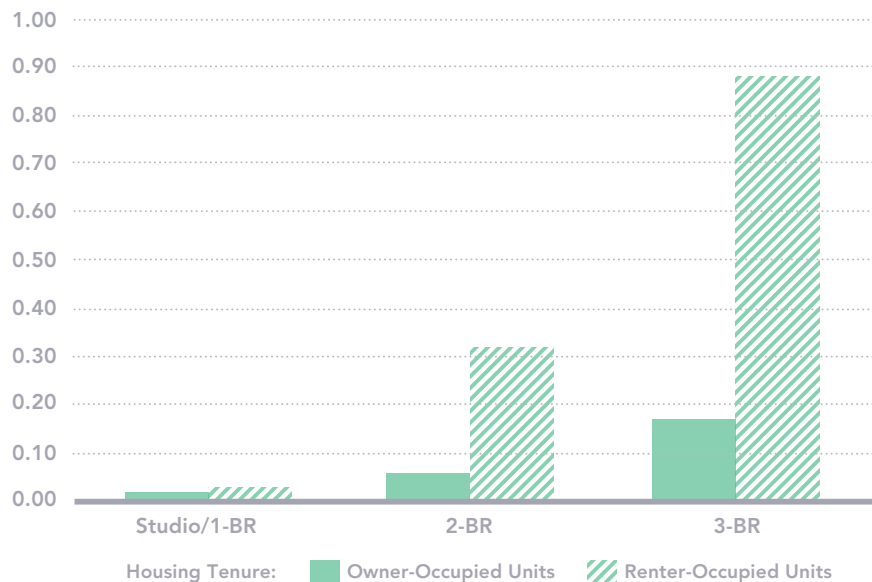


Figure 26: Comparison of School-Age Children Generated by Tenure for the Region (2012– 2016)



Source: U. S. Census Bureau, 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Table 4: School-Age Children

Geography	2012-2016 PUMS Data					2007-2011 PUMS Data				
	Single-Family	Multifamily Apartments Renter-Occupied, 5+ Units in Structure			Single-Family	Multifamily Apartments Renter-Occupied, 5+ Units in Structure				
	All	All	Studio/1 BR	2 BR	3 BR	All	All	1 BR/Studio	2 BR	3 BR
DVRPC Region: All SAC	0.62	0.16	0.03	0.32	0.88	0.63	0.16	0.03	0.31	0.88
Age 5-10	0.33	0.09	0.02	0.17	0.45	0.32	0.09	0.01	0.18	0.46
Age 11-13	0.14	0.03	0.00	0.07	0.16	0.14	0.04	0.01	0.06	0.20
Age 14-17	0.16	0.04	0.01	0.07	0.27	0.16	0.03	0.01	0.06	0.23
Suburban PA: All SAC	0.61	0.16	0.04	0.28	1.07	0.62	0.15	0.03	0.22	1.02
Age 5-10	0.33	0.09	0.02	0.15	0.58	0.32	0.09	0.01	0.14	0.54
Age 11-13	0.14	0.03	0.01	0.06	0.14	0.13	0.03	0.01	0.04	0.21
Age 14-17	0.14	0.04	0.01	0.07	0.35	0.16	0.03	0.01	0.04	0.28
Suburban NJ: All SAC	0.68	0.23	0.04	0.43	0.99	0.63	0.22	0.05	0.43	1.00
Age 5-10	0.38	0.12	0.03	0.23	0.44	0.33	0.12	0.03	0.24	0.50
Age 11-13	0.14	0.05	0.01	0.11	0.26	0.14	0.05	0.01	0.09	0.26
Age 14-17	0.16	0.05	0.01	0.09	0.30	0.16	0.05	0.01	0.10	0.24
Philadelphia: All SAC	0.60	0.10	0.02	0.25	0.54	0.64	0.12	0.02	0.33	0.40
Age 5-10	0.30	0.06	0.01	0.15	0.30	0.31	0.07	0.01	0.20	0.24
Age 11-13	0.14	0.02	0.00	0.05	0.09	0.15	0.03	0.01	0.07	0.06
Age 14-17	0.17	0.02	0.00	0.05	-	0.18	0.02	0.00	0.06	0.10
Core Cities: All SAC	0.64	0.12	0.02	0.30	0.74	0.67	0.13	0.03	0.34	0.55
Age 5-10	0.32	0.07	0.01	0.18	0.38	0.33	0.08	0.01	0.21	0.35
Age 11-13	0.14	0.02	0.00	0.06	0.15	0.15	0.03	0.01	0.07	0.13
Age 14-17	0.18	0.03	0.01	0.06	-	0.19	0.02	0.01	0.06	0.07
Dev. Communities: All SAC	0.62	0.18	0.05	0.34	0.82	0.62	0.19	0.04	0.34	0.93
Age 5-10	0.34	0.10	0.03	0.18	0.38	0.32	0.19	0.04	0.34	0.93
Age 11-13	0.13	0.04	0.01	0.08	0.19	0.14	0.04	0.01	0.08	0.16
Age 14-17	0.14	0.04	0.01	0.08	0.25	0.16	0.05	0.01	0.07	0.28
Growing Suburbs: All SAC	0.61	0.17	0.03	0.28	1.27	0.60	0.17	0.03	0.21	1.28
Age 5-10	0.33	0.09	0.01	0.14	0.75	0.33	0.09	0.01	0.14	0.61
Age 11-13	0.14	0.03	0.00	0.06	0.10	0.12	0.04	0.02	0.03	0.34
Age 14-17	0.14	0.05	0.01	0.07	0.41	0.15	-	-	-	-

Source: ESI using data derived from the 2007–2011 and 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Vehicles Available per Household

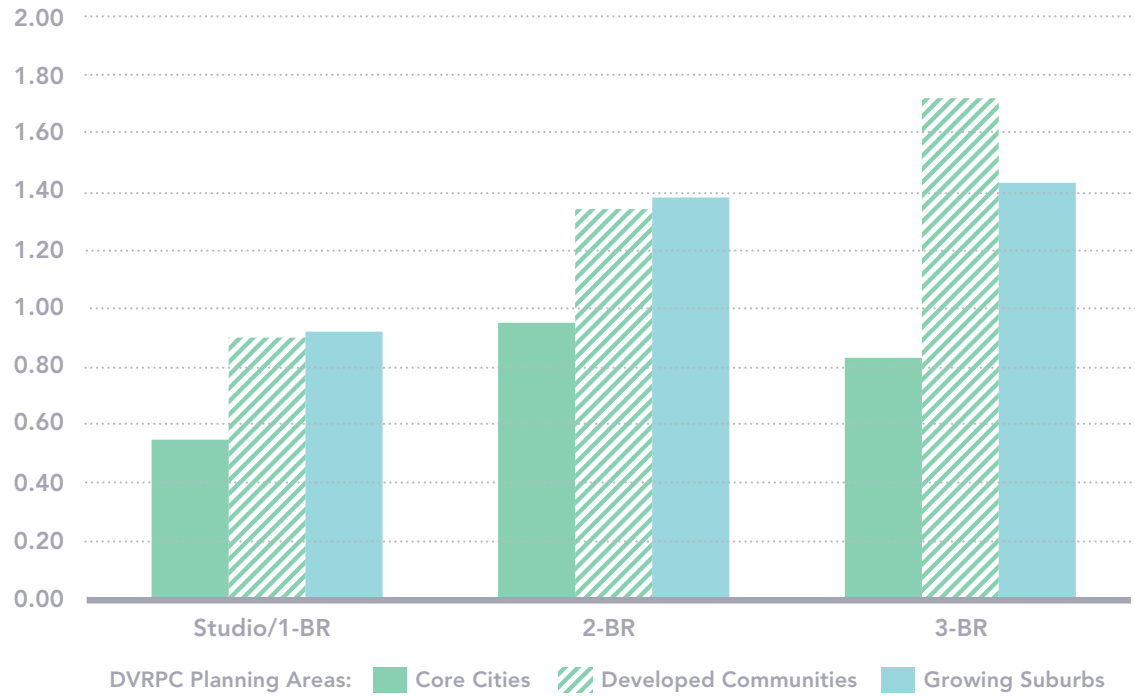
This multiplier is based on an estimate of the number of passenger cars, vans, and pickup or panel trucks of one-ton (2,000 pounds) capacity or less kept at home and available for the use of household members. Vehicles rented or leased for one month or more, company vehicles, and police and government vehicles are included if kept at home and used for non-business purposes. Motorcycles or other recreational vehicles are excluded. Dismantled or immobile vehicles are excluded. Vehicles kept at home but used only for business purposes also are excluded.

Table 5: Vehicles Available per Household

Geography	2012-2016 PUMS Data					2007-2011 PUMS Data				
	Single-Family	Multifamily Apartments Renter-Occupied, 5+ Units in Structure				Single-Family	Multifamily Apartments Renter-Occupied, 5+ Units in Structure			
	All	All	Studio/1 BR	2 BR	3 BR	All	All	1 BR/Studio	2 BR	3 BR
DVRPC Region	1.61	0.94	0.76	1.23	1.33	1.61	0.92	0.73	1.18	1.43
Suburban PA	1.87	1.11	0.90	1.39	1.61	1.88	1.12	0.90	1.33	1.70
Suburban NJ	1.81	1.02	0.85	1.24	1.48	1.80	0.99	0.84	1.19	1.48
Philadelphia	1.06	0.68	0.55	0.96	0.87	0.98	0.61	0.51	0.86	0.85
Core Cities	1.08	0.68	0.55	0.95	0.83	1.06	0.64	0.52	0.87	0.94
Developed Communities	1.84	1.10	0.90	1.34	1.72	1.83	1.06	0.88	1.27	1.65
Growing Suburbs	1.96	1.13	0.92	1.38	1.43	1.97	1.14	0.89	1.36	1.50

Source: ESI using data derived from the 2007–2011 and 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Figure 27: Number of Vehicles Available per Multifamily Rental Household by Planning Area and Number of Bedrooms (2012– 2016)



Source: U. S. Census Bureau, 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Age Cohorts

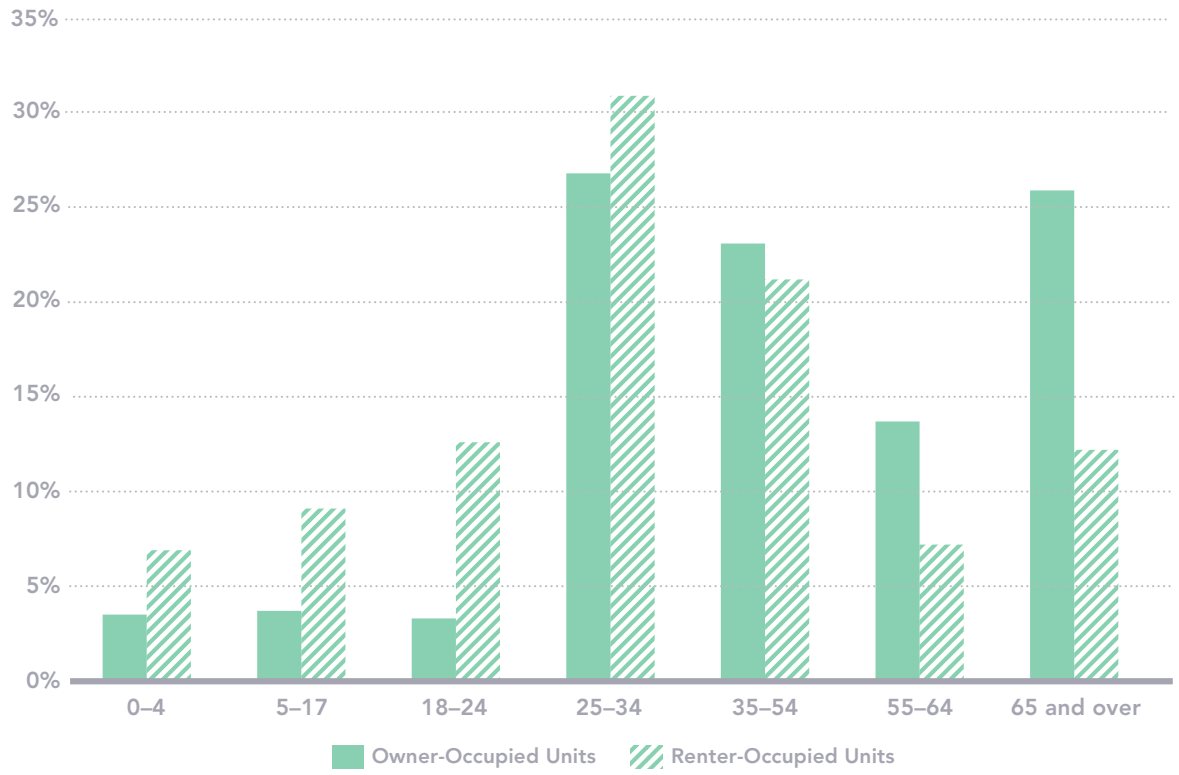
Table 6 presents age cohorts for apartment residents living in structures with five or more units. The age classifications shown here are based on the age of the person in complete years at the time of survey. Both age and date of birth are used in combination to calculate the most accurate age at the time of the survey. Age is asked for all persons in a household or group quarters.

Table 6: Age Cohorts

		Geography	Age Brackets						
			0-4	5-17	18-24	25-34	35-54	55-64	65+
2012-2016 PUMS Data	Multifamily Apartments Renter-Occupied, 5+ Units in Structure All BR Configurations	DVRPC Region	6.9%	9.1%	12.6%	30.9%	21.2%	7.2%	12.2%
		Suburban PA	6.4%	9.1%	12.0%	28.9%	22.3%	6.3%	15.0%
		Suburban NJ	6.4%	9.1%	12.0%	28.9%	22.3%	6.3%	15.0%
		Philadelphia	5.6%	6.3%	14.8%	37.9%	19.0%	7.6%	8.9%
		Core Cities	6.3%	7.5%	14.2%	35.5%	19.5%	8.1%	8.9%
		Developed Communities	7.4%	10.1%	9.9%	30.1%	22.2%	7.1%	13.2%
		Growing Suburbs	6.6%	9.5%	16.5%	23.8%	21.8%	5.9%	15.9%
2012-2016 ACS	County Benchmarks All Households	Bucks County	5.0%	16.5%	8.0%	10.9%	28.1%	14.9%	16.7%
		Burlington County	5.2%	16.5%	8.8%	12.1%	28.4%	13.6%	15.5%
		Camden County	6.2%	17.1%	8.8%	13.7%	27.0%	12.9%	14.2%
		Chester County	5.7%	17.9%	9.1%	11.4%	27.9%	13.5%	14.6%
		Delaware County	6.0%	16.5%	10.3%	12.7%	25.9%	13.5%	15.1%
		Gloucester County	5.6%	17.4%	9.2%	12.0%	28.3%	13.3%	14.1%
		Mercer County	4.9%	15.4%	9.9%	10.1%	25.0%	14.8%	19.8%
		Montgomery County	5.6%	16.4%	8.0%	12.5%	27.5%	13.6%	16.4%
Philadelphia City/County	6.9%	15.0%	11.5%	18.1%	24.5%	11.3%	12.5%		

Source: ESI using data derived from the 2012–2016 5-Year American Community Survey (ACS) PUMS dataset

Figure 28: Comparison of Age Cohorts by Tenure for All Multifamily Units in the DVRPC Region (2012– 2016)



Source: U. S. Census Bureau, 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Educational Attainment

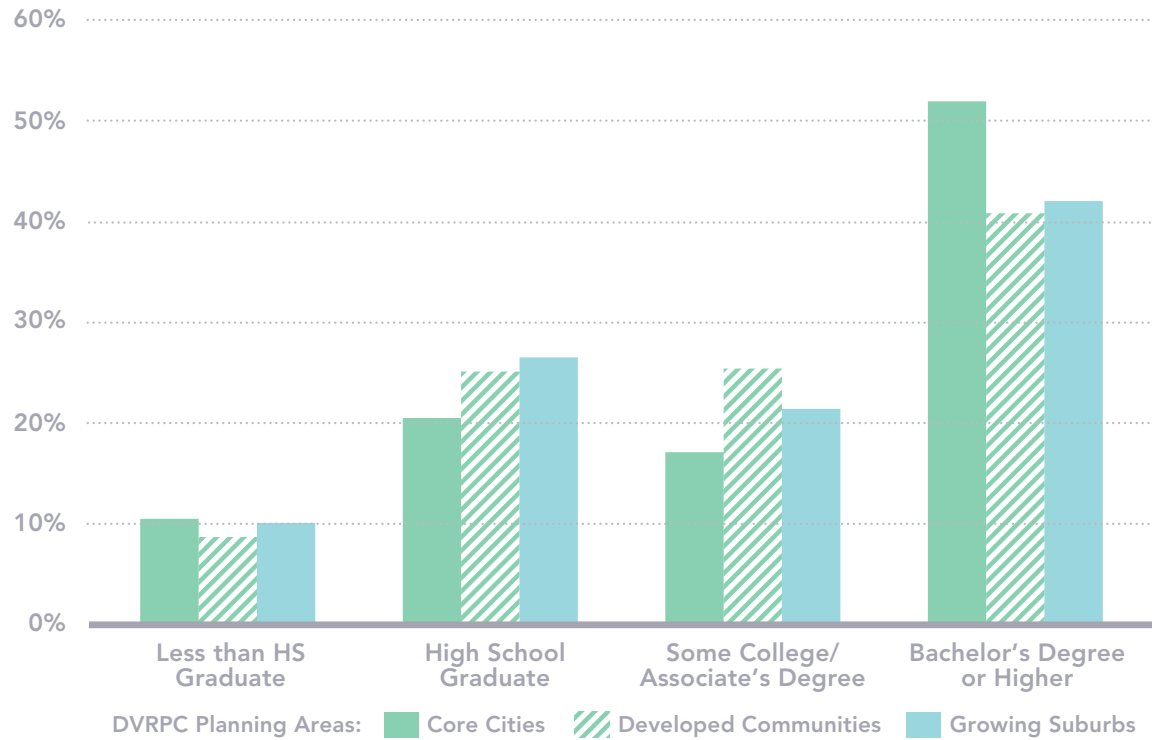
The educational attainment statistics shown here are estimated for people 25 years and over in renter-occupied units in structures with five or more units. Attainment levels are classified according to the highest degree or the highest level of school completed. The question includes instructions for persons currently enrolled in school to report the level of the previous grade attended or the highest degree received.

Table 7: Educational Attainment (Population 25 Years and Over)

	Geography	Educational Attainment Level				
		Less than High School Graduate	High School Graduate	Some College or Associate's Degree	Bachelor's Degree or Higher	
2012-2016 PUMS Data	Multifamily Apartments Renter-Occupied, 5+ Units in Structure All BR Configurations	DVRPC Region	9.6%	23.7%	21.8%	44.9%
		Suburban PA	7.7%	23.8%	22.9%	45.5%
		Suburban NJ	12.9%	28.7%	27.6%	30.8%
		Philadelphia	9.1%	19.2%	15.5%	56.2%
		Core Cities	10.5%	20.5%	17.1%	51.9%
		Developed Communities	8.7%	25.1%	25.4%	40.8%
		Growing Suburbs	10.1%	26.5%	21.4%	42.0%
2012-2016 ACS	County Benchmarks All Households	Bucks County	6.4%	30.2%	25.0%	38.4%
		Burlington County	7.1%	29.1%	27.3%	36.4%
		Camden County	13.0%	27.5%	29.2%	30.3%
		Chester County	7.1%	22.5%	20.2%	50.2%
		Delaware County	7.6%	31.6%	24.0%	36.8%
		Gloucester County	13.0%	27.5%	29.2%	30.3%
		Mercer County	12.3%	25.2%	22.1%	40.5%
		Montgomery County	6.1%	24.6%	21.9%	47.5%
Philadelphia City/County	17.4%	33.5%	22.7%	26.4%		

Source: ESI using data derived from the 2012–2016 5-Year American Community Survey (ACS) PUMS dataset

Figure 29: Educational Attainment Levels for All Apartment Residents by Planning Area (2012– 2016)



Source: U. S. Census Bureau, 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Means of Transportation to Work

Table 8 provides statistics on means of transportation to work for residents 16 years and over for renter occupied-units in structures with five or more units. Means of transportation to work refers to the principal mode of travel or type of conveyance that the worker usually used to get from home to work during the reference week.

People who used different means of transportation on different days of the week were asked to specify the one they used most often, that is, the greatest number of days. People who used more than one means of transportation to get to work each day were asked to report the one used for the longest distance during the work trip.

Table 8: Means of Transportation to Work (Population 16 Years and Over)

	Geography	Means of Commute					
		Public Transit	Bike	Walk	Work from Home	Car, truck, or van	Other
2012-2016 PUMS Data	Multifamily Apartments						
	Renter-Occupied, 5+ Units in Structure All BR Configurations						
	DVRPC Region	14.0%	1.1%	9.7%	3.2%	71.7%	0.2%
	Suburban PA	9.1%	0.3%	4.0%	2.7%	83.8%	0.1%
	Suburban NJ	8.9%	0.6%	2.8%	2.6%	84.7%	0.4%
	Philadelphia	24.6%	2.6%	22.7%	4.4%	45.4%	0.3%
	Core Cities	23.9%	2.4%	21.1%	4.1%	48.2%	0.3%
Developed Communities	10.5%	0.3%	3.4%	2.3%	83.1%	0.3%	
Growing Suburbs	3.9%	0.5%	4.2%	3.8%	87.5%	0.1%	
2012-2016 ACS	County Benchmarks						
	All Households						
	Bucks County	3.3%	0.2%	1.8%	4.8%	89.3%	0.6%
	Burlington County	3.5%	0.3%	1.3%	3.7%	90.6%	0.7%
	Camden County	7.6%	0.4%	2.0%	4.3%	84.6%	1.2%
	Chester County	2.9%	0.2%	3.6%	6.8%	85.9%	0.7%
	Delaware County	10.5%	0.2%	3.8%	4.3%	80.5%	0.8%
	Gloucester County	2.3%	0.1%	0.9%	4.1%	91.5%	1.2%
	Mercer County	7.9%	0.8%	3.1%	4.9%	82.1%	1.2%
Montgomery County	5.4%	0.2%	2.7%	5.6%	85.5%	0.5%	
Philadelphia City/County	25.7%	2.1%	8.2%	3.3%	59.4%	1.3%	

Source: ESI using data derived from the 2012–2016 5-Year American Community Survey (ACS) PUMS dataset

Travel Time to Work

Travel time to work refers to the total number of minutes that it usually took the worker to get from home to work during the survey reference week. The elapsed time includes time spent waiting for public transportation, picking up passengers in carpools, and time spent in other activities related to getting to work.

Table 9: Travel Time to Work (Population 16 Years and Over)

	Geography	Commute Time			
		Less than 30 minutes	30 to 59 minutes	60 minutes or more	
2012-2016 PUMS Data	Multifamily Apartments Renter-Occupied, 5+ Units in Structure All BR Configurations	DVRPC Region	58.5%	31.4%	10.1%
		Suburban PA	59.9%	32.4%	8.7%
		Suburban NJ	63.3%	27.2%	9.4%
		Philadelphia	53.9%	33.4%	12.6%
		Core Cities	55.5%	32.1%	12.4%
		Developed Communities	59.5%	31.8%	8.7%
		Growing Suburbs	64.5%	29.0%	9.5%
2012-2016 ACS	County Benchmarks All Households	Bucks County	57.9%	29.6%	12.5%
		Burlington County	58.0%	30.5%	11.5%
		Camden County	58.1%	32.2%	9.7%
		Chester County	58.4%	31.6%	10.0%
		Delaware County	52.9%	38.6%	8.5%
		Gloucester County	52.4%	36.3%	11.3%
		Mercer County	65.8%	21.7%	12.6%
		Montgomery County	55.9%	34.3%	9.8%
		Philadelphia City/County	45.7%	40.2%	14.1%

Source: ESI using data derived from the 2012–2016 5-Year American Community Survey (ACS) PUMS dataset

Median Household Income

The median divides the income distribution into two equal parts: one-half of the cases falling below the median income and one-half above the median. For households and families, the median income is based on the distribution of the total number of households and families including those with no income.

Table 10: Median Household Income

Geography	2012-2016 PUMS Data				2007-2011 PUMS Data			
	Multifamily Apartments Renter-Occupied, 5+ Units in Structure				Multifamily Apartments Renter-Occupied, 5+ Units in Structure			
	All	Studio/1 BR	2 BR	3 BR	All	1 BR/Studio	2 BR	3 BR
DVRPC Region	\$38,833	\$31,437	\$53,738	\$47,756	\$35,744	\$30,038	\$47,426	\$58,615
Suburban PA	\$44,612	\$36,336	\$58,300	\$68,000	\$35,638	\$30,744	\$45,734	\$59,117
Suburban NJ	\$35,817	\$27,823	\$51,745	\$60,835	\$35,638	\$30,744	\$45,734	\$59,117
Philadelphia	\$33,793	\$30,107	\$46,465	\$25,089	\$26,489	\$20,531	\$40,537	\$34,300
Core Cities	\$31,693	\$27,615	\$44,983	\$25,089	\$25,660	\$22,340	\$36,379	\$31,169
Developed Communities	\$42,565	\$35,366	\$56,779	\$70,807	\$40,537	\$34,148	\$49,632	\$62,537
Growing Suburbs	\$42,584	\$33,741	\$56,070	\$48,314	\$41,850	\$31,565	\$55,021	\$48,748

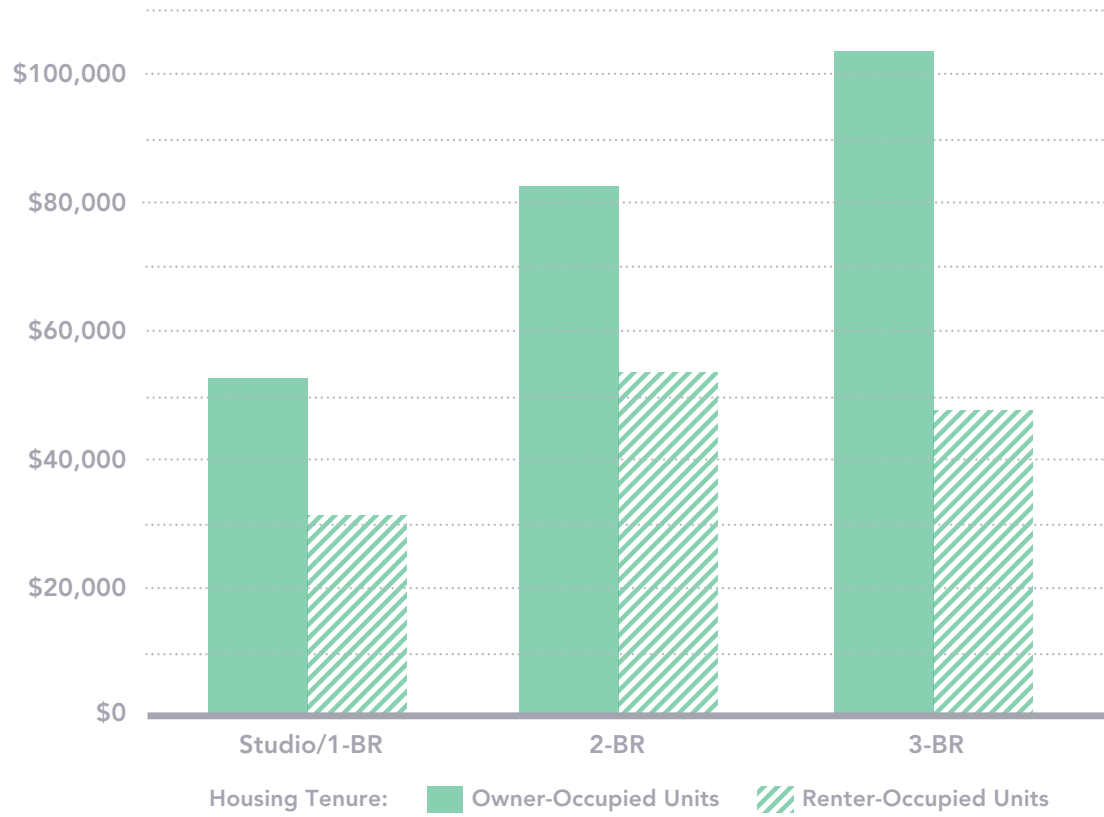
Source: ESI using data derived from the 2012–2016 5-Year American Community Survey (ACS) PUMS dataset

Median Household Income by County

Bucks County	\$79,559
Burlington County	\$80,034
Camden County	\$63,028
Chester County	\$88,995
Delaware County	\$66,576
Gloucester County	\$78,592
Mercer County	\$73,966
Montgomery County	\$81,902
Philadelphia County	\$39,770

Source: U.S. Census Bureau, ACS 5-Year Estimates 2012–2016

Figure 30: Comparison of Median Household Income by Tenure for all Multifamily Units in Structures with Five or More Units (2012–2016)



Source: U. S. Census Bureau, 2012–2016 5-Year American Community Survey (ACS) PUMS datasets

Occupation

Occupation data were derived from answers to questions 45 and 46 in the 2016 ACS. Question 45 asks: “What kind of work was this person doing?” Question 46 asks: “What were this person’s most important activities or duties?”

Non-blank responses category included those who are employed, unemployed, in the Armed Forces at the time of the survey, and those not currently in the labor force if they had worked in the last 5 years. Blank responses cover persons who are 16 or older and have never worked or last worked more than five years ago.

Table 11: Occupation (Population 16 and Over)

Occupation Category	2012-2016 PUMS DATA						
	Multifamily Apartments by Geography Renter-Occupied, 5+ Units in Structure, All Units						
	DVRPC Region	Suburban PA	Suburban NJ	Philadelphia	Core Cities	Developed Communities	Growing Suburbs
Management, Business, Finance	11.2%	10.9%	9.6%	12.9%	12.3%	11.0%	9.4%
Engineering, Computer, Science	7.7%	9.3%	5.8%	7.3%	6.8%	8.1%	8.5%
Social Work, Law, Education	8.2%	6.5%	6.7%	11.5%	10.7%	7.3%	5.3%
Entertainment	1.7%	1.7%	1.2%	2.3%	2.1%	1.4%	1.9%
Health Care	9.8%	8.0%	8.4%	13.2%	12.8%	8.4%	7.3%
Service	10.4%	10.7%	12.1%	8.5%	8.9%	11.0%	11.6%
Sales, Office	17.7%	18.4%	20.1%	14.8%	15.5%	18.5%	20.1%
Agriculture, Construction, Production, Repair	6.3%	7.5%	6.8%	4.2%	4.3%	7.1%	8.0%
Transportation	3.9%	3.8%	5.1%	2.9%	2.9%	4.4%	4.5%
Unemployed	1.1%	1.3%	0.8%	1.0%	1.0%	1.1%	1.1%
Blank	22.1%	21.9%	23.2%	21.5%	22.7%	21.6%	22.4%

Race and Hispanic Origin

The racial categories included in the census questionnaire generally reflect a social definition of race recognized in this country and the statistics presented here are based on self-identification. In addition, it is recognized that the categories of the race item include racial and national origin or sociocultural groups. People may choose to report more than one race to indicate their racial mixture, such as “American Indian” and “White.” People who identify their origin as Hispanic, Latino, or Spanish may be of any race.

Table 12: Race and Hispanic Origin

	Geography	Race					Hispanic Origin		
		White Alone	Black or African American Alone	Asian, Native Hawaiian & Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Hispanic	Non-Hispanic	
2012-2016 PUMS Data	Multifamily Apartments Renter-Occupied, 5+ Units in Structure All BR Configurations	DVRPC Region	54.2%	25.1%	12.8%	4.2%	3.8%	10.7%	89.3%
		Suburban PA	65.1%	16.0%	14.1%	2.0%	2.9%	8.6%	91.4%
		Suburban NJ	46.7%	28.3%	11.4%	8.7%	4.9%	16.4%	83.6%
		Philadelphia	46.7%	34.1%	12.4%	3.0%	3.9%	8.2%	91.8%
		Core Cities	43.7%	37.1%	11.6%	3.6%	4.0%	9.6%	90.4%
		Developed Communities	57.0%	20.7%	13.7%	4.9%	3.6%	11.1%	88.9%
		Growing Suburbs	67.9%	12.7%	12.7%	3.0%	3.7%	11.7%	88.3%
2012-2016 ACS	Benchmarks All Households	Bucks County	88.8%	3.9%	4.4%	1.0%	1.8%	4.9%	95.1%
		Burlington County	72.6%	16.1%	4.8%	2.5%	3.9%	7.5%	92.5%
		Camden County	63.0%	19.6%	5.7%	8.6%	3.0%	15.7%	84.3%
		Chester County	86.1%	5.8%	4.6%	1.1%	2.1%	7.1%	92.9%
		Delaware County	70.4%	21.0%	5.3%	1.0%	2.1%	3.5%	96.5%
		Gloucester County	81.9%	10.3%	3.0%	2.2%	2.5%	5.6%	94.4%
		Mercer County	63.4%	20.5%	10.4%	3.7%	1.9%	16.4%	83.6%
		Montgomery County	80.3%	8.9%	7.1%	2.3%	1.2%	4.7%	95.3%
		Philadelphia City/County	41.3%	42.9%	6.9%	5.7%	2.8%	13.8%	86.2%

Source: ESI using data derived from the 2012–2016 5-Year American Community Survey (ACS) PUMS dataset

Household Type

Households can generally be divided into family and non-family categories. A family household consists of a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. These family households are presented as Married Couple households and other family households in Tables 13 and 14. A married couple household is one in which the householder and his or her spouse are listed as members of the same household. Other family households include a family with a male or female householder and no spouse present.

Nonfamily households include a householder living alone or with nonrelatives only. Unmarried couples households, whether opposite-sex or same-sex, with no relatives of the householder present are tabulated in nonfamily households.

Table 13: Household Type by County

County	2012-2016 ACS			
	County Benchmarks			
	All Households			
	Living Alone	Married Couple	Not Living Alone	Other Family
Bucks County	24.1%	58.1%	4.6%	13.2%
Burlington County	25.5%	53.7%	4.9%	15.9%
Camden County	27.7%	45.5%	5.0%	22.1%
Chester County	23.4%	58.0%	6.3%	12.3%
Delaware County	28.7%	47.6%	4.4%	19.3%
Gloucester County	23.5%	54.6%	4.9%	17.0%
Mercer County	29.5%	50.4%	4.1%	16.0%
Montgomery County	26.2%	55.5%	5.3%	13.0%
Philadelphia City/County	38.7%	27.6%	7.9%	25.8%

Source: U.S. Census Bureau, ACS 5-Year Estimates 2012–2016

Table 14: Household Type

Geography	Household Type	2012-2016 PUMS Data				2007-2011 PUMS Data			
		Multifamily Apartments Renter-Occupied, 5+ Units in Structure				Multifamily Apartments Renter-Occupied, 5+ Units in Structure			
		All	Studio/1 BR	2 BR	3 BR	All	1 BR/Studio	2 BR	3 BR
DVRPC Region	Living Alone	53.0%	72.5%	23.0%	8.3%	54.7%	74.2%	25.7%	8.6%
	Married Couple	19.3%	12.7%	30.3%	31.4%	17.1%	10.7%	26.3%	36.8%
	Not Living Alone	12.9%	9.2%	18.1%	21.4%	12.1%	9.3%	17.0%	9.0%
	Other Family	14.7%	5.7%	28.6%	38.8%	16.0%	5.8%	31.1%	45.6%
Suburban PA	Living Alone	51.5%	72.7%	23.5%	5.4%	53.1%	75.4%	28.7%	8.2%
	Married Couple	22.3%	13.5%	33.7%	50.5%	19.8%	10.9%	28.6%	47.1%
	Not Living Alone	13.1%	8.6%	19.6%	7.6%	12.1%	8.7%	17.1%	4.3%
	Other Family	13.1%	5.2%	23.2%	36.5%	15.0%	5.0%	25.5%	40.4%
Suburban NJ	Living Alone	48.1%	68.5%	21.3%	4.3%	48.7%	67.0%	21.7%	3.0%
	Married Couple	20.2%	14.0%	28.3%	36.5%	18.5%	13.0%	26.3%	34.4%
	Not Living Alone	10.0%	9.6%	10.1%	12.9%	10.8%	10.3%	11.9%	8.0%
	Other Family	21.7%	7.8%	40.3%	46.3%	22.0%	9.7%	40.0%	54.6%
Philadelphia	Living Alone	58.7%	74.8%	24.0%	15.3%	61.3%	77.4%	25.1%	18.2%
	Married Couple	15.1%	11.0%	27.0%	4.4%	13.3%	9.5%	22.7%	18.2%
	Not Living Alone	15.0%	9.4%	24.3%	45.0%	13.6%	9.6%	22.2%	20.2%
	Other Family	11.2%	4.8%	24.7%	35.4%	11.9%	3.5%	30.0%	43.3%
Core Cities	Living Alone	58.5%	75.8%	22.3%	13.3%	59.6%	76.1%	24.7%	13.2%
	Married Couple	14.2%	10.2%	25.4%	4.9%	13.5%	9.8%	22.2%	16.0%
	Not Living Alone	13.9%	8.9%	22.0%	39.3%	12.6%	9.1%	19.7%	18.6%
	Other Family	13.4%	5.1%	30.3%	42.5%	14.3%	4.9%	33.4%	52.2%
Developed Communities	Living Alone	48.8%	67.9%	23.5%	6.7%	52.0%	72.4%	24.5%	5.9%
	Married Couple	23.0%	15.2%	32.8%	50.5%	19.2%	12.0%	28.1%	40.7%
	Not Living Alone	12.0%	9.9%	15.0%	13.2%	10.9%	8.7%	14.7%	7.4%
	Other Family	16.2%	7.0%	28.7%	29.6%	18.0%	6.9%	32.7%	46.0%
Growing Suburbs	Living Alone	51.9%	76.0%	22.8%	2.2%	51.4%	73.7%	30.1%	8.7%
	Married Couple	20.9%	12.6%	31.5%	40.8%	20.3%	11.9%	27.8%	41.3%
	Not Living Alone	13.3%	7.8%	20.1%	4.3%	11.8%	8.7%	16.2%	1.2%
	Other Family	14.0%	3.5%	25.6%	52.7%	16.5%	5.7%	25.9%	48.8%

Source: ESI using data derived from the 2007–2011 and 2012–2016 5-Year American Community Survey (ACS) PUMS datasets



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