



CONNECTIONS **2040**

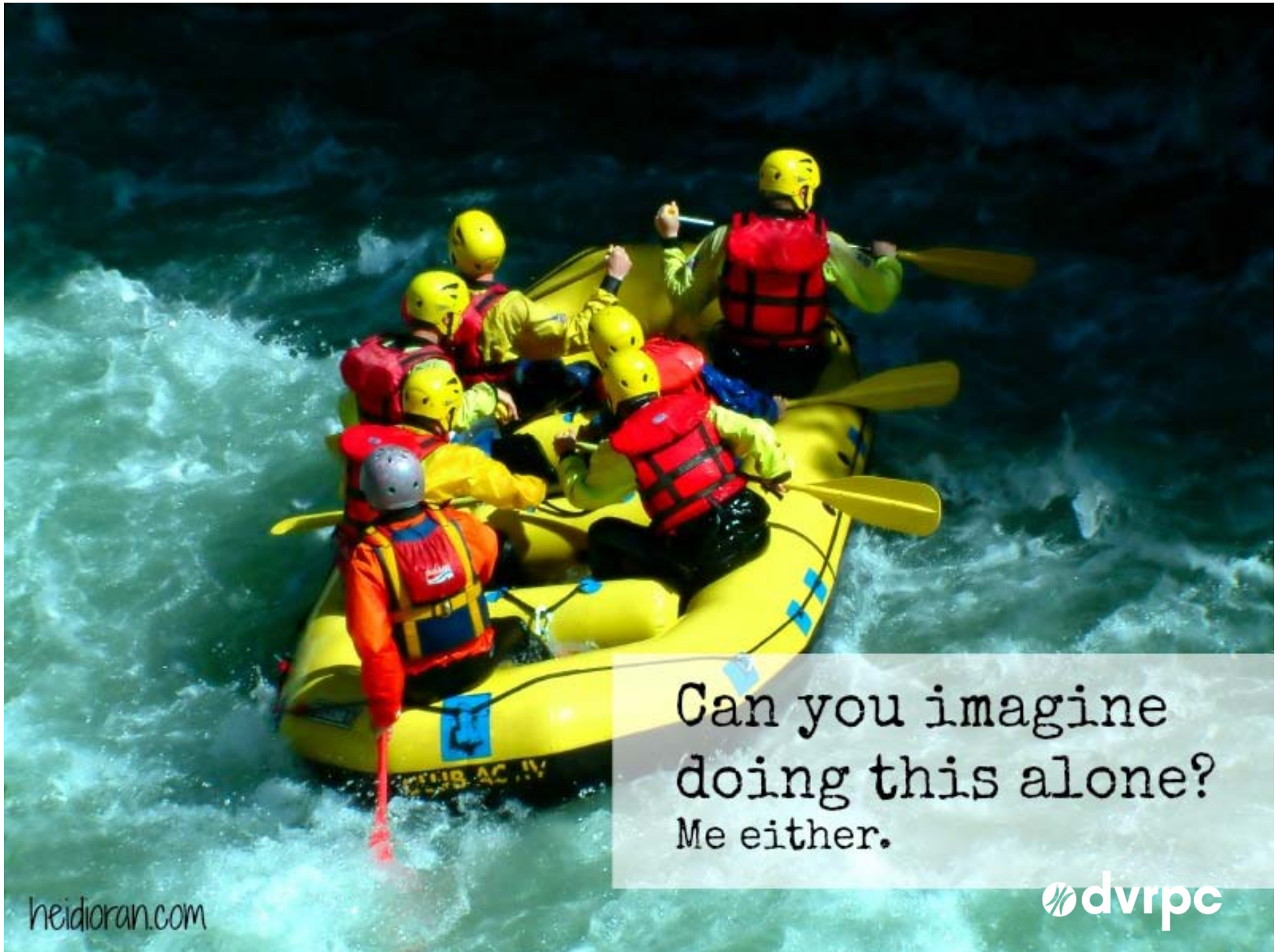
PLAN FOR GREATER PHILADELPHIA

fostering sustainability, equity and innovation

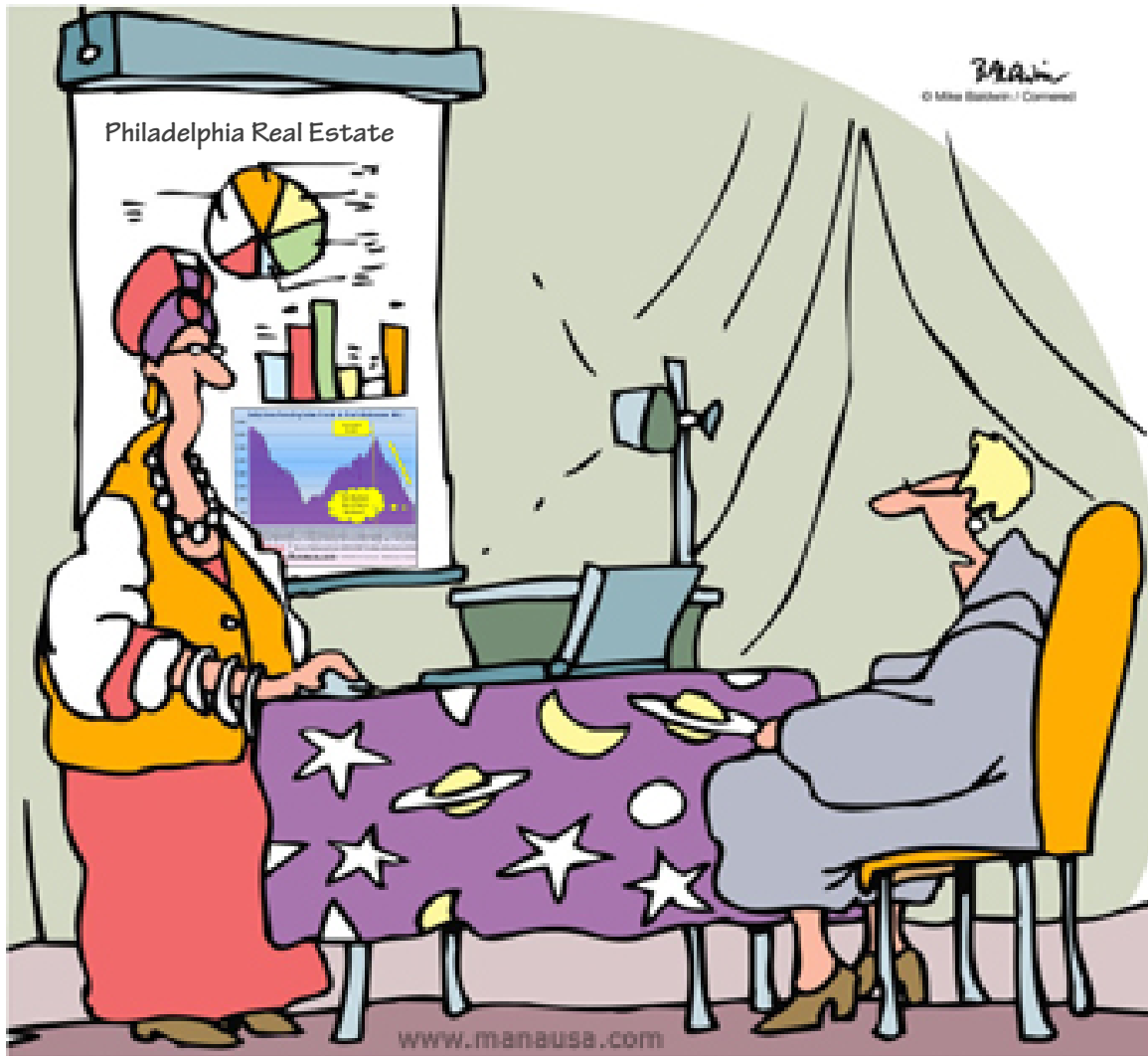
Greater Philadelphia Futures Group

Background

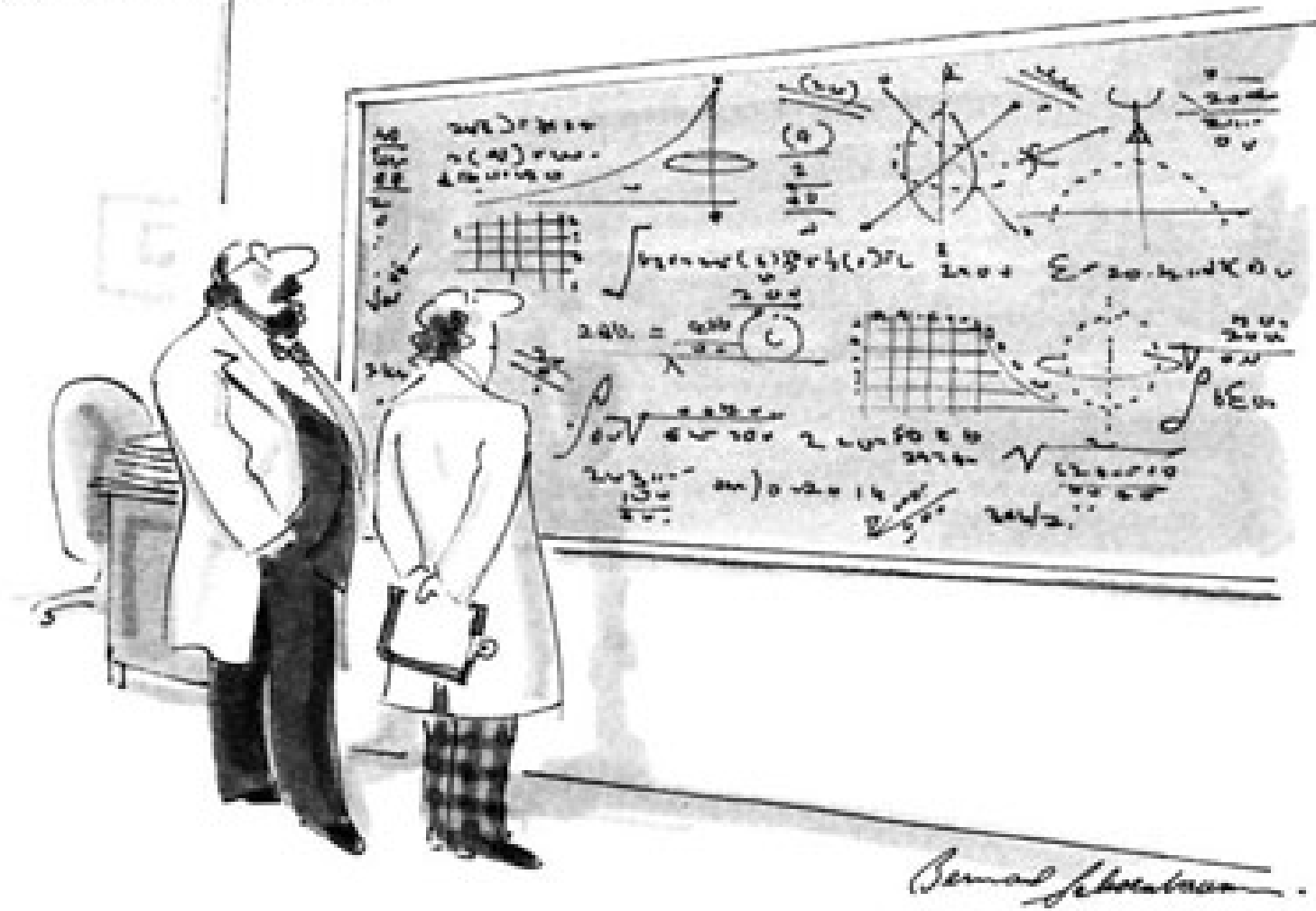
September 17, 2014



Can you imagine
doing this alone?
Me either.

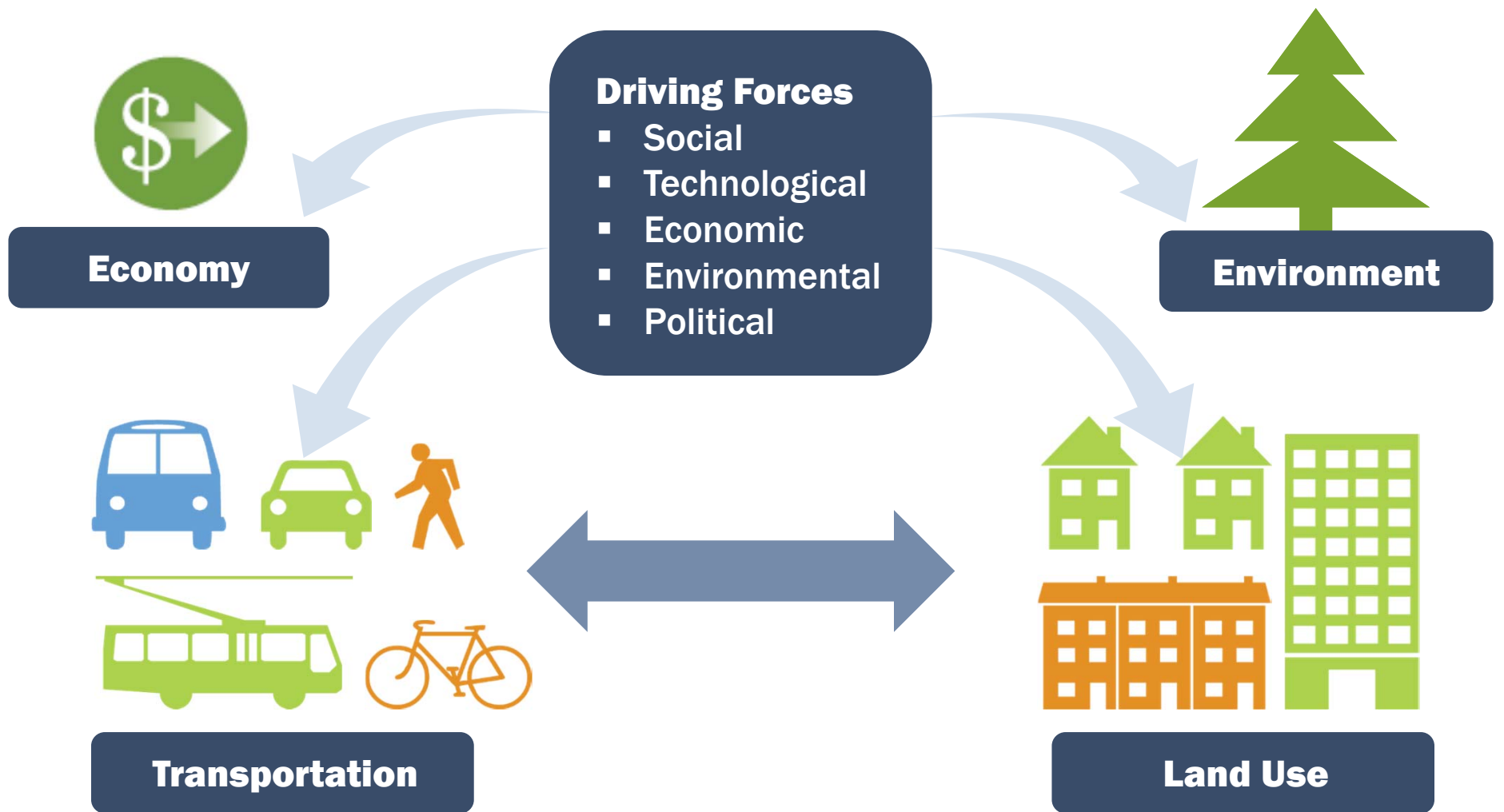


"This just isn't doing it for me. Could we go back to using the crystal ball?"

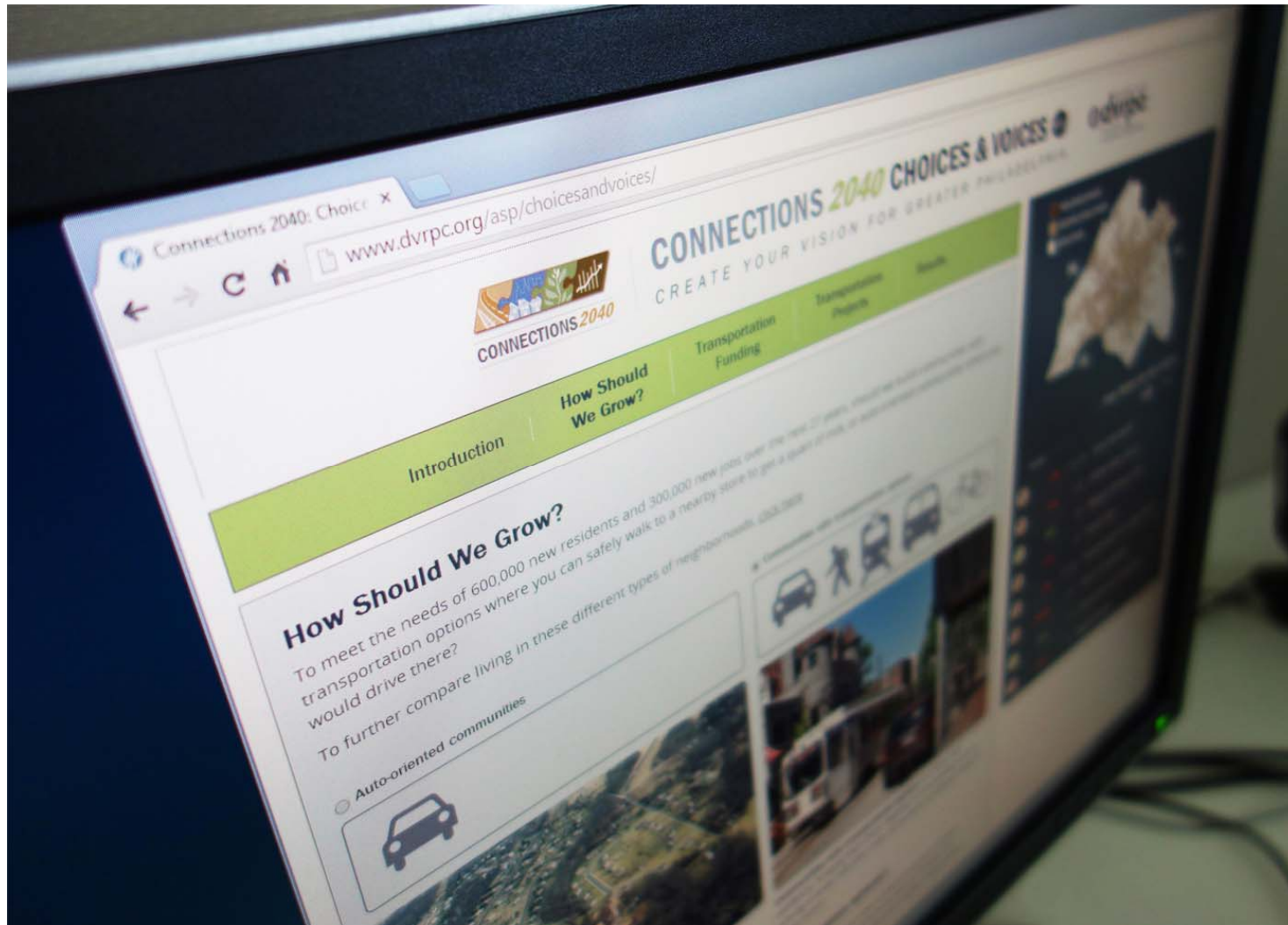


"Oh, if only it were so simple."

DRIVING FORCES



www.dvrpc.org/choicesandvoices



NEXT MEETINGS

October

Wednesday, 10/15 or

Tuesday, 10/21

December

Thursday, 12/4 or

Wednesday, 12/10



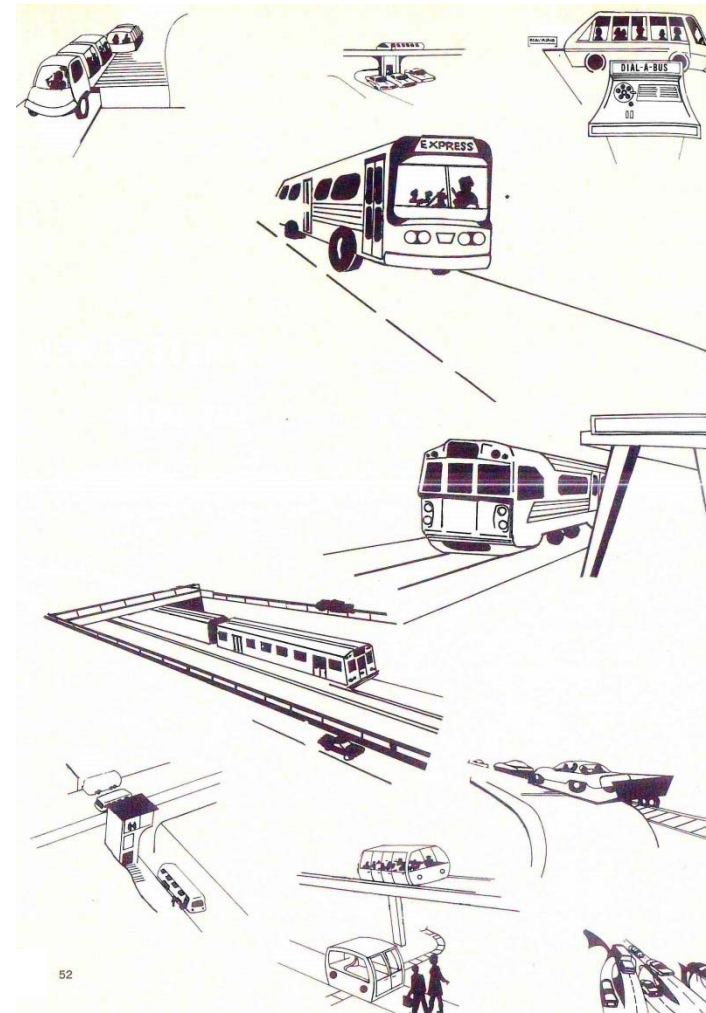
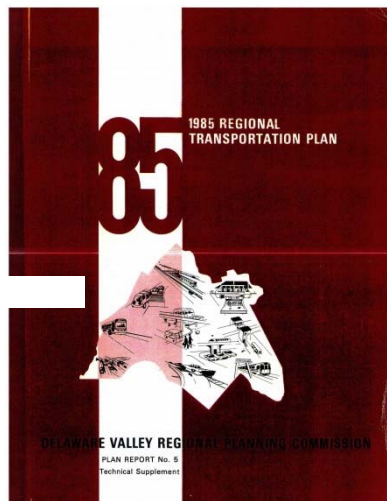
Greater Philadelphia Futures Group

Barry Seymour
9 – 17 - 2014



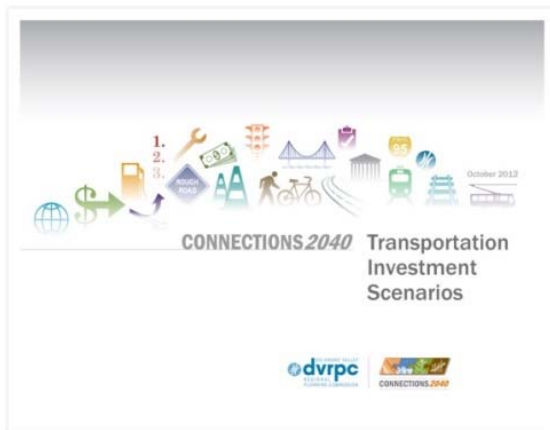
*"We are called to
be architects of
the future, not its
victims."*

- R. Buckminster Fuller

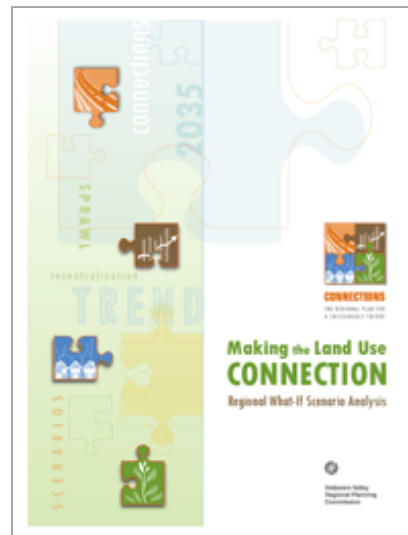


Previous Planning Scenarios

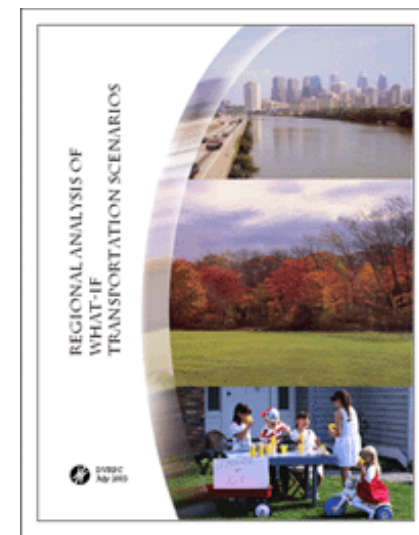
Transportation Investments



Land Use Development



“What-If” Drivers



Forecasting

"The best thing about the future is that it comes one day at a time."

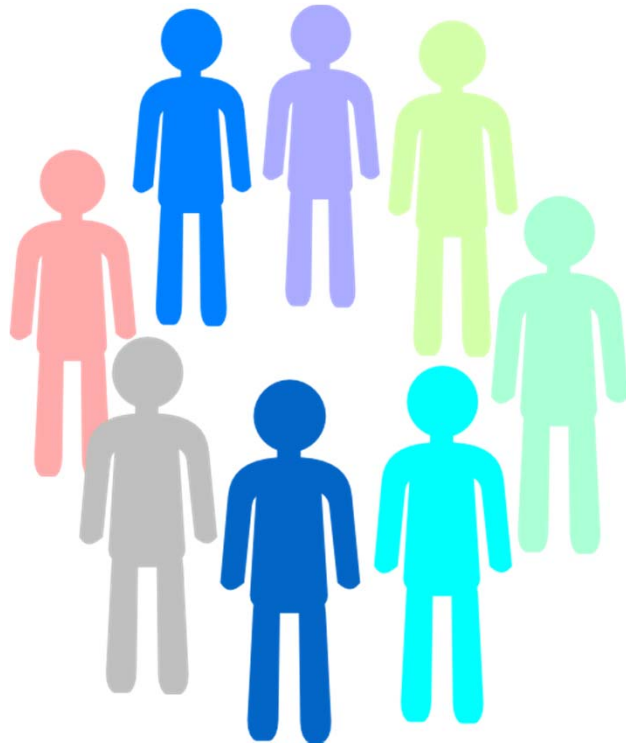
- Abraham Lincoln



HIT: 1993 Population Forecast

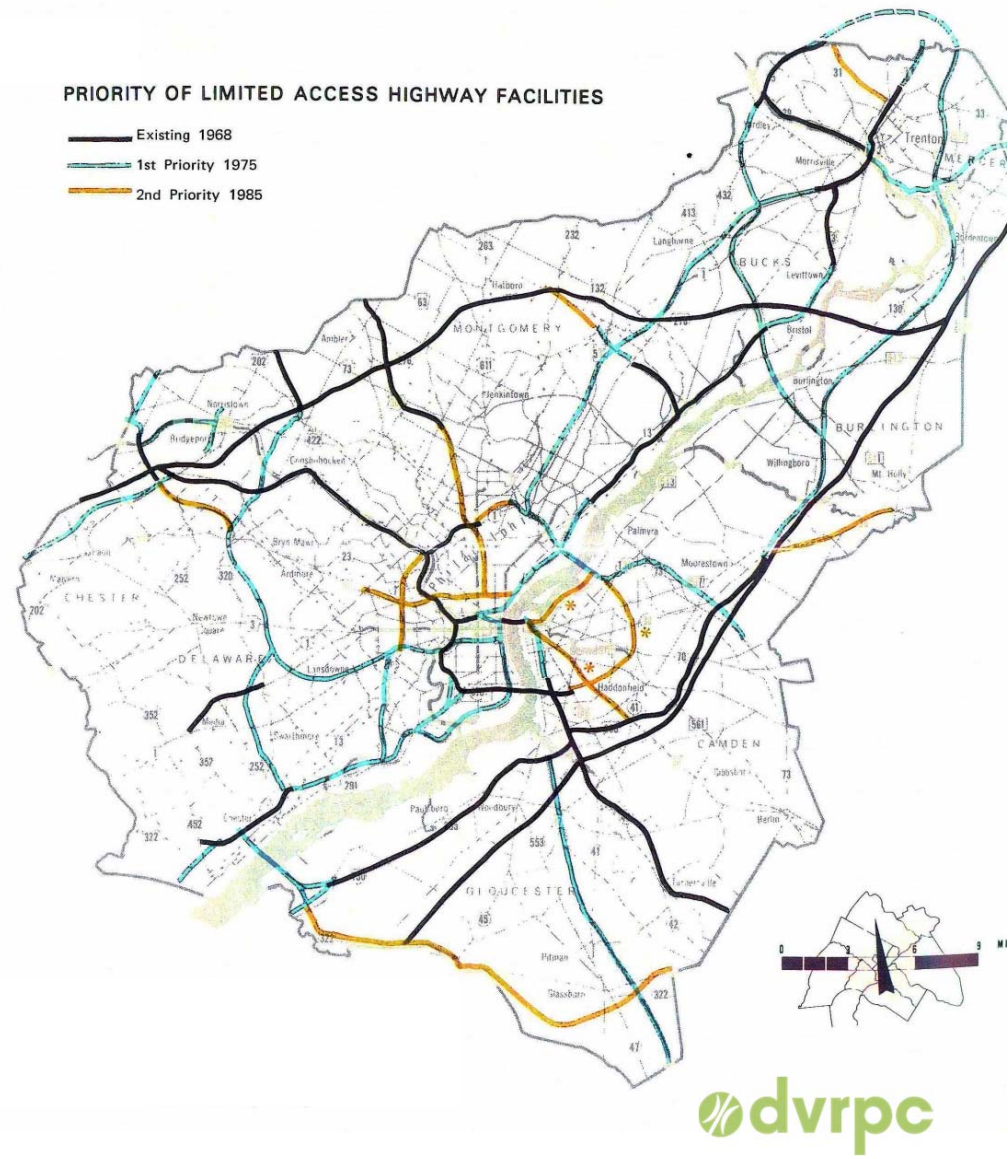


HIT: 1993 Population Forecast



2013 Population
5,688,000

MISS: Highway Network Vision Circa 1960s



3 Key Factors for Successfully Predicting the Future

- 1) Some basic training in probabilistic reasoning is useful
 - **C**omparisons are important as a starting point
 - **H**istorical trends can help
 - **A**verage the opinions of different experts
 - **M**athematical models should be taken into account
 - **P**redictable biases exist and can be allowed for

Source: The Good Judgment Project

3 Key Factors for Successfully Predicting the Future

- 1) Some basic training in probabilistic reasoning is useful
- 2) Actively open-minded people make better forecasters
- 3) Teams of good forecasters produce better results than individuals

Source: The Good Judgment Project

*“Never make
Predictions,
especially about
the Future.”*

- Casey Stengel

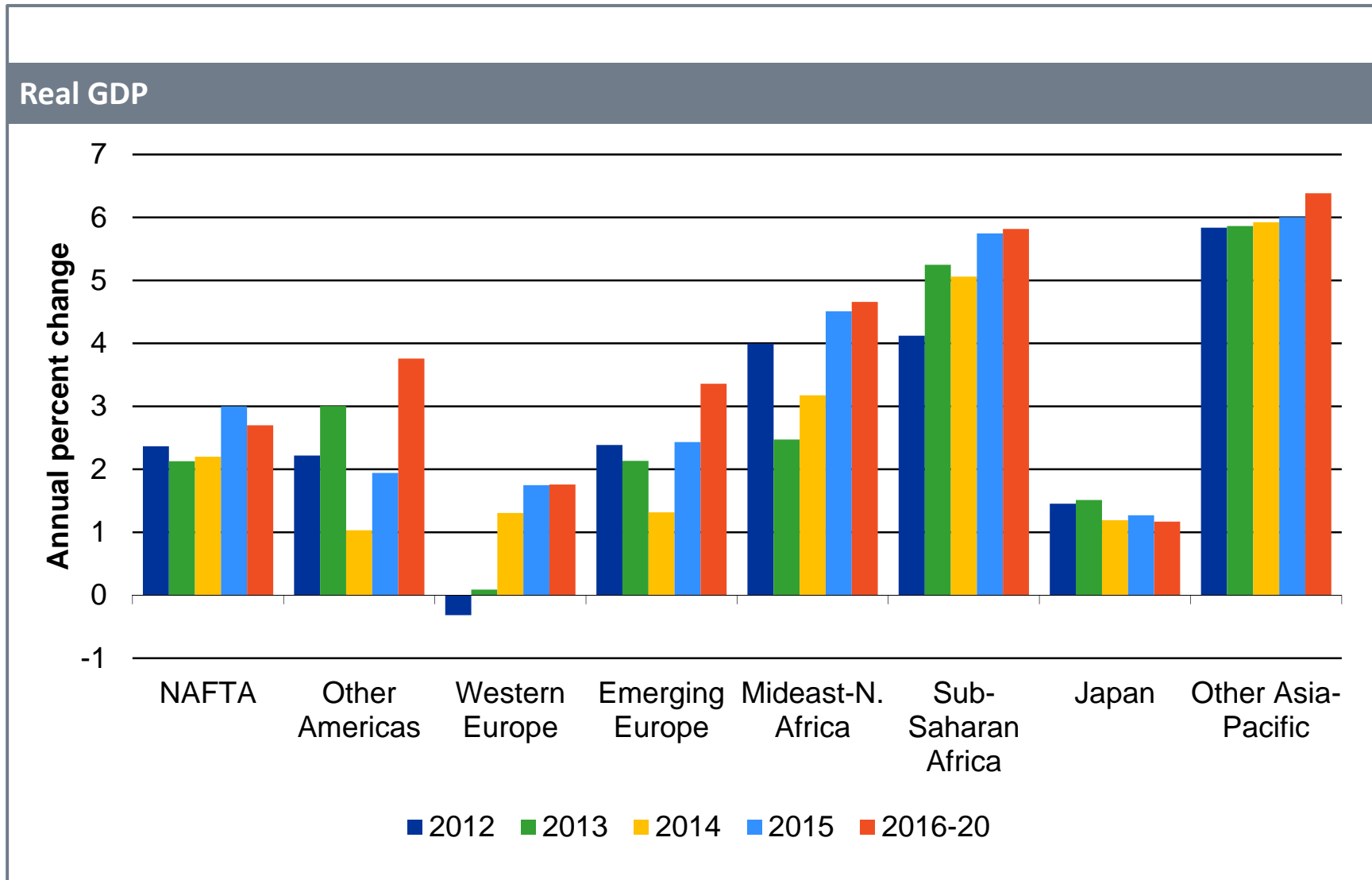
Global and US Economic Trends that Will Affect the Greater Philadelphia Region



**Greater Philadelphia
Futures Group
September 17, 2014**

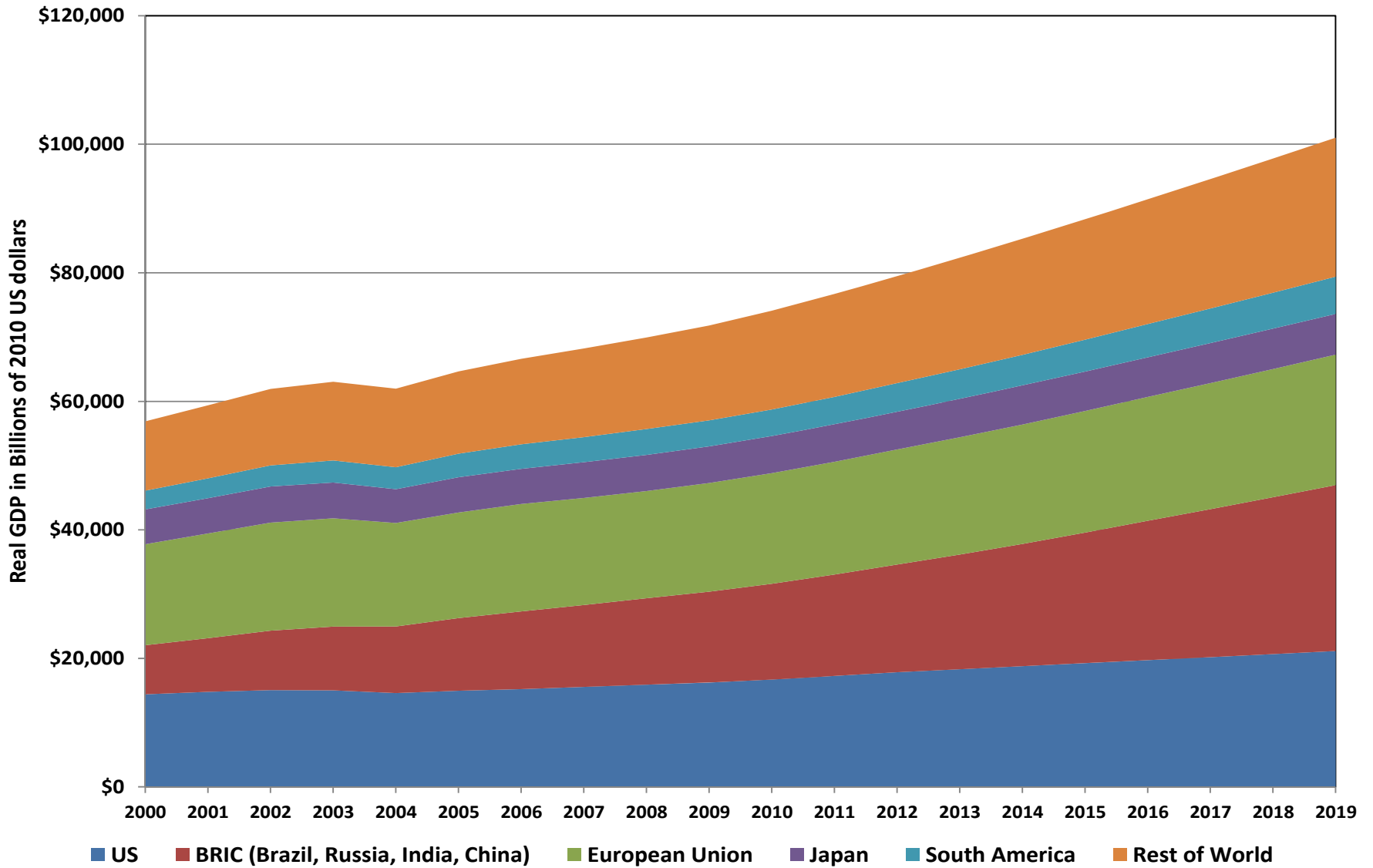
**Phil Hopkins
IHS Economics**

Asia-Pacific (excluding Japan) and Sub-Saharan Africa will achieve the fastest growth in real GDP



Global GDP Shares

Levels of Real GDP by Country and Region



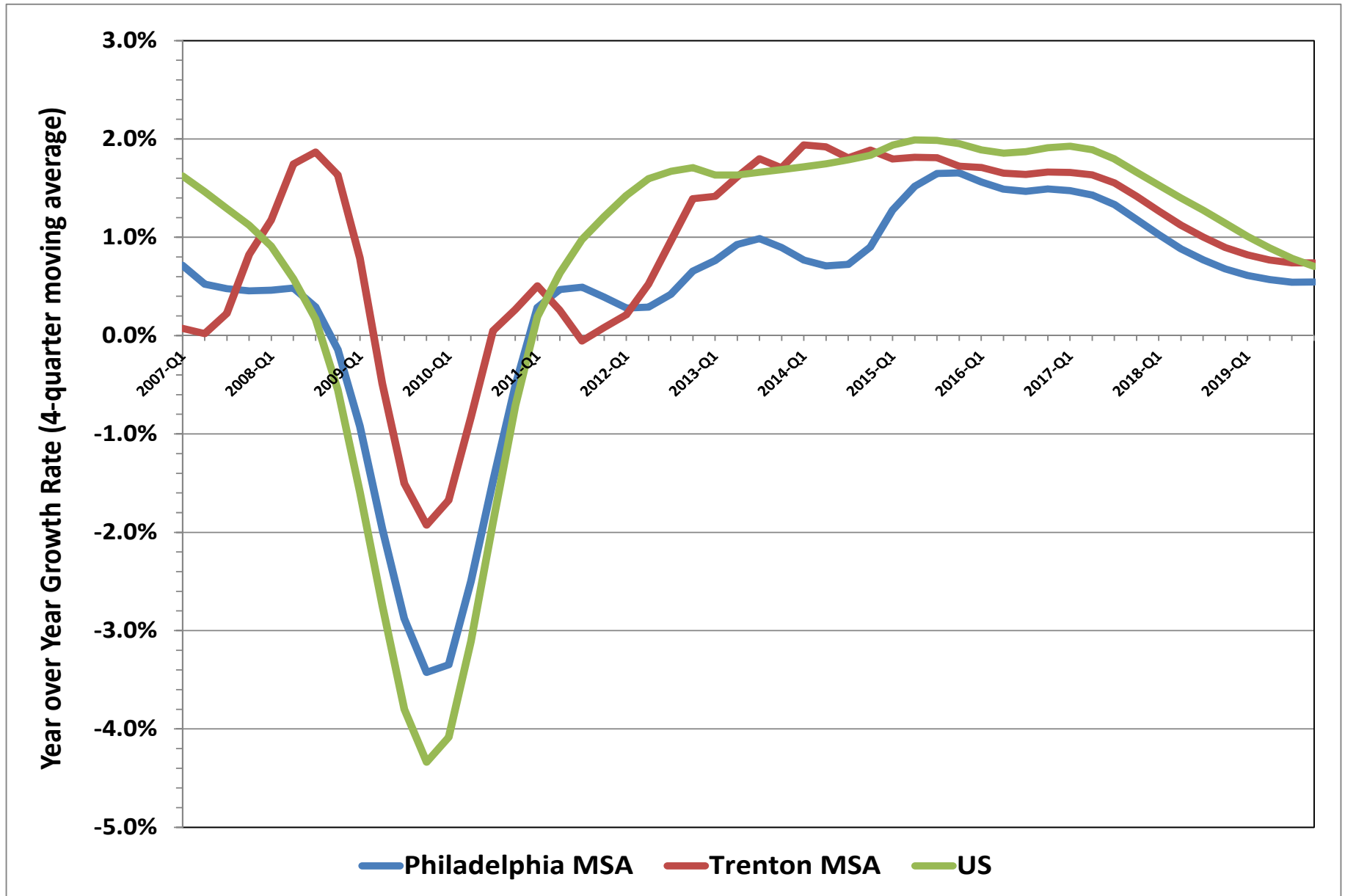
Global Outlook

- Real Global GDP Growth (in US\$) is forecast at:
 - 2.8% in 2014
 - 3.4% in 2015
 - 3.7% in 2016; averaging 3.7% thereafter
- Among developed countries the US is leading the way, Europe and Japan are slowing or contracting
- In emerging markets China leads with some weakness, India is recovering, but Brazil and Russia are in trouble
- Global economic news is good, but not great
- Commodity prices steady, world oil prices gradually higher over the next 5 years
- Businesses are cautiously optimistic, investment slowly rising
- Geopolitical risks, especially in oil-producing countries remain a concern
- Macroeconomic policies, especially timing, are keys in US, Eurozone, and Japan

US Outlook

- 2014q3 growth remains strong, due to pickup in homebuilding, a drop in imports, and robust capital spending.
 - Rises 3.7% in 2014q3, 3% in 2014q4,
- Real GDP growth is projected to pick up in 2015 and 2016, led by strengthening private-sector investment.
 - 2.9% in 2015. 3.1% in 2016 & 2017
- Homebuilding will rise in 2014–16 as supply catches up with demand.
 - Starts to exceed million, high % of multi-family. Sales up.
- Consumers will cautiously increase spending due to gains in employment, personal income, and household wealth.
- Capital spending will accelerate in 2014–15 in response to global market growth, replacement needs, and technological advances.
 - Real business fixed investment will increase 5–6% annually.
- Net exports will restrain US economic growth in 2014–18 and support growth in 2019–24.
- Interest rates will rise through mid-2017.
- Inflation will stay relatively mild.

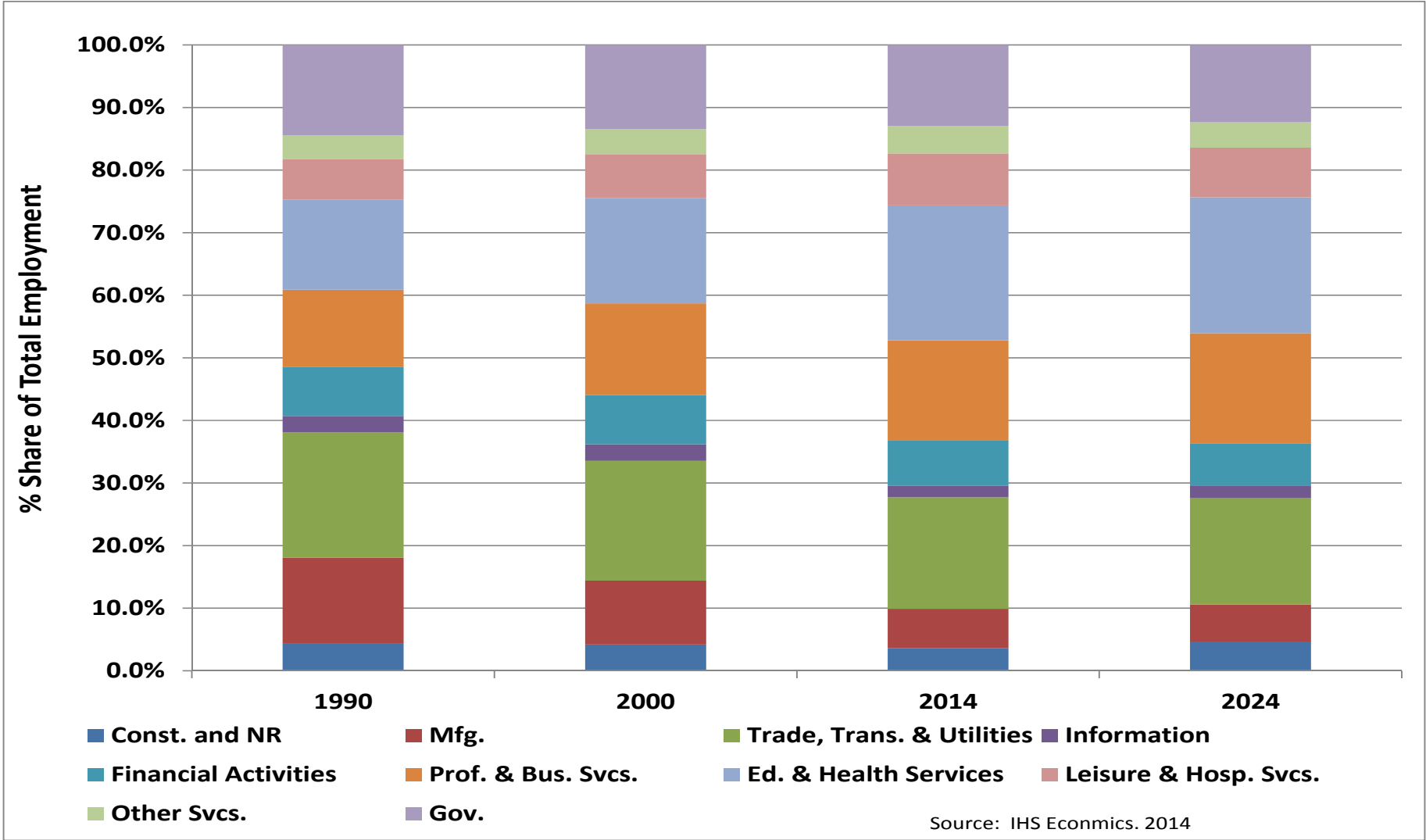
Growth Rates in Total Non-Farm Employment



Economic Forecasts – Average Annual Growth Rates

Measure	2000 to 2014			2014 to 2019		
	Phila. MSA	Trenton MSA	US	Phila. MSA	Trenton MSA	US
Real GDP/GRP	1.4%	2.6%	1.8%	2.5%	2.6%	3.0%
Non-farm Employment	0.1%	1.1%	0.4%	1.2%	1.4%	1.5%
Real Personal Income	1.6%	1.2%	1.9%	3.2%	3.2%	3.7%
Population	0.4%	0.4%	0.9%	0.4%	0.5%	0.8%

Change in Economic Structure



Global Growth Factors Affecting GPR

- **Quality of Institutions** – government, non-profits
- **Hard connectivity and infrastructure**, including goods movement efficiency, digital infrastructure. Can we make the necessary investments?
- **Soft Connectivity and human capital**: health and primary education, training and higher education, digital infrastructure, entrepreneurial networks
- **Demographics** – aging population, slowing population & labor force growth and low LFPR
- **Rising inequality** – can we provide jobs for all?
- **Financing**, availability of capital

Sources: World Economic Forum, 2014. “The Competitiveness of Cities”. Robert Gordon, 2014. “The Demise of U.S. Economic Growth: Restatement, Rebuttal and Reflections”, NBER working paper 19895

Global Growth Factors Affecting GPR (cont.)

- **Sustainable competitiveness:** “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
 - Energy, implications of global warming
- **Governance and the regulatory environment:** trend towards transparency, predictability, timeliness and reasonable cost
- **Indebtedness:** can governments afford to provide essential services and infrastructure? Student debt?
- **Technology and Innovation:** where will the next productivity enhancing technologies come from?
- **Attractiveness of urban areas** with high qualities of life will continue
 - Decreasing reliance on autos

Sources: World Economic Forum, 2014. “The Competitiveness of Cities”. Robert Gordon, 2014. “The Demise of U.S. Economic Growth: Restatement, Rebuttal and Reflections”, NBER working paper 19895



Thank you!

THE CITY OF PHILADELPHIA

MAYOR'S OFFICE OF
SUSTAINABILITY

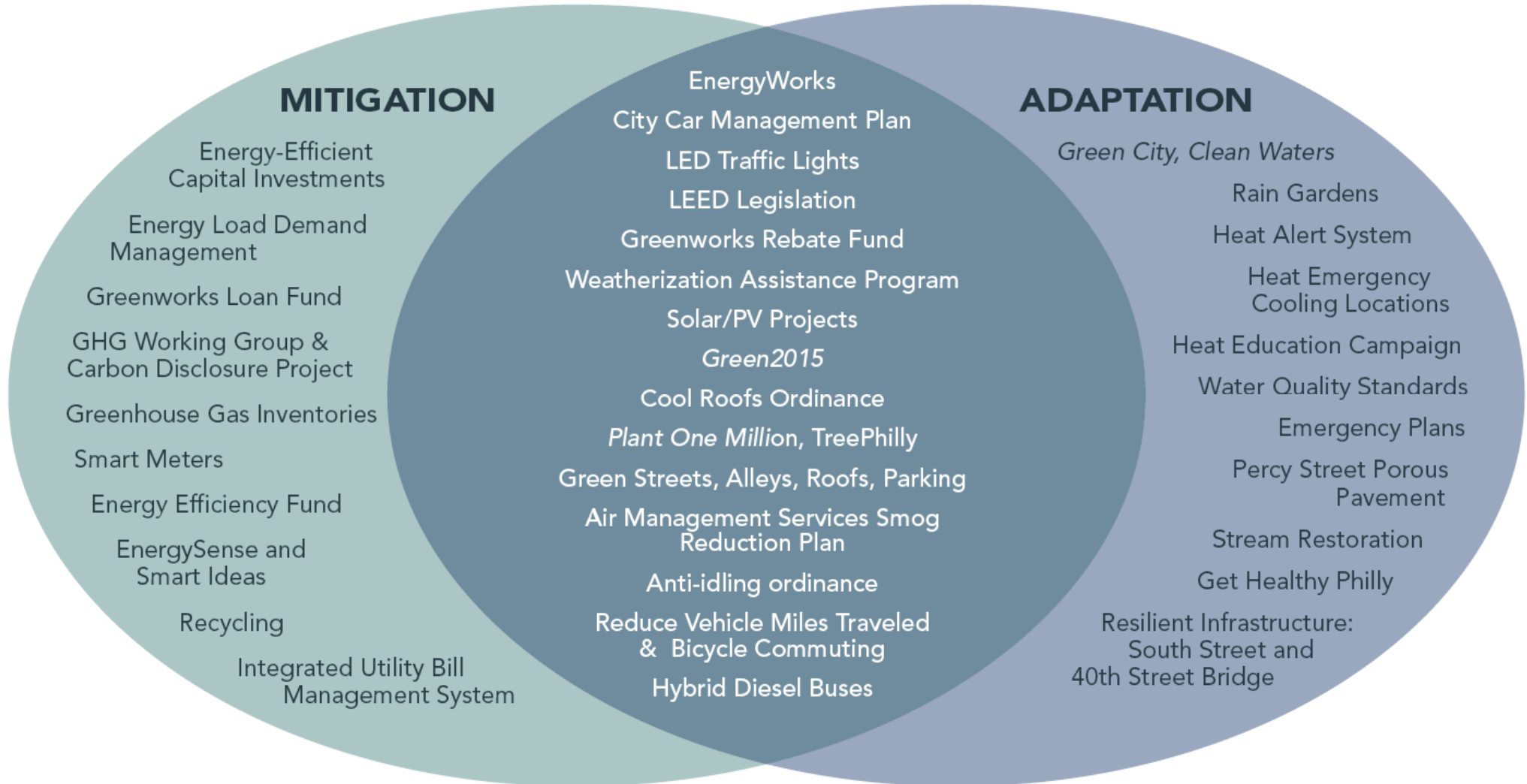


GREENWORKS
PHILADELPHIA

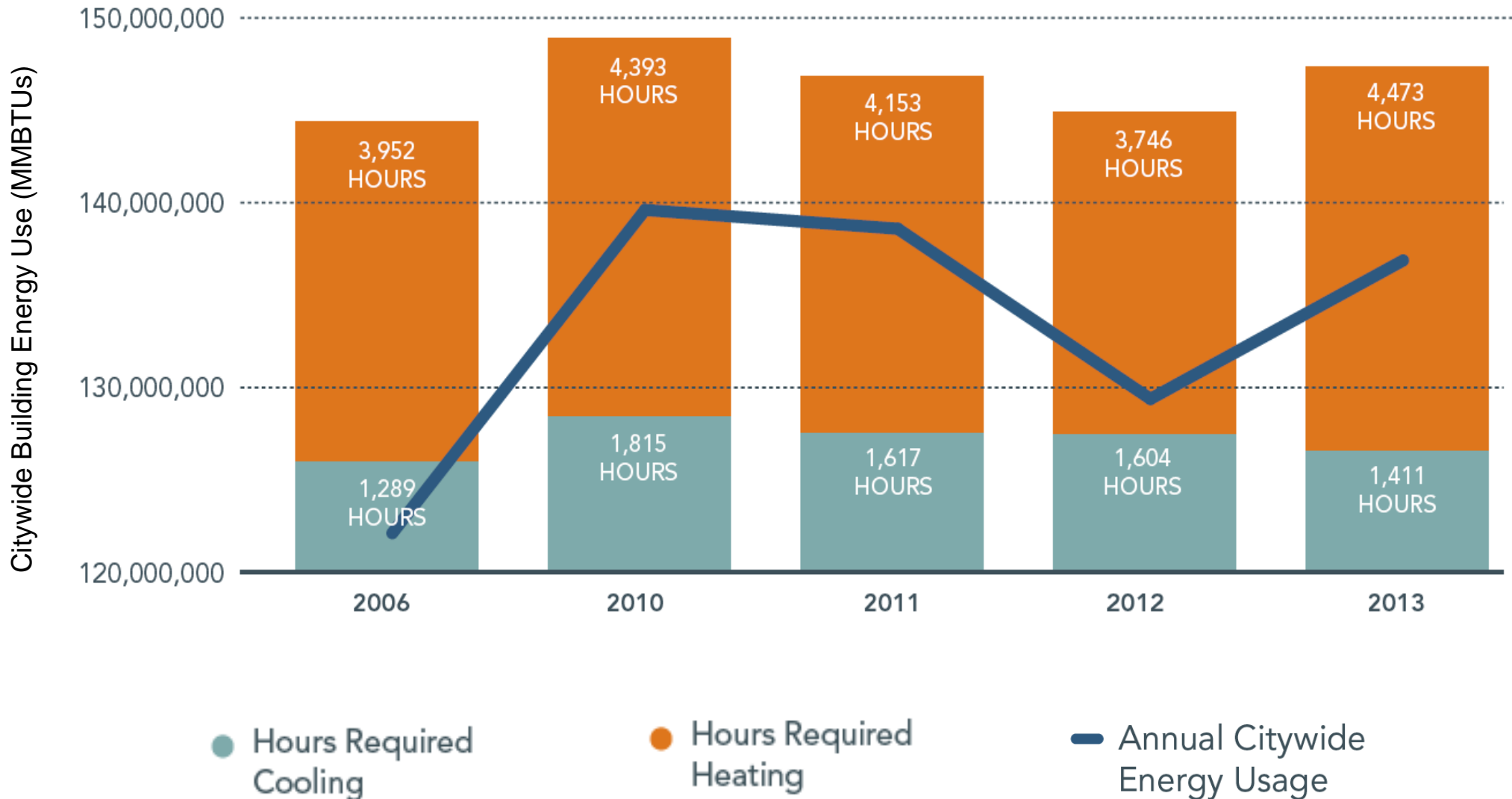
Climate Change in Greater Philadelphia

- Delaware Valley Regional Planning Commission •
Sarah Wu • September 17, 2014

Greenworks Climate Initiatives



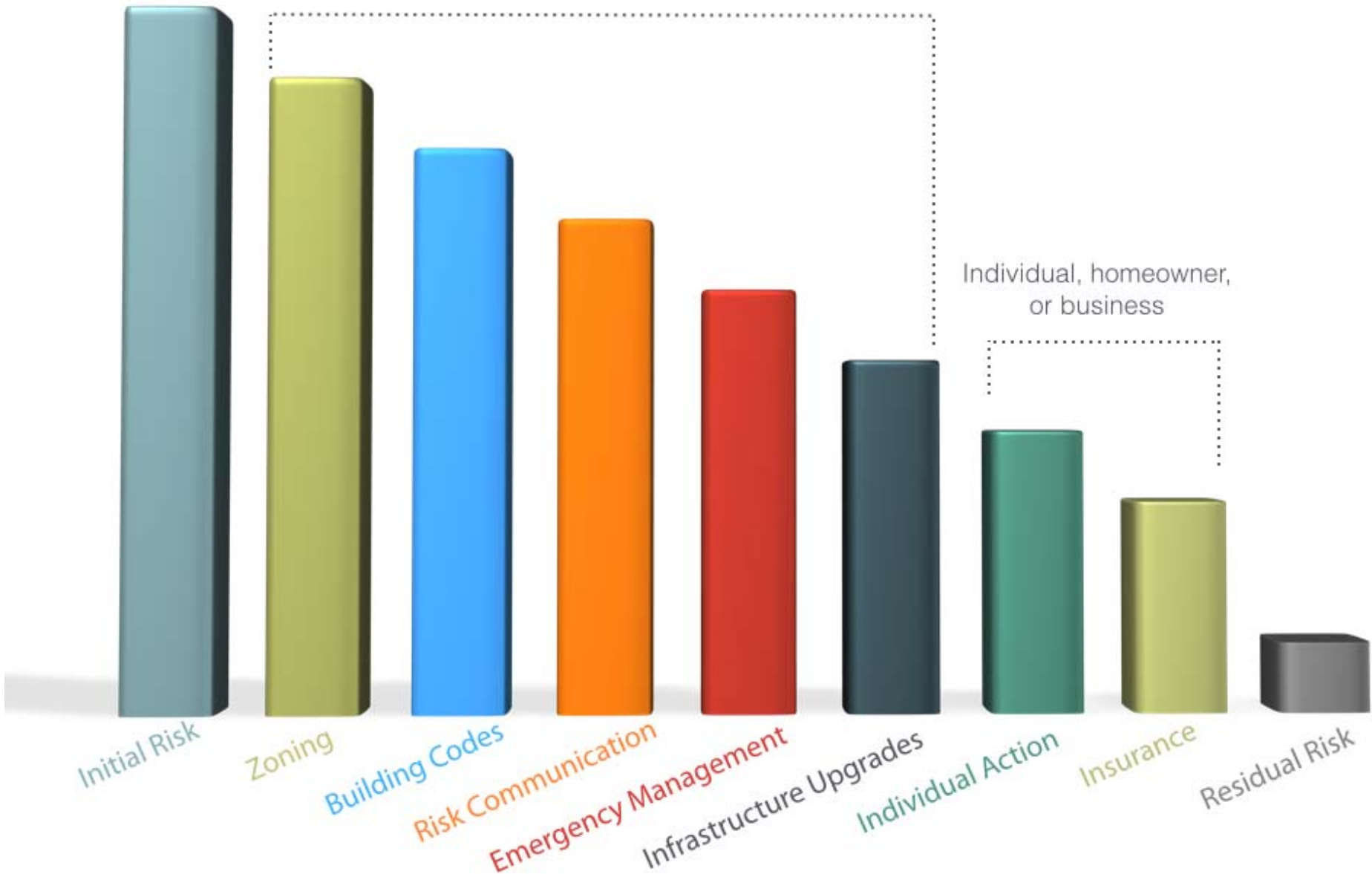
Weather as a Driver of Energy Use



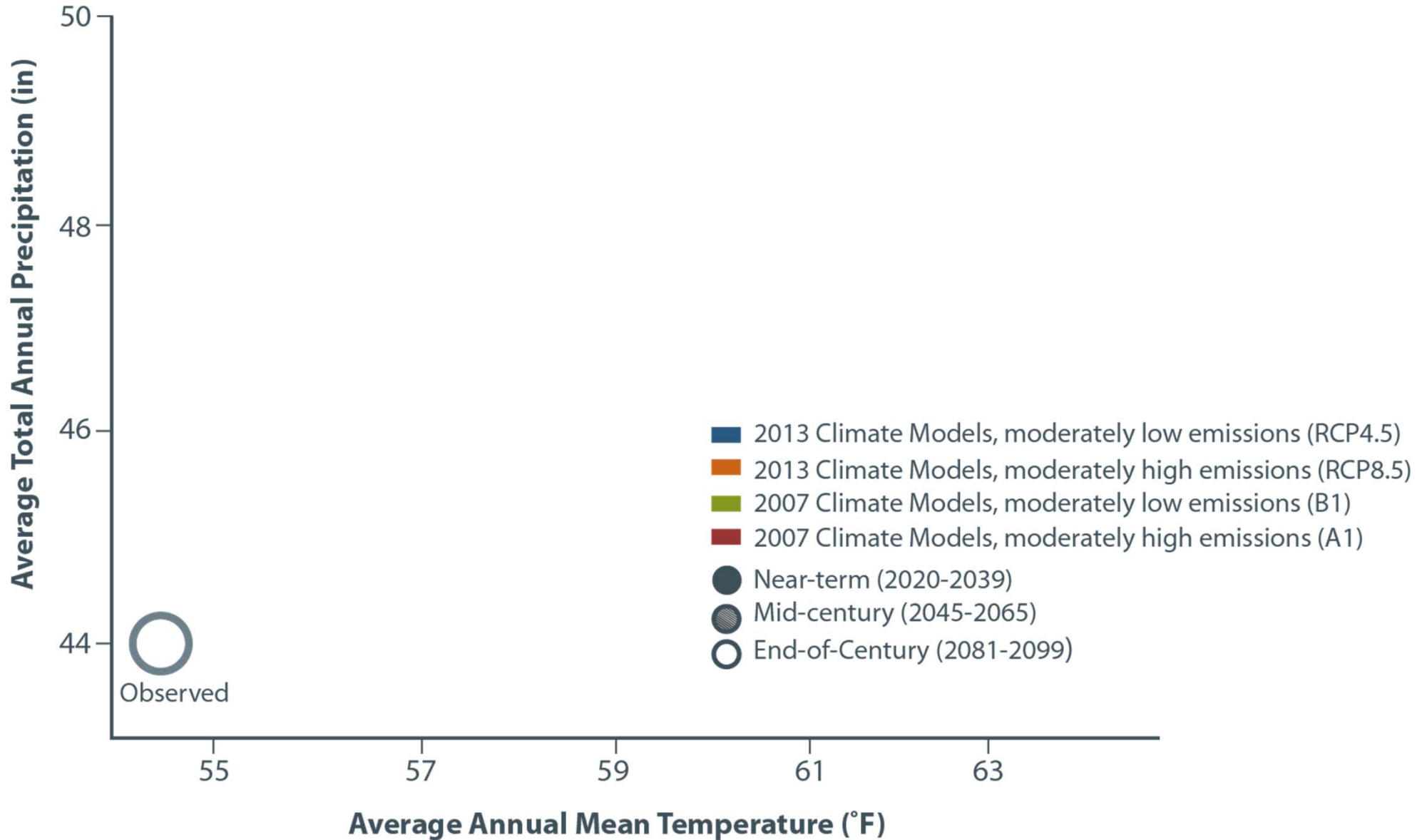
Risk Reduction Measures

Federal, state, and local government

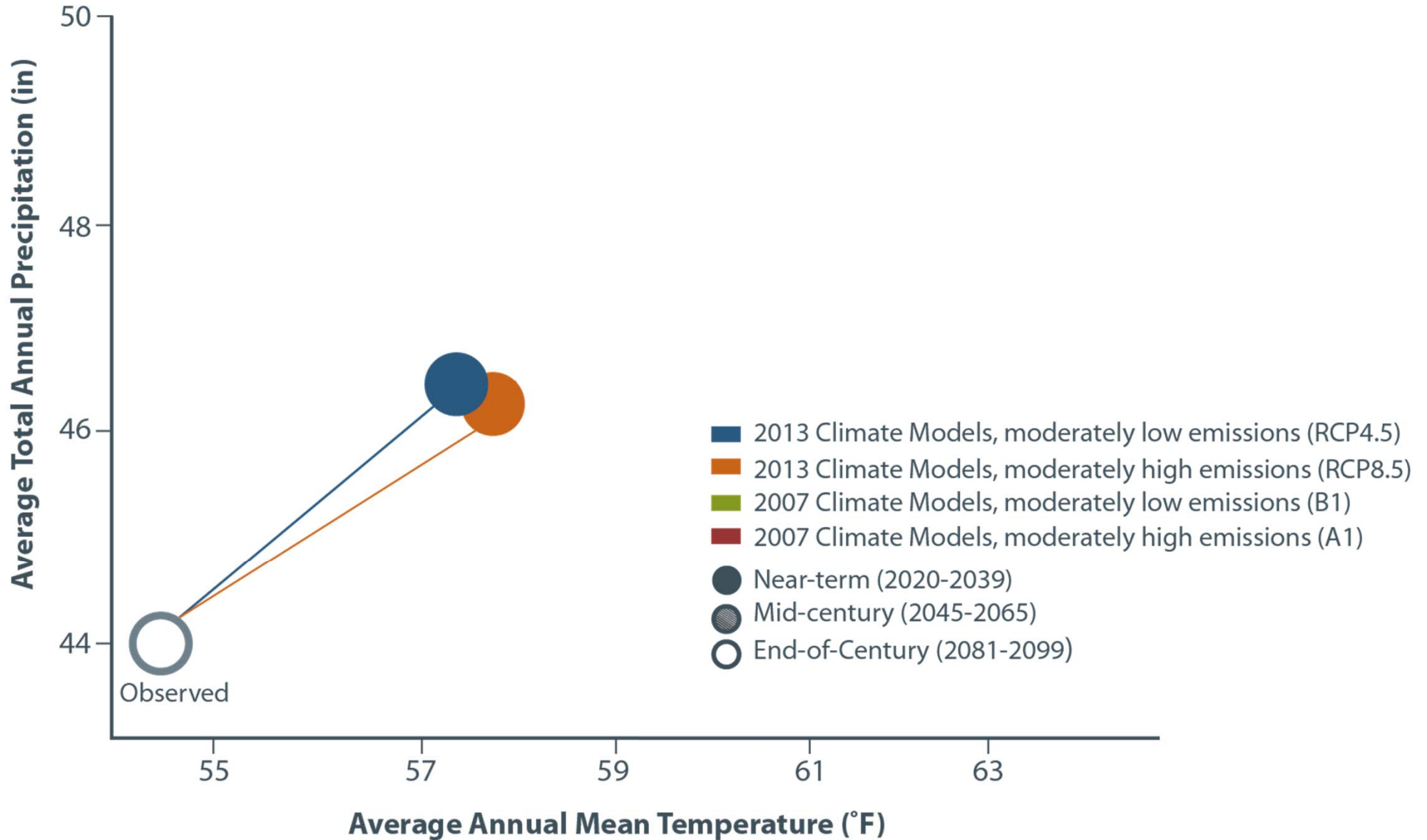
Individual, homeowner,
or business



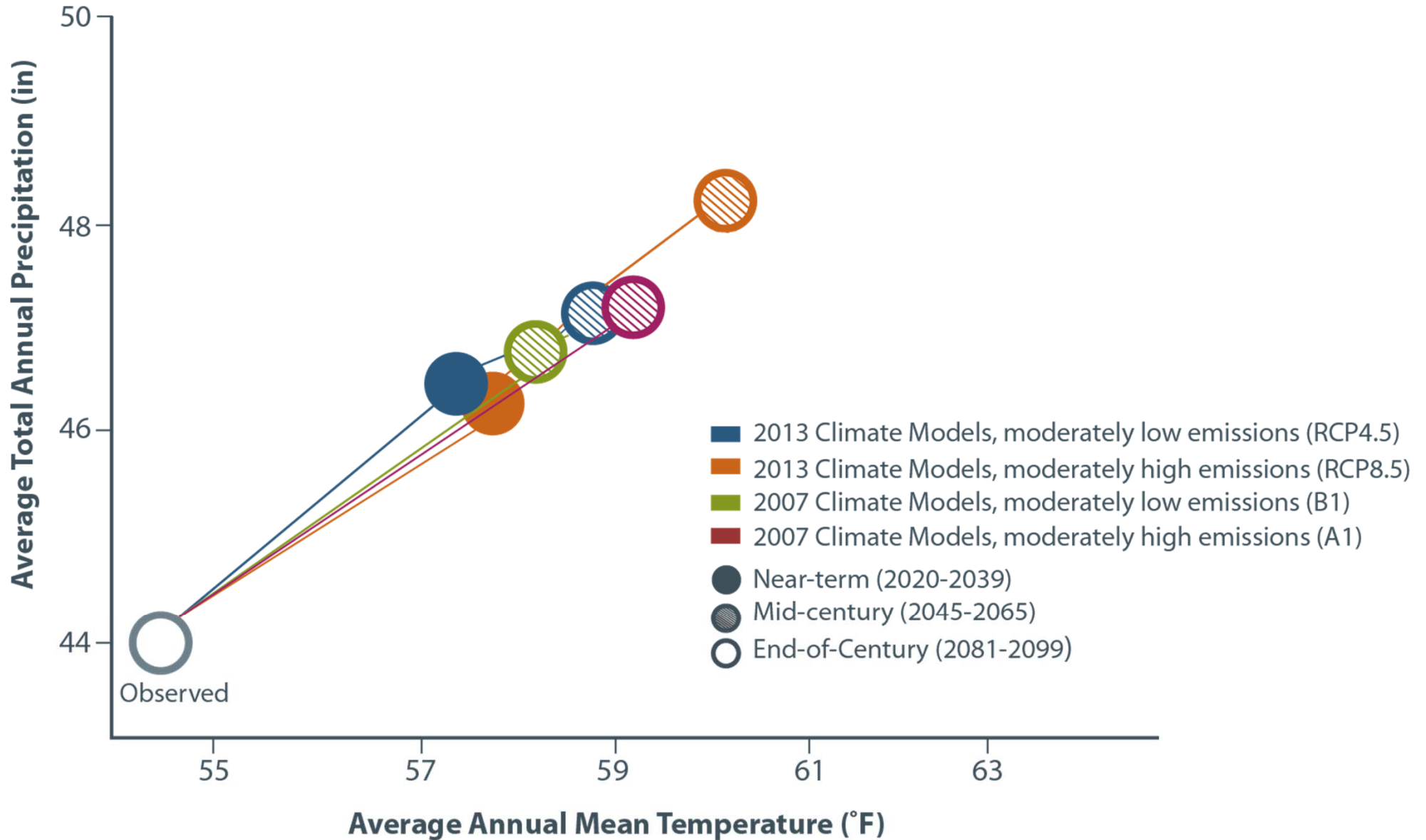
Climate Projections: Observed (1961-2000)



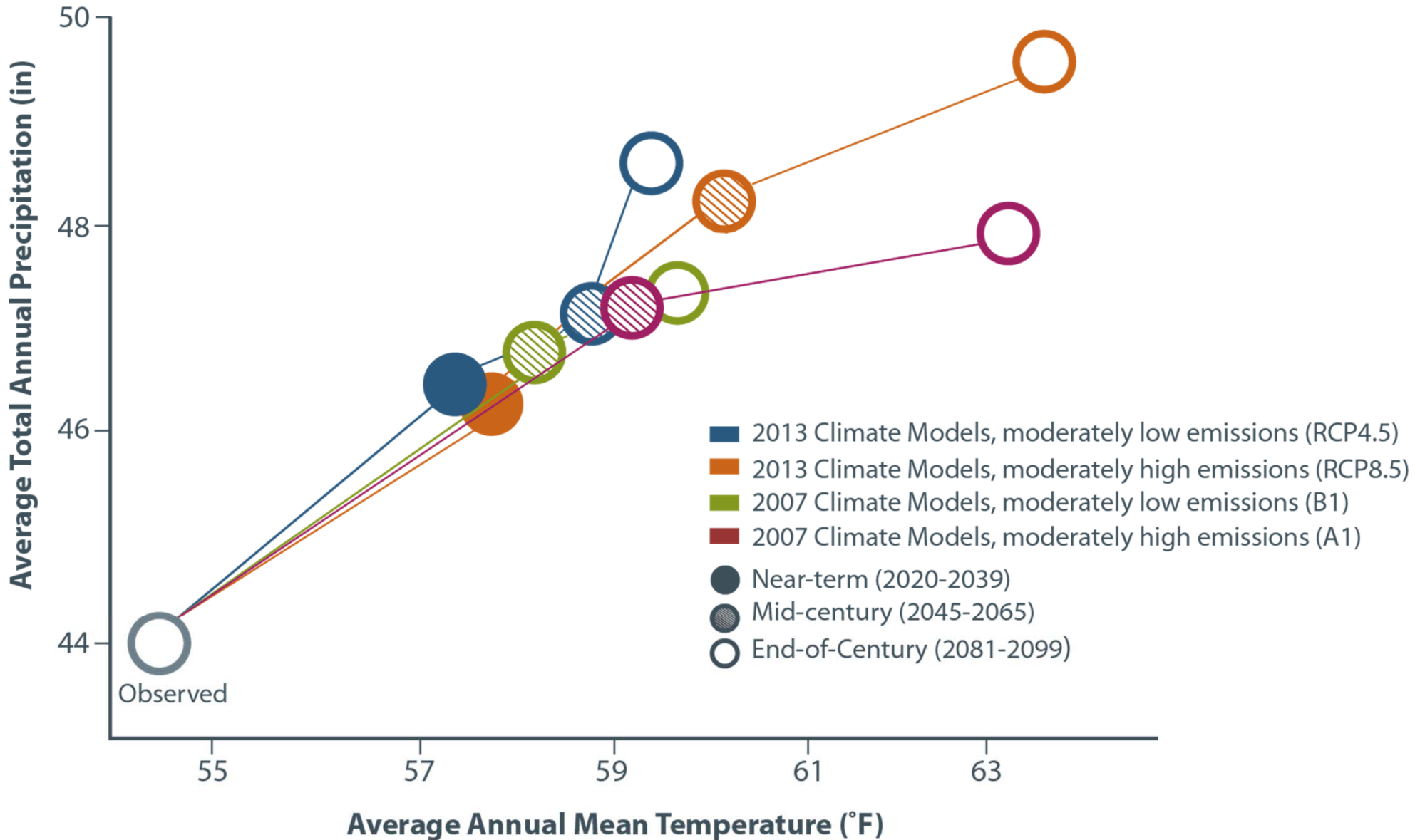
Climate Projections: Near Term (2020-39)



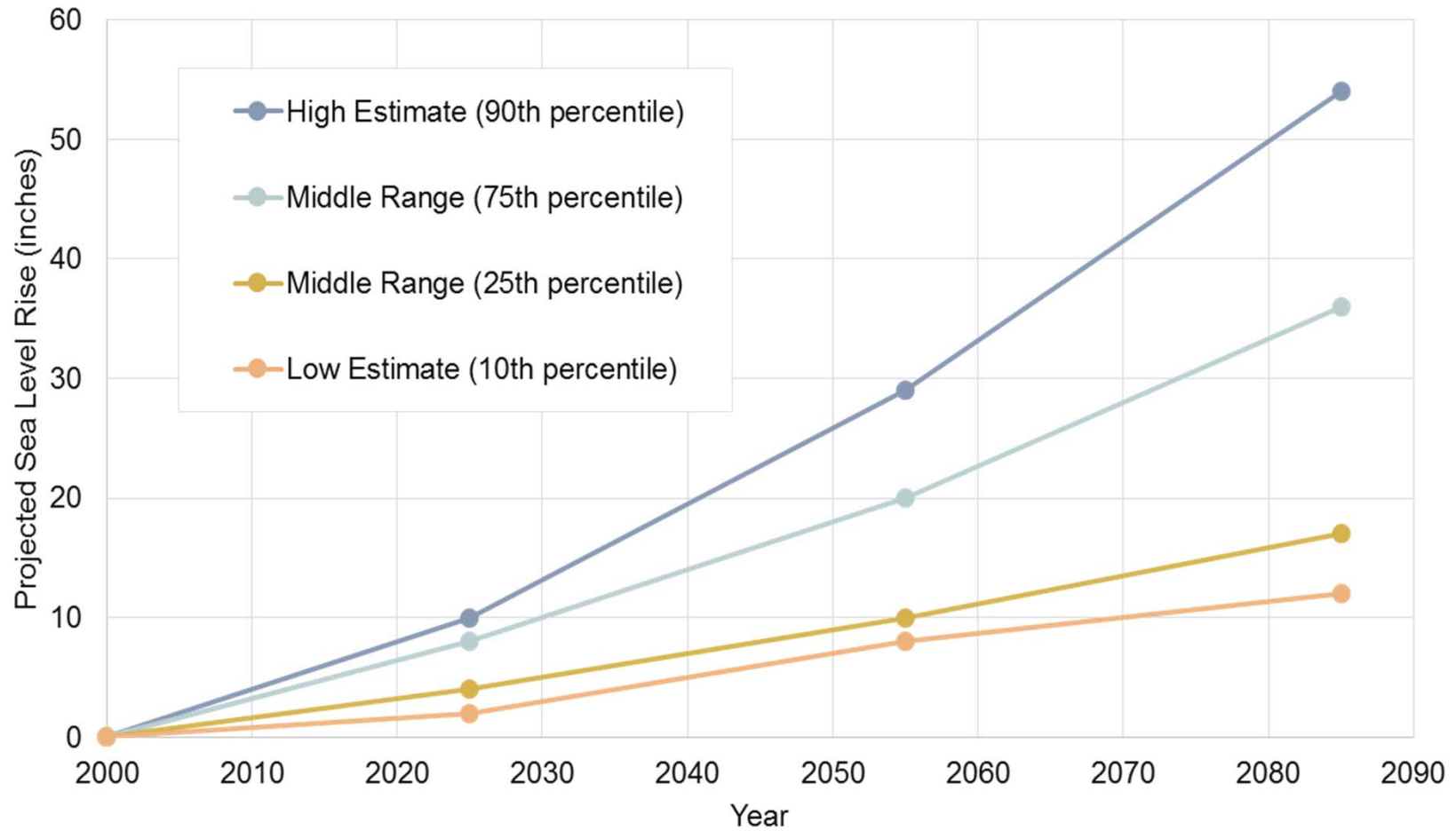
Climate Projections: Mid-century (2045-65)



Climate Projections: End-of-Century (2081-99)

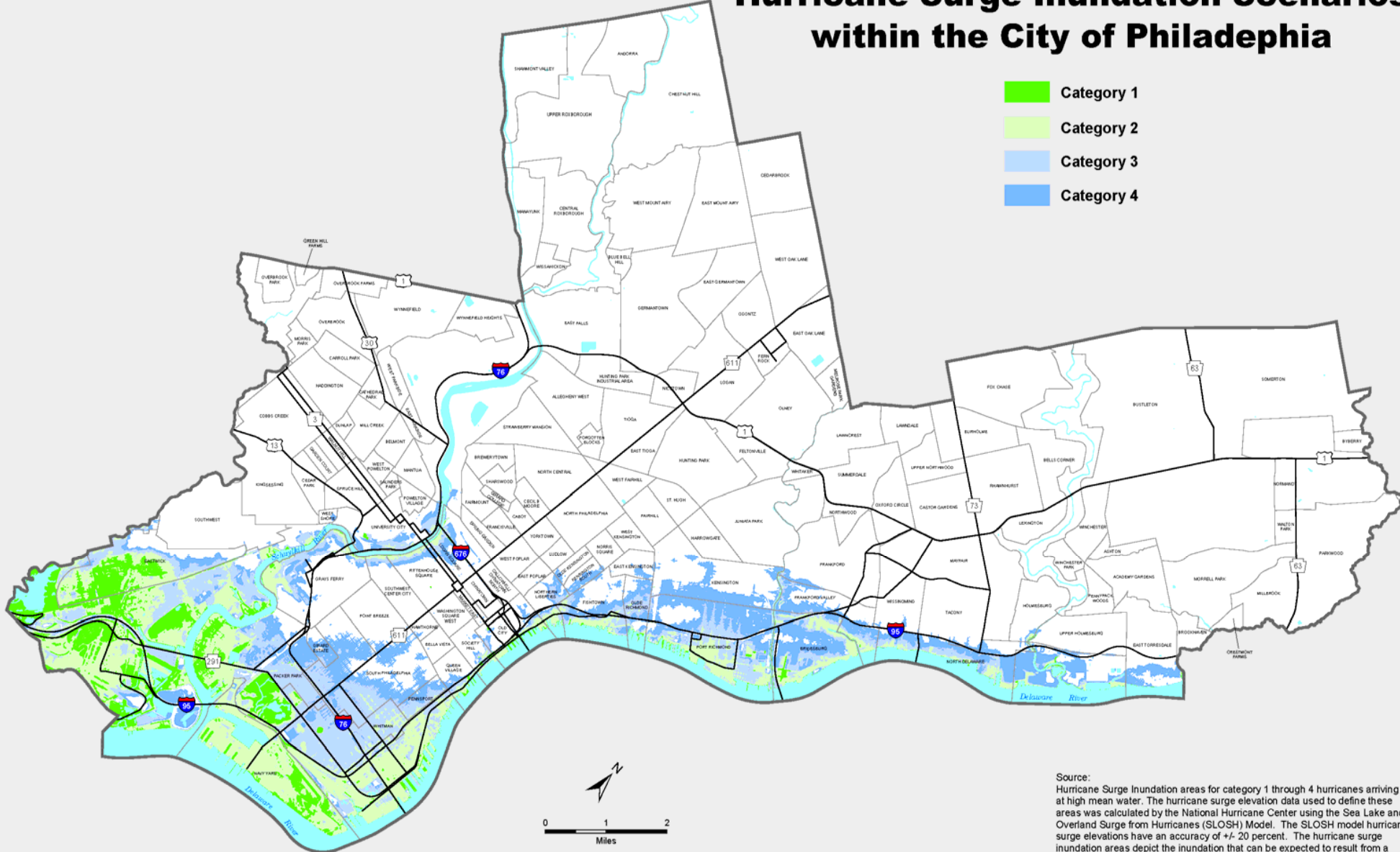


Climate Projections: Sea Level Rise



Hurricane Surge Inundation Scenarios within the City of Philadelphia

- Category 1
- Category 2
- Category 3
- Category 4



Source:
Hurricane Surge Inundation areas for category 1 through 4 hurricanes arriving at high mean water. The hurricane surge elevation data used to define these areas was calculated by the National Hurricane Center using the Sea Lake and Overland Surge from Hurricanes (SLOSH) Model. The SLOSH model hurricane surge elevations have an accuracy of +/- 20 percent. The hurricane surge inundation areas depict the inundation that can be expected to result from a worst case combination of hurricane landfall location, forward speed, and direction for each hurricane category.

Neighborhood Boundaries - Philadelphia City Planning Commission

THE CITY OF PHILADELPHIA

MAYOR'S OFFICE OF
SUSTAINABILITY

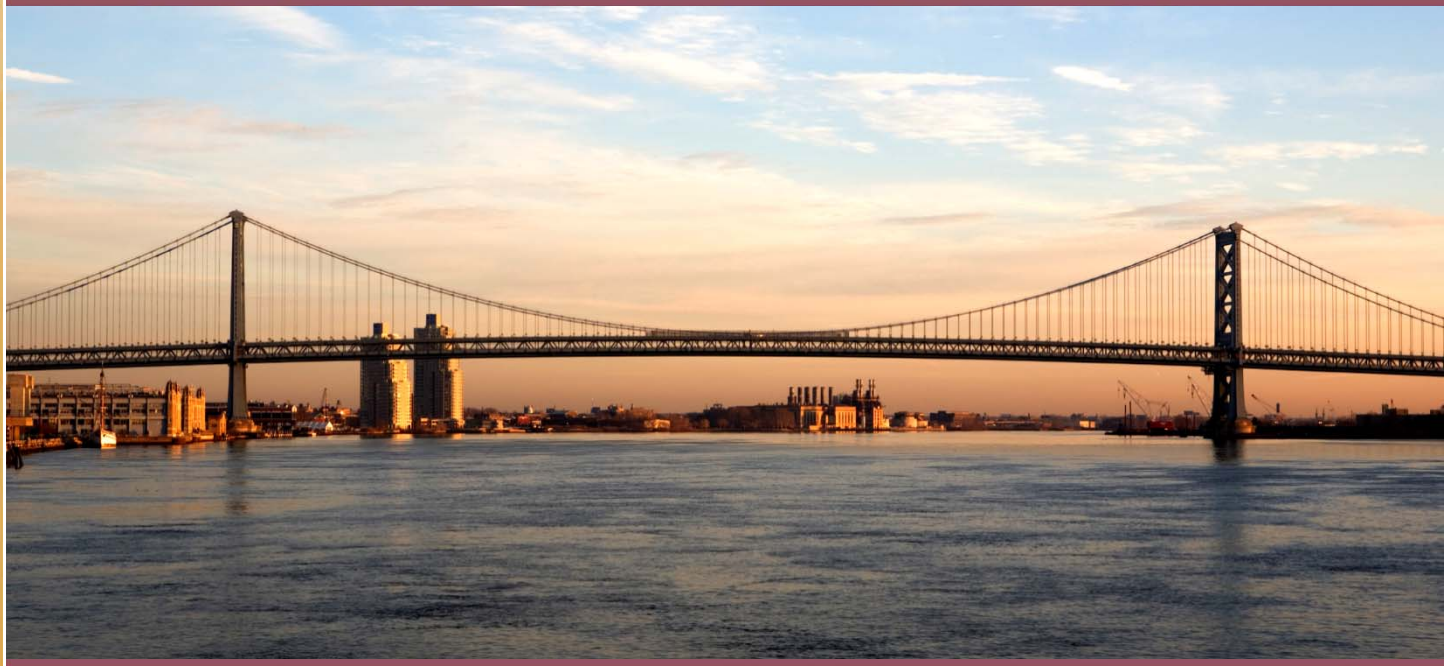


GREENWORKS
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Changing Demographics

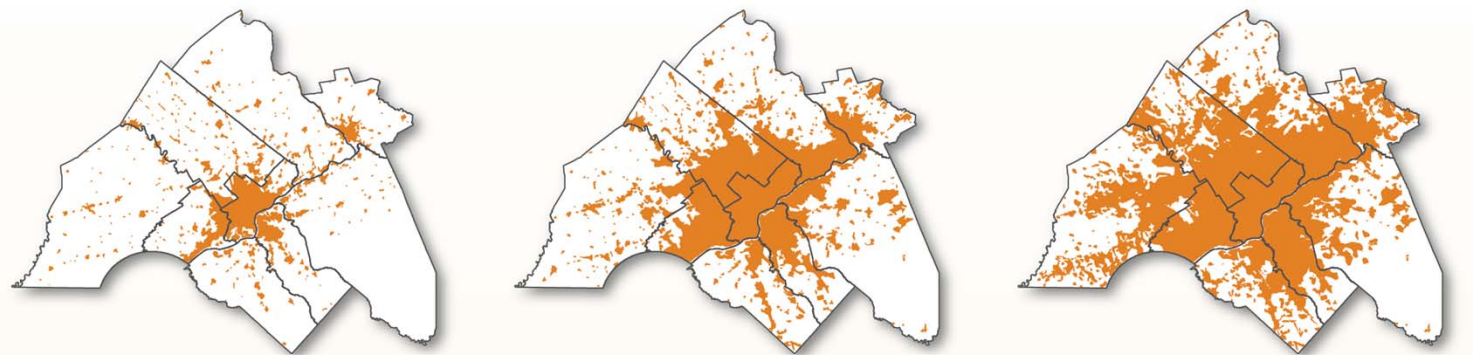


Mary E. Bell
Manager
Demographic and
Economic Analysis

September 17, 2014
DVRPC Futures Group



Regional Development Pattern



1930

1970

2010



3.3 MILLION PEOPLE



222,000 ACRES DEVELOPED



5.1 MILLION PEOPLE



641,000 ACRES DEVELOPED

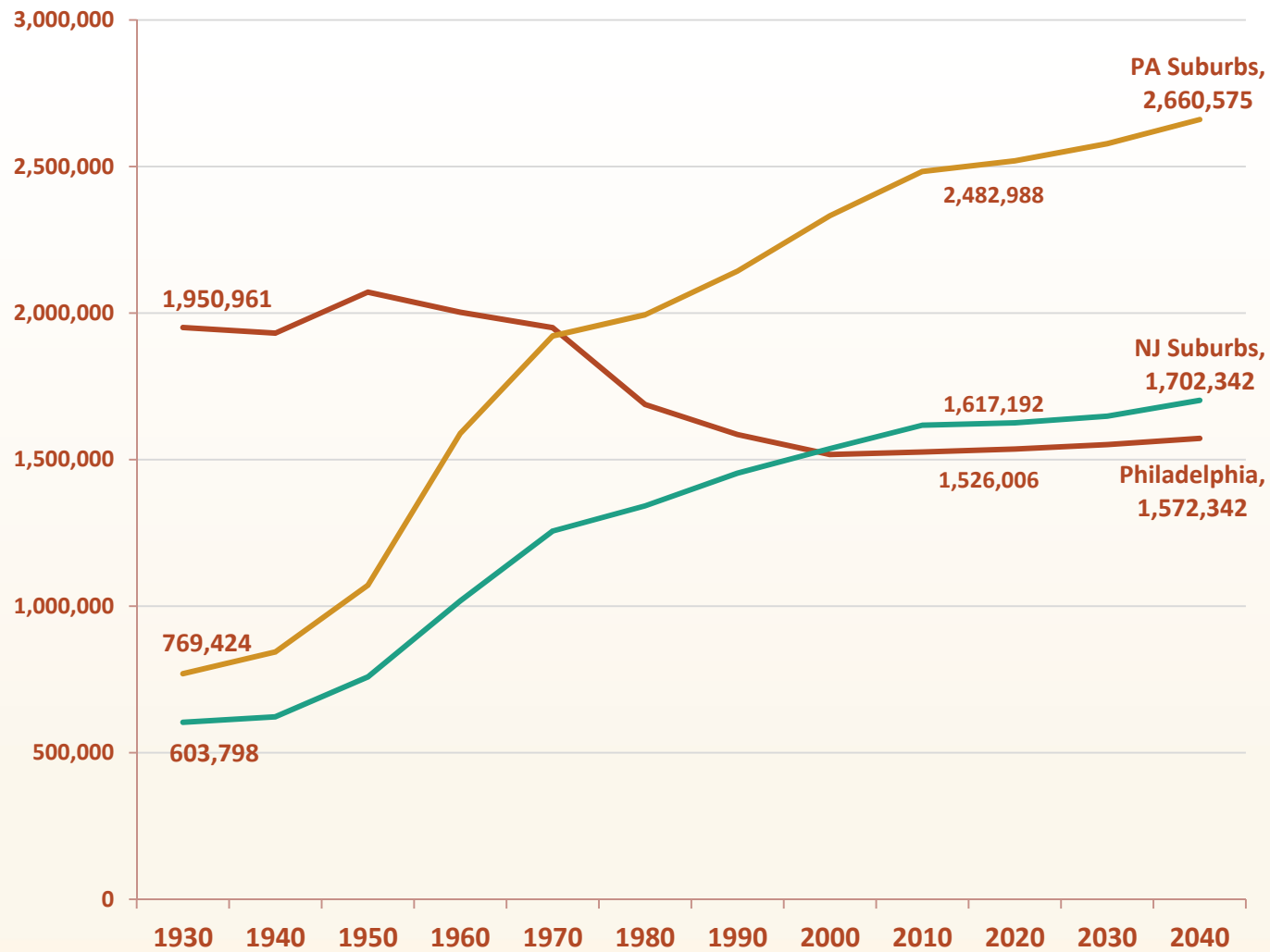


5.6 MILLION PEOPLE

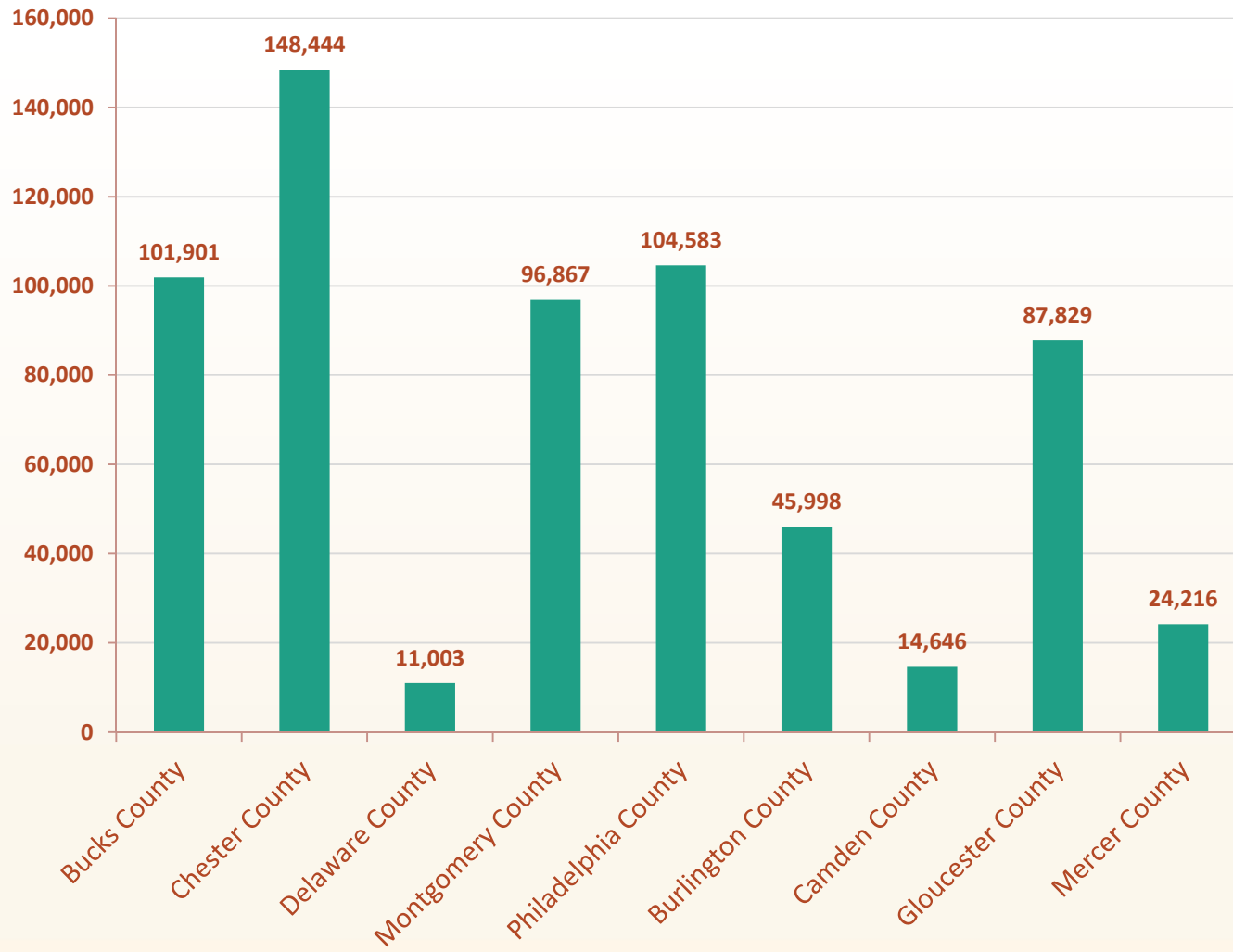


983,000 ACRES DEVELOPED

Regional Population, 1930-2040

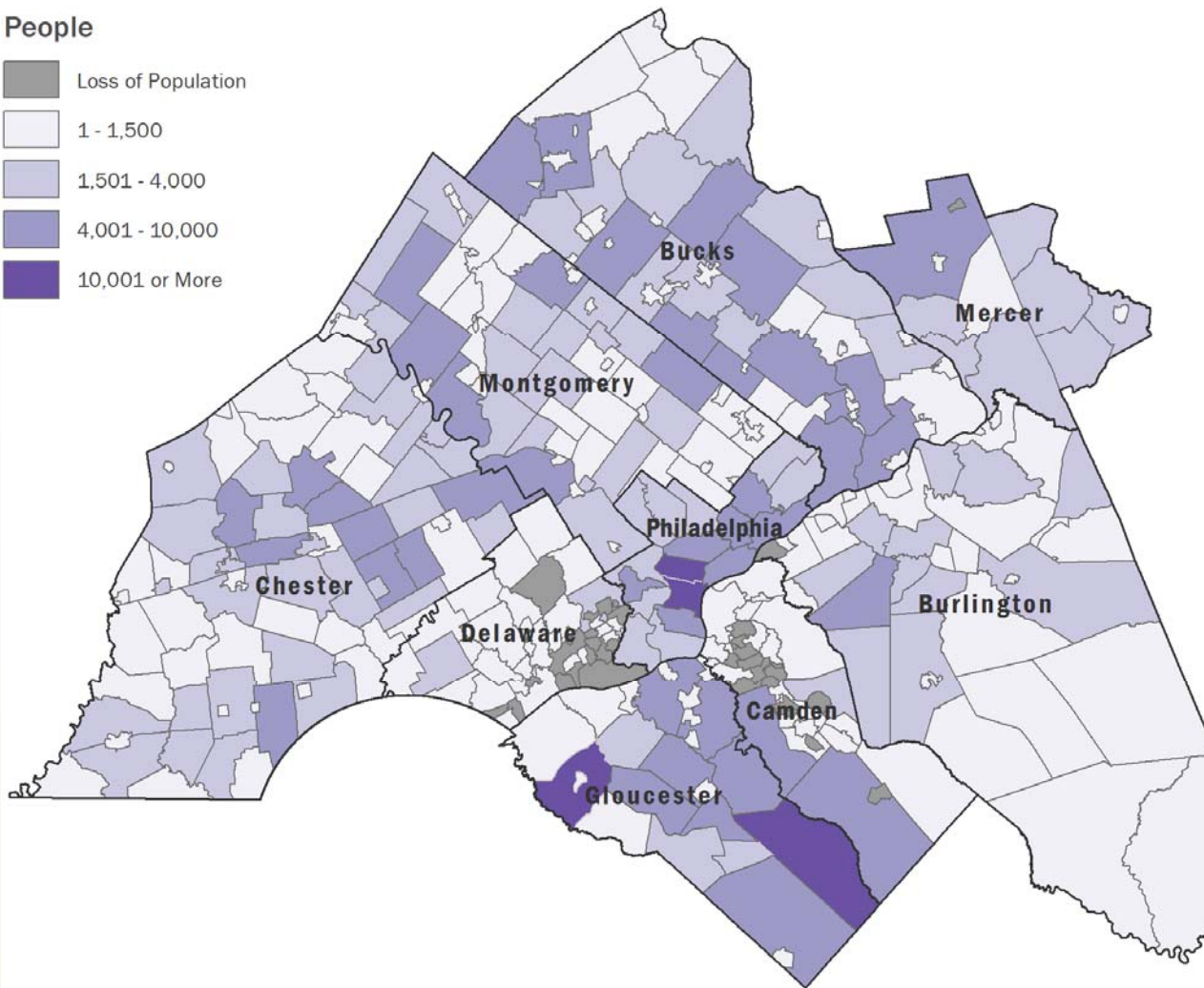
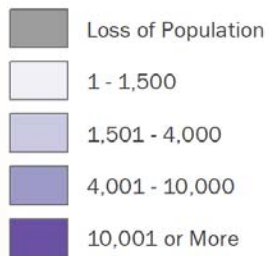


Forecasted Population Change, 2010-2040



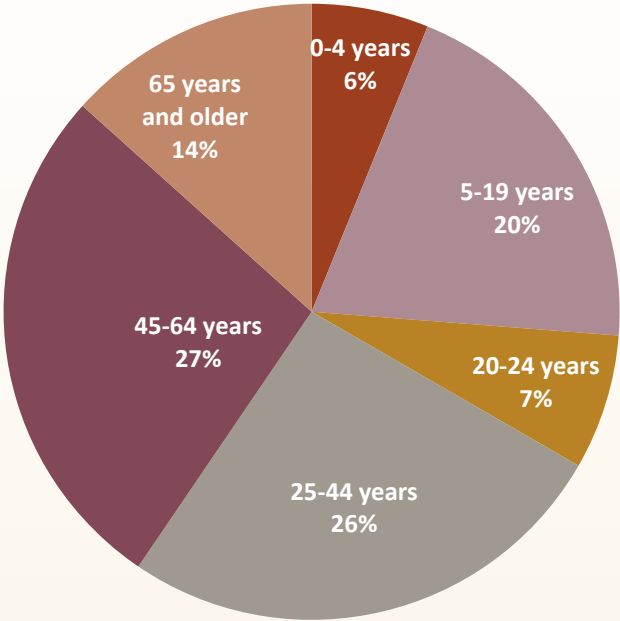
Forecasted Population Change, 2010-2040

People

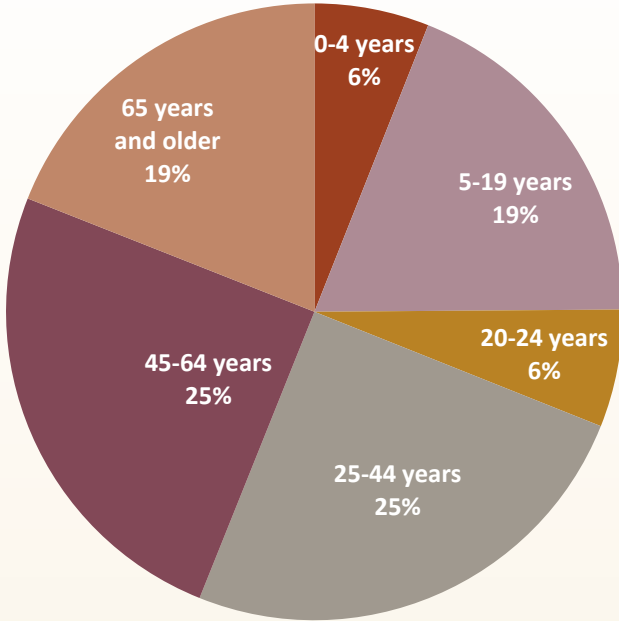


The Greying of the Region...

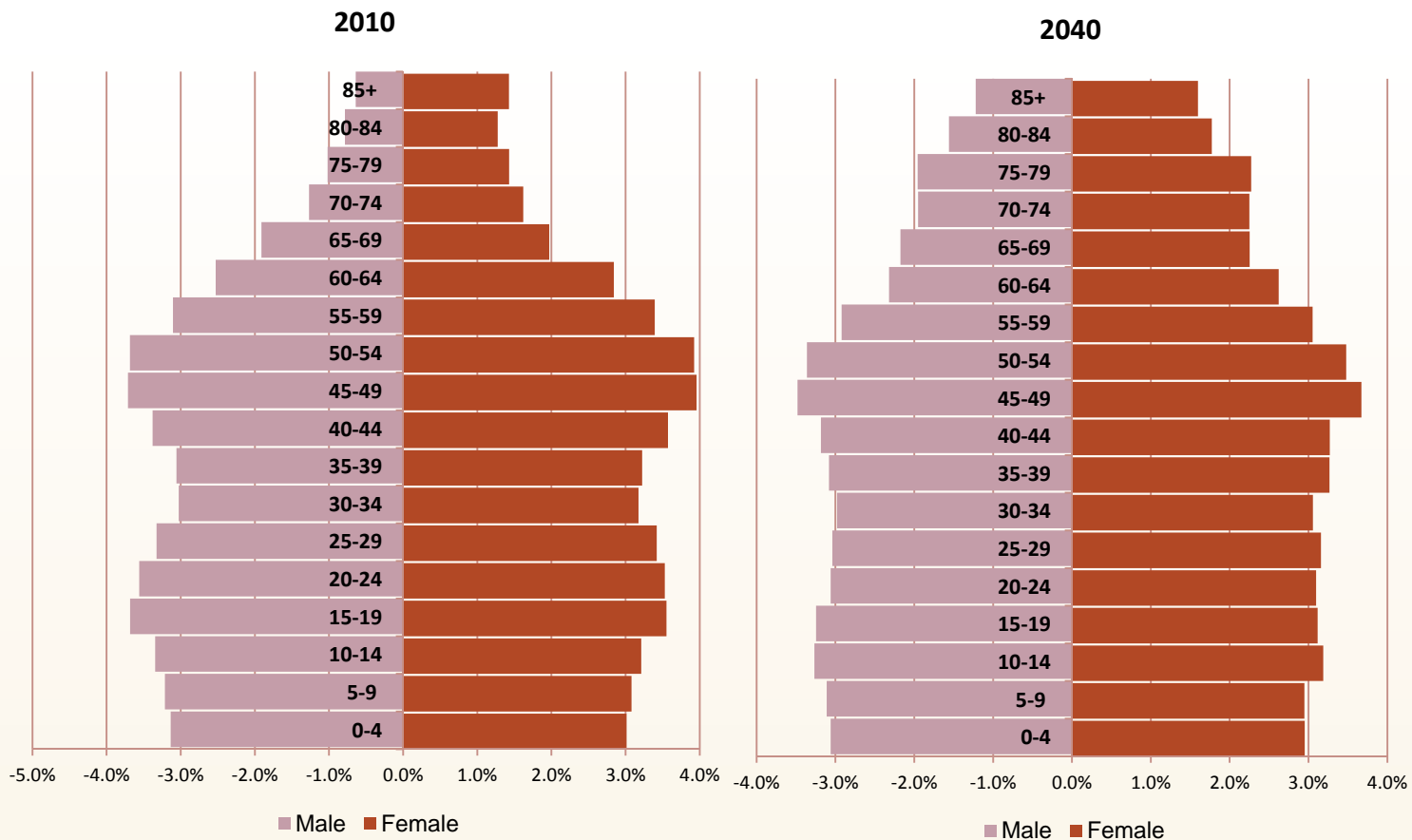
2010



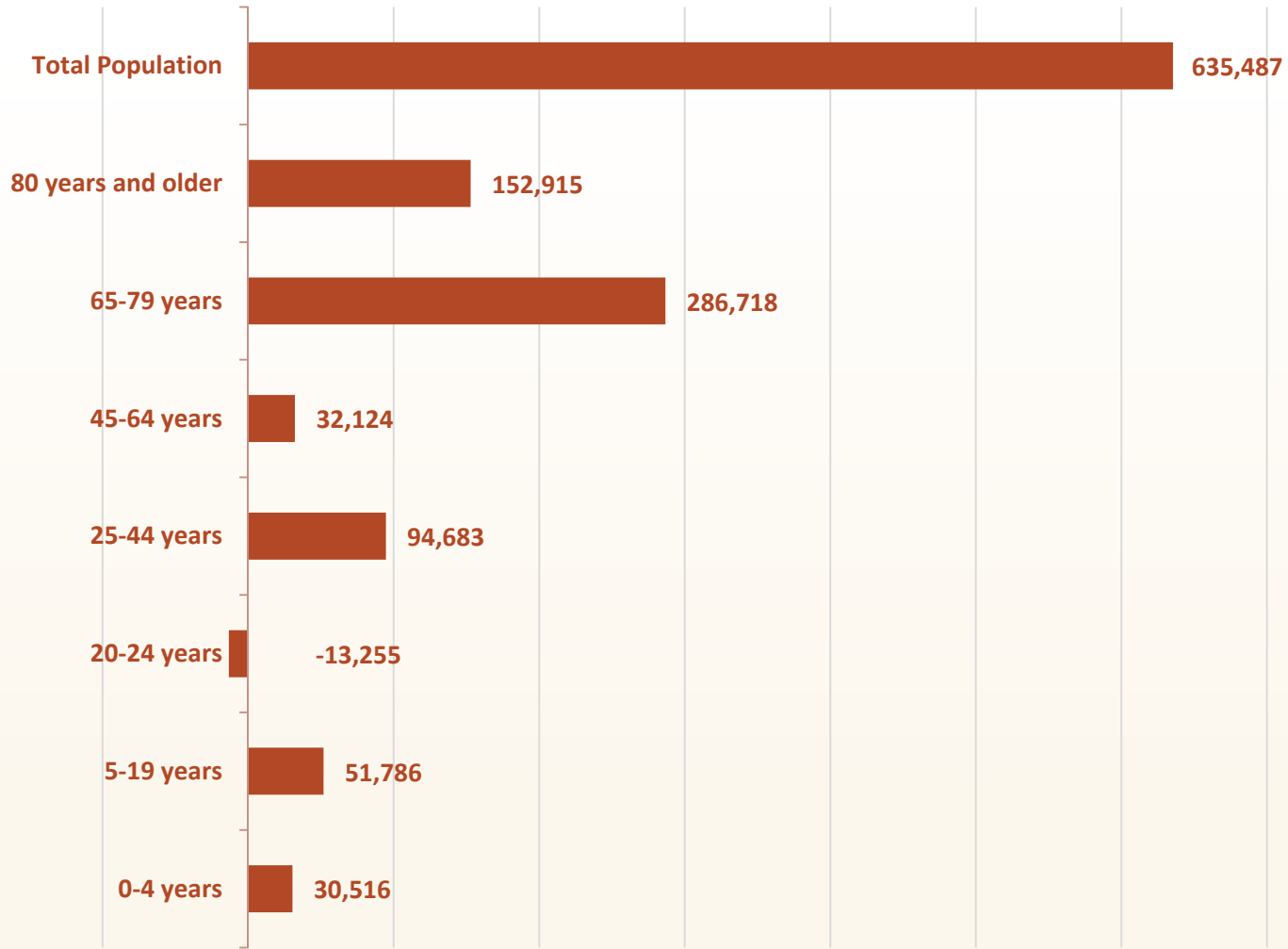
2040



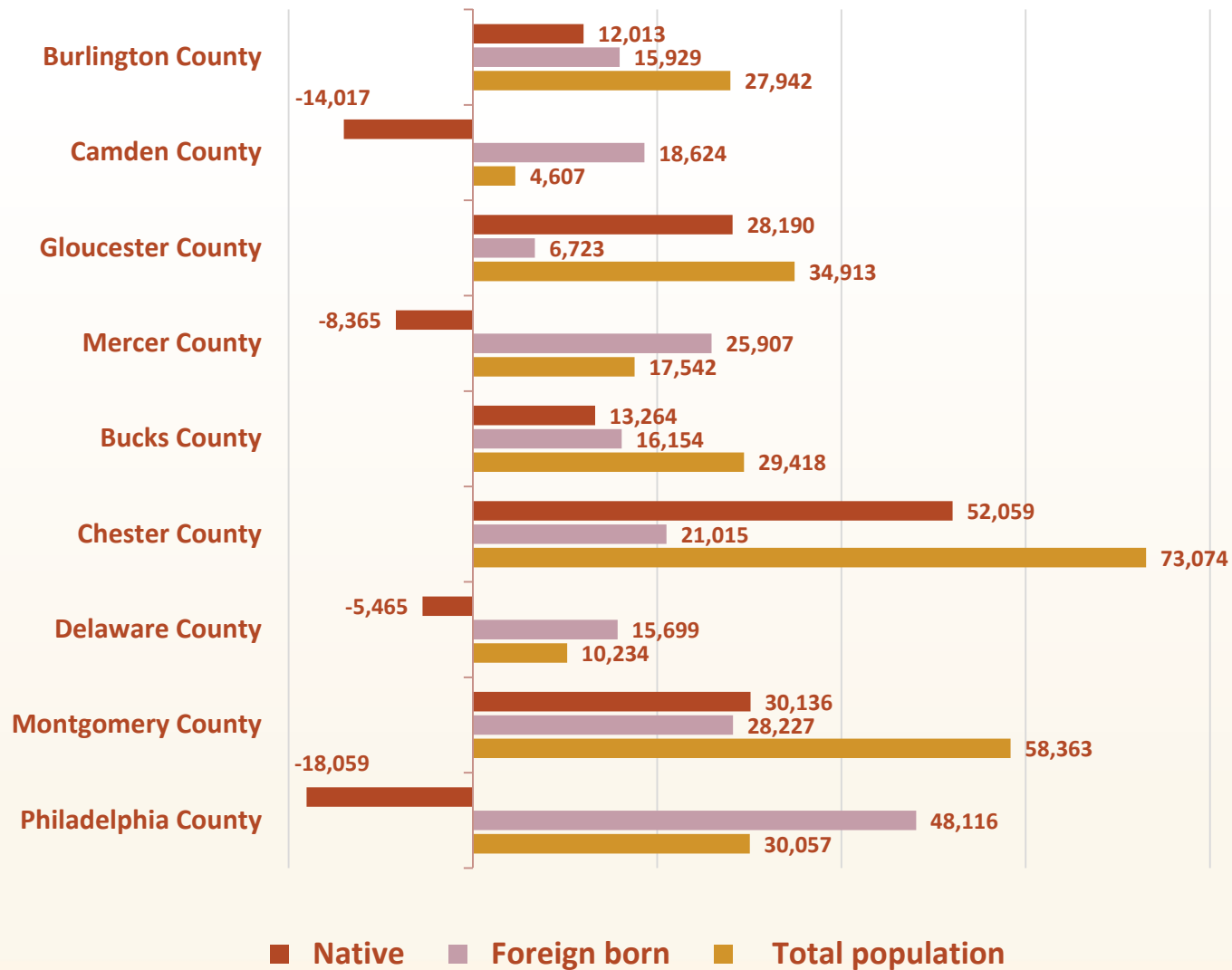
Population by Age Cohort



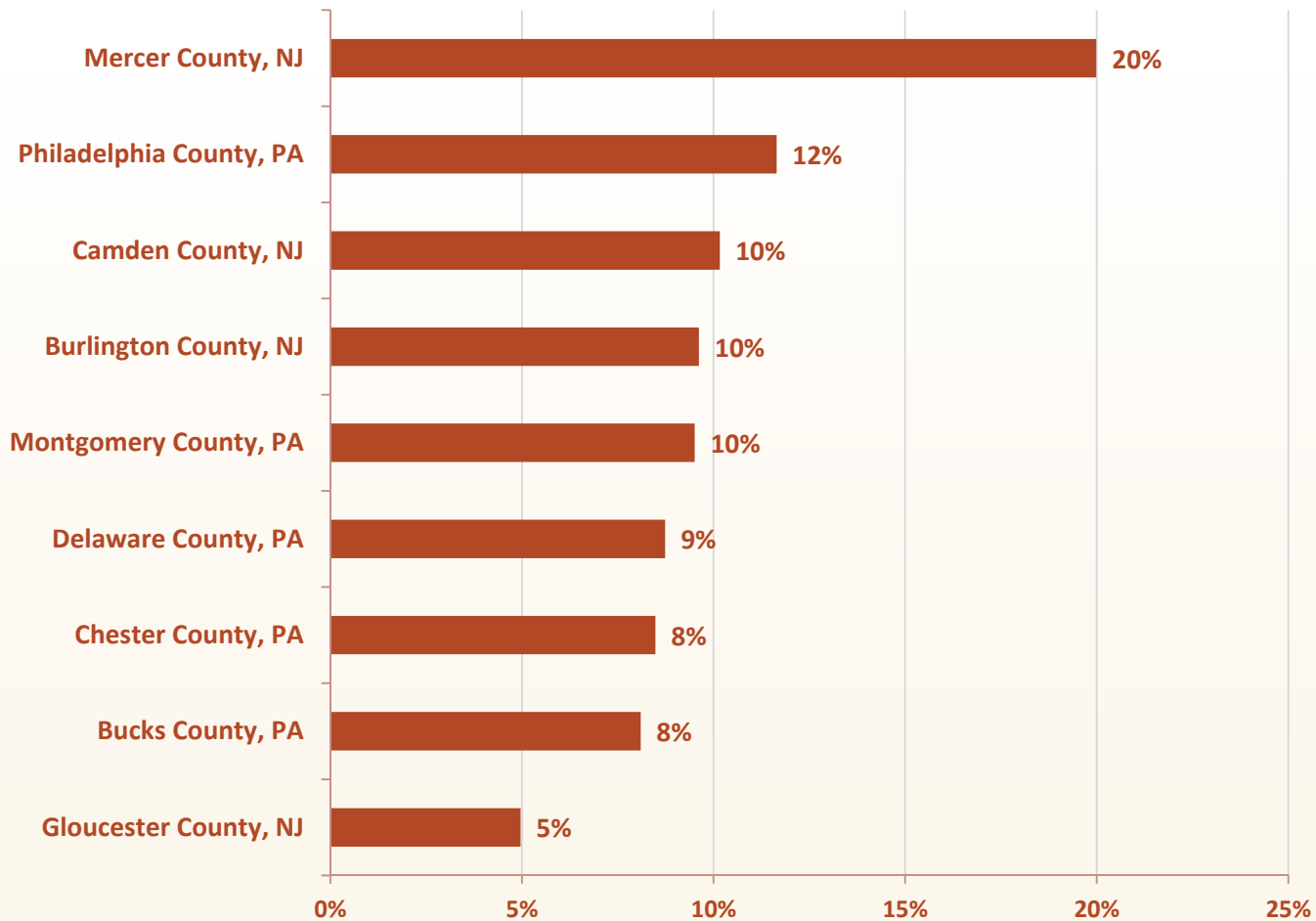
Population Change, 2010-2040



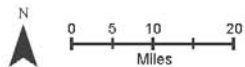
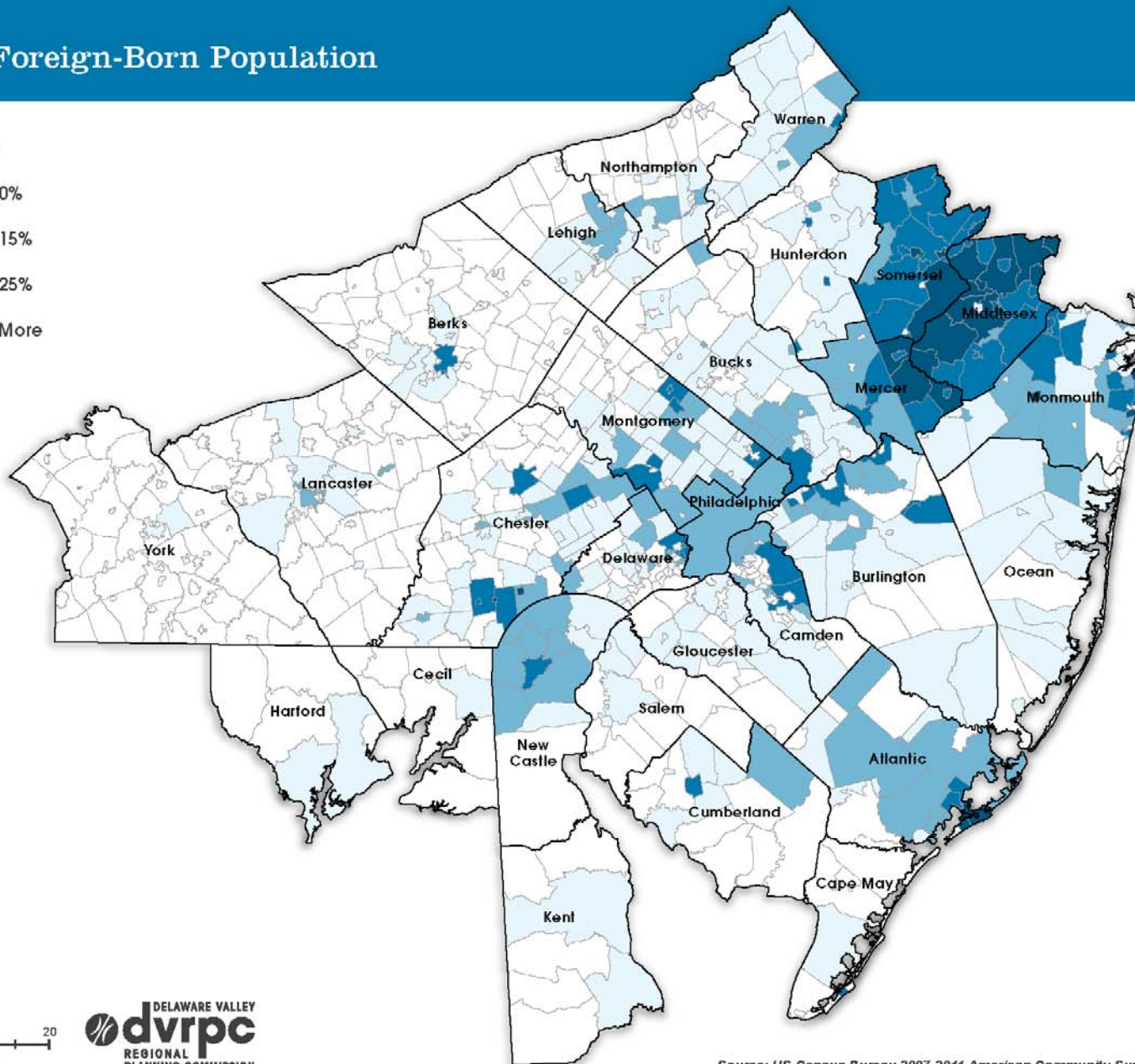
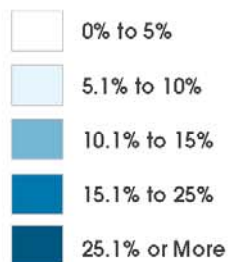
Native versus Foreign Born Population Change, 2000-2010



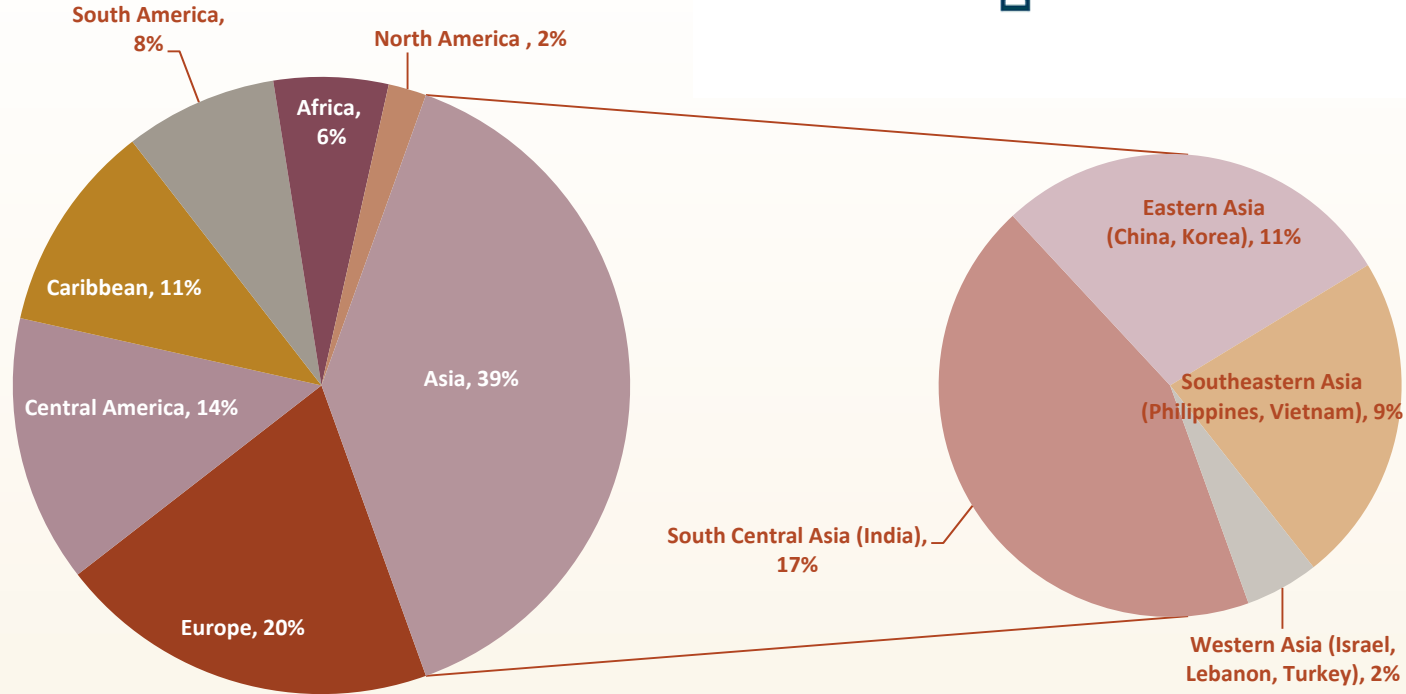
Percent Foreign-Born by County, 2011



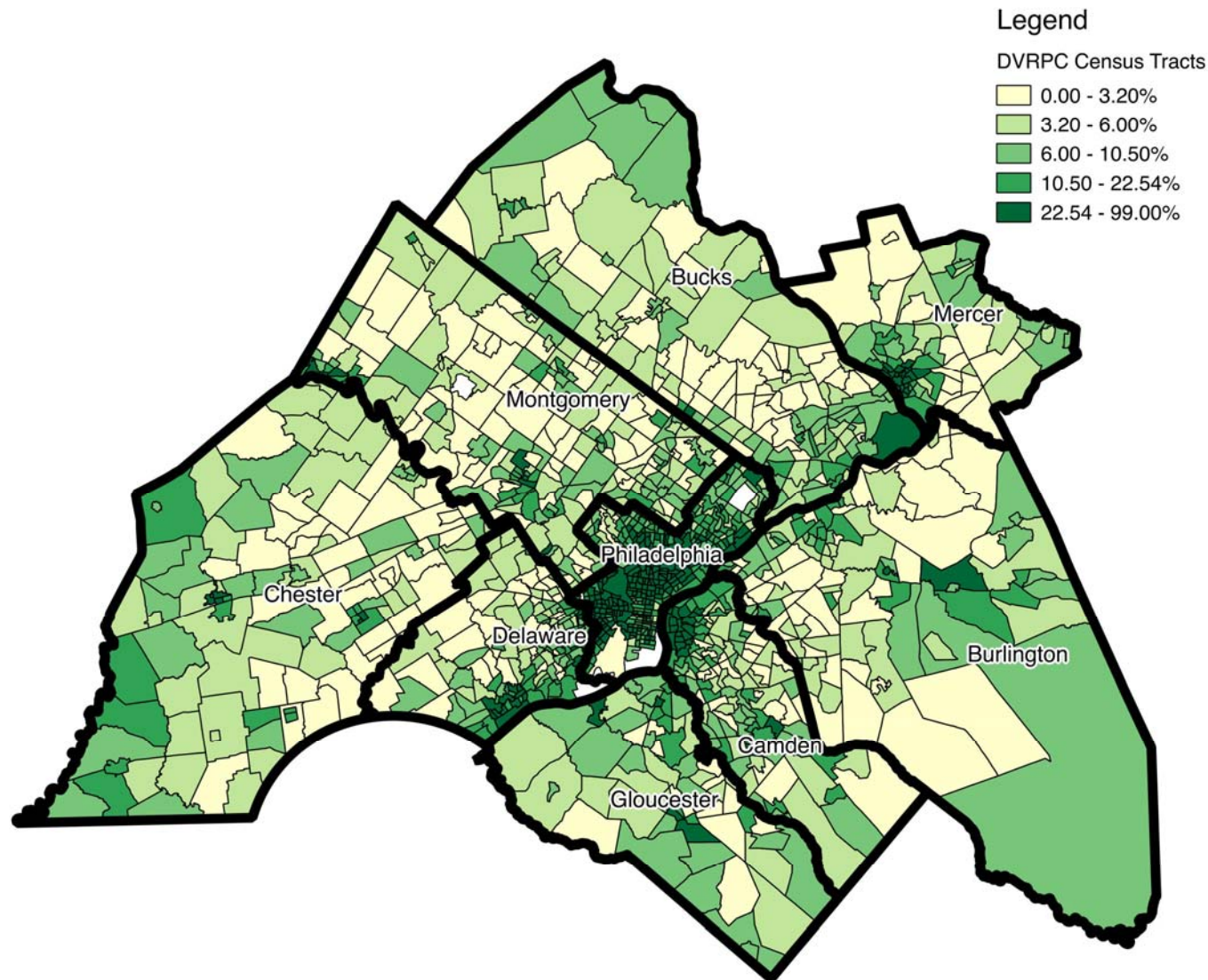
**Figure 2:
Percent Foreign-Born Population**



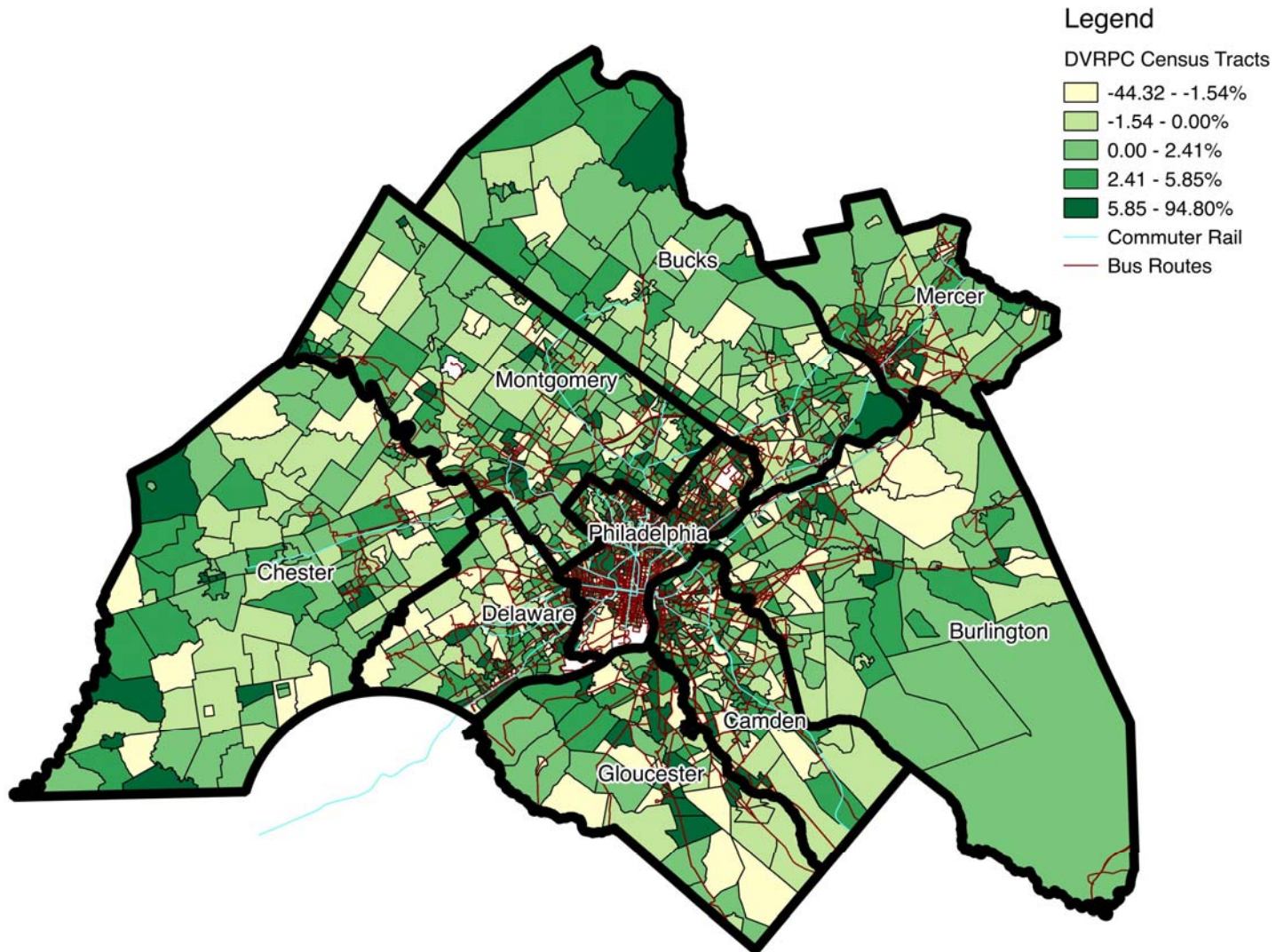
Countries of Origin



Poverty by Census Tract, 2012



Change in Poverty, 2000-2012



Thank You!
Questions? Comments?



Mary E. Bell
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PLANNING FOR CARS THAT DRIVE THEMSELVES



Erick Guerra
Assistant professor of City & Regional Planning
University of Pennsylvania

DARPA CHALLENGE

2004: No teams' autonomous vehicles completed 150-mile challenge

2005: Six teams completed the challenge (including teams from Stanford, CMU, Upenn, and MIT)



Existing Technology



When will technologies be market-ready?



Primary Impacts: Safety



Primary Impacts: Congestion and VMT?



Primary Impacts: Urban Form?



Primary Impacts: Shared Vehicles?



Current Issues: Legal Challenges

Areas allowing testing of autonomous vehicles:

- California
- Nevada
- Florida
- Washington, DC

CARS TECHNICA / ALL THINGS AUTOMOTIVE

California DMV says Google's autonomous car tests need a steering wheel

State isn't ready to approve Google's cars without a backup control system.

by Ron Amadeo - Aug 21 2014, 2:40pm EDT

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Summary

- Technology is here (but expensive)
- Prices are likely to fall
- Mass-marketing likely within the next 20 years
- Legislation is likely to support (particularly due to safety)
- Direct impacts on safety and road capacity
- Uncertain impacts on VMT, congestion, and urban form