Presentation to **Chester County Housing Choices Committee** | July 11, 2019

Community Impacts of
Multifamily Development

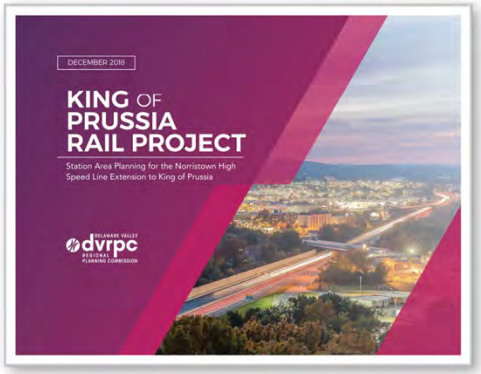
dvrpc

DVRPC's Office of Smart Growth

Coordinating land use & transportation planning in Greater Philadelphia

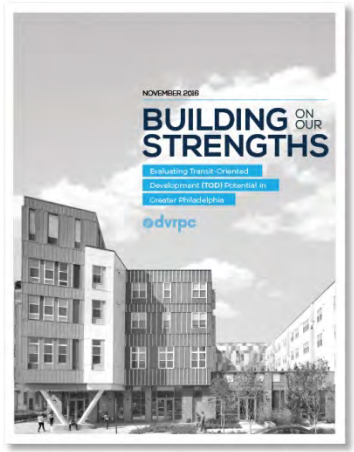
Place-Based

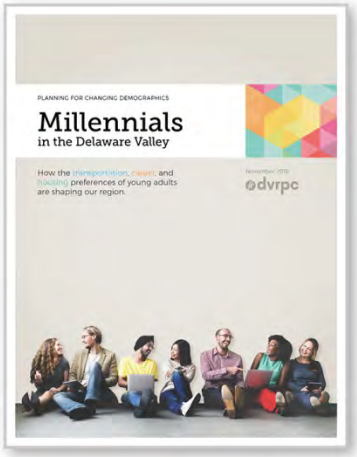
Studies & Strategies



Regional

Analysis & Inventories





Presentation to **Montgomery County Planning Commission Board** | June 12, 2019

Community Impacts of
Multifamily Development

dvrpc

The Inquirer
DAILY NEWS philly.com

REAL ESTATE

In Philly, the renters keep on coming

by Julia Terruso, Posted: August 8, 2018

The Inquirer
DAILY NEWS philly.com

Thursday, March 28, 2019 | Today's Paper

Car dealer wants to replace Ardmore showrooms and IHOP with town's largest-ever apartment complex

by Jacob Adelman, Updated: 54 minutes ago

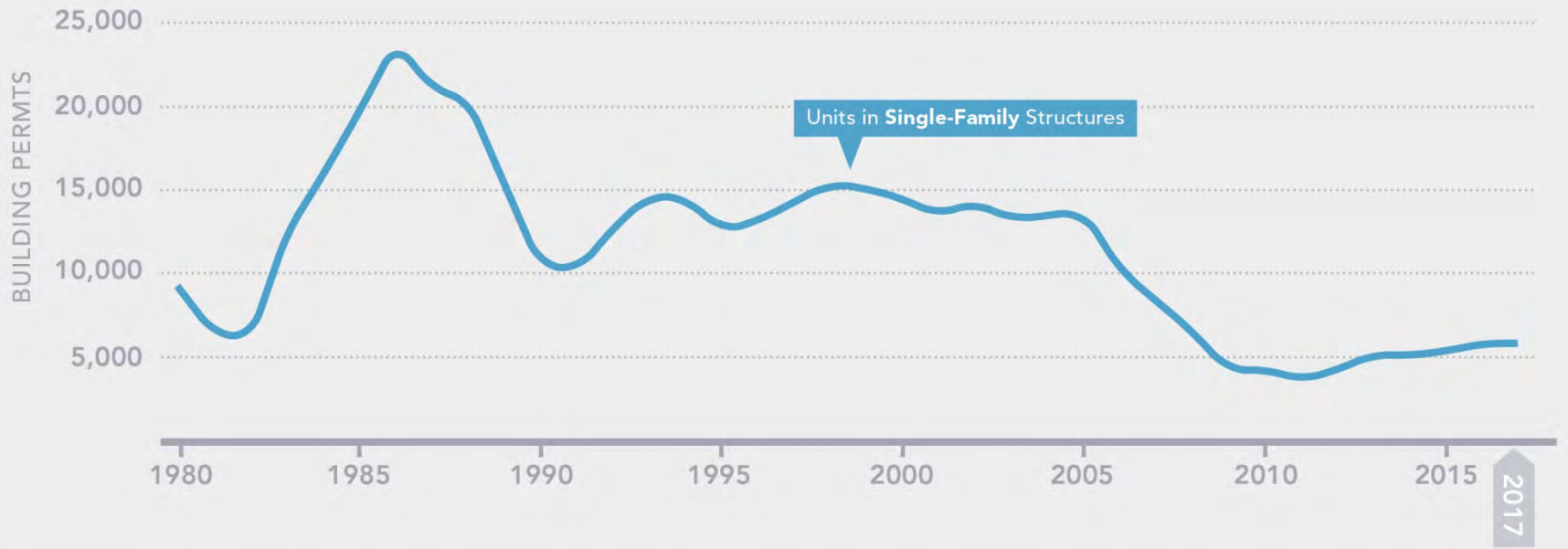
POST
TWEET
SUBMIT
EMAIL
SHARE

JESSICA GRIFFIN / STAFF PHOTOGRAPHER

The owners of the Acura and Volkswagen dealerships near Ardmore's commercial core want to redevelop the auto-showroom sites and adjacent land into what would be the largest apartment complex ever to rise in the suburban Philadelphia community.

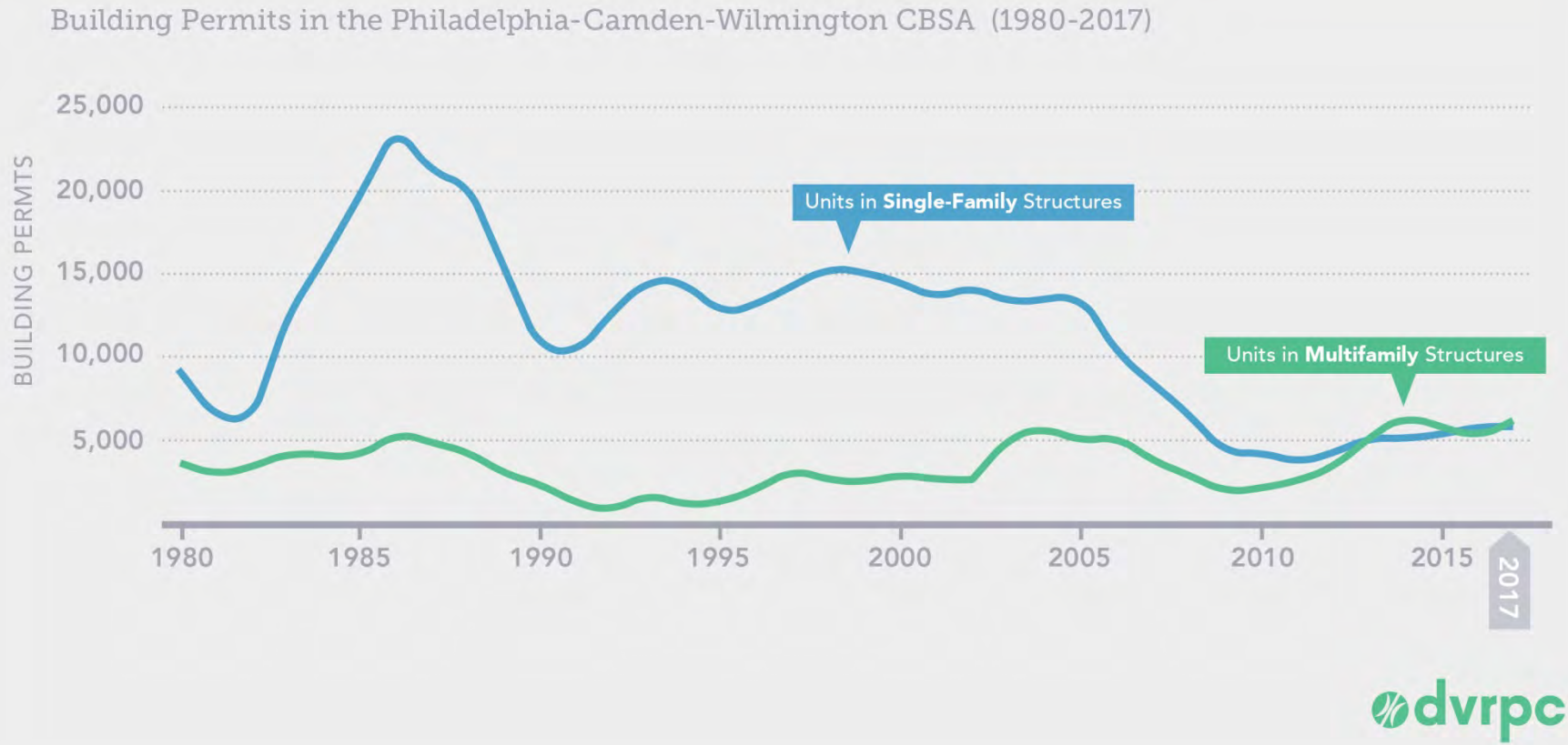
Community Impacts of
Multifamily Development

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

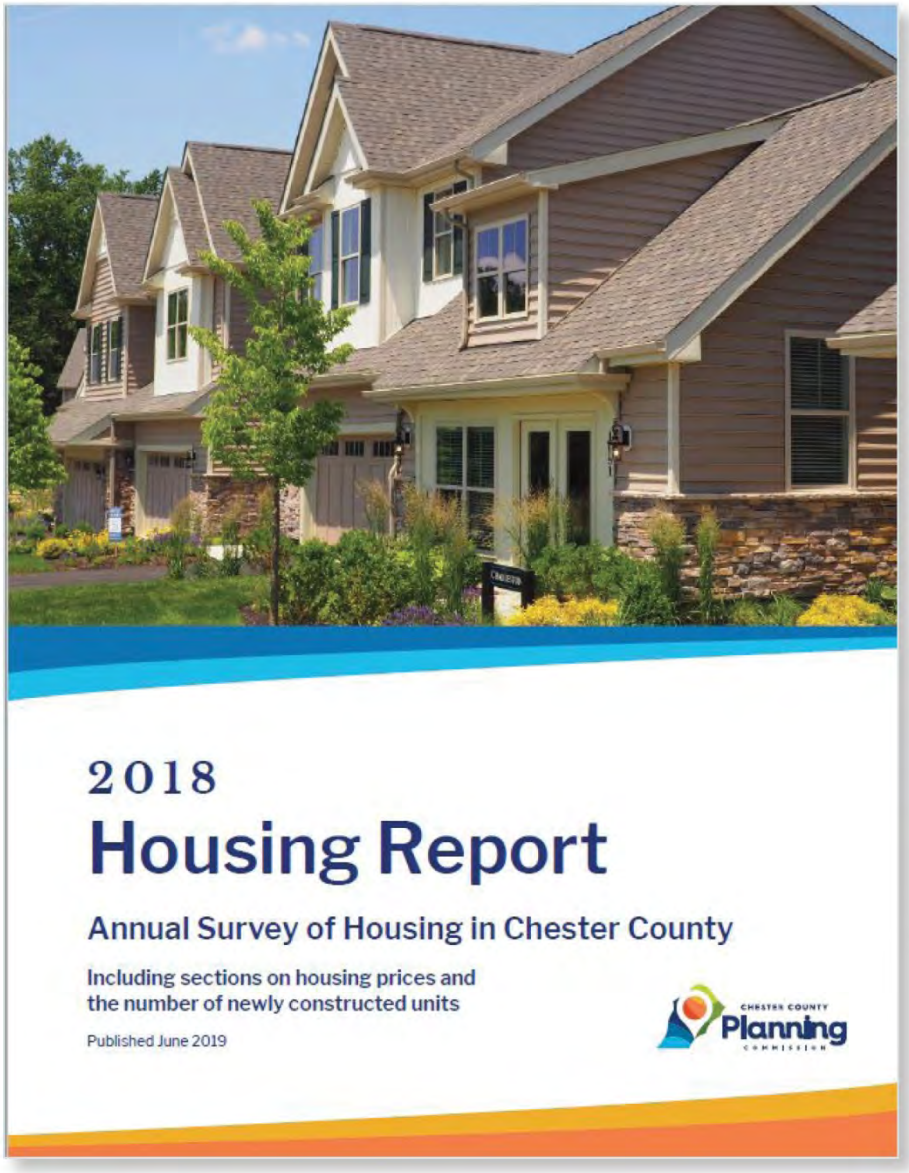


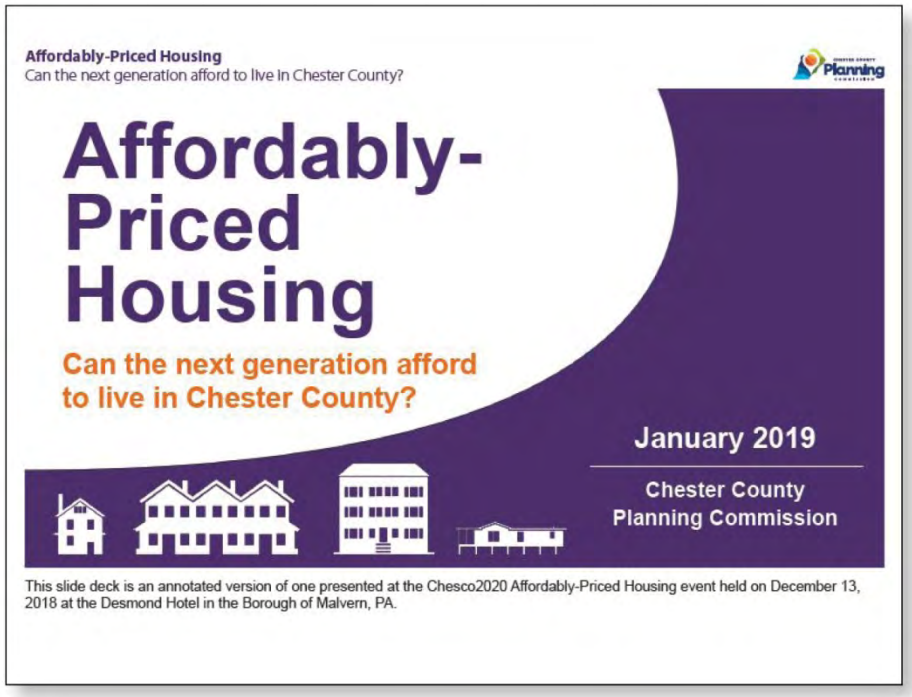
dvrpc

Community Impacts of
Multifamily Development



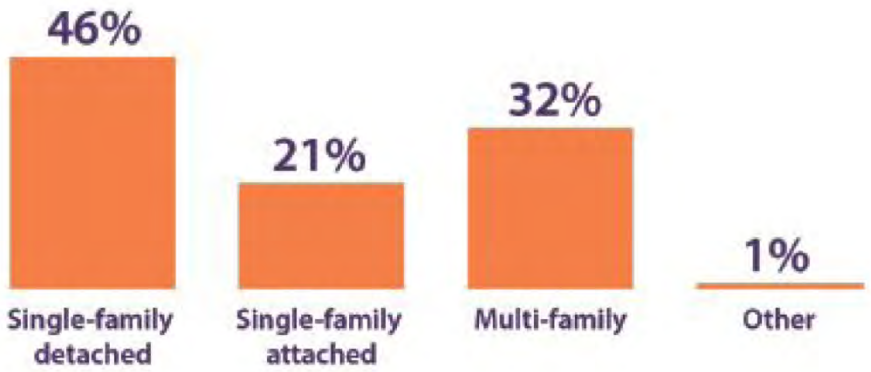
dvrpc


2018
Housing Report
Annual Survey of Housing in Chester County
Including sections on housing prices and
the number of newly constructed units
Published June 2019
Planning


Affordably-Priced Housing
Can the next generation afford to live in Chester County?
Planning
Affordably-Priced Housing
Can the next generation afford to live in Chester County?
January 2019
Chester County
Planning Commission
This slide deck is an annotated version of one presented at the Chesco2020 Affordably-Priced Housing event held on December 13, 2018 at the Desmond Hotel in the Borough of Malvern, PA.

Housing type projections

Estimated Future Construction



Source: CCPC estimate

Recent construction trends lean heavily towards multi-family and single-family attached housing, while the historic building pattern in the county and the preferences of potential homebuyers lean towards single-family detached homes. CCPC estimates that reality over the next 25 plus years will be somewhere in between.

Community Impacts of

Multifamily Development

Study Goal

Improve our understanding of the **local impacts** and **benefits** of higher density residential development in communities throughout Greater Philadelphia.

dvrpc

Community Impacts of

Multifamily Development

Today's Presentation

- Why study multifamily development?
- Project approach
- Key findings

dvrpc

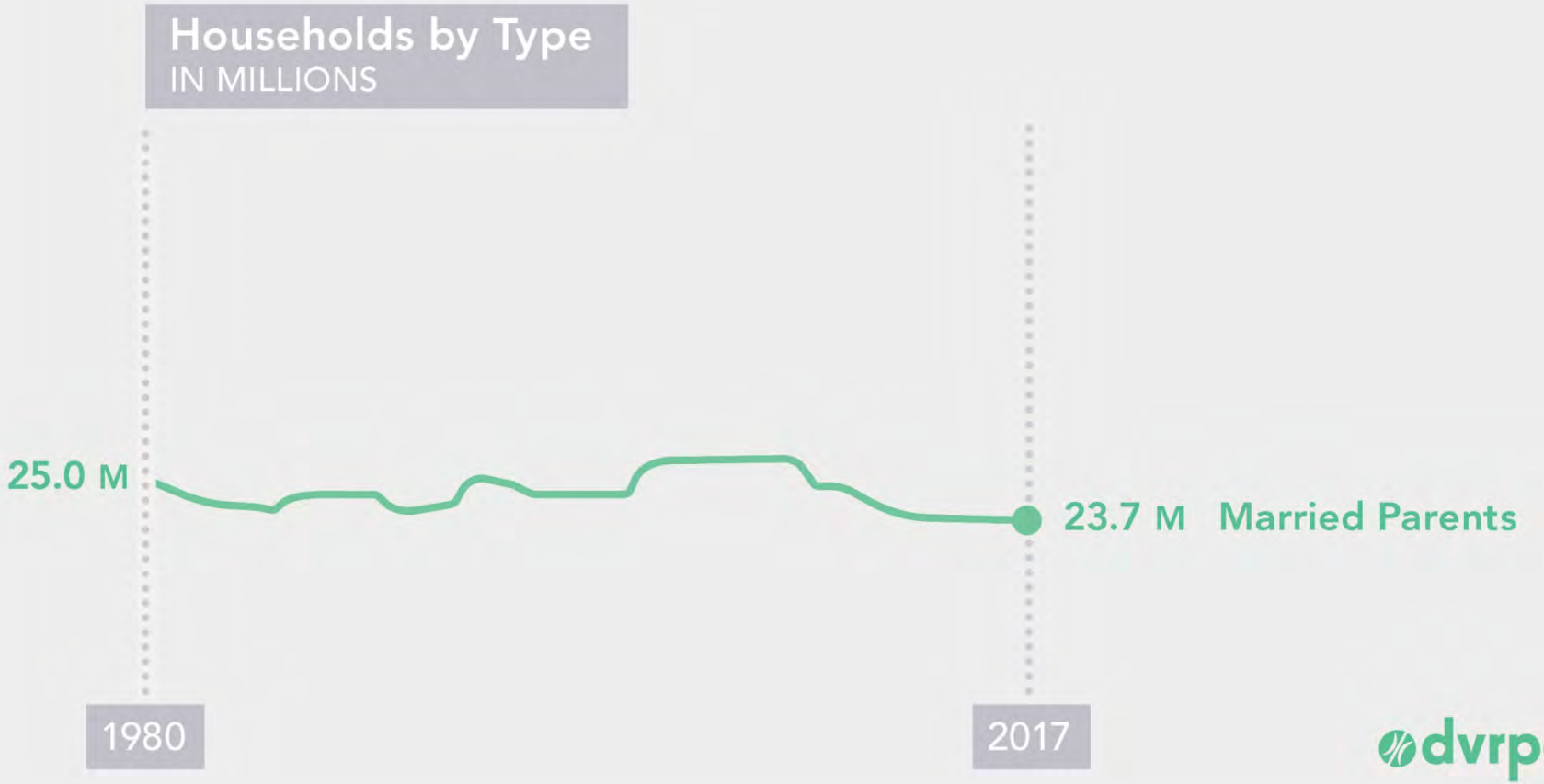
Why study multifamily development?

Our **changing population** is driving demand for new types of homes, offices, and retail spaces.

dvrpc

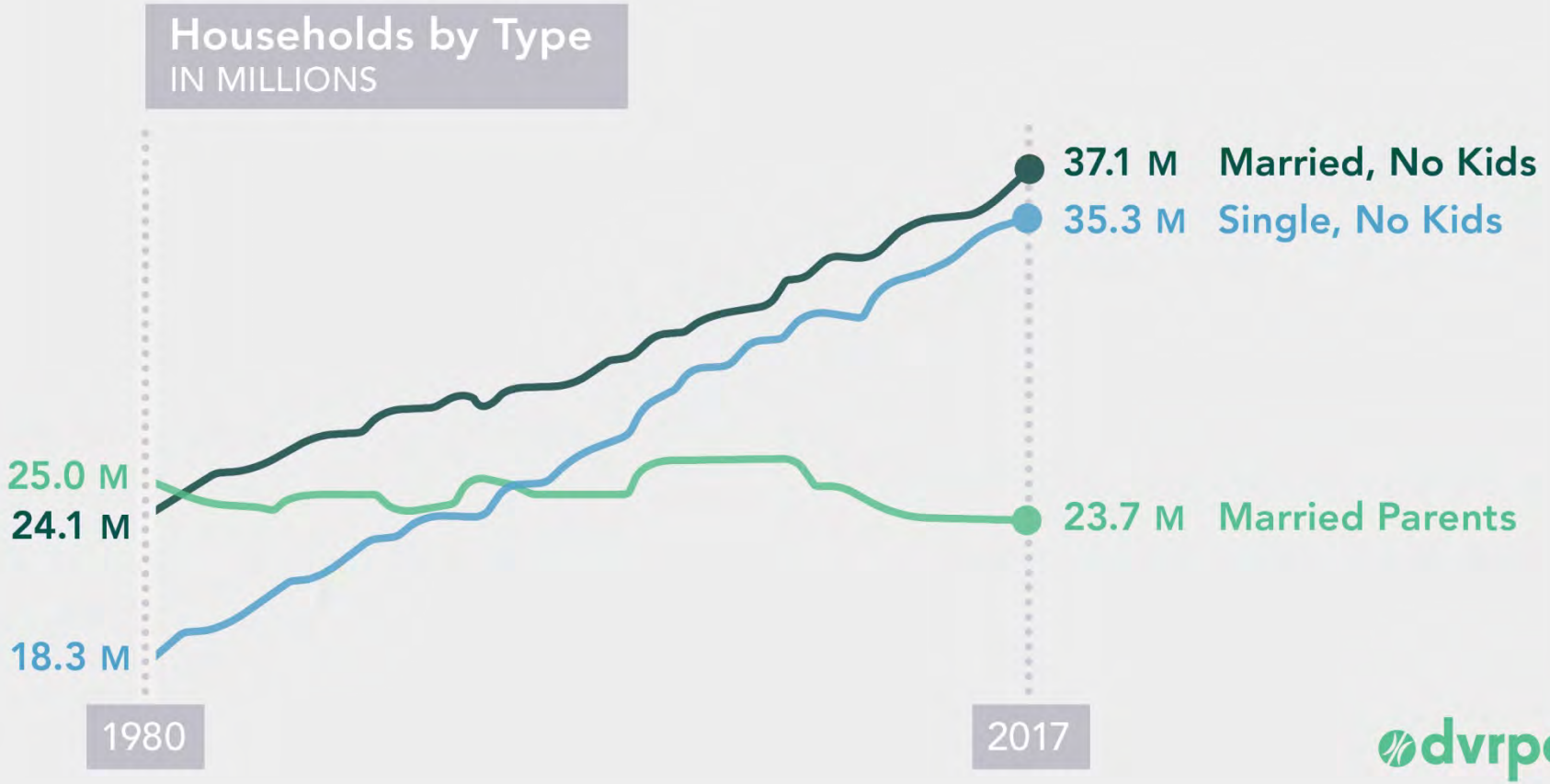
Why study multifamily development?

Our **changing population** is driving demand for new types of homes, offices, and retail spaces.



Why study multifamily development?

Our **changing population** is driving demand for new types of homes, offices, and retail spaces.



Sections

The Washington Post
Democracy Dies in Darkness

Economic Policy

Millennials really are special, data show

Faculty members walk with their two young children on George Washington University's Mount Vernon campus in 2010. They lived among the students in college housing at the time as part of an old practice to share space with students. (Jahi Chikwendiu/The Washington Post)

By **Andrew Van Dam**
March 16

The Inquirer
DAILY NEWS philly.com

Thursday, March 28, 2019 | Today's Paper

More older adults are relocating to rentals around Philly — sometimes close to where they owned a home

by Terri Akman, Updated: April 2, 2019- 7:00 AM

MARGO REED / STAFF PHOTOGRAPHER

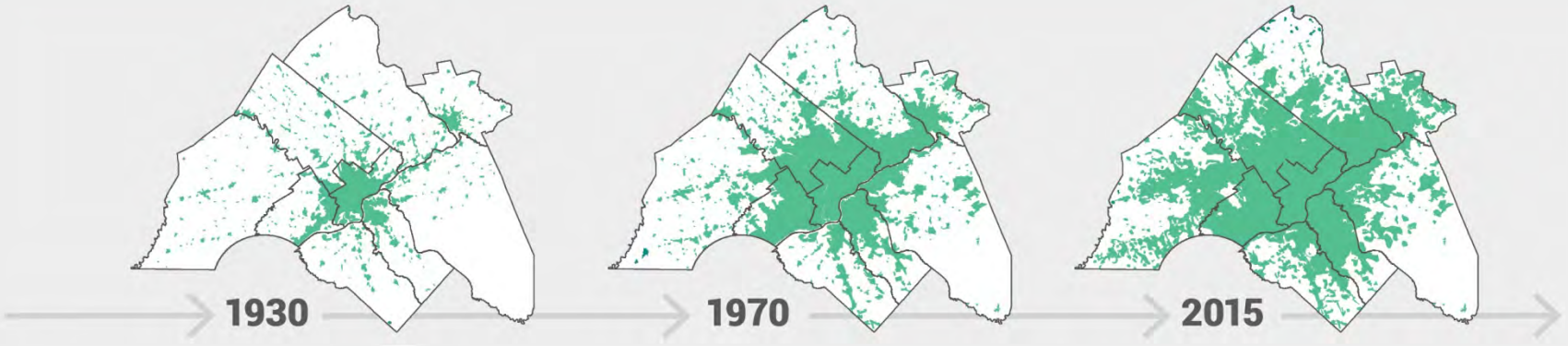
Why study multifamily development?

Smart Growth development, with a mix of uses and housing types, is being embraced as an alternative to sprawl.

dvrpc

Why study multifamily development?

TRENDS & FORECASTS: **LAND USE**



Why study multifamily development?

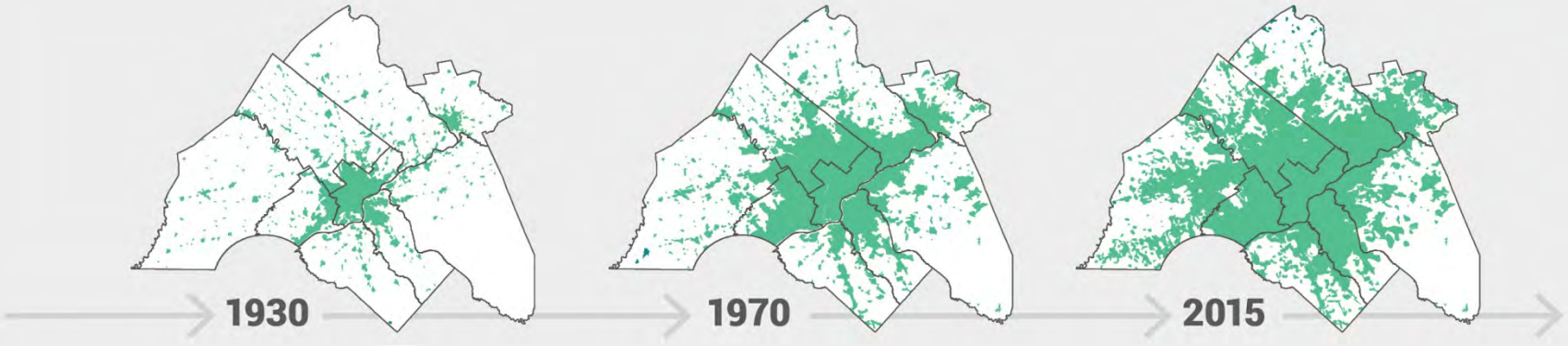
TRENDS & FORECASTS: **LAND USE**

- Increased reliance on **driving, and more congestion**
- Drastic reduction in **open space and farmland**
- Detrimental impacts to **air and water quality**
- Increased need for **infrastructure and services**

From 1930-2015

450%
increase in
acres developed

73%
increase in
population



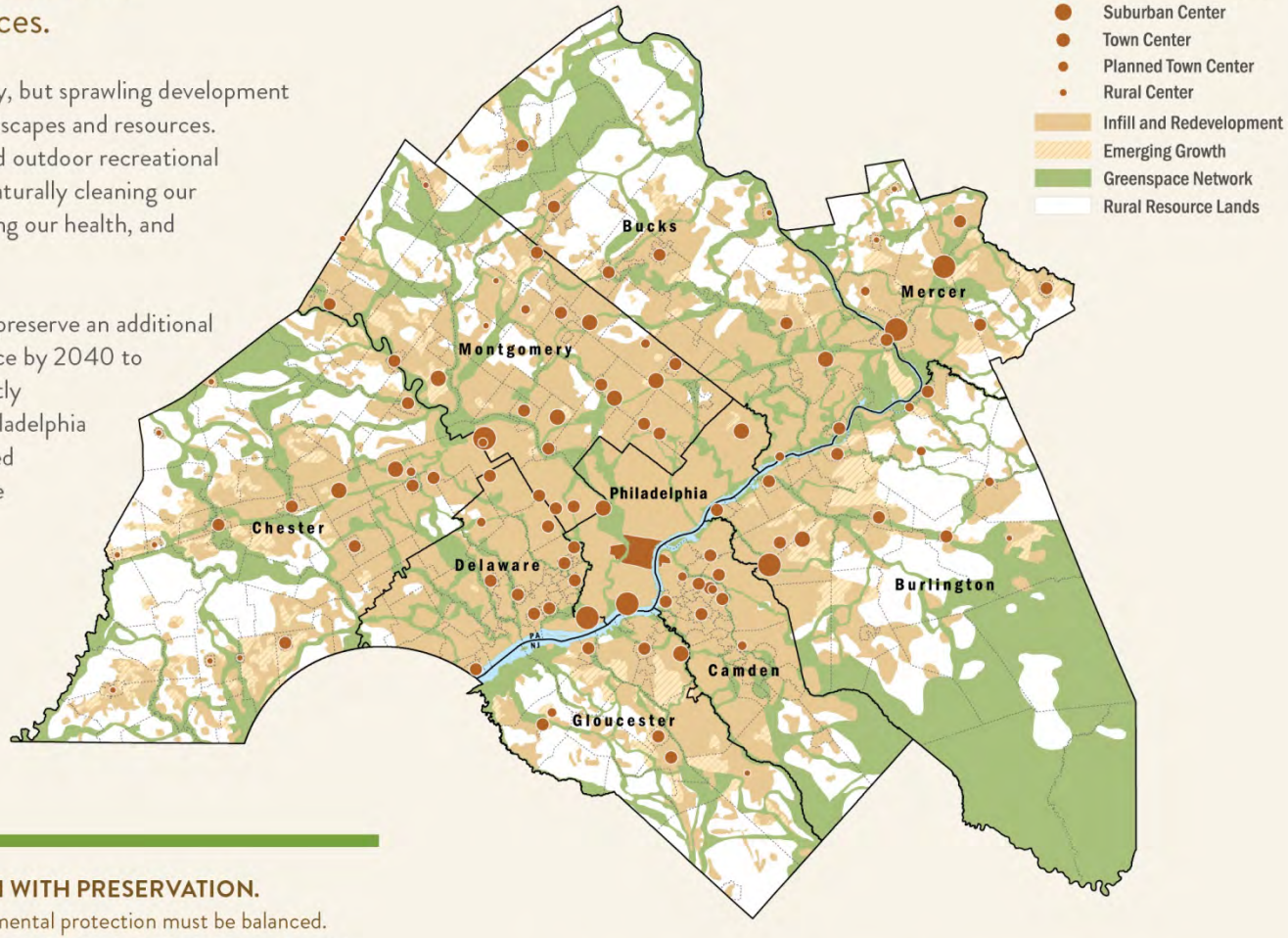
HOW CAN WE GROW RESPONSIBLY?

Manage growth and development while protecting our natural resources.

Our region is home to breathtaking beauty, but sprawling development patterns threaten our region's natural landscapes and resources. Our land is a source of local food, jobs, and outdoor recreational opportunities. It also saves us money by naturally cleaning our air and water, mitigating flooding, improving our health, and enhancing our quality of life.

Connections 2040 outlines strategies to preserve an additional 450,000 acres of farmland and open space by 2040 to help reach a goal of one million permanently protected acres in our region. Greater Philadelphia has already made progress having preserved more than 75,000 acres over the past five years. The Plan's land use vision continues this progress.

LAND USE VISION



BALANCING GROWTH WITH PRESERVATION.

Development and environmental protection must be balanced. Growth should be encouraged where infrastructure already exists to limit the cost of new transportation facilities and reduce energy use and environmental impacts.

The Land Use Vision Map defines areas for open space preservation (Rural Resource Lands and Greenspace Network) as well as development (Centers, Infill and Redevelopment, and Emerging Growth).

Why study multifamily development?

Higher density, mixed-use development is often **difficult to construct** because of existing zoning codes and opposition from the community.

dvrpc

Why study multifamily development?

Higher density, mixed-use development is often **difficult to construct** because of existing zoning codes and opposition from the community

The New York Times

The Bipartisan Cry of 'Not in My Backyard'

The housing secretary wants to encourage mixed-income, multifamily development as a way of making housing more affordable. But it's a notion homeowners of all political leanings tend to oppose

By Emily Badger

Aug. 21, 2018

dvrpc

Why study multifamily development?

Higher density, mixed-use development is often **difficult to construct** because of existing zoning codes and opposition from the community.

dvrpc

Organizing the Potential Impacts of Development

DEVELOPMENT PROPOSAL

ECONOMIC

- Infrastructure Costs
- Locally-Provided Services
- Tax Revenue
- Property Values

TRANSPORTATION

- Traffic and Congestion
- Parking Demand and Supply
- Traffic and Safety

COMMUNITY

- Public Safety
- Community Character

DEVELOPMENT PROJECT

dvrpc

Project Approach

Measuring the impacts and benefits of development

DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS

dvrpc

Project Approach

Measuring the impacts and benefits of development

DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS

CORNERSTONE TRACY

EQUUS CAPITAL PARTNERS, LTD.

PETRUCCI DEVELOPMENT • DESIGN/BUILD

RPG | Radnor Property Group LLC

Project Approach

Measuring the impacts and benefits of development

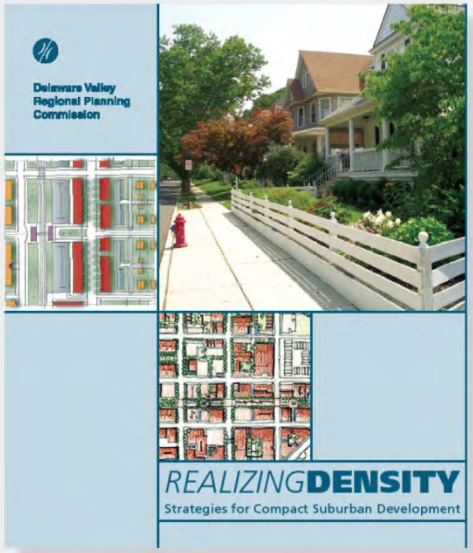
DEVELOPER INTERVIEWS

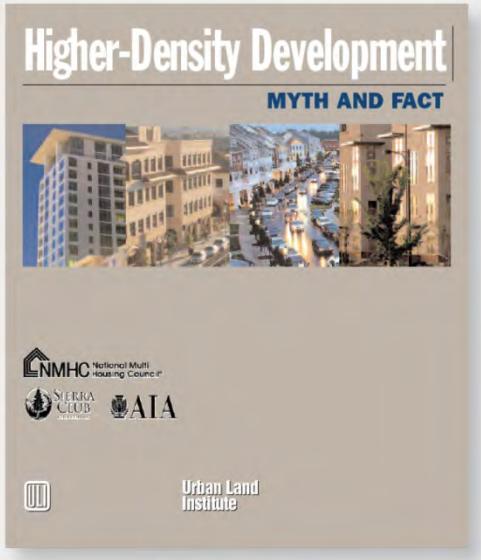
LITERATURE REVIEW

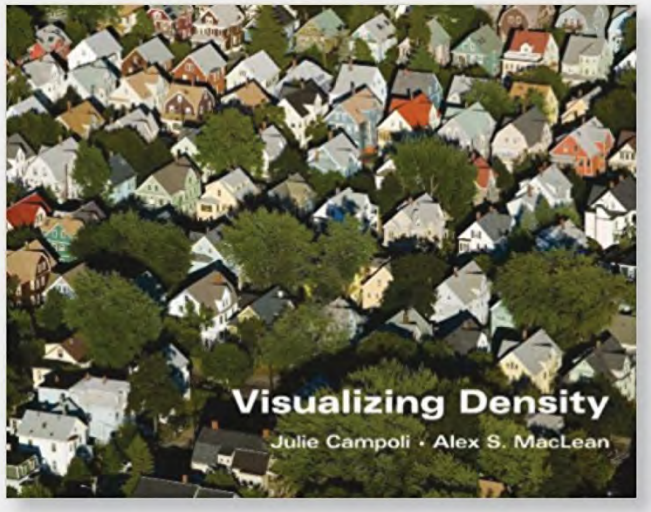
MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS







Project Approach

Measuring the impacts and benefits of development

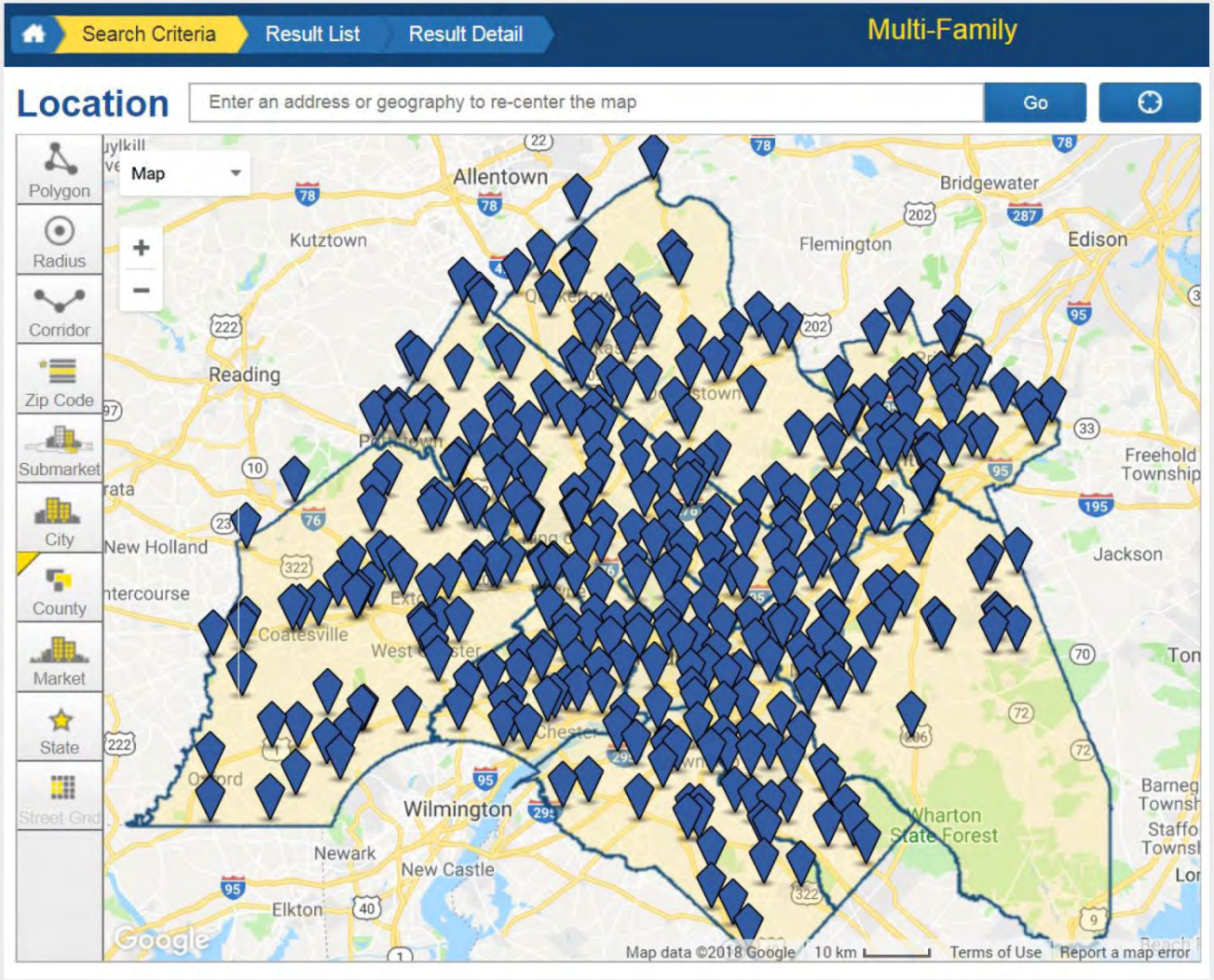
DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS



Project Approach

Measuring the impacts and benefits of development

DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS

Source: CoStar

Project Approach

Measuring the impacts and benefits of development

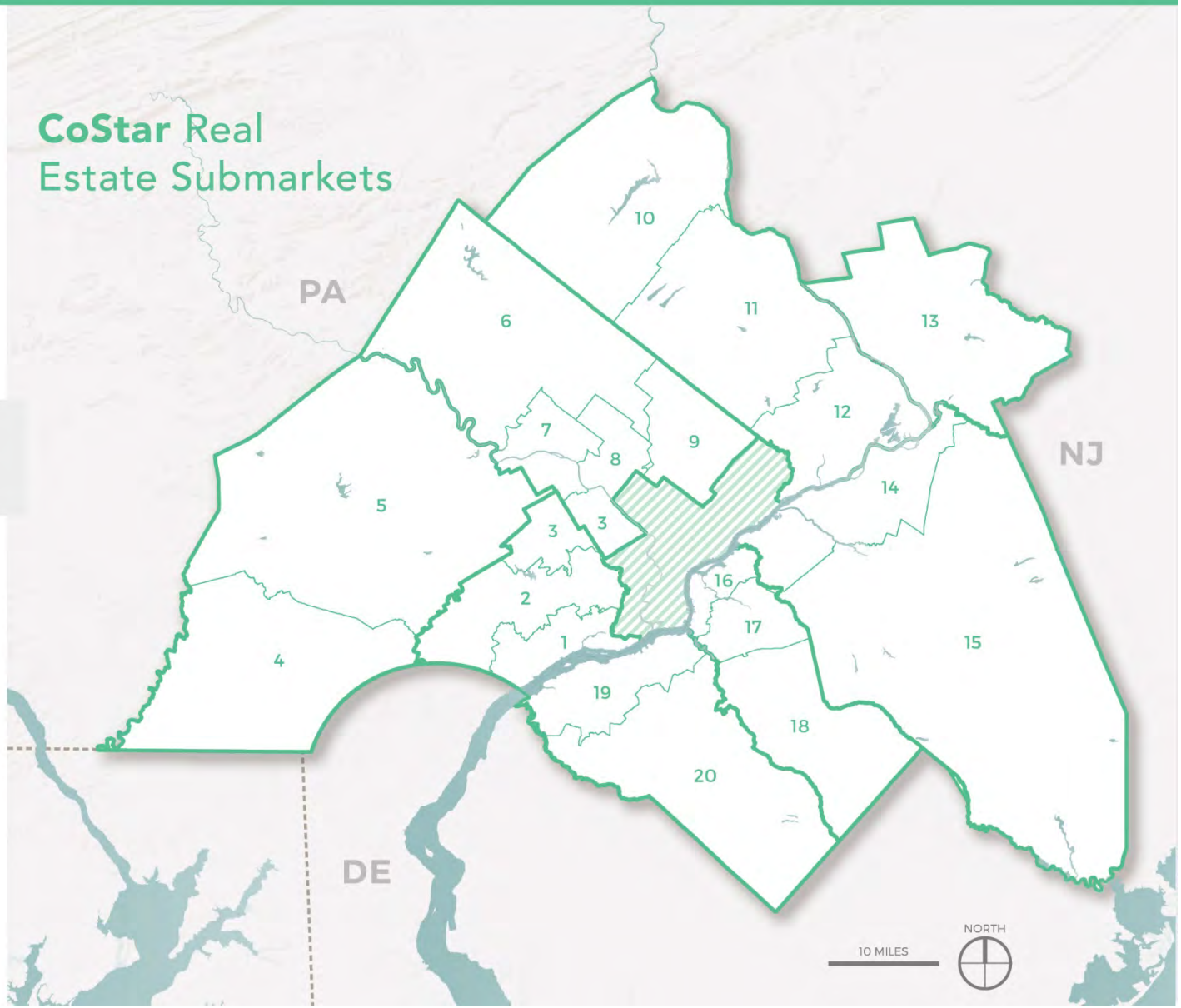
DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS



Project Approach

Understanding Multifamily Real Estate Trends

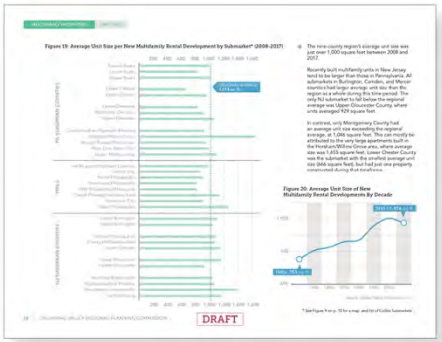
DRAFT

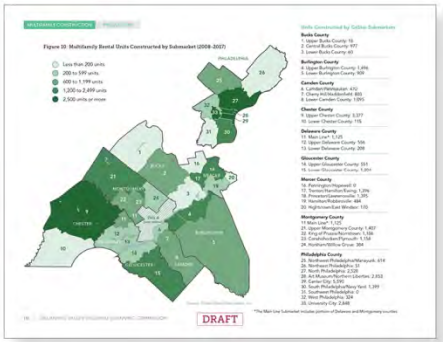
Community impacts of Higher Density Development

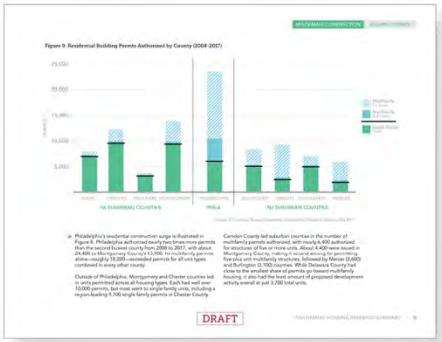
Multifamily Housing Research Summary

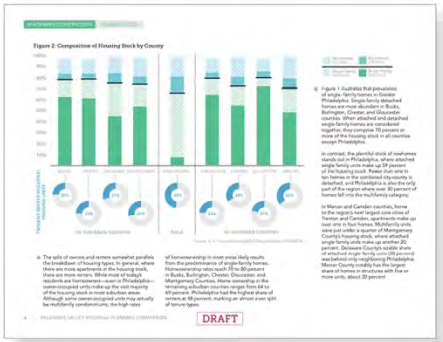
October 2018

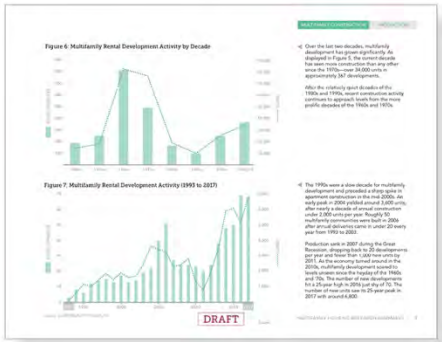
DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

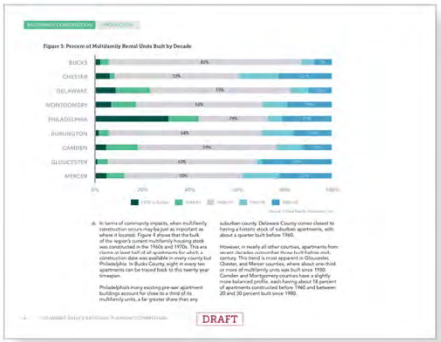


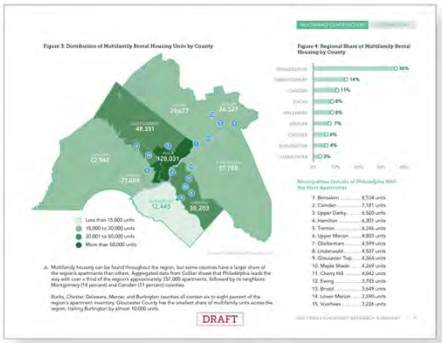


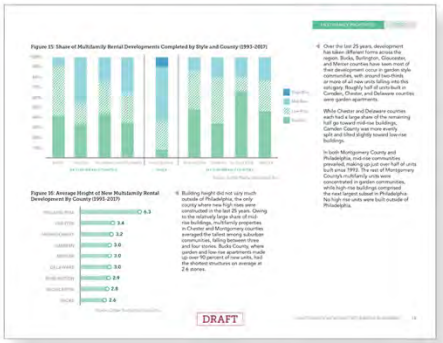






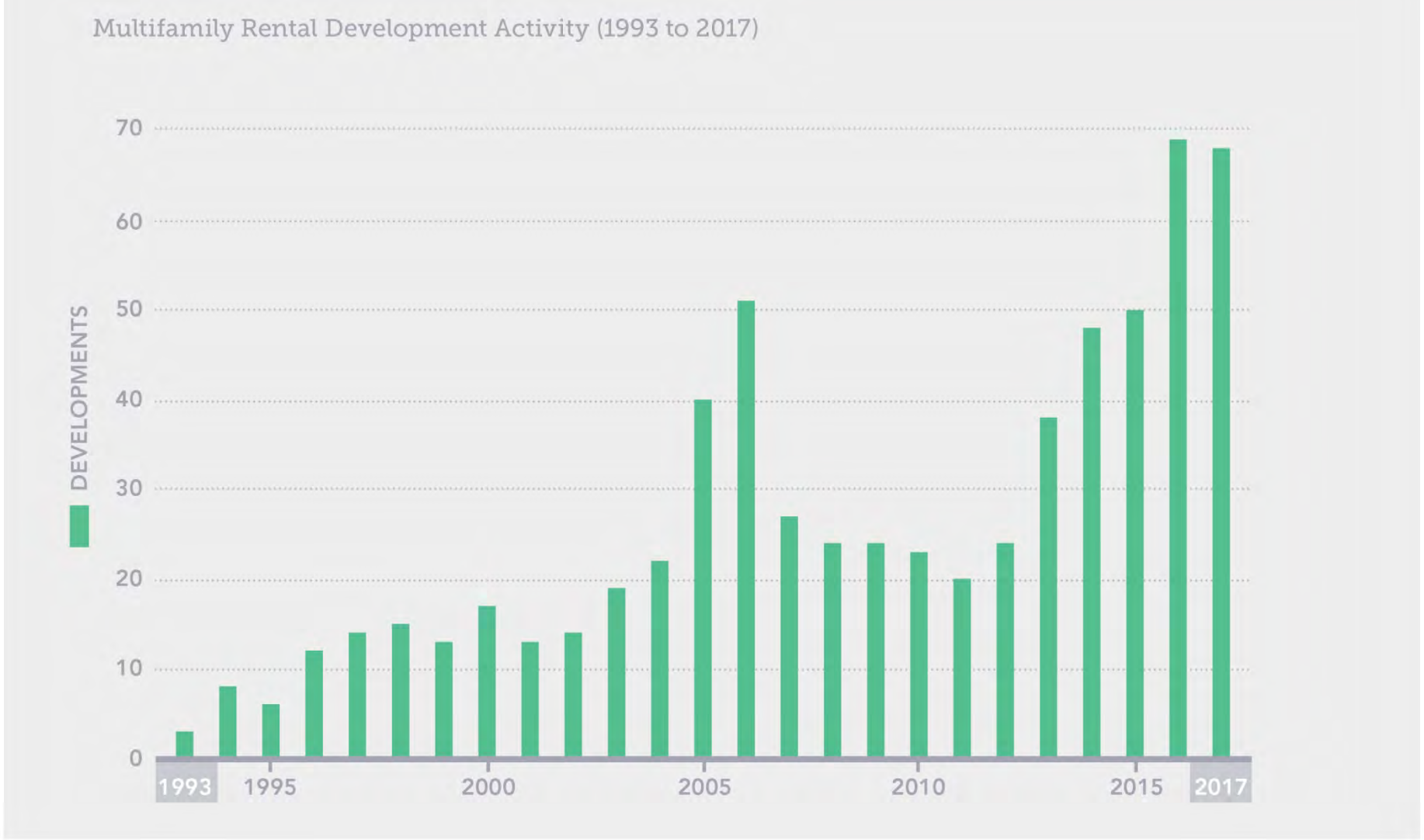






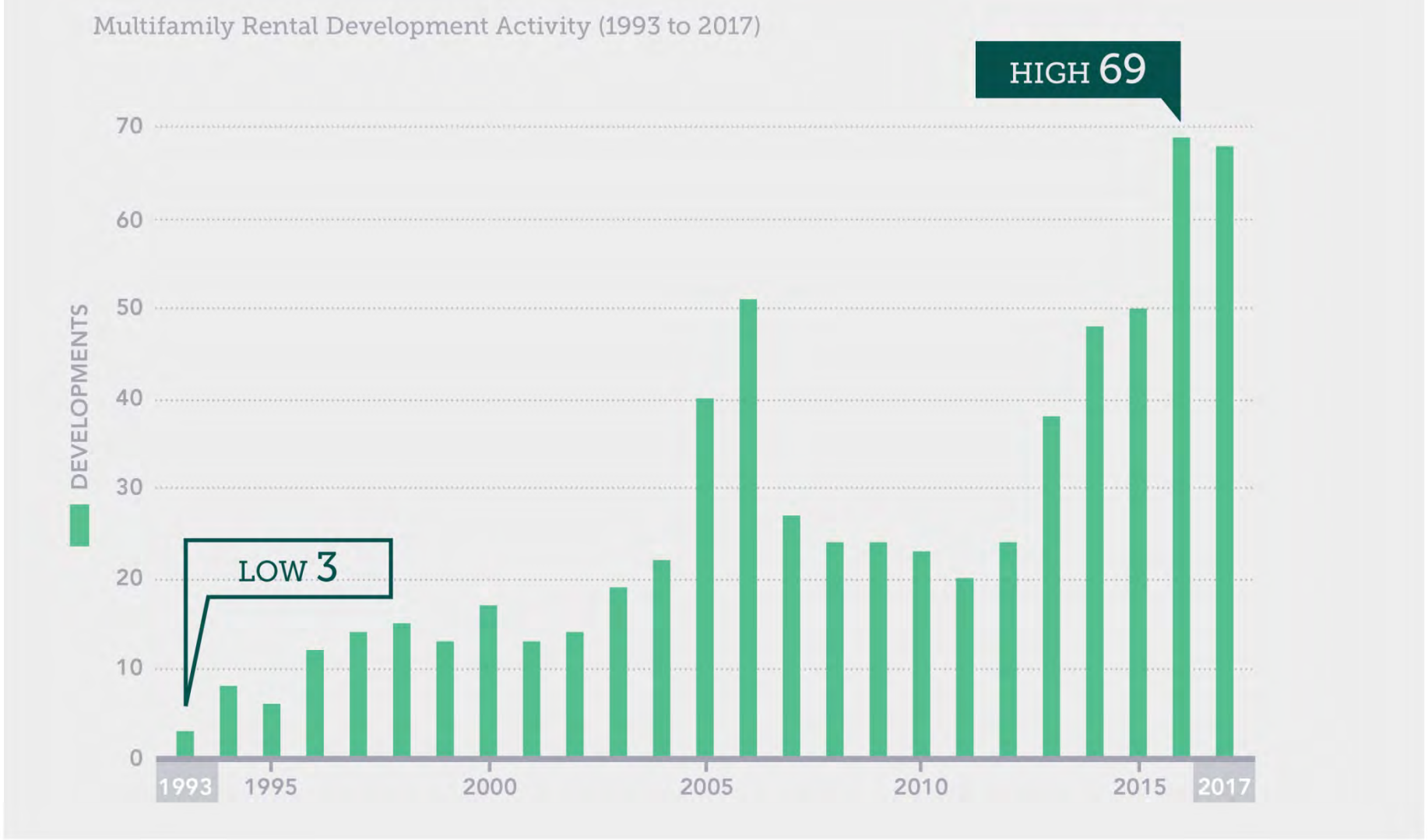
Key Takeaways

Greater Philadelphia's Multifamily Housing Boom



Key Takeaways

Greater Philadelphia's Multifamily Housing Boom



Project Approach

Multifamily Building Forms [2007–2017]

HIGHER DENSITY

GARDEN	LOW-RISE	MID-RISE	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
52 DEVELOPMENTS	106 DEVELOPMENTS	170 DEVELOPMENTS	23 DEVELOPMENTS
15% OF MF TOTAL	30% OF MF TOTAL	48% OF MF TOTAL	7% OF MF TOTAL

Key Takeaways

Greater Philadelphia's Multifamily Housing Boom

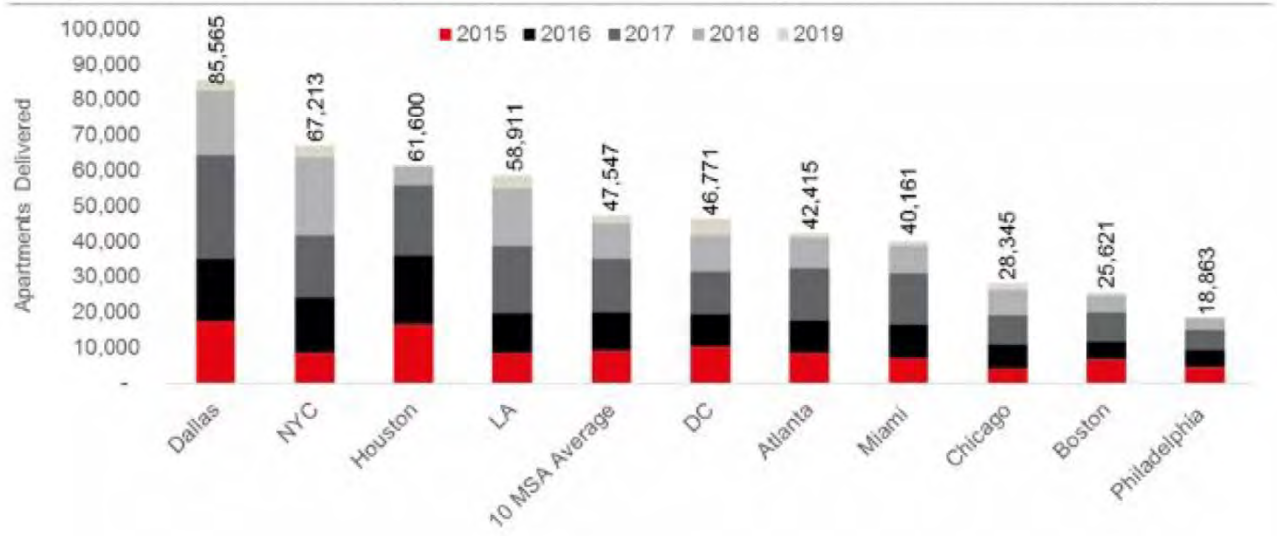
"Yet Philly's 'boom' is peanuts compared to Dallas, NYC, and other metros..."

JLL

Philadelphia Snapshot

May 29, 2017

New apartment construction levels high across the region, but Philly is just catching up to the party



dvrpc

Key Takeaways

Greater Philadelphia's Multifamily Housing Boom

The Inquirer
DAILY NEWS philly.com

RESIDENTIAL

Upscale apartments are booming in Philly's suburbs

Posted: January 6, 2017 - 6:00 AM

Caitlin McCabe, Staff Writer

Source: CoStar

Key Takeaways

Greater Philadelphia's Multifamily Housing Boom

The Inquirer
DAILY NEWS philly.com

RESIDENTIAL

Upscale apartments are booming in Philly's suburbs

Posted: January 6, 2017 - 6:00 AM

Caitlin McCabe, Staff Writer

Median Rents for Recently Constructed Apartments in Greater Philadelphia

[Market Rate , 2016-2018]

1-Bedroom	$1,755
2-Bedroom	$2,169
3-Bedroom	$2,709

dvrpc

Project Approach

Measuring the impacts and benefits of development

DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS

What is a demographic multiplier?

An average ratio of demographic measures per occupied housing unit or per household.

Key Measures

- Average household size
- Number of school age children
- Vehicle availability

dvrpc

Project Approach

Measuring the impacts and benefits of development

DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS

Data Source

ACS Public Use Microdata Sample (PUMS)

PUMS "Mover Sample" for High Density Housing

- Living in a structure with five or more units
- Moved into unit within four years prior to the survey

▶ Includes all ACS respondents living in newly built units, as well as those who recently moved into older units.

dvrpc

Project Approach

Measuring the impacts and benefits of development

DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS

Data Products

Demographic Multipliers

- Average Household Size
- School-Age Children
- Vehicles Available per Household

Demographic Statistics

- Age Cohorts
- Educational Attainment
- Means of Commute
- Commuting Time
- Income
- Occupation
- Race
- Hispanic Origin
- Household Type

dvrpc

Key Takeaways

Focus on School-Age Children

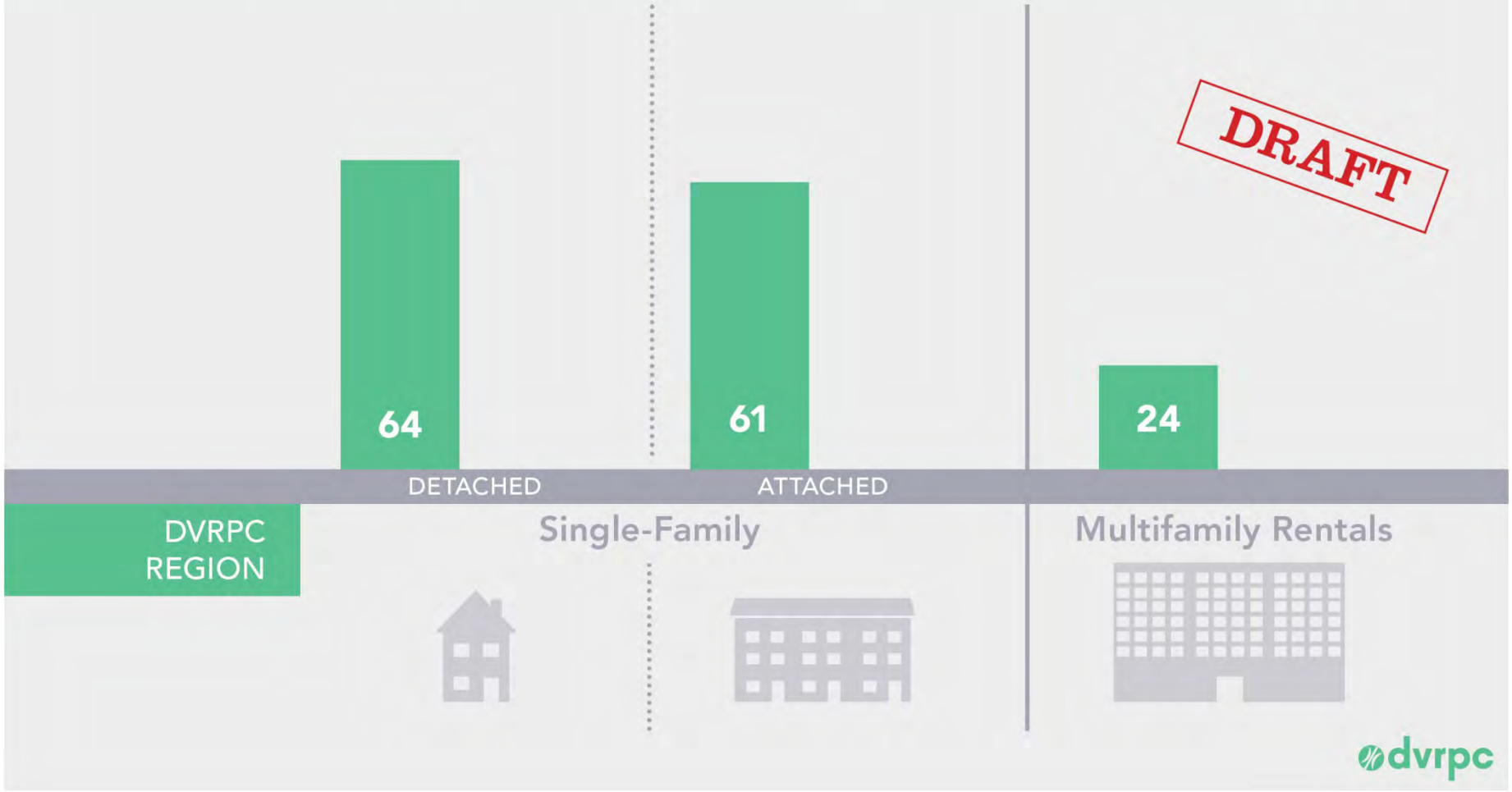
DRAFT

	Single-Family		Multifamily Rentals		
	DETACHED	ATTACHED	STUDIO/1-BR	2-BR	3-BR
DVRPC REGION	0.64	0.61	0.03	0.31	0.88
CORE CITIES	0.63	0.64	0.02	0.30	0.74
DEVELOPED COMMUNITIES	0.63	0.60	0.05	0.34	0.82
GROWING SUBURBS	0.65	0.52	0.03	0.28	1.27

Key Takeaways

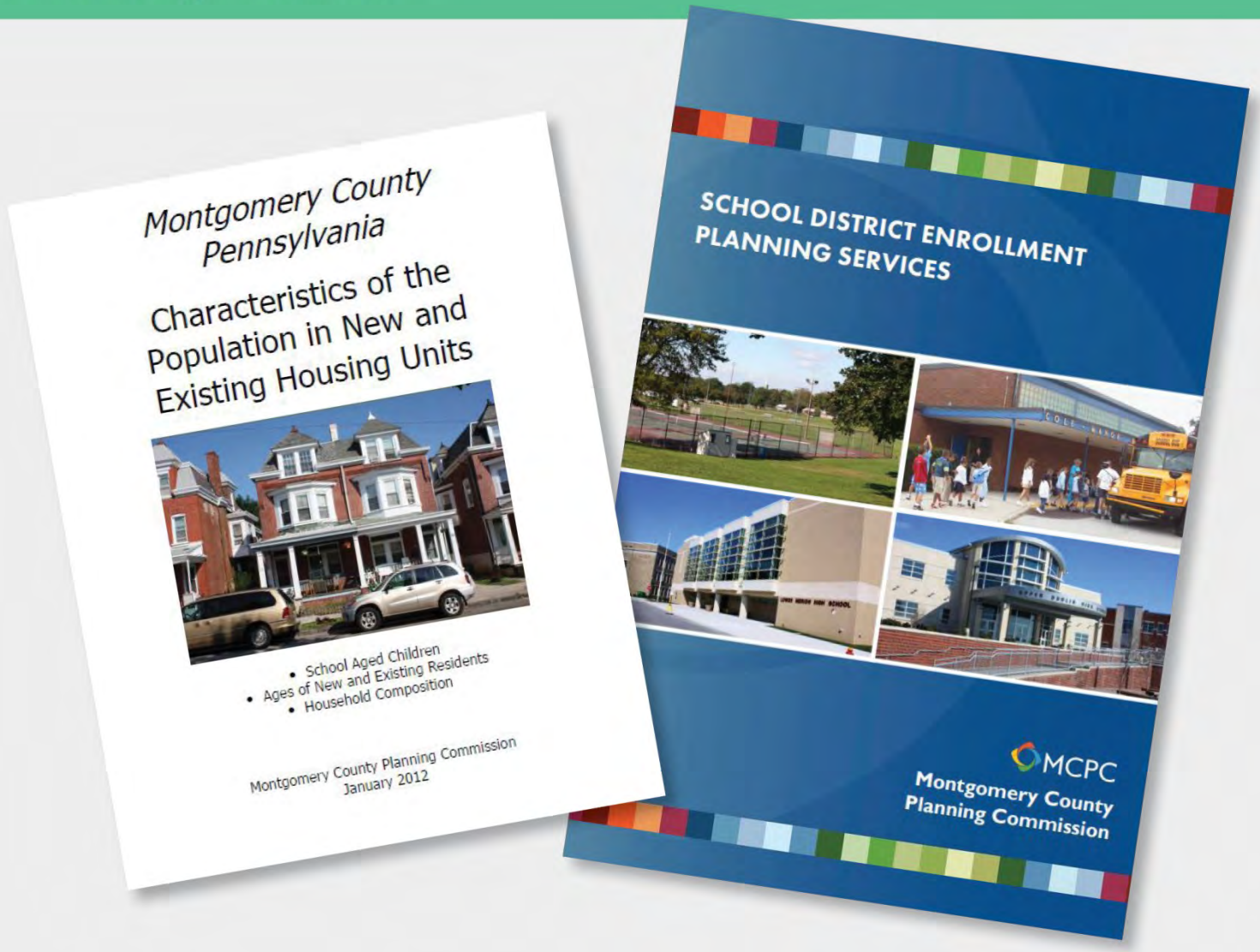
Focus on School-Age Children

Estimation: Number of School Age Children per 100 Units of Housing



Key Takeaways

Focus on School-Age Children



Housing Impacts - School Age Children by Housing Type

- Data presented in MCPC's original report – *Characteristics of the Population in New and Existing Housing Units*
- Multifamily provides the fewest school-age children
- New Multifamily units, built after 2000, provide fewer (1/3) school age children than existing units

*** 2010 Census Data ***

Montgomery County			
	Single Family Detached	Single Family Attached	**Multifamily**
School Age Children per Household in **Existing** Units	0.55	0.41	**0.18**
School Age Children per Household in **New** Units	0.93	0.21	**0.06**

Source: Montgomery County Planning Commission

Public School Students in Multifamily Developments

- Through its school district enrollment projections service, MCPC has researched the actual number of public school students from multifamily developments across the county, but especially through the denser eastern half of the county.
- Developments were observed at various years from 2015 through 2018.
- There were 23 developments observed that were built since 2000 with a total of 4,784 units. Total number of school children was consistent with the rates observed in the 2010 study.

Observed Students in Multifamily Developments			
	Total Units	Public Students	Students Per Unit
All Units Built Since 2000	4,784	290	0.06

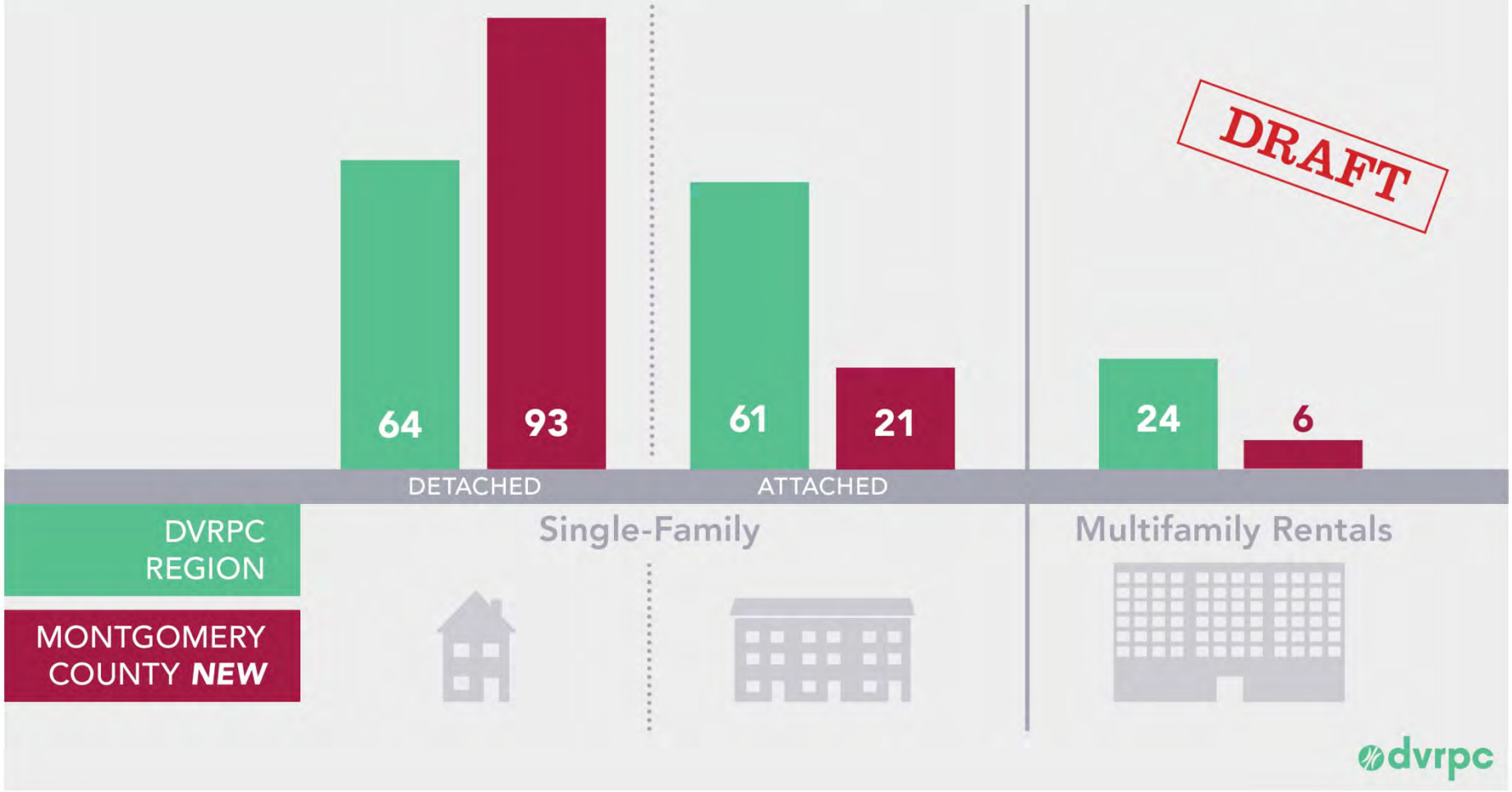
Source: Montgomery County Planning Commission

- Older developments were also observed. While a cumulative total is not available, we consistently observed dramatic increases in students coming from older multifamily developments over the last decade. Many districts saw these student counts more than double in that time period.

Key Takeaways

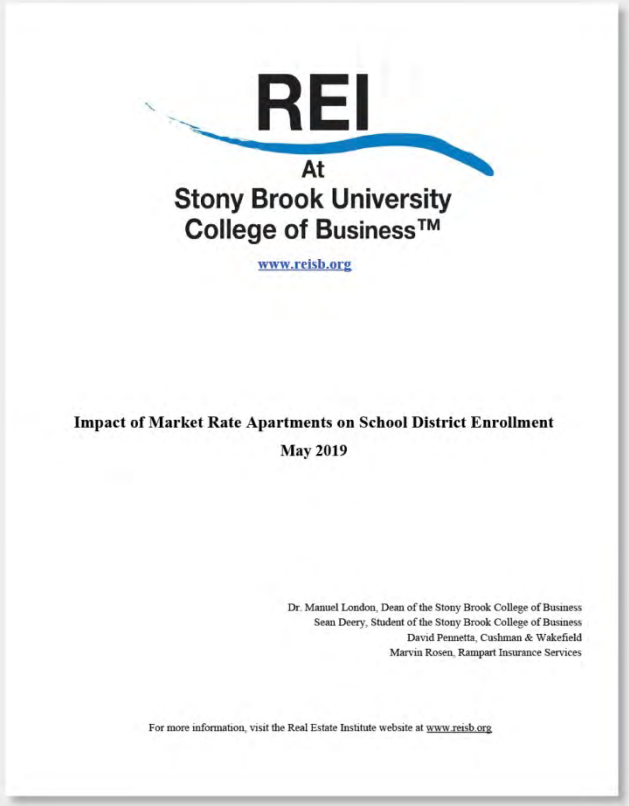
Focus on School-Age Children

Estimation: Number of School Age Children per 100 Units of Housing



Key Takeaways

Other Research on School Age Children: Stonybrook University



REI
At
Stony Brook University
College of Business™
www.reisb.org

Impact of Market Rate Apartments on School District Enrollment

May 2019

Dr. Manuel London, Dean of the Stony Brook College of Business
Sean Deery, Student of the Stony Brook College of Business
David Pennetta, Cushman & Wakefield
Marvin Rosen, Rampart Insurance Services

For more information, visit the Real Estate Institute website at www.reisb.org

Impact of Market Rate Apartments on School District Enrollment

This study reflects a sample of 14 multifamily apartment projects developed during the last 15 years in Nassau and Suffolk counties. Each project considered contains a minimum of 200 units

---

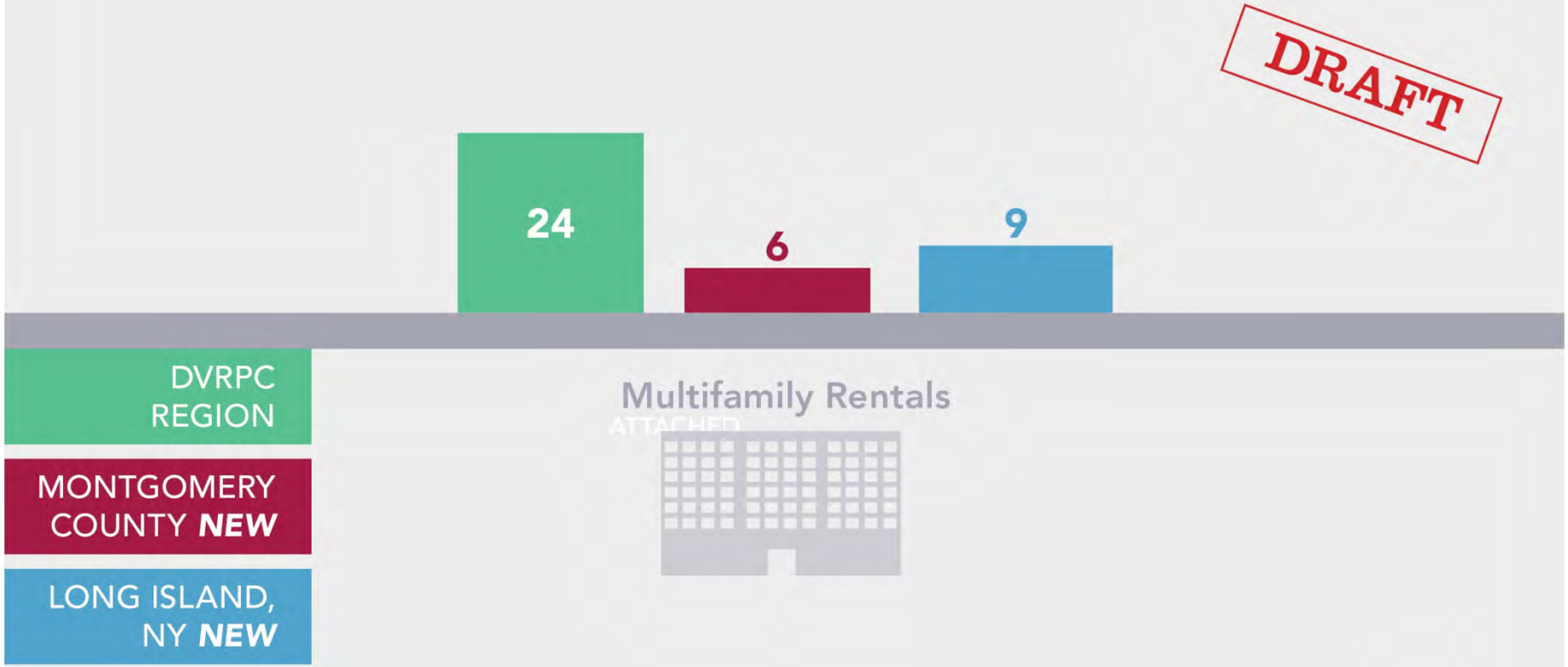
There was an average of:

- **25.5** students per complex &
- **0.09** students per unit.

Key Takeaways

Focus on School-Age Children

Estimation: Number of School Age Children per 100 Units of Housing



dvrpc

Key Takeaways

Other Research on School Age Children: Rutgers University

School-Age Children in Rental Units in New Jersey

Rutgers Center for Real Estate (July 2018)

Table 3: School-Age Children per 100 Units

			Children per 100 units	Total Children	Total Units
Built Any Year	(1)	Market	20.4	6,561	32,200
	(2)	Affordable	62.9	1,238	1,968
Built Before 2000	(3)	Market	25.9	5,477	21,138
	(4)	Affordable	60.9	412	677
Built After 2000	(5)	Market	9.8	1,084	11,062
	(6)	Affordable	64.0	826	1,291

Key Takeaways
Household Size

Average Household Size

Geography	2012-2016 PUMS Data				
	Single-Family	**Multifamily Apartments** Renter-Occupied, 5+ Units in Structure			
	All	All	Studio/1 BR	2 BR	3 BR
DVRPC Region	2.90	1.74	1.33	2.30	3.28
Suburban PA	2.91	1.78	1.34	2.29	3.49
Suburban NJ	3.04	1.88	1.39	2.45	3.53
Philadelphia	2.76	1.59	1.29	2.14	2.82
Core Cities	2.84	1.61	1.28	2.21	2.94
Developed Communities	2.96	1.83	1.40	2.35	3.37
Growing Suburbs	2.90	1.79	1.30	2.30	3.72

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

Key Takeaways
Vehicle Ownership

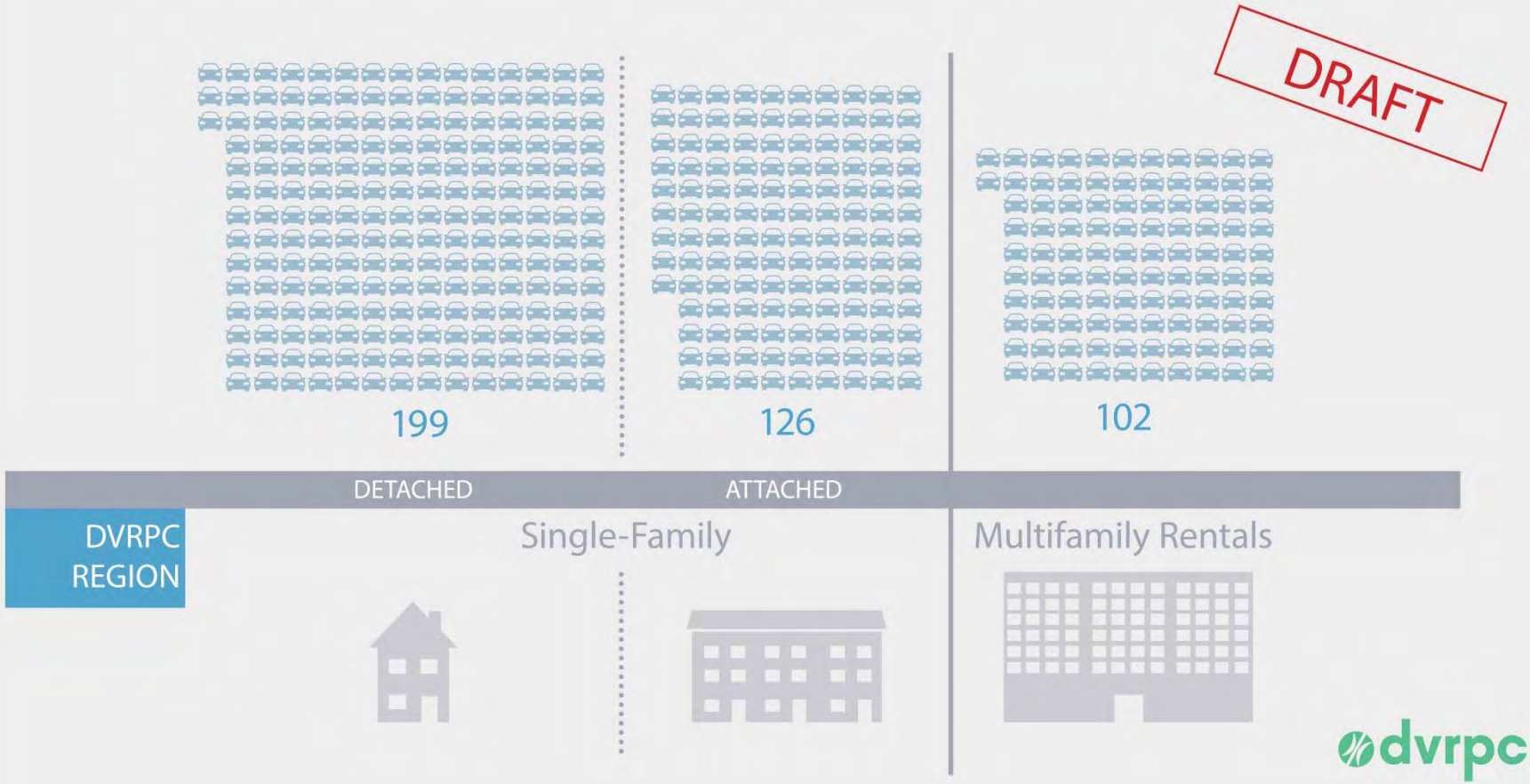
Vehicles Available per Household

Geography	2012-2016 PUMS Data				
	Single-Family	**Multifamily Apartments** Renter-Occupied, 5+ Units in Structure			
	All	All	Studio/1 BR	2 BR	3 BR
DVRPC Region	1.61	0.94	0.76	1.23	1.33
Suburban PA	1.87	1.11	0.90	1.39	1.61
Suburban NJ	1.81	1.02	0.85	1.24	1.48
Philadelphia	1.06	0.68	0.55	0.96	0.87
Core Cities	1.08	0.68	0.55	0.95	0.83
Developed Communities	1.84	1.10	0.90	1.34	1.72
Growing Suburbs	1.96	1.13	0.92	1.38	1.43

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

Key Takeaways
Vehicle Ownership

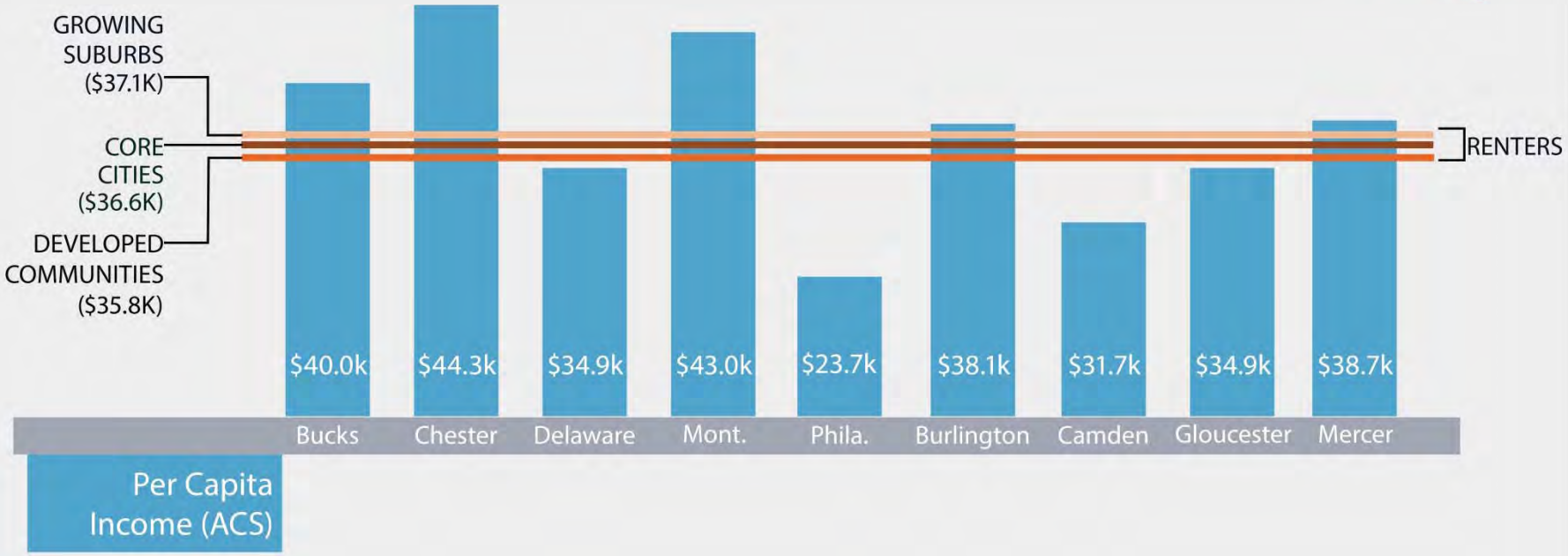
Estimation: Number of Vehicles per 100 Units of Housing



Key Takeaways
Focus on Income

Per Capita Income Comparison: Renters vs. Population At-Large

DRAFT



dvrpc

Project Approach

Measuring the impacts and benefits of development

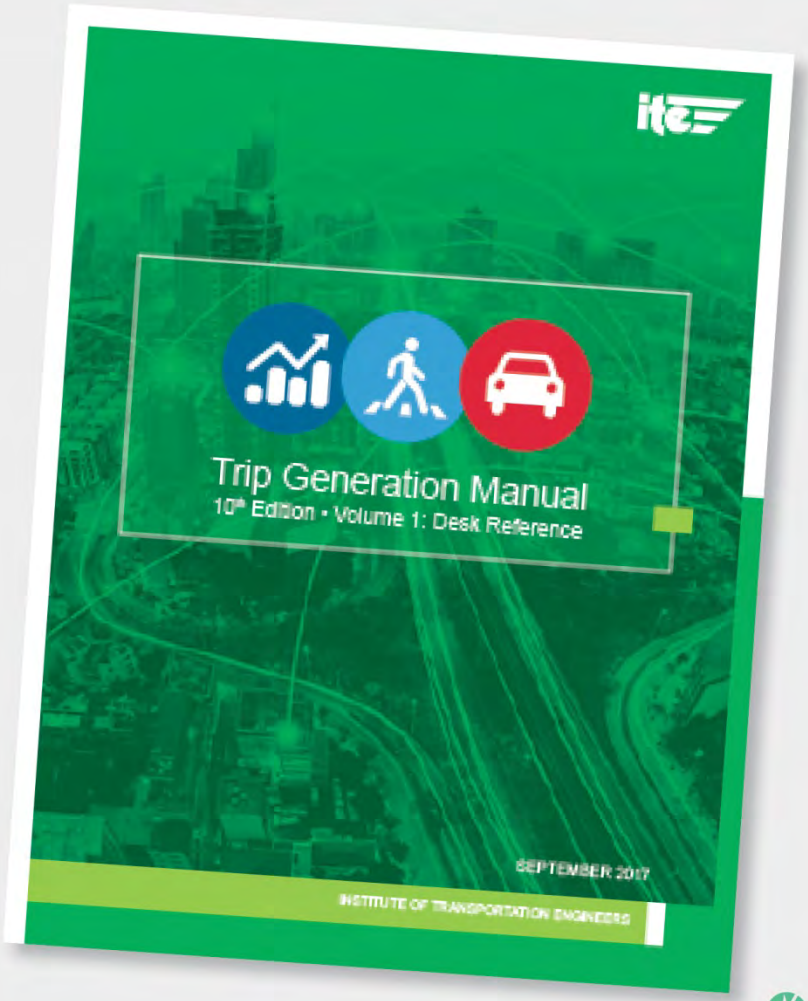
DEVELOPER INTERVIEWS

LITERATURE REVIEW

MARKET TRENDS

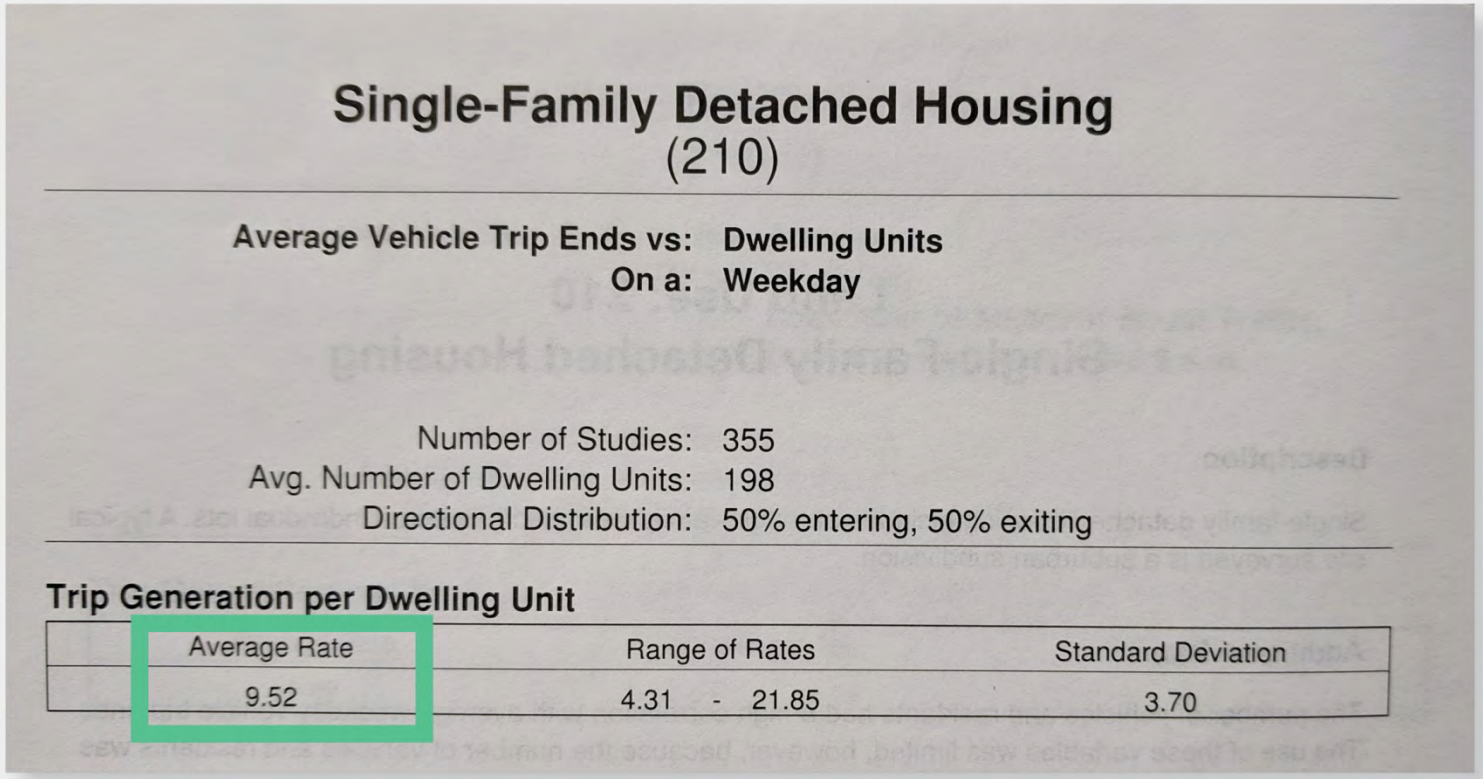
DEMOGRAPHIC MULTIPLIERS

TRAVEL OBSERVATIONS



dvrpc

Key Takeaways
Estimating traffic impacts



Single-Family Detached Housing
(210)

Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Number of Studies: 355
Avg. Number of Dwelling Units: 198
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.52	4.31 - 21.85	3.70

Key Takeaways
Estimating traffic impacts

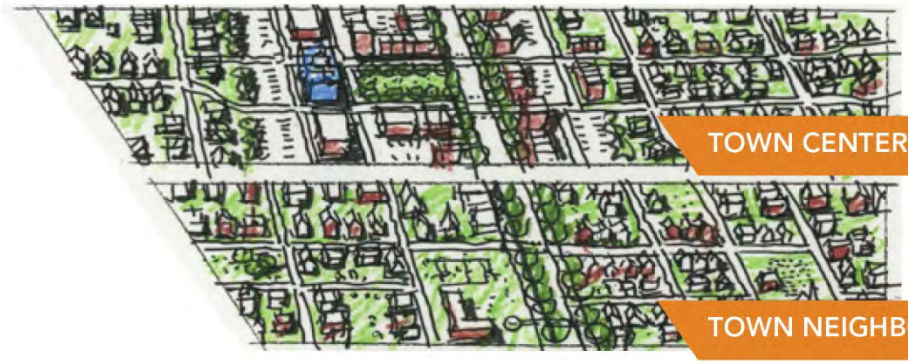
ITE TRIP GENERATION PER DWELLING UNIT: DAILY TRIP RATE
10th Edition, September 2017

SINGLE-FAMILY	MULTIFAMILY		
DETACHED	LOW-RISE *1-2 stories*	MID-RISE *3-10 stories*	HIGH-RISE *11+ stories*
9.54	**7.32**	**5.44**	**4.45**
Trips per day	Trips per day		

LAND USE & TRANSIT CONTEXT

SUBURBAN CENTER

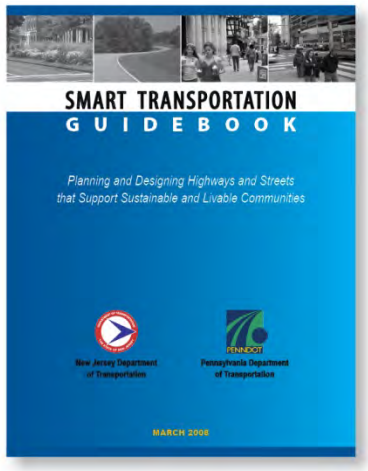
SUBURBAN NEIGHBORHOOD



TOWN CENTER

TOWN NEIGHBORHOOD

URBAN CENTER/NEIGHBORHOOD



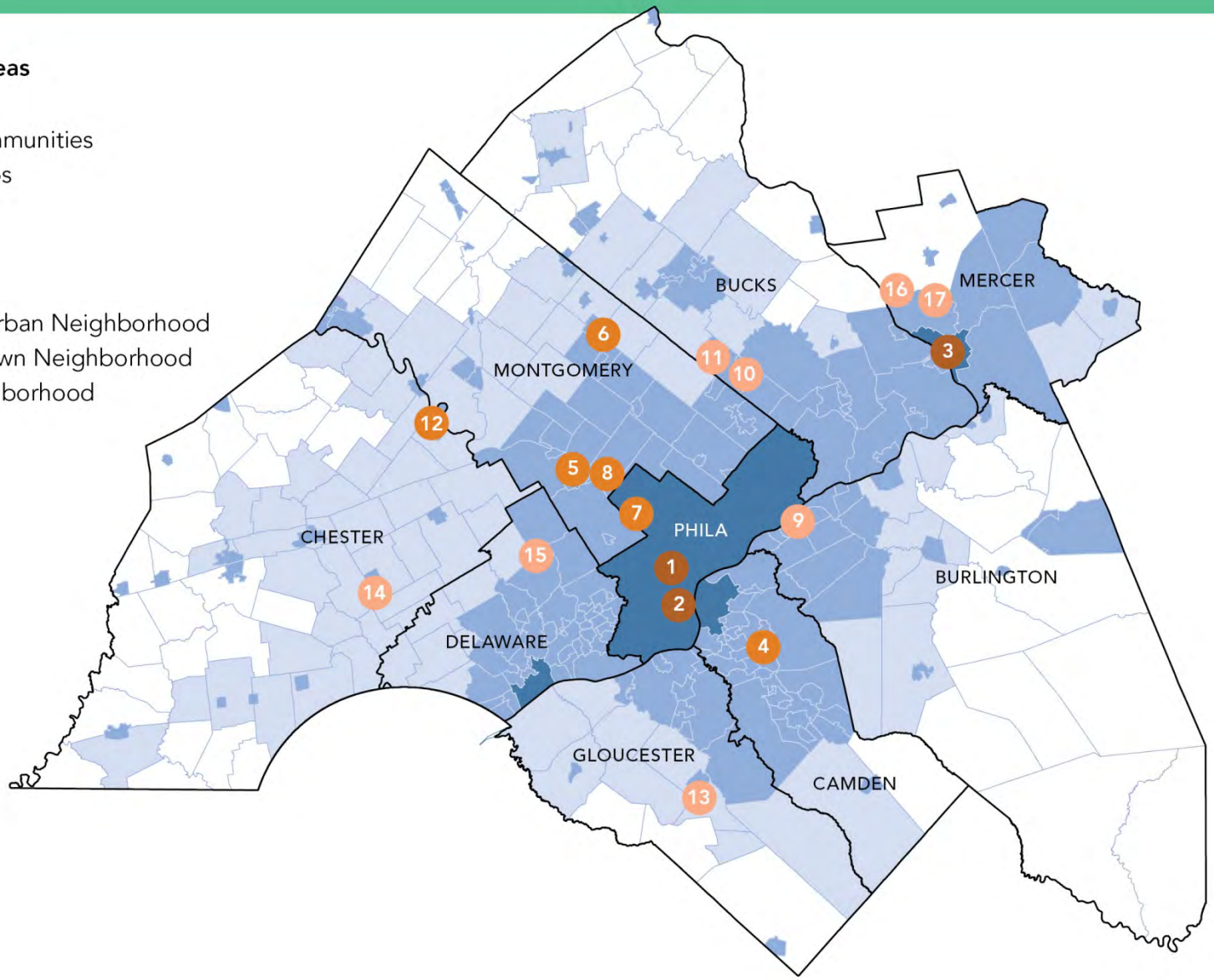
DEVELOPMENT CONTEXT

DVRPC Planning Areas

- Core Cities
- Developed Communities
- Growing Suburbs
- Rural Areas

Land Use Context*

- Urban Center/Urban Neighborhood
- Town Center/Town Neighborhood
- Suburban Neighborhood



* The land use contexts of each development site is based on classifications described in the *Smart Transportation Guidebook*. For more information, please visit: www.dvrpc.org/products/08030A.

dvrpc

Figure 1: Observed AM Peak Hour Vehicular Trips per Dwelling Unit

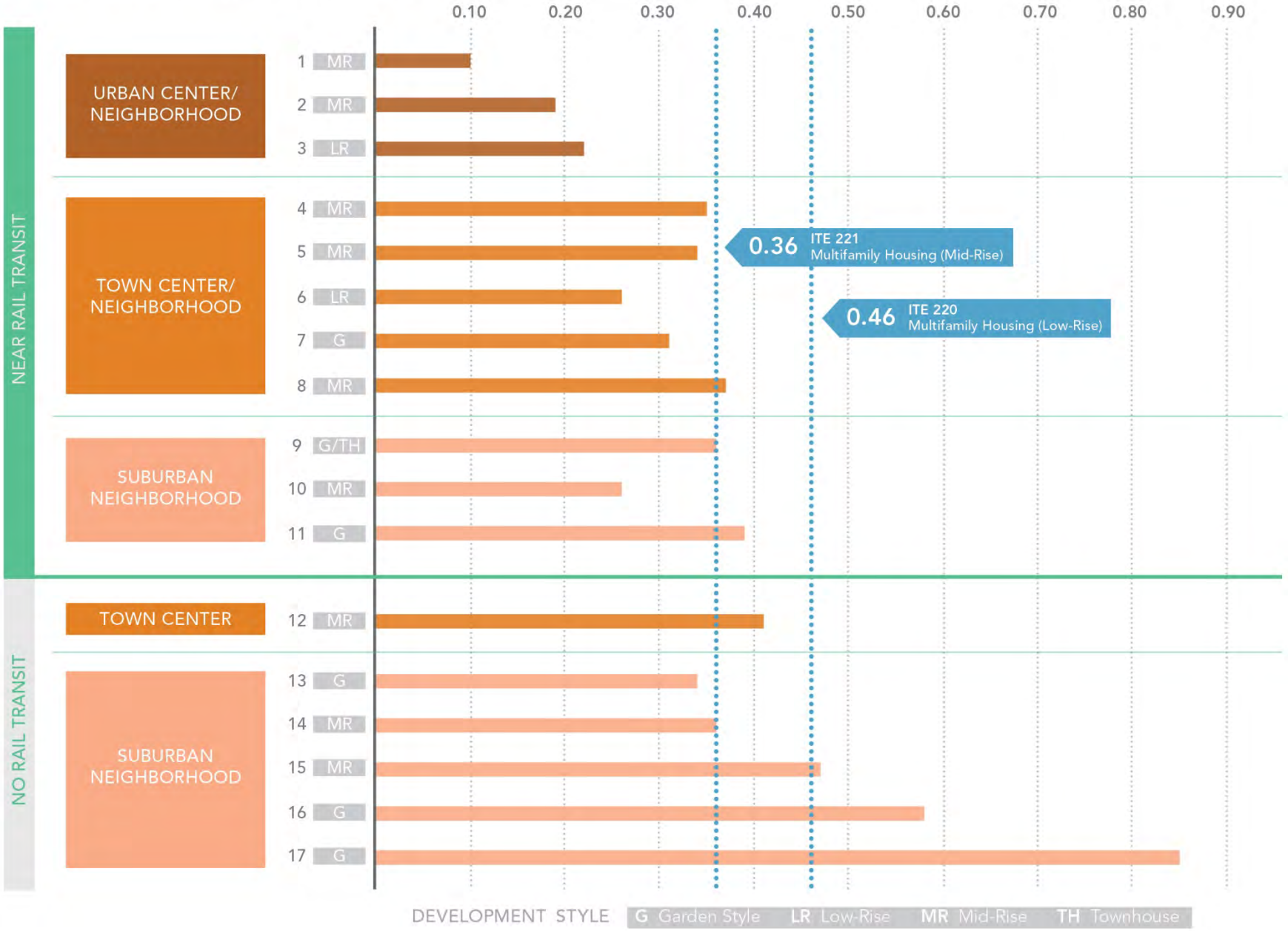
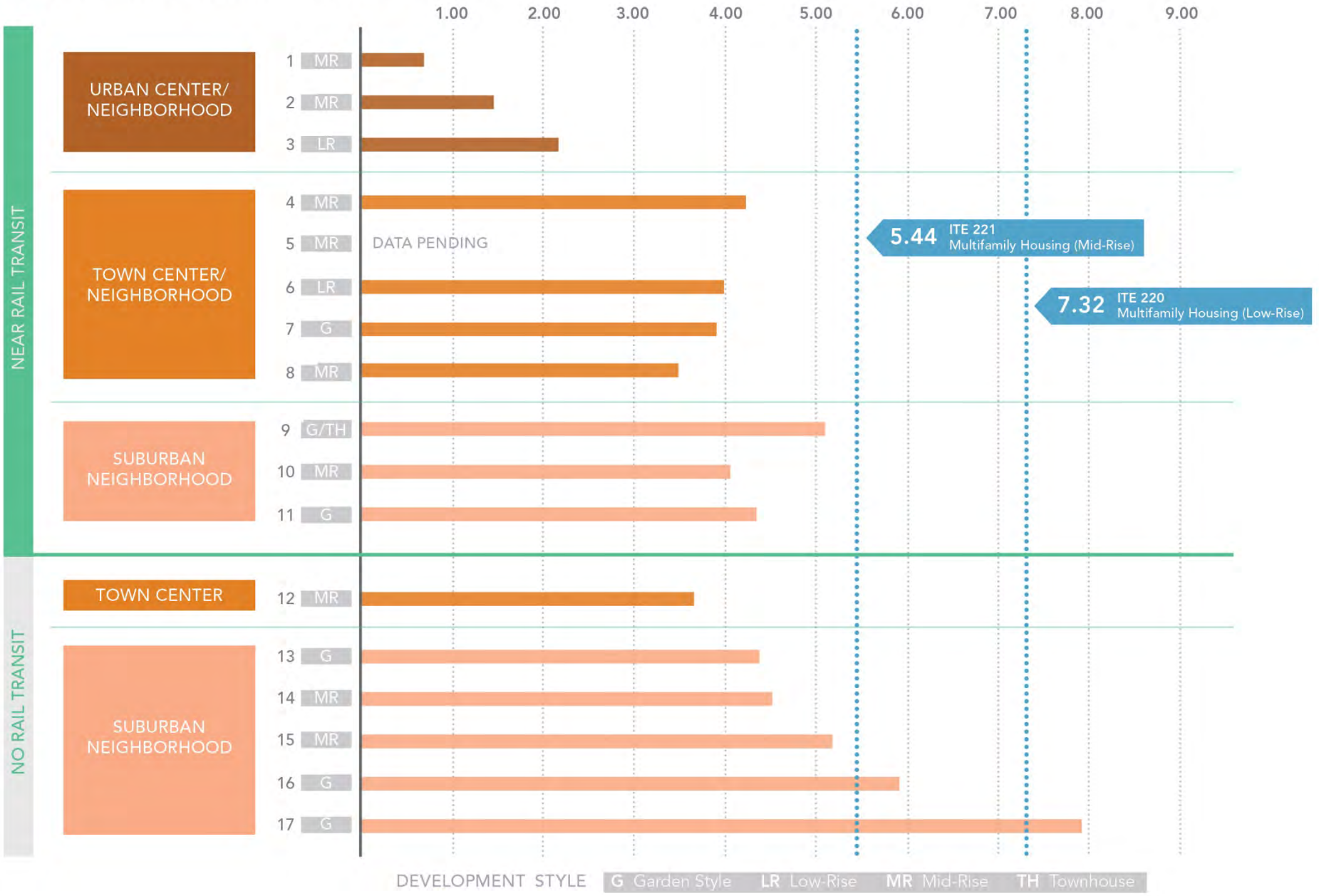


Figure 2: Observed Daily Vehicular Trips per Dwelling Unit



Community Impacts of
Multifamily Development

Next Steps

- Developing resources for stakeholders
- Engagement and outreach opportunities

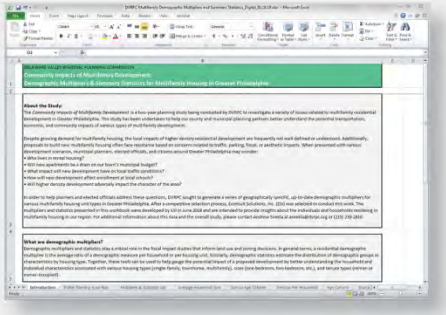
dvrpc

Community Impacts of
Multifamily Development

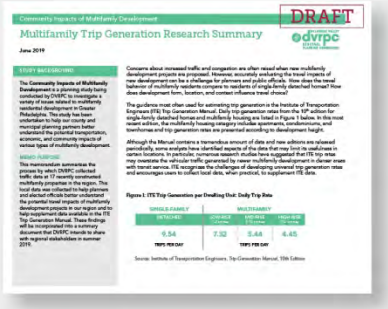
Stakeholder Resources

Literature Review

Multifamily Housing Research Summary



Demographic Multipliers & Statistics (Digital)



Trip Generation Research Summary

dvrpc

Presentation to **Chester County Housing Choices Committee** | July 11, 2019

Community Impacts of
Multifamily Development

dvrpc

Andrew Svekla
Associate Manager, Office of Smart Growth
asvekla@dvrpc.org
(215) 238-2815

Derek Lombardi
Planner, Office of Smart Growth
dlombardi@dvrpc.org
(215) 238-2827

ACS Public Use Microdata Sample (PUMS)

PUMS "Mover Sample" for High Density Housing

- Living in a structure with five or more units
- Moved into unit within four years prior to the survey

- ▶ Includes all ACS respondents living in newly built units, as well as those who recently moved into older units.

- ▶ Resovles sample size issue with results comparable to a "recently built unit" sample

Housing

Please answer the following questions about the house, apartment, or mobile home at the address on the mailing label.

1 Which best describes this building?
Include all apartments, flats, etc., even if vacant.

- ☐ A mobile home
- ☐ A one-family house detached from any other house
- ☐ A one-family house attached to one or more houses
- ☐ A building with 2 apartments
- ☐ A building with 3 or 4 apartments
- ☐ A building with 5 to 9 apartments
- ☐ A building with 10 to 19 apartments
- ☑ A building with 20 to 49 apartments
- ☐ A building with 50 or more apartments
- ☐ Boat, RV, van, etc.

2 About when was this building first built?

- ☐ 2000 or later – *Specify year* [ ]
- ☑ 1990 to 1999
- ☐ 1980 to 1989
- ☐ 1970 to 1979
- ☐ 1960 to 1969
- ☐ 1950 to 1959
- ☐ 1940 to 1949
- ☐ 1939 or earlier

3 When did PERSON 1 (listed on page 2) move into this house, apartment, or mobile home?

Month	Year
07	2014

Geographic Considerations

Public Use Microdata Areas (PUMAS)

- Nest within states and counties
- Contain at least 100,000 people
- Are geographically contiguous

Geographic Considerations

Public Use Microdata Areas (PUMAS)

- **DVRPC Region:** 41 PUMAS

- **Suburban Pennsylvania:** 18 PUMAS
  (four Pennsylvania counties, excluding Philadelphia)
- **Suburban New Jersey:** 10 PUMAS
  (four New Jersey Counties, excluding the cities of Camden and Trenton)
- **Philadelphia City/County:** 11 PUMAS

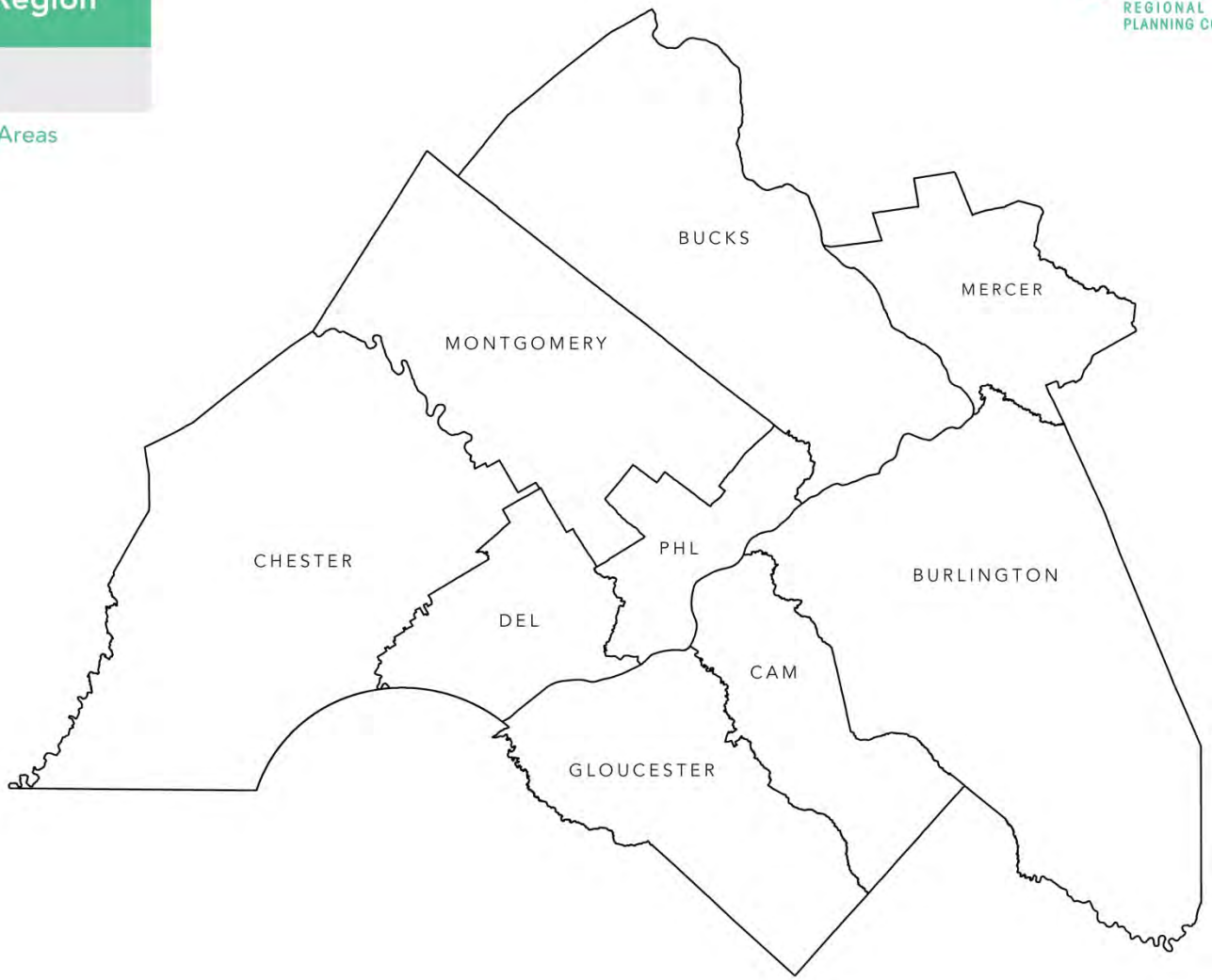
- **Core Cities:** 13 PUMAS
- **Developed Communities:** 18 PUMAS
- **Growing Suburbs:** 10 PUMAS

Development of Demographic Multipliers for the DVRPC Region

GEOGRAPHIC CONSIDERATIONS

PUMA Boundaries & DVRPC Planning Areas

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

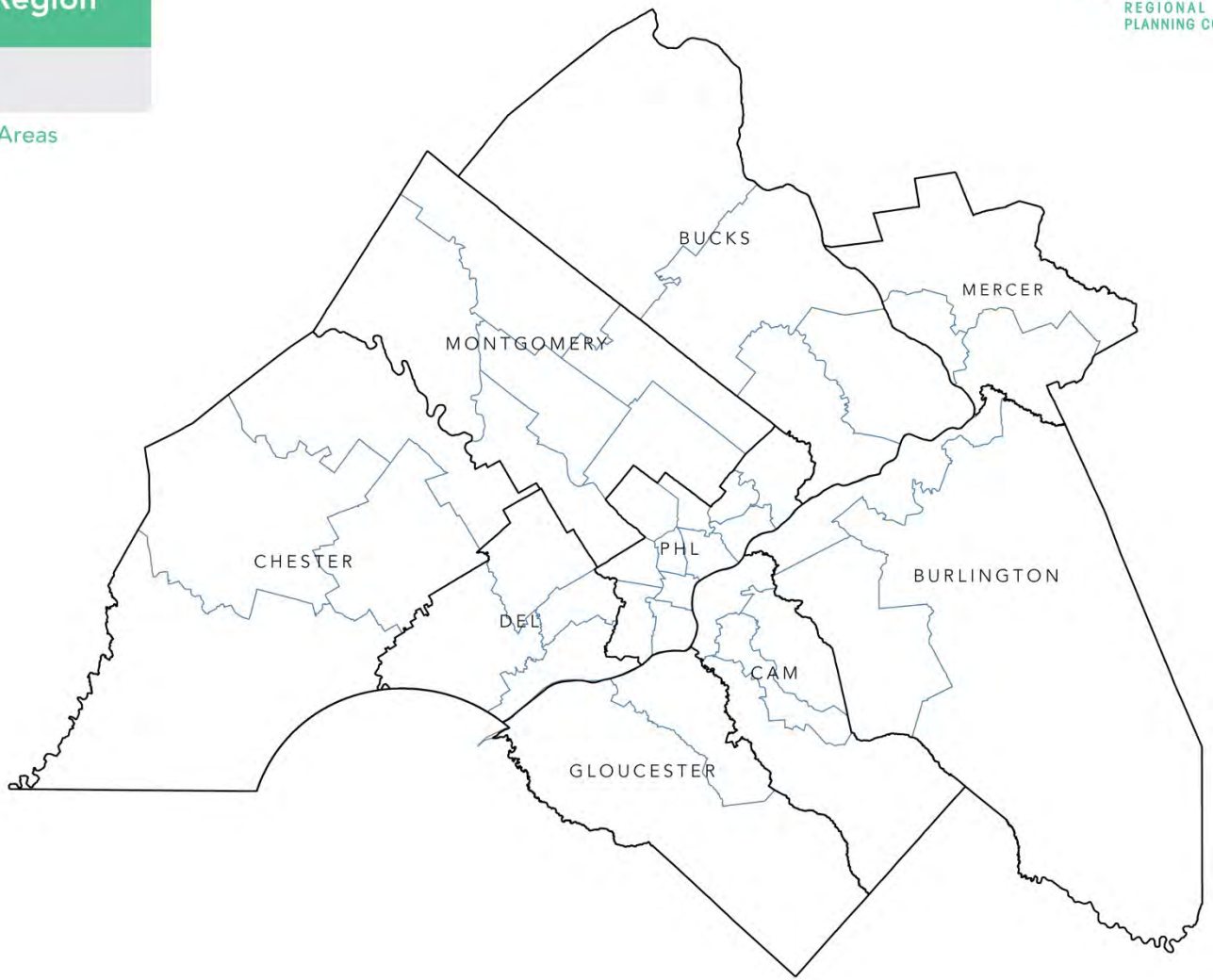


Development of Demographic Multipliers for the DVRPC Region

GEOGRAPHIC CONSIDERATIONS

PUMA Boundaries & DVRPC Planning Areas

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION



Development of Demographic Multipliers for the DVRPC Region

GEOGRAPHIC CONSIDERATIONS

PUMA Boundaries & DVRPC Planning Areas

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

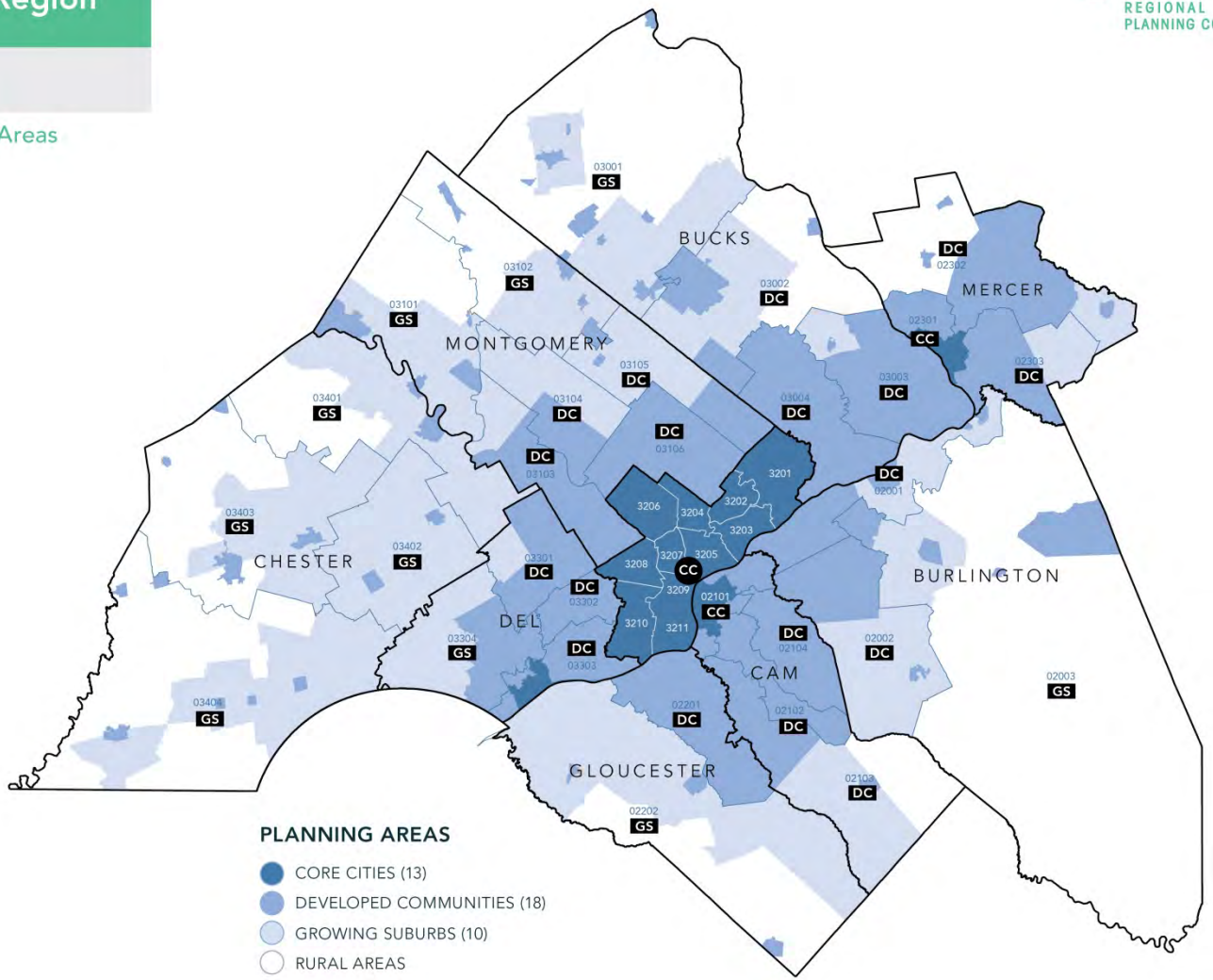


Table 1: Demographic Multipliers

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

DRAFT

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

DRAFT

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

DRAFT

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

DRAFT

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

DRAFT

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

DRAFT

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

DRAFT

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

DRAFT

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%

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

DRAFT

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

DRAFT

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

DRAFT