

Sean Greene  
DVRPC Board  
September 24, 2020

# CMAQ Performance Targets and Interim Performance Plan



# Background

## What is CMAQ?

- Federal program to fund projects that reduce congestion and improve air quality

## MAP-21 required US DOT to establish Transportation Performance Measures for the CMAQ program

- Known as PM3 regulation
  - Subpart G – Congestion Measures
  - Subpart H – On-Road Mobile Source Emissions

# Today's Presentation

- PM3 Requirements
- Performance Measures
- Interim Performance Plan
- Requested Action

# FHWA PM3 Rule Requires...

1. Establishment of 2-and 4-year Targets (Regions >1M people and in NAA)
  - Congestion Measures for UZA
  - CMAQ Emissions Reductions Measures for MPO region and state
2. Interim Performance Plan
  - Provides the opportunity to adjust targets
3. Performance reports from states due to FHWA by October 1, 2020

# What are the Congestions Measures?

Unified targets for entire UZA

## 1. Peak Hour Excessive Delay (PHED)

- Annual per capita delay on the NHS system
- Data extracted from RITIS Probe Data Analytics Suite

## 2. Percent Non-SOV travel

- U.S. Census 5-Year Estimates

# How Were the Targets Established?

## Discussion and Collaboration

- MPOs and DOTs in affected UZAs held a series of meetings in spring of 2018 and summer of 2020
- Targets established by consensus

# Congestion Targets and 2-Year Performance - PHED

<b>Baseline</b> <i>(annual hours per capita)</i>	<b>Two-Year Target Optional</b> <i>(annual hours per capita)</i>	<b>Two-Year Performance Measurement</b> <i>(annual hours per capita)</i>	<b>Four-Year Target</b> <i>(annual hours per capita)</i>
<b>Philadelphia UZA</b>			
16.8	17.0	14.6	17.2
<b>New York-Newark UZA</b>			
20.0	N/A	22.2	22.0

# Congestion Targets and 2-Year Performance – Percent Non-SOV Travel

Baseline	Two-Year Target	Two-Year Measurement	Four-Year Target
<b>Philadelphia UZA</b>			
27.9%	28.0%	28.2%	28.1%
<b>New York-Newark UZA</b>			
51.6%	51.6%	51.7%	51.7%



# Performance Results

Two-Year Performance surpassed or is meeting two- and four-year targets for Philadelphia and New York-Newark UZAs.

# Adjusting the Targets

- MPOs and state DOTs in each UZA reviewed performance measures and targets
- Have agreed to NOT ADJUST 4-year congestion targets
  - Data issues
  - Uncertainty of future travel patterns due to COVID-19 pandemic

# Emissions Performance Measure

## CMAQ Program Eligibility

- Projects must show emissions reductions
- DOTs report emissions benefits for authorized projects in annual report to FHWA
- Data is stored in FHWA CMAQ Public Access System (PAS)

# Emissions Reductions Requirements

## Targets

- DOTs must set statewide 2- and 4-Year Targets for emissions reductions from CMAQ funded projects
- MPOs must either develop targets or adopt state targets for MPO area
- DVRPC is adopting state developed targets

# How Were the Targets Established?

- **Discussion and Collaboration**
  - MPOs and DOTs collaborated on Emissions Measure for regional and statewide emissions targets and performance
  - Statewide targets incorporate MPO targets

# Results (DVRPC Performance Pennsylvania)

Pollutant	Emissions Reduction (Kg/day)		
	2018-2019 2-year Target	2-Year Performance	2020-2021 4-year Target
VOC Emissions	37.61	142.8	69.31
NO <sub>x</sub> Emissions	23.42	652.4	42.50
PM <sub>2.5</sub> Emissions	1.08	24.21	2.06
CO Emissions	282.74	NA	NA

# Results (DVRPC Performance New Jersey)

Pollutant	Emissions Reduction (Kg/day)		
	2018-2019 2-year Target	2-Year Performance	2020-2021 4-year Target
VOC Emissions	1.45	142.8	2.864
NO <sub>x</sub> Emissions	7.453	652.4	14.861
PM <sub>2.5</sub> Emissions	2.627	24.21	5.253
CO Emissions	N/A	NA	N/A

# Performance Results

- **Two-Year Performance surpassed two and four-year targets for PA and NJ**
  - Transit flex emissions benefits included in PAS for first time in 2018
  - TDM projects that were expected to be listed as “recurring” were counted in 2018
  - In NJ, Statewide projects contributed to regional goals



# Adjusting the Targets

- **Pennsylvania**

- DVRPC not adjusting regional targets but removing CO (no longer applicable)
- PennDOT adjusting statewide targets due to issues in other regions

- **New Jersey**

- NJDOT and MPOs agreed to not adjust targets

# Performance Plan

## Applicability and Requirements

- All measures
  - Two-year performance
    - Congestion measures for UZA (Philadelphia and NYC-Newark)
    - Mobile Source Emissions for MPO area separated by state
  - Adjusted Targets
- Emissions measures
  - List projects contributing to performance
  - Identify projects that have changed, been added, or deleted
  - Identify projects that support 4-year targets
  - Narrative description of programmed projects and benefits

# Action Proposed

That the DVRPC Board adopt the Subpart H mobile-source emissions performance targets established by PennDOT and NJDOT in 2020 and approves DVRPC to submit the CMAQ Interim Performance Plan for 2018-2019 to the state DOTs for submission to FHWA.

# Thank You!



Questions?

Sean Greene | [sgreene@dvrpc.org](mailto:sgreene@dvrpc.org)

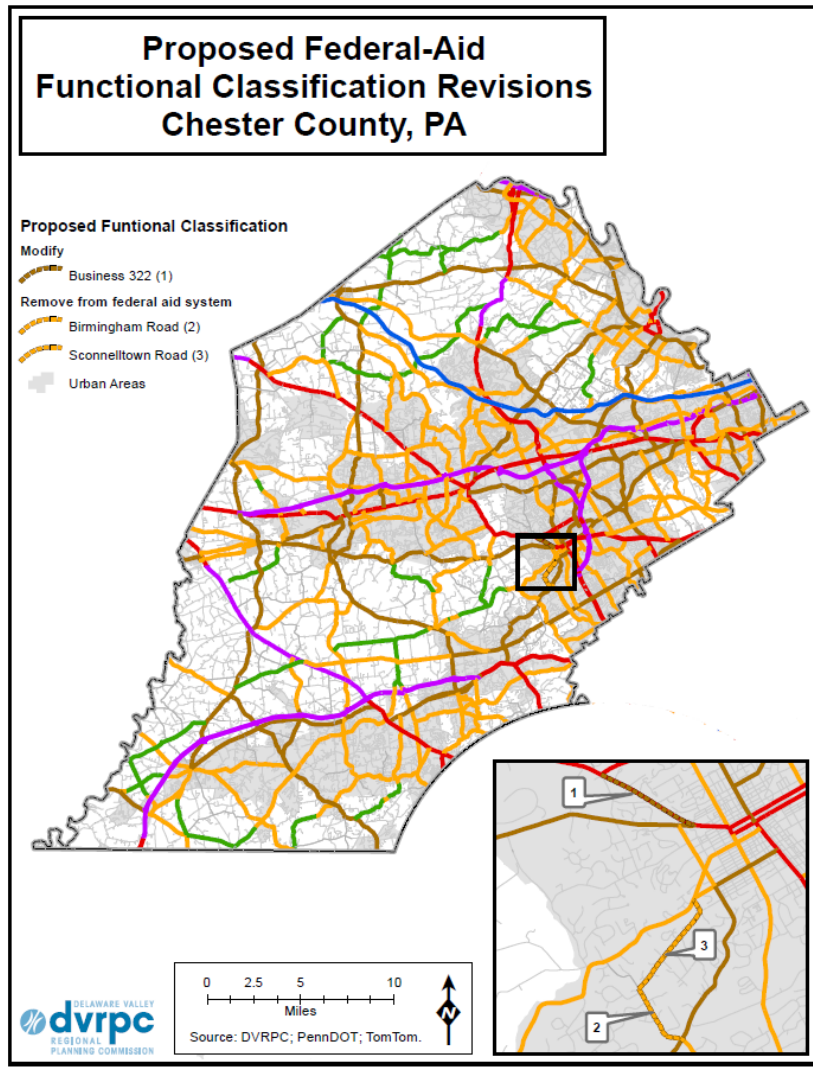


# FEDERAL FUNCTIONAL CLASS SYSTEM CHANGES

East Bradford Twp, Chester County

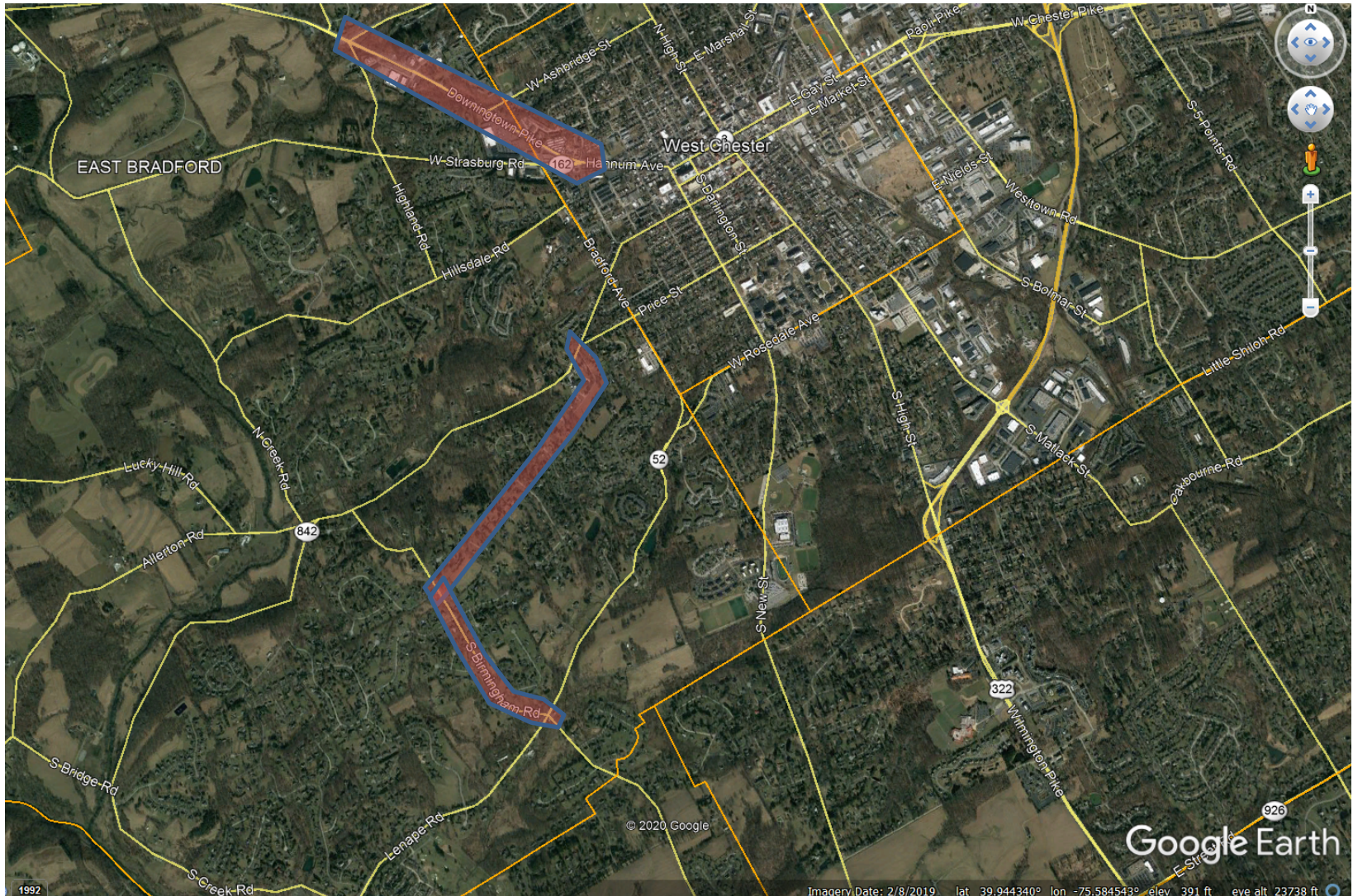
September 24, 2020  
Board Meeting

Brad Lane



- 1. Business 322 from US 322 Bypass to PA 162
- 2. Birmingham Road from PA 52 to Sconnelltown Road
- 3. Sconnelltown Road from Birmingham Road to PA 842

# East Bradford Township



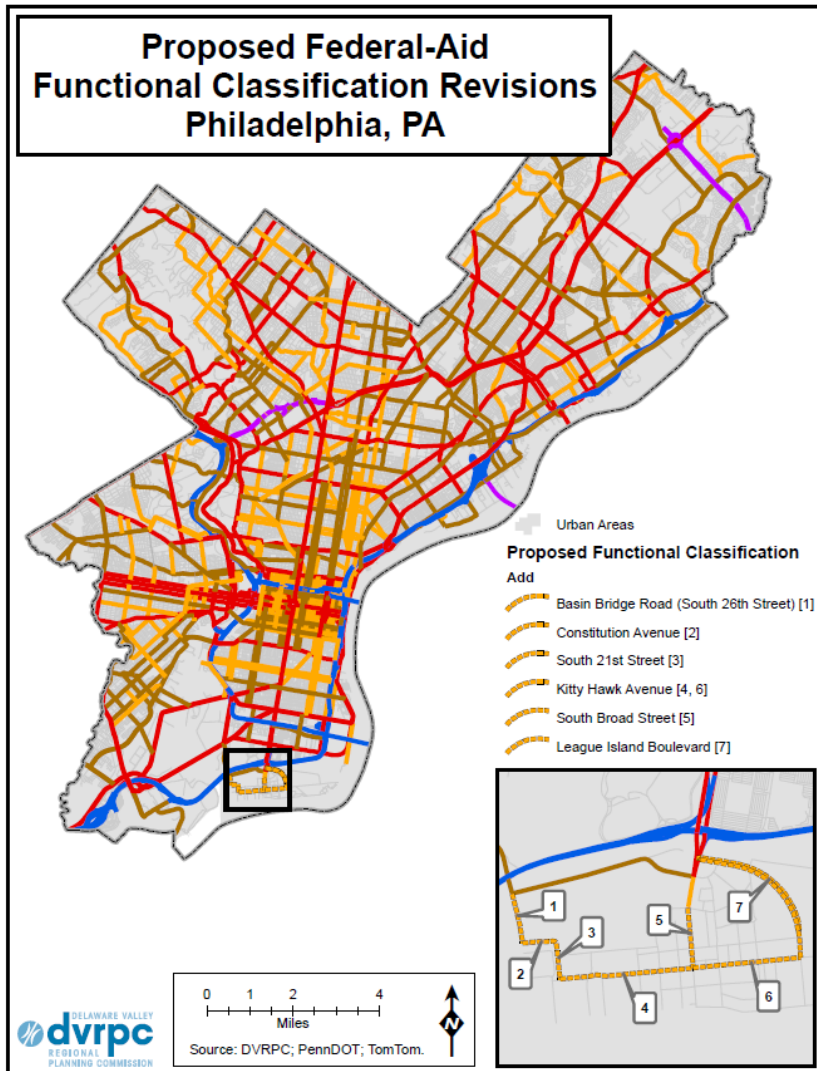
# Federal Functional Classification Changes

- Change from Other Principal Arterial (FC 3) to Minor Arterial (FC 4)
  - Business 322 (SR 3072) Segments 0010-0012 (1.00 miles)
- Change from Major Collector (FC 5) to Local Road (FC 7) and remove from Federal-Aid System
  - Birmingham Road (SR 2001) Segment 0070 (0.70 miles)
  - Sconnelltown Road (SR G106) Segments 0010-0020 (1.10 Miles)



# Action Requested

- That the Board approve the Federal Functional Classification changes in East Bradford Township, Chester County



- 1. Basin Bridge Road
- 2. Constitution Avenue
- 3. South 21<sup>st</sup>
- 4. Kitty Hawk Avenue
- 5. South Broad Street
- 6. Kitty Hawk Avenue
- 7. League Island Boulevard

# Navy Yard



# Federal Functional Classification Changes

- Change from Local Road (FC 7) to Minor Arterial (FC 4)
  - South Broad St from Intrepid Ave to Kitty Hawk Ave (0.20 miles)
  - League Island Blvd from Kitty Hawk Ave to S. Broad St (0.70 miles)
- Change from Local Road (FC 7) to Major Collector (FC 5)
  - Basin Bridge Rd (S. 26<sup>th</sup> St) from Langley Ave to Constitution Ave (0.20 miles)
  - Constitution Ave from Basin Bridge Rd to S. 21<sup>st</sup> St (0.20 miles)
  - S. 21<sup>st</sup> St from Constitution Ave to Kitty Hawk Ave (0.10 miles)
  - Kitty Hawk Ave from S. 21<sup>st</sup> St to S. Broad St (0.60 miles)
  - Kitty Hawk Ave from S. Broad St to League Island Blvd (0.70 miles)

# Action Requested

- That the Board approve the Federal Functional Class changes in Philadelphia County's Navy Yard

DVRPC BOARD MEETING | SEPTEMBER 24, 2020

COMMUNITY IMPACTS OF

# MULTIFAMILY DEVELOPMENT



**Office of Smart Growth**

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Andrew Svekla, Associate Manager

Derek Lombardi, Planner



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.

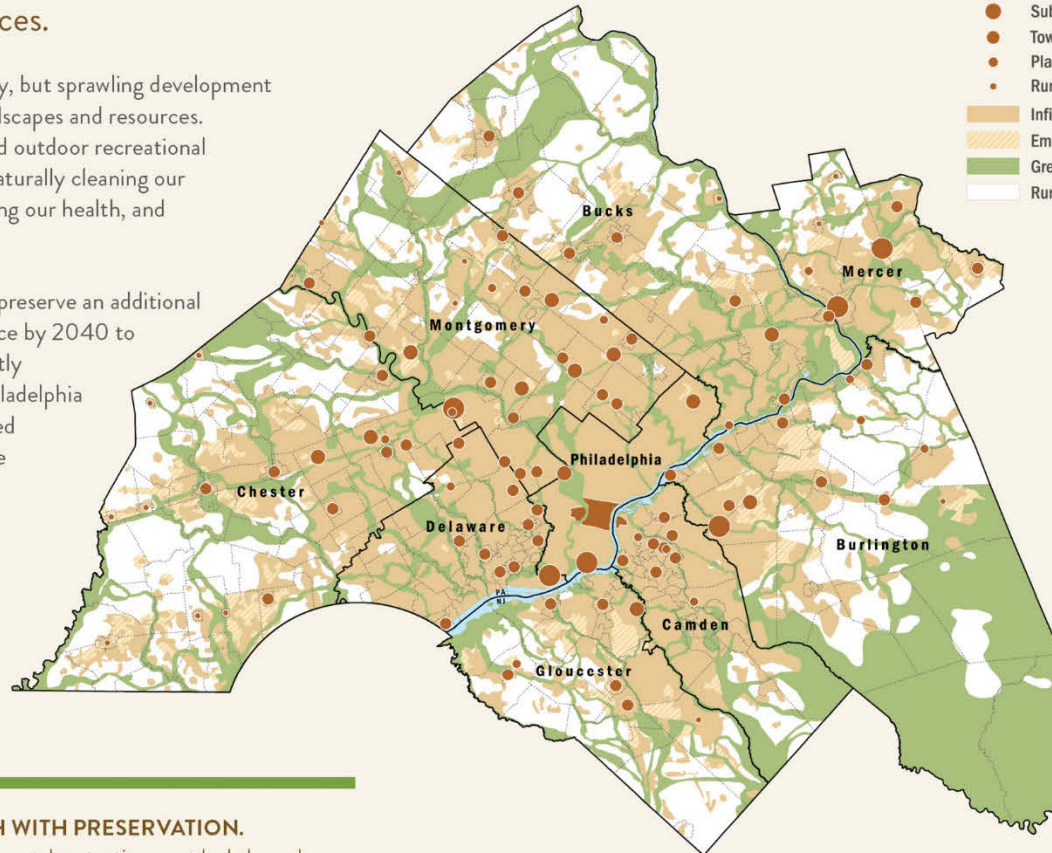
# Why does DVRPC care about multifamily housing?

## 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.



### 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 do our **planning partners** care about multifamily housing?



# 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



**CONSTRUCTION  
PROJECT**

## Project Approach **Measuring the impacts and benefits of development**

- 1 Interviewing **local developers**
- 2 Documenting **housing and real estate trends**
- 3 Reviewing academic and professional **housing literature**
- 4 Generating localized **demographic multipliers and statistics**
- 5 Observing **trip generation patterns** for local apartment buildings



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## Community Impacts of Multifamily Development

The demand for multifamily housing has surged in recent years. While planners often tout the virtues of higher density development as part of a smart growth approach to land use and development, proposals to build new apartments are frequently met with opposition based on concerns about local traffic, municipal finances, and community character.

When it comes to new multifamily development, municipal planners, elected officials, and citizens may want to know:

Who will live in this property?

Will new apartments be a drain on our town's municipal budget?

What impact will this development have on local traffic conditions?

How will this development affect enrollment at local schools?

How will new higher density development impact the character of the neighborhood?



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## Community Impacts of Multifamily Development

### Project Resources

[Multifamily Housing Impact Literature Review \[0.3 MB pdf\]](#)

[Multifamily Housing Research Summary \[3.2 MB pdf\]](#)

[Demographic Multipliers and Summary Statistics for Residents of Multifamily Housing \(Digital Product\) \[1 MB xlsx\]](#)

[Methodology of Demographic Multipliers for the DVRPC Region \[0.5 MB pdf\]](#)

[Multifamily Trip Generation Research Summary \[1.1 MB pdf\]](#)


[Local Trip Generation Adjustments for Transit-Oriented Development \(TOD\)](#)

# The Philadelphia Inquirer


NEWS SPORTS BUSINESS OPINION POLITICS ENTERTAINMENT LIFE FOOD HEALTH REAL ESTATE OBITUARIES JOBS


## Luxury apartments finished near Lansdale SEPTA station; stores and restaurants coming

by [Katie Park](#), Updated: January 16, 2020

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## The New York Times

The Coronavirus Outbreak >

LIVE

Latest Updates

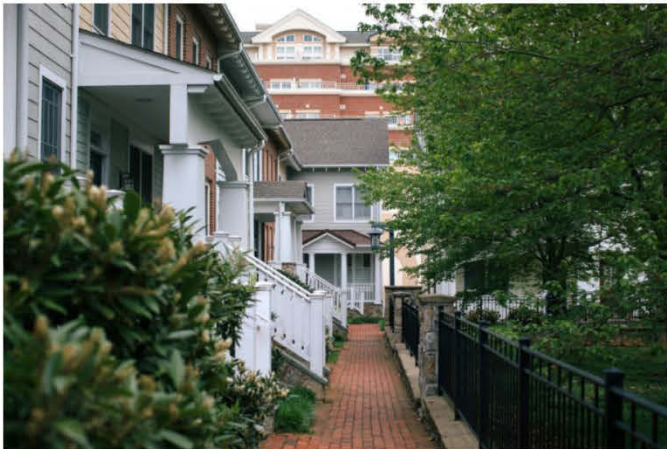
Maps and Cases

Vaccine Tracker

Limited Value of Fever Checks

# *Coronavirus Crisis Threatens Push for Denser Housing*

Transit-oriented developments were seen as a solution to severe housing shortages, but experts say developers need to rethink the design for a post-pandemic world.



Chardon Park, a high-density development in Arlington, Va., is about three blocks from a Washington Metro station. Alyssa Schuler for The New York Times

# Development Matters

Understanding the Opportunities and Implications of **Multifamily Development**

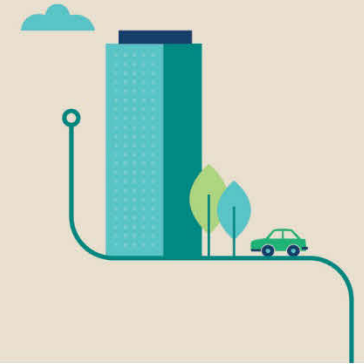




Key Finding 1

**The construction of multifamily housing in Greater Philadelphia has surged in recent years**

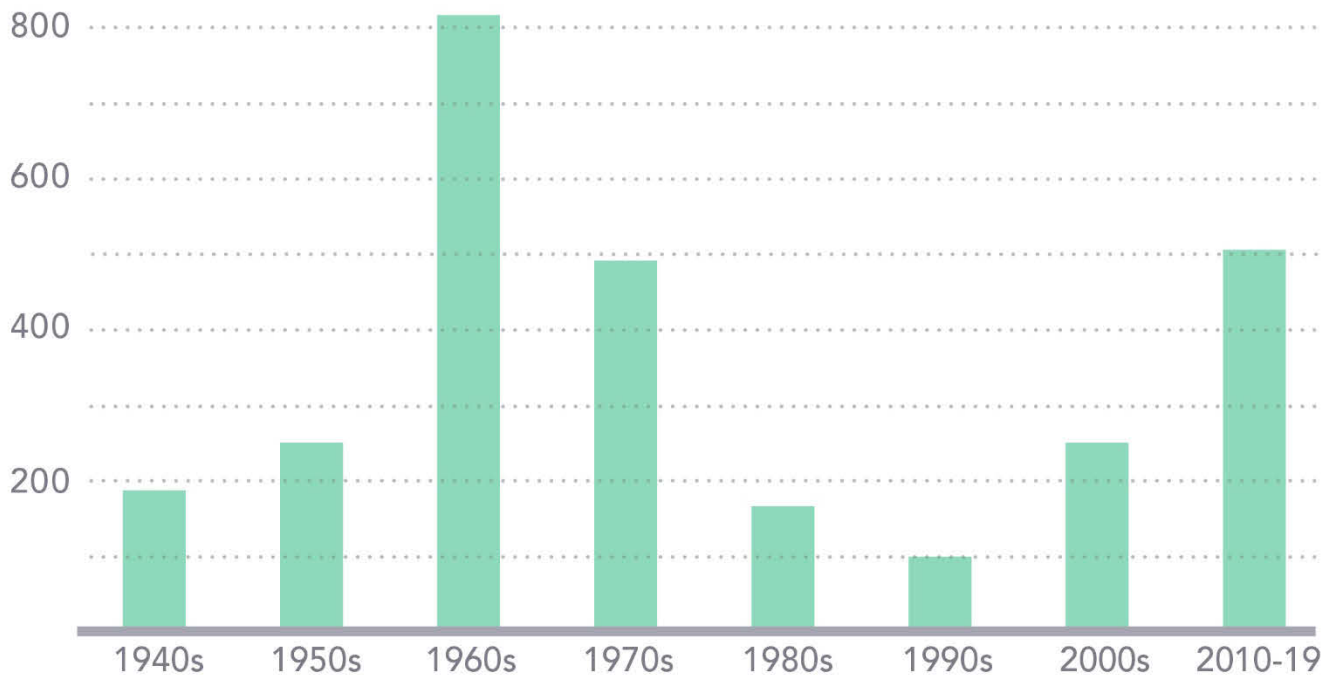




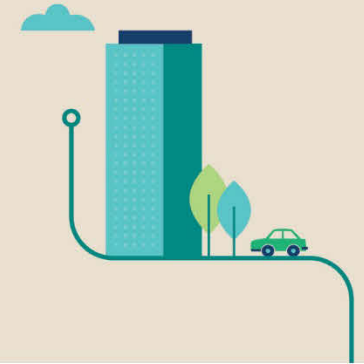
Key Finding 1

# The construction of multifamily housing in Greater Philadelphia has surged in recent years

Figure 2: Multifamily Rental Developments Constructed by Decade in Greater Philadelphia



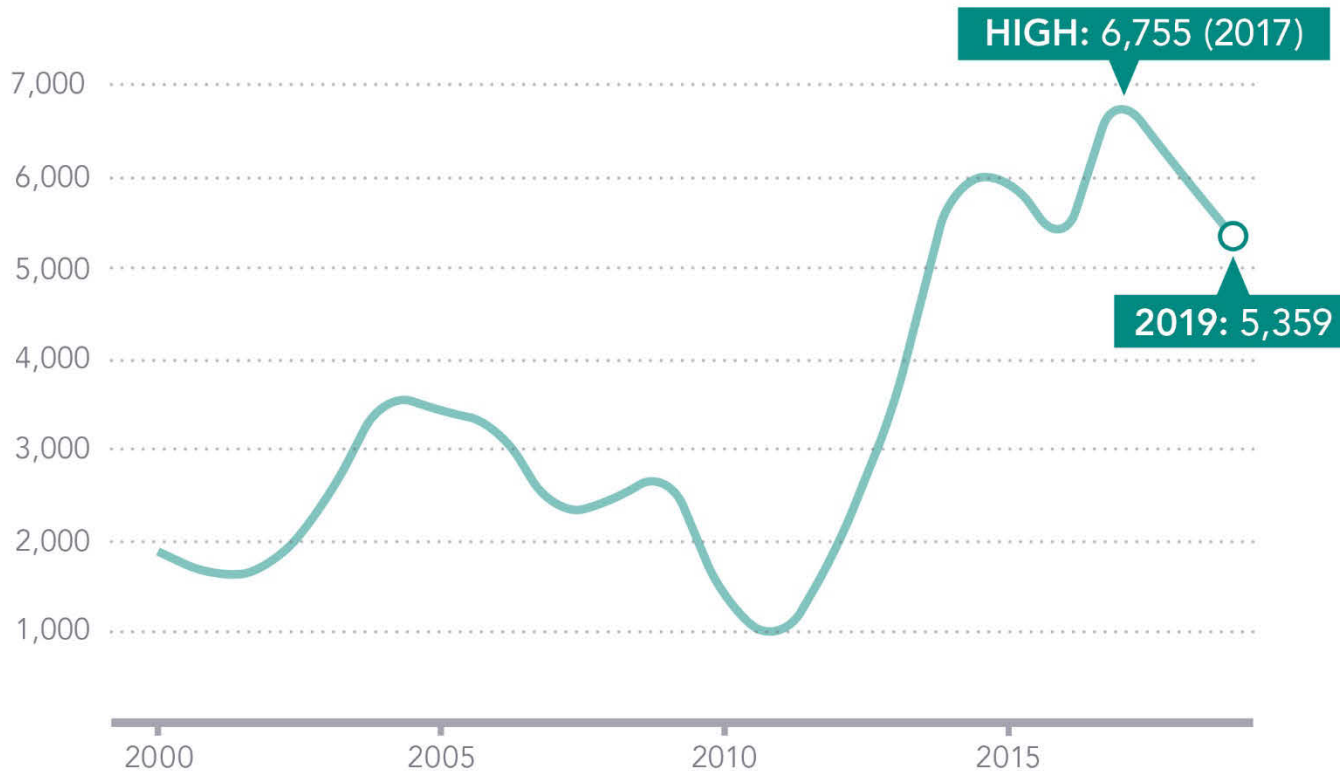
Source: CoStar Realty Information, Inc.



Key Finding 1

# The construction of multifamily housing in Greater Philadelphia has surged in recent years

Figure 3: Multifamily Rental Units Constructed in Greater Philadelphia (2000 to 2019)

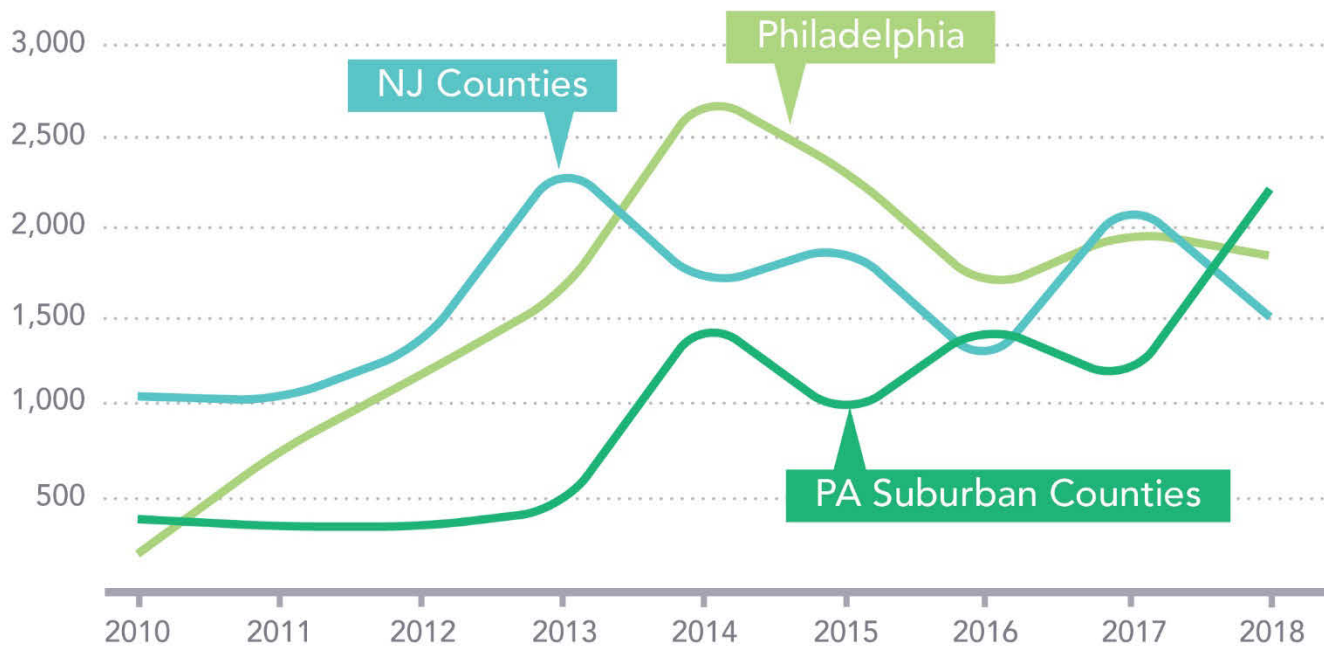


Key Finding 2

# The multifamily construction boom has reached the suburbs



Figure 4: Building Permits Issued for Structures with Five or More Units (2010–2018)





Key Finding 4

# The apartments being constructed today differ from their predecessors in some important ways

Figure 7: Number of Developments Completed by Style and Decade

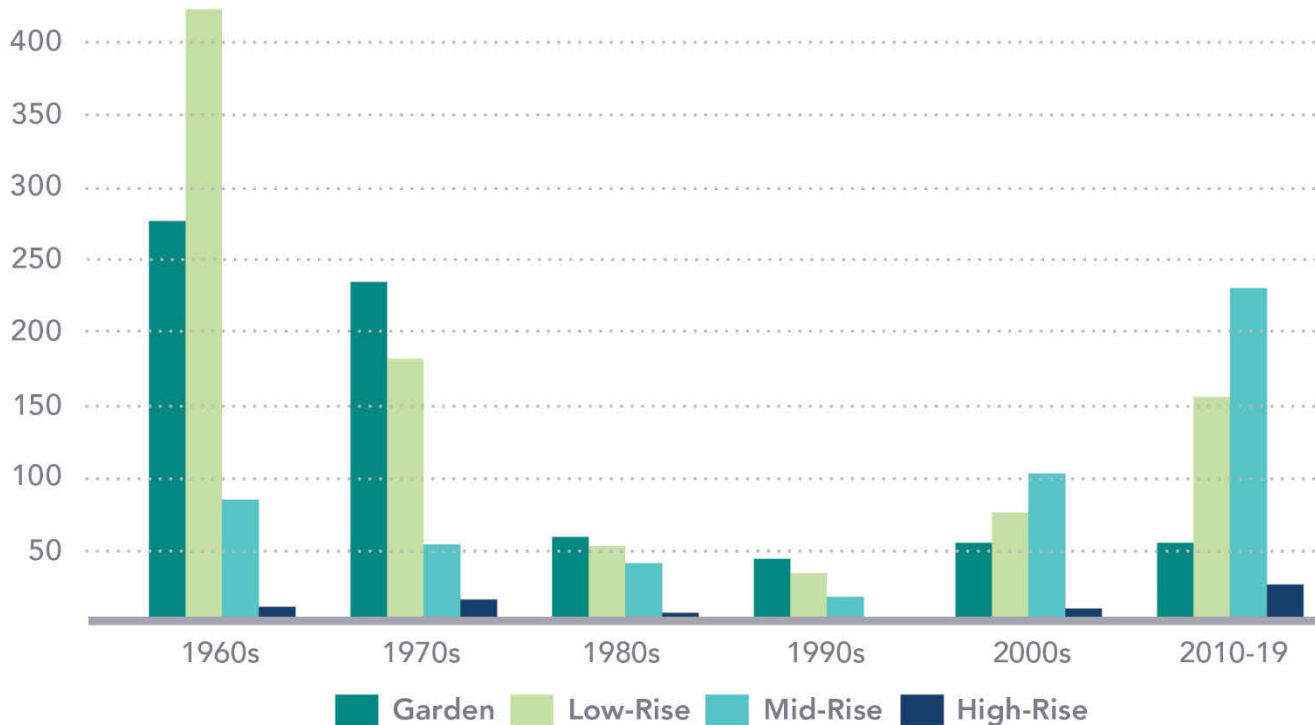


Figure 7: Number of Developments Completed by Style and Decade 2010–2019

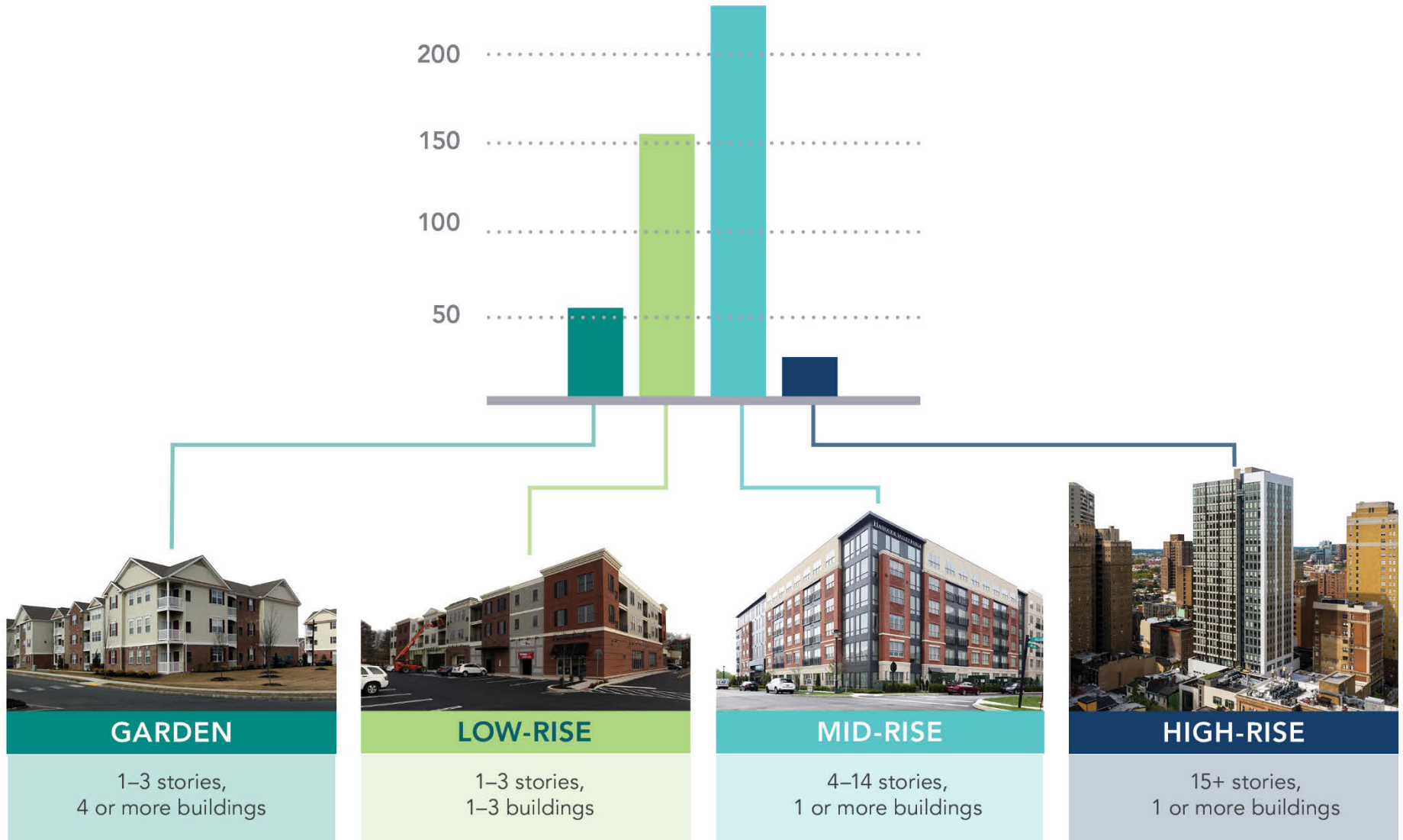
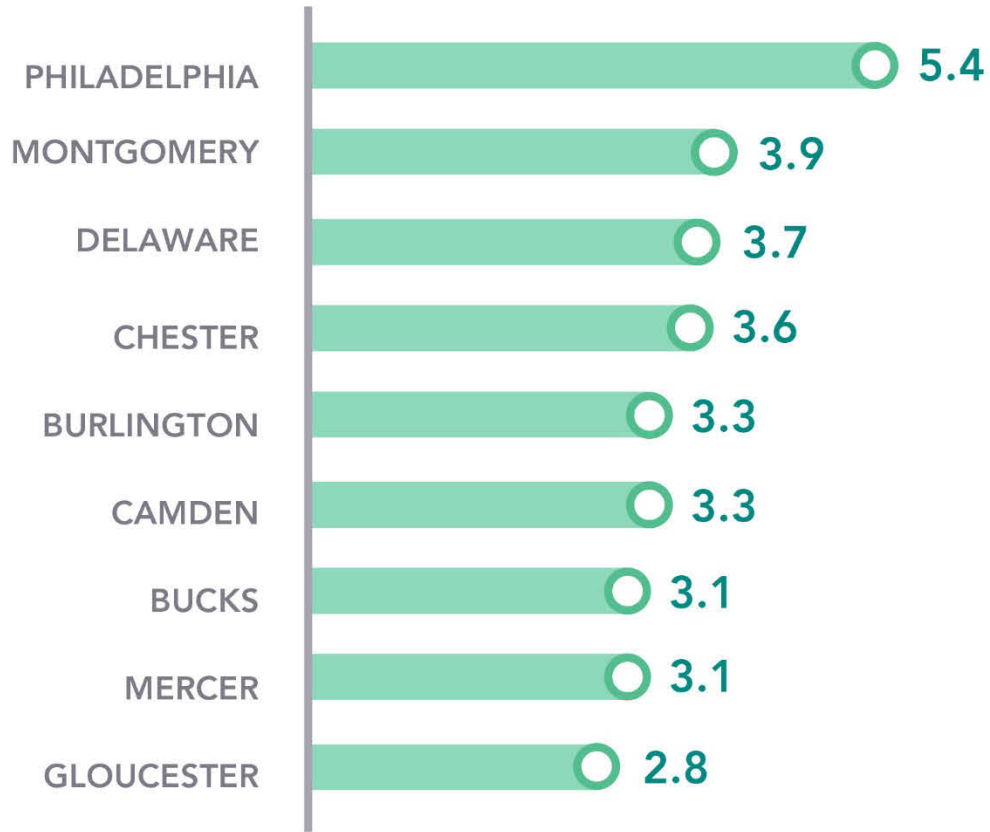


Figure 9: Average Height of New Apartment Developments by County 2000–2019



Source: CoStar Realty Information, Inc.

Key Finding 5

# Multifamily households are smaller and generate fewer school-age children than those of other housing types

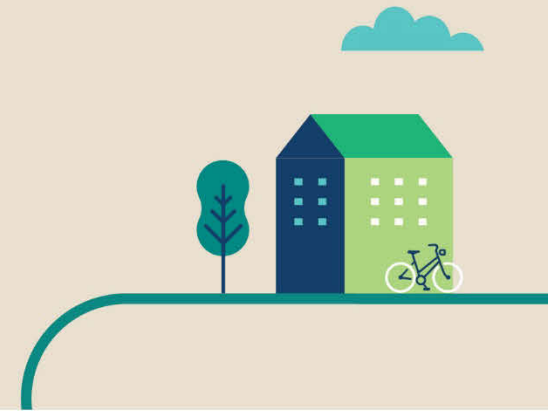
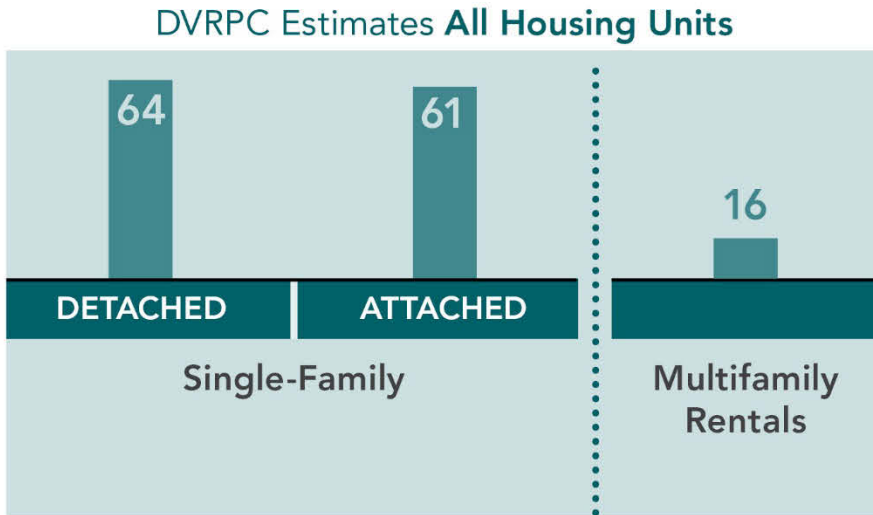


Figure 10: Estimates of the Number of School-Age-Children Generated by 100 Units of Housing



Source: DVRPC, ESI

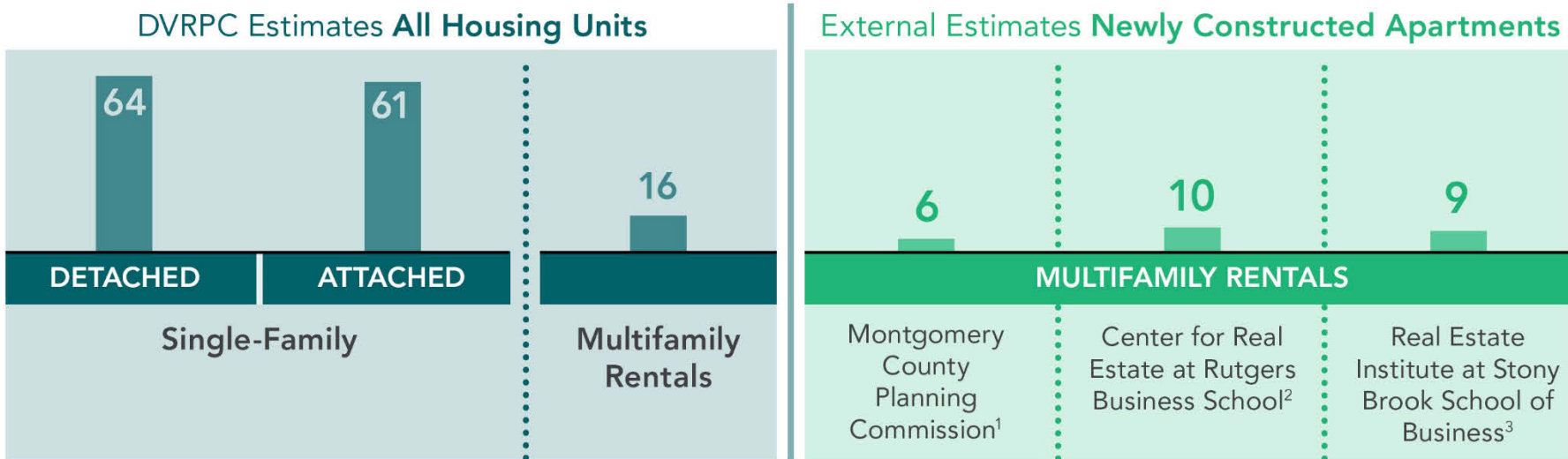


Key Finding 5

# Multifamily households are smaller and generate fewer school-age children than those of other housing types



Figure 10: Estimates of the Number of School-Age-Children Generated by 100 Units of Housing



Source: DVRPC, ESI

Key Finding 6

# Multifamily residents travel less and own fewer cars than their single-family peers



Figure 11: Daily Vehicle Trip Generation Rates per Dwelling Unit

ITE TRIP GENERATION DATA			
SINGLE-FAMILY DETACHED	LOW-RISE 1–2 stories	MULTIFAMILY* MID-RISE 3–10 stories	HIGH-RISE 11+ stories
9.54	7.32	5.44	4.45
TRIPS PER DAY			

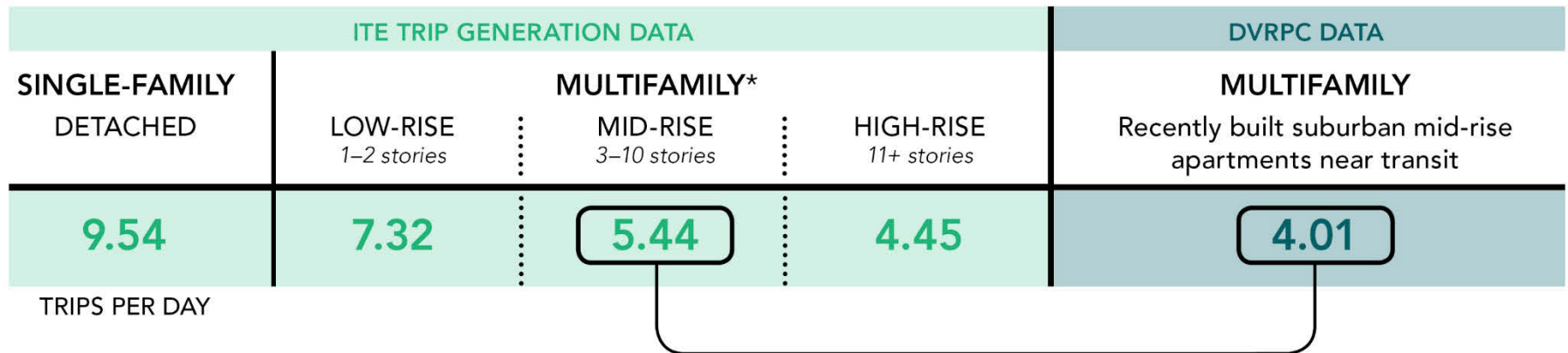
Sources: Institute of Transportation Engineers, *Trip Generation Manual*, 10th Edition; DVRPC

Key Finding 6

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Figure 11: Daily Vehicle Trip Generation Rates per Dwelling Unit



Sources: Institute of Transportation Engineers, *Trip Generation Manual*, 10th Edition; DVRPC

COMMUNITY IMPACTS OF

# MULTIFAMILY DEVELOPMENT

**Development matters.** Planning for growth and prosperity requires honest conversations about the types of communities we should be building.

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COMMUNITY IMPACTS OF

# MULTIFAMILY DEVELOPMENT



[www.dvrpc.org/SmartGrowth/Multifamily](http://www.dvrpc.org/SmartGrowth/Multifamily)

Andrew Svekla, AICP  
asvekla@dvrpc.org



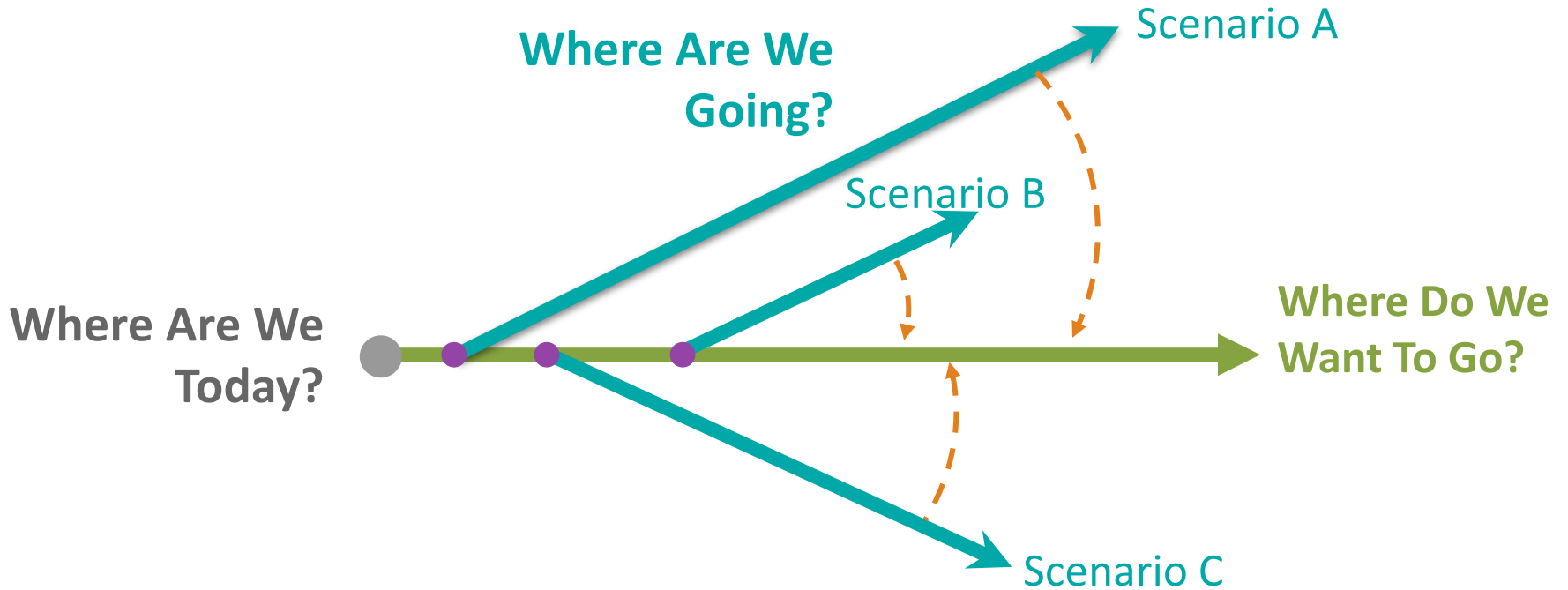
# Dispatches from Alternate Futures: Exploratory Scenarios for Greater Philadelphia

Jackie Davis

*September 2020 Board Meeting*

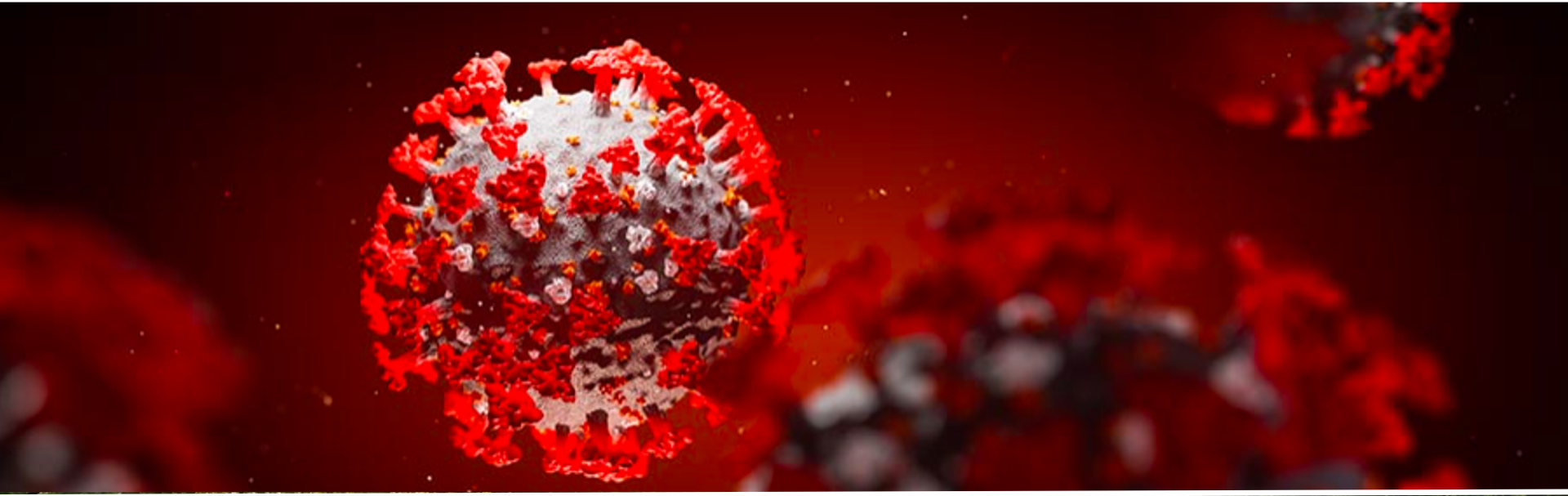


# Scenarios and Long-Range Planning





# Current Tipping Points





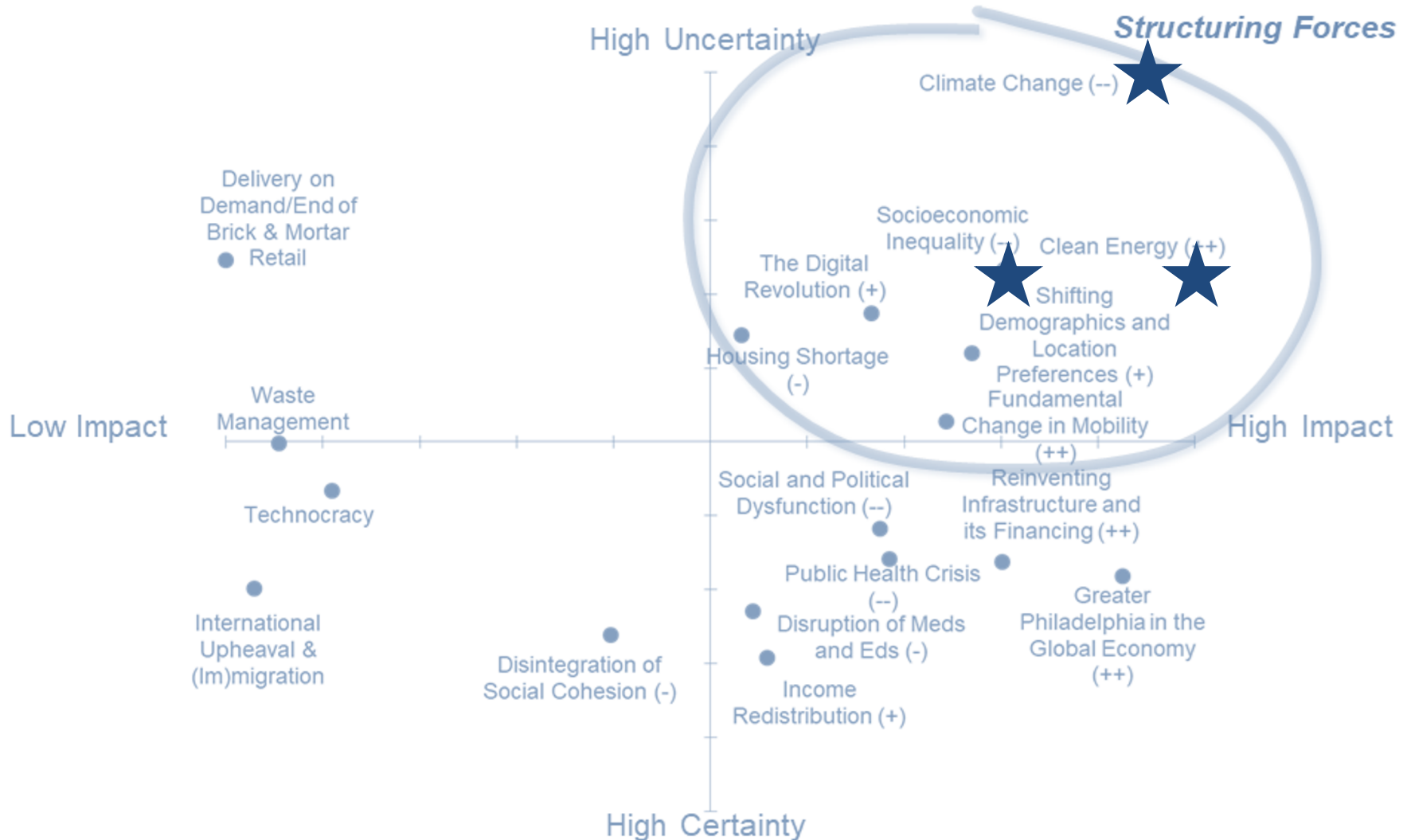


# Futures Working Group

“Characterize and test uncertainty from societal, technological, economic, environmental, and political trends and forces in Greater Philadelphia between the present and 2050, which may: pose new opportunities and risks; affect predictability in regional demographics, economy, land use, infrastructure, and travel patterns; and impact the region’s ability to achieve its vision.”



# Forces Affecting the Region





# Axes of Uncertainty

## Technology

Incremental Change

Transformative Change

## Climate Change & Equity

Political Will /  
Collective Action

Market Forces /  
Individual  
Responsibility

1

2

3

4

Dispatches from Alternate Futures: Exploratory Scenarios for Greater Philadelphia is the result of the second exploratory scenario for the Greater Philadelphia region and is a key step in developing the *Connections 2050* Long-Range Plan for Greater Philadelphia. Policymakers and public- and private-sector leaders can use these scenarios and the forthcoming Long-Range Plan to make informed decisions that help guide the region toward more preferable outcomes consistent with the Plan's vision.

For *Connections 2050* products as the Plan is developed, please visit: [www.dvrpc.org/LongRangePlan](http://www.dvrpc.org/LongRangePlan)



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EXPLORATORY SCENARIOS FOR GREATER PHILADELPHIA

# DISPATCHES from ALTERNATE FUTURES

**DELAYED EXPECTATIONS**  
A world overcome by climate change and economic slowdown

**PEOPLE POWER**  
Grassroots movement to a more just and sustainable future

**TECHNOLOGY IN THE DRIVER'S SEAT**  
Big Tech takes control

**INCLUSIVE TECH**  
A new equitable economy emerges through open source technologies

IN THIS ISSUE

**COVID-19  
BREAKING NEWS**

See pages 26, 40, 54, and 68



JULY 2020

working  
**FUTURES GROUP**  
GREATER PHILADELPHIA



# FOUR SCENARIOS

## TECHNOLOGY

INCREMENTAL CHANGE

TRANSFORMATIVE CHANGE

PEOPLE  
POWER

INCLUSIVE  
TECH

DELAYED  
EXPECTATIONS

TECHNOLOGY IN  
THE DRIVER'S  
SEAT



ENVIRONM



DEMOGRA



THE ECONO



INEQUALITY



HOUSING



TRANSPORT  
INFRASTRU  
AND FINAN



TRANSPORT  
TECHNOLO

CLIMATE CHANGE & EQUITY

POLITICAL  
WILL /  
COLLECTIVE  
ACTION

MARKET  
FORCES /  
INDIVIDUAL  
RESPONSIBILITY



# FOUR SCENARIOS

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INCREMENTAL CHANGE

TRANSFORMATIVE CHANGE

CLIMATE CHANGE & EQUITY

POLITICAL  
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INDIVIDUAL  
RESPONSIBILITY



### PEOPLE POWER

Grassroots democracy gives citizens more input into the development of their communities and the economy, while readily available technologies are deployed to fight climate change.

### INCLUSIVE TECH

A collaborative, networked, open source economy of abundance emerges from societal efforts to make technological advances more sustainable and equitable.

### DELAYED EXPECTATIONS

Climate change, sharp political swings, ongoing civil discord, and a slowdown in innovation lead to a lack of direction and economic stagnation.

### TECHNOLOGY IN THE DRIVER'S SEAT

Markets drive economic growth through Big Data, algorithms, and innovation.



January 14, 2024

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## Climate Refugees Compound Crisis on Southern Border



January 31, 2035

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## Gig Economy All That's Left?



March 9, 2041

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## 2040 Census: Greater Philadelphia Population Declines Amidst Undercount, Hurricane, & Pandemic Concerns

# FOUR SCENARIOS

## TECHNOLOGY

INCREMENTAL CHANGE

TRANSFORMATIVE CHANGE

CLIMATE CHANGE & EQUITY

POLITICAL  
WILL /  
COLLECTIVE  
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September 21, 2023

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## Antitrust Suit Brought Against Amazon



April 9, 2038

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## Transit Renaissance Continues as SEPTA Regional Rail Returns to West Chester



March 9, 2041

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## 2040 Census: Greater Philadelphia Still Growing Slowly

# FOUR SCENARIOS

## TECHNOLOGY

INCREMENTAL CHANGE

TRANSFORMATIVE CHANGE

CLIMATE CHANGE & EQUITY

POLITICAL  
WILL /  
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February 27, 2023

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## Ready or Not, the Automated Vehicle Race Arrives in Philly Area



November 3, 2035

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## Ubiquitous Cryptocurrency Undermining the U.S. Dollar



March 9, 2041

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## 2040 Census: Greater Philadelphia Growth Shifts to the Suburbs

# FOUR SCENARIOS

## TECHNOLOGY

INCREMENTAL CHANGE

TRANSFORMATIVE CHANGE

CLIMATE CHANGE & EQUITY

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WILL /  
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### TECHNOLOGY IN THE DRIVER'S SEAT

Markets drive economic growth through Big Data, algorithms, and innovation.



June 25, 2025

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## End of the Road for Brick-and-Mortar Retail?



December 16, 2036

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## Push for Programmable Roads as Carbon Tax Dwindles



March 9, 2041

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## 2040 Census: Greater Philadelphia Growth Still Driven by Foreign Immigration

# 2020s

## TECHNOLOGY IN THE DRIVER'S SEAT

The COVID-19 outbreak leads to increased investment in biotech research, which yields major healthcare advances. It also strengthens the big tech companies, who control proprietary video conferencing, remote working software, and holograms. As public health surveillance gains acceptance, tech giants increase their personal data collection and targeted advertising.<sup>40</sup> The crisis propels automation, AI, and other disruptive technologies, which catapult the global economy into a new era of industry and post-pandemic progress.

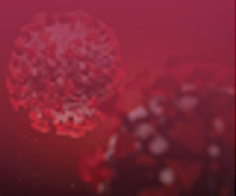
Big Tech companies use their political clout to end net neutrality, allowing internet providers to wall off information and services.<sup>41</sup> "Buyer, beware" approaches to regulation mean all kinds of questionable products are readily available for consumption. Fossil fuel companies increase their research and development in the areas of renewable energy generation and carbon capture to protect their business interests, even though the climate has been surprisingly stable. This allows those who deny climate change to promote business-as-usual practices. ■

September 17, 2022

### BREAKING NEWS

## COVID-19 Resurges Again, Despite Vaccine

COVID-19 is on the rise in parts of Africa, Asia, and the Middle East once again, as the coronavirus vaccine remains out of reach for many in developing nations. Developed by U.S. pharmaceutical firm Merck in early 2021, nearly 70 percent of the U.S. population was vaccinated within a year thanks to a public-private partnership between Merck, the Centers for Disease Control, and Google Cloud. Beyond enabling the vaccine's distribution, this partnership has become the largest ever health data aggregation project. It also ended investigations into the tech giant's privacy and data protection practices in several healthcare projects that predated the 2019 outbreak. But the time to manufacture billions of vaccine doses, the lack of a similar global partnership to widely distribute it, and its high cost means many of the world's poorest and most vulnerable populations are still waiting to be vaccinated.



February 27, 2023



## Ready or Not, the Automated Vehicle Race Arrives in Philly Area

China's DrivePower is the latest company to make highly autonomous vehicles (HAVs) available to consumers. These HAVs can operate only in specific areas, such as limited-access highways and some major arterials, and in good weather conditions. While some manufacturers promise full HAVs that can go anywhere in any condition within a few years, others cautiously warn that this may take decades due to the need for advances in computing power and artificial intelligence.

The race to deploy HAVs began to heat up with the passage of the ROBOTIC DRIVING Act of 2022, aimed at speeding up HAV deployment in the wake of the COVID-19 pandemic. This legislation removed all vehicle safety regulations for HAVs and directed the National Highway Traffic Safety Administration (NHTSA) to create a new regulatory structure for them, limited the ability of state and local governments to restrict HAVs on their roadways, granted states the right to apply congestion pricing on interstates and other highways, and required manufacturers to develop plans for collecting data while ensuring privacy, and communicating this to consumers.

While DrivePower faces stiff competition, bigger questions remain about what this means for Greater Philadelphia's fast-changing transportation system. The public has had little opportunity to weigh in on their wants and needs for these vehicles, or to help shape the newly emerging transportation system.

"I'm still not comfortable with them," said Southampton Township, New Jersey, resident Barbara Spencer. "I saw one going south on 206 last week. Its backup driver wasn't paying any attention. It stopped at first, but then when I started to cross the street, it started going as well. Fortunately, it stopped before hitting me. How is a person supposed to communicate with these cars?"

The first fatal crash between two actively self-driving vehicles has heightened safety concerns. While investigators are still looking into its causes, it has been speculated that it may be the result of sensor failure, the difficulty of reading and predicting different operating systems, or a software bug.

Roadway Auto and Safety Advocates President Robyn Caroline notes these vehicles were tested on roads with human drivers but rarely with other HAVs. It is difficult to verify this, since few of the manufacturers are sharing data, and there are no regulations that compel them to. NHTSA spokesperson Joe King disputes claims that the agency's voluntary reporting standards are insufficient. "This technology will save tens of thousands of lives each year. We shouldn't put up hurdles that slow that kind of progress down." Despite safety concerns and high prices, HAVs continue to fly off car dealer lots. ■



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## INTRODUCTION

Scenario planning is a process that helps organizations respond to uncertain external forces that arise in a future that cannot be fully known.

## DELAYED EXPECTATIONS

The following chart illustrates a gap that is a possible future scenario for the Greater Philadelphia region. It shows a divergence between the current trajectory and a more optimistic path.

Climate churl, discord, and a slowdown in innovation lead to a lack of direction and economic stagnation.

2020s overview | pg 24  
2030s overview | pg 30  
2040s overview | pg 34

## 2030S DELAYED EXPECTATIONS

### Hedge Funds Become World's Largest Landlord

What if the world's largest real estate investment trusts (REITs) were not just landlords, but also hedge funds? This scenario explores the implications of financial institutions moving into the physical real estate market.

2020s overview | pg 30  
2030s overview | pg 34  
2040s overview | pg 38

## 2040S PEOPLE POWER

### 2040 Census: Greater Philadelphia Still Growing Slowly

Greater Philadelphia population in 2040 is projected to be 4.5 million, a slower growth rate than previous decades.

Greater Philadelphia Region	2010	2020	2030	2040
Greater Philadelphia Region	3,800,000	4,100,000	4,300,000	4,500,000
Philadelphia	1,500,000	1,600,000	1,650,000	1,700,000
Camden	700,000	750,000	800,000	850,000
Atlantic City	400,000	450,000	500,000	550,000
Delaware	1,200,000	1,300,000	1,400,000	1,500,000

## PEOPLE POWER

Grassroots democracy gives citizens more input into the development of their communities and the economy, while reality in the technologies are deployed to fight climate change.

2020s overview | pg 40  
2030s overview | pg 44  
2040s overview | pg 48

## TECHNOLOGY IN THE DRIVER'S SEAT

Technology is driving economic growth through faster, smarter, and more innovative solutions.

2020s overview | pg 54  
2030s overview | pg 58  
2040s overview | pg 62

## Robotic 'Road Butlers' Coming to Crab From North Philly

Autonomous vehicles are being tested on a dedicated road in North Philadelphia, promising to reduce traffic and improve safety.

2020s overview | pg 66  
2030s overview | pg 70  
2040s overview | pg 74

## Issues as SEPTA West Chester

SEPTA is addressing various challenges in the West Chester area, including infrastructure and service quality.

## 2020S TECHNOLOGY IN THE DRIVER'S SEAT

### Ready or Not, the Automated Vehicle Race Arrives in Philly Area

The race to develop and deploy autonomous vehicles is intensifying in the Philadelphia region.

2020s overview | pg 66  
2030s overview | pg 70  
2040s overview | pg 74

## Ubiquitous Cryptocurrency Undermining the U.S. Dollar

The rise of cryptocurrencies like Bitcoin is challenging the dominance of the U.S. dollar as a global reserve currency.

## American Bumblebee Officially Extinct

The Eastern bumblebee has been declared extinct, a significant loss to biodiversity and agriculture.

## PRIMER

### What will our region look like in 20, 30, or 40 years from now?

This primer provides a high-level overview of the scenarios and the data used in the report.

## DE

Delaware's role in the regional economy and its impact on the Greater Philadelphia area.

## ANALYTICS ENHANCING BUSINESS

Data analytics is transforming business operations and decision-making across various industries.

## INTEGRATED LEARNING

Integrating learning into the workforce is essential for staying competitive in a rapidly changing economy.

## AI AND DATA SCIENCE

Artificial intelligence and data science are driving innovation and efficiency in many sectors.

## AI AND DATA SCIENCE

Continued exploration of AI and data science applications in the business and public sectors.

## AI AND DATA SCIENCE

Final thoughts on the impact of AI and data science on the future of work and society.



# Visioning Workshops

What concerns you the most when thinking about Greater Philadelphia in the future?

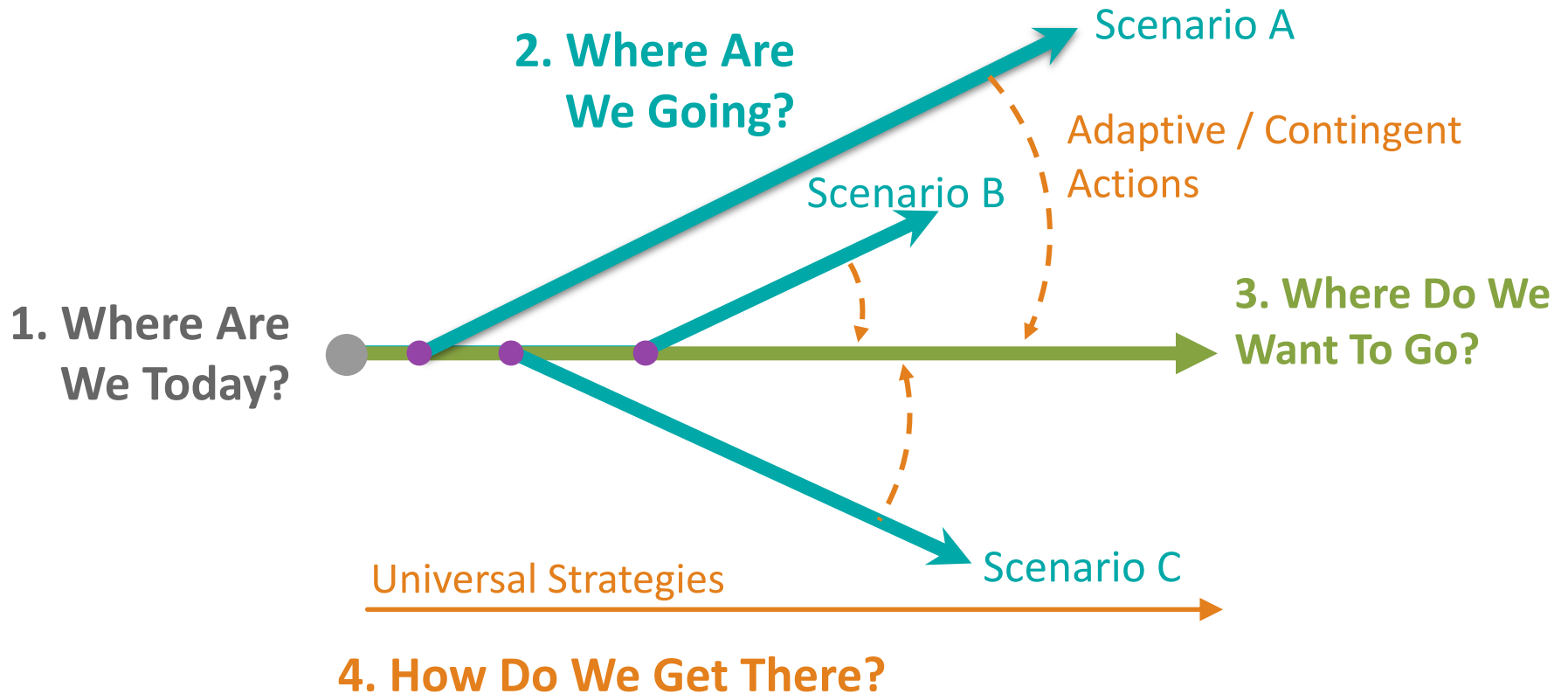
What do you value most in Greater Philadelphia today?

What is your vision and/or goals for the region?



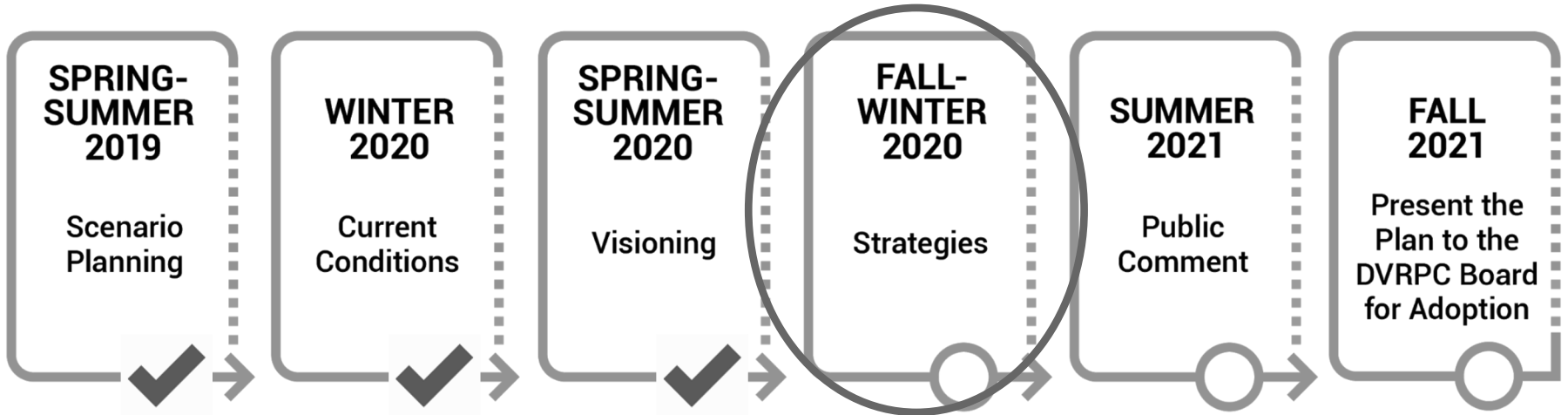


# Informing Strategies





# Timeline



EXPLORATORY SCENARIOS FOR GREATER PHILADELPHIA

# DISPATCHES

from

# ALTERNATE FUTURES

**Read Now**

**DELAYED EXPECTATIONS**  
A world reverts to a more jaded and uncertain future by climate change and economic slowdown

**PEOPLE POWER**  
Classrooms reorient to a more just and sustainable future

**TECHNOLOGY IN THE DRIVER'S SEAT**  
Big Tech takes control

**INCLUSIVE TECH**  
A new equitable economy emerges through open source technologies

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**COVID-19  
BREAKING NEWS**  
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JULY 2020



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DEVELOPING VISIONS FOR GREATER PHILADELPHIA

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# THANK YOU!

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