Real Resilience: Positioning Montgomery County to Thrive Through Changing Times

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Coming Big Disruptions and the County's Role in Managing Change

Transport and Mobility

Opportunity for Disruption Technology-enabled options

Climate
Change/
Resilience

Existence, Habitability
Information/Action/Choice?
Increasing disparities or shrinking ones?

Changing Economy/ Disparity

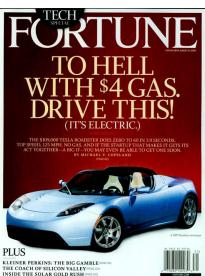
Housing
Demographics
Limned in the geography

Transportation and New Mobility

The rise of new mobility services





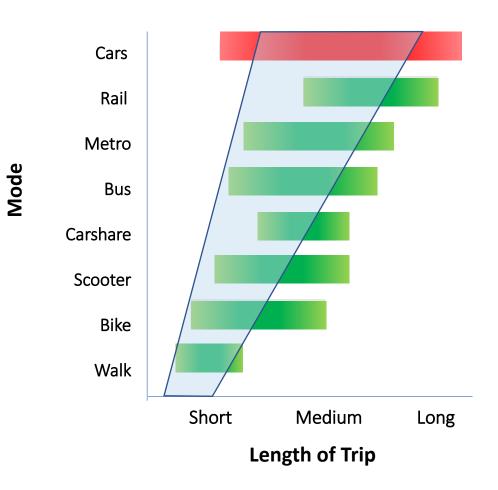


"New mobility" is a loose term for business models using technology to deliver transport in new ways.

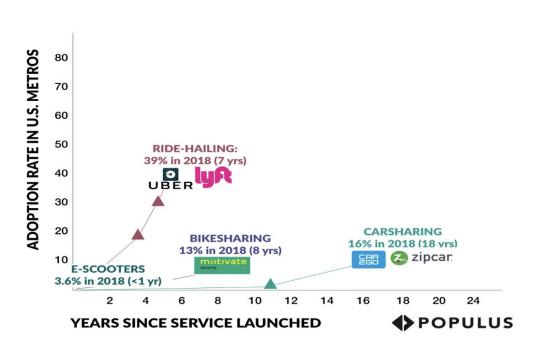


The Mobility Ecosystem is Changing

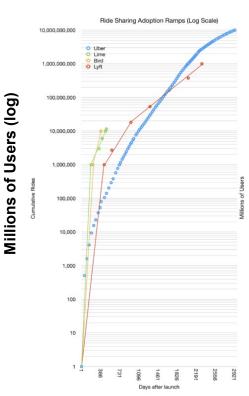
Communities need to define their mobility priorities, and the role modes play in a balanced ecosystem



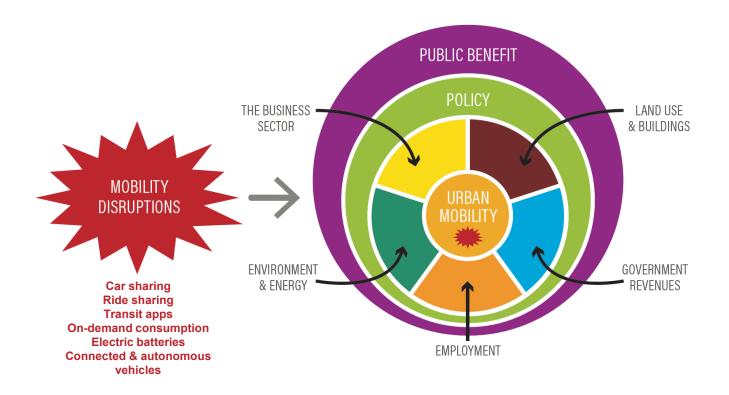
IT'S HAPPENING FAST(ER)



E-Scooter Growth



THE IMPACTS ARE FAR-REACHING



OUR MOBILITY FUTURE



HEAVEN









Massive sprawl

Single occupancy modes

Pollution

Unsafe streets

Historic job losses

Sudden drop in tax revenues

Unjust, unsustainable cities

Compact and accessible

Shared modes

Decarbonized

Complete streets

Retrained labor

New (and fair) revenue streams

Just, sustainable, livable cities













County: Montgomery, MD

Traditional measures of housing affordability ignore transportation costs. Typically a household's second-largest expenditure, transportation costs are largely a function of the characteristics of the neighborhood in which a household chooses to live. Location M atters. Compact and dynamic neighborhoods with walkable streets and high access to jobs. transit, and a wide variety of businesses are more efficient, affordable, and sustainable.

The statistics below are modeled for the Regional Typical Household. Income: \$92,324 Commuters: 1.37 Household Size: 2.74 (Washington-Arlington-Alexandria, DC-VA-MD-WV)

Map of Transportation Costs %Income



<8% 8-12% 12-15% 15-18% 18-22% 22-26%

transportation choices, allow people to spend less time, energy, and money on transportation.

Places that are compact, close to jobs and services, with a variety of

Location Eff ciency Metrics

Percent of location efficient neighborhoods

Neighborhood Characteristic Scores (1-10) As compared to neighborhoods in all 955 U.S. regions in the Index

Job Access	
8.6	

AllTransit Performance Score

Neighborhood 2.5

Very high access to a variety of jobs

Good access to public transportation

Low density and limited walkability

Average Housing + Transportation Costs % Income

28-29% 29%+

Factoring in both housing and transportation costs provides a more comprehensive way of thinking about the cost of housing and true affordability.



Transportation Costs

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living.



13.017 Annual Transportation Costs





19 418 Average Household VM T

H+T* Fact Sheet



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Map of Transportation Costs % Income



Location Efficient Areas

22-26% 26-29% 29%+

Location Efficiency Metrics

Places that are compact, close to jobs and services, with a variety of transportation choices, allow people to spend less time, energy, and money on transportation.

Percent of location efficient neighborhoods

Neighborhood Characteristic Scores (1-10)

As compared to neighborhoods in all 955 U.S. regions in the Index

Job Access 9.8

AllTransit Performance Score 9.3

Compact Neighborhood

Very high access to a variety of jobs

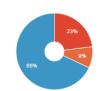
Very good access to public Very high density and very transportation

Average Housing + Transportation Costs % Income

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Transportation Costs

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living.



Annual Transportation Costs

Autos Per Household

Average Household VMT

BENCHMARK

CLIMATE CHANGE/RESILIENCE

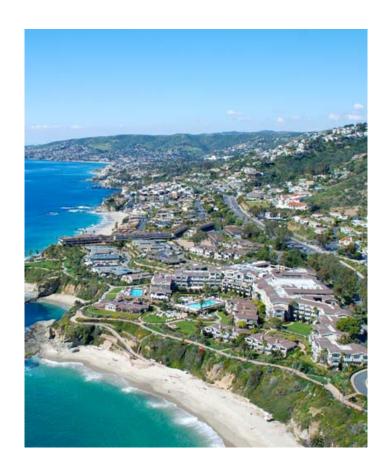
The worst flooding ever. So far.



Homes near Silver Sands Beach in Milford were flooded by Hurricane Sandy in 2012. (MICHAEL McANDREWS / Hartford Courant)

Coastal Concentration of Risk

- In 2010, 123.3 million people, or 39 percent of US population lived in counties directly on shoreline.
- 1970 2010, population + 40%.
- + 10 million people or 8% by 2020
- 6X population density of inland communities



Disasters in the Making

- Elevated Temperature
- Sea Level Rise
- Coastal Flooding
- Drought
- Wildfire
- Violent Storms
- Very Heavy Rain
- Disease Migration

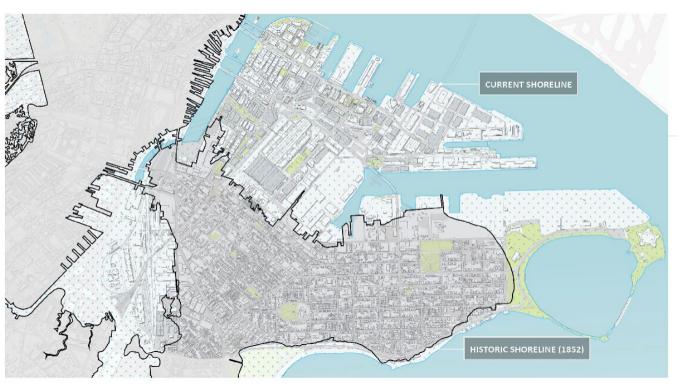


What does Montgomery County Need to Know?

- Know the risk
- Share knowledge of the risk
- Use your Engineering Chops
- Use your regulations
- What were chronic vulnerabilities BEFORE Irene, Sandy, 2018 Nor'easters?
- What were your aspirations?
- Take Risks to Innovate, Adapt, LEARN
- Leverage work underway or planned

Boston's South Seaport

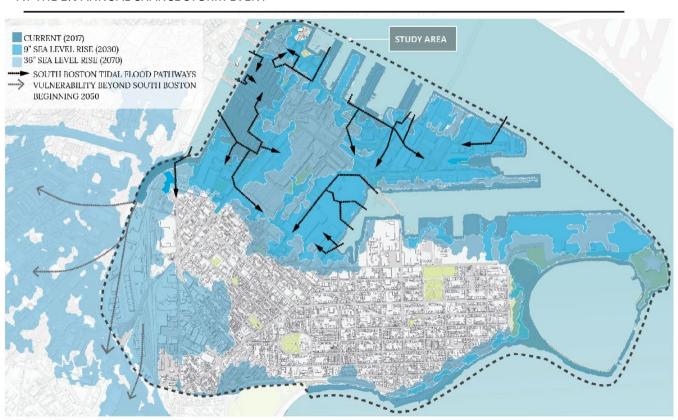
HISTORIC AND CURRENT SHORELINE



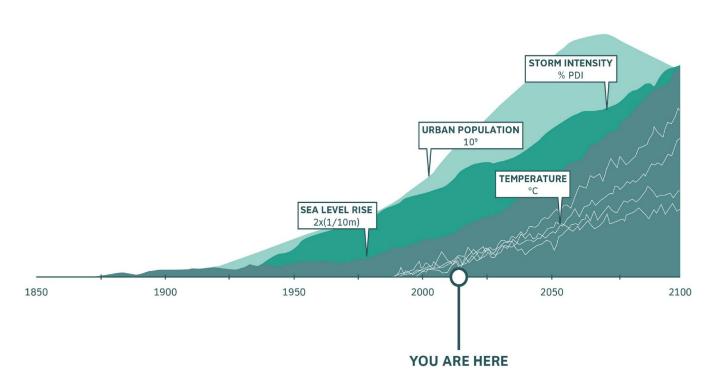
Boston's South Seaport

PROBABLE FUTURE STORM FLOOD EXTENTS

AT THE 1% ANNUAL CHANCE STORM EVENT



FUTURE



•IMAGE: SCAPE/LANDSCAPE ARCHITECTURE

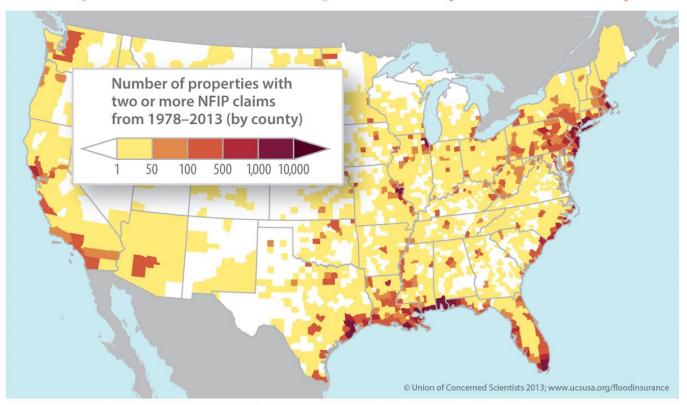
Where are property owners getting signals about growing risk?

- Homebuilders and Realtors?
- Insurance Premiums?
- Federal Disaster Relief?
- Changing Bond ratings?
- Mortgage Lending?



Federal Flood Insurance

Repetitive-Loss Properties by U.S. County

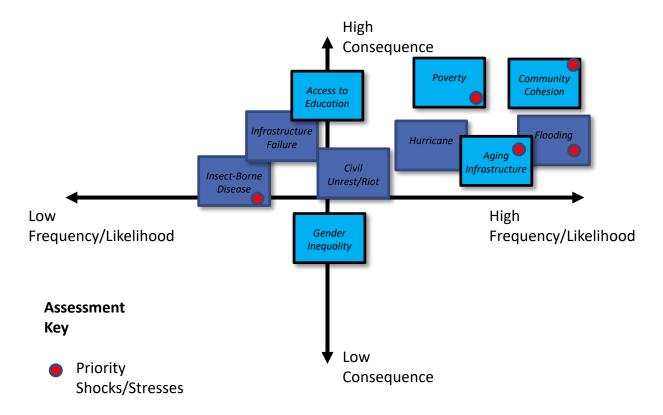


It's not engineering VS. regulation

- Stronger building codes
- Buyouts
- Disclosure Requirements
- Prohibitions against building in the most dangerous places
- Other actions to reduce repeatedly flooded properties
- Use of flexibility in land use to encourage more housing in the best places



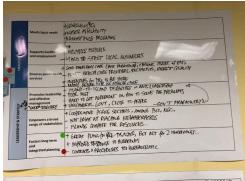
Assessing Shocks and Stresses

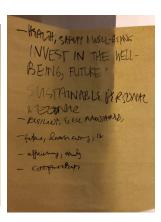




FACILITATED DISCUSSION: DEFINE RESILIENCE VALUE







OBJECTIVE

Establish a common set of resilience values and drivers as they relate to the project or program.

APPROACH

Facilitated brainstorm exercise to identify and group values and drivers.

OUTCOME

An organized list of values and drivers, leading toward a resilience opportunity statement.



RESILIENCE VALUES

TOP SHOCKS AND STRESSES

- Lack of High Quality Education, Workforce Development and Access to Opportunity
- Aging and Vulnerable Infrastructure
- Quality and Affordable Health Care Access
- High Cost of Living (including Energy Cost)
- Lack of Housing and Affordability

VALUES

OPTIMISM ABOUT THE FUTURE, ECONOMIC DIVERSITY, OPPORTUNITY



- SAFETY, ACCESS, COMPETITIVENESS, SUSTAINABILITY, RELIABILITY, ACCOUNTABILITY
- > HEALTH
- WELL-BEING, DIVERSITY
- WELL-BEING, SAFETY, COMPETITIVENESS, AFFORDABILITY

Mapping Projects to Resilience Values Exercise

	#1 INVEST IN PEOPLE	#2 SAFETY/ REDUCED RISK	#3 COMPETITIVE	# 4 RELIABLE	Barriers to Success
Project Example #1: Restore Electric Power System	Lower energy bills	Microgrids + Distributed generation:	Get people to return	Underground where feasible	WAPA Solvency
	New jobs for residents	o redundancy o lower rate of	Be first mover on	Sustain WAPA financially	Remoteness, Topography,
	Train/retrain on new technology, technique	failure o protect critical	tech innovation & renewables (solar)	Microgrids for critical	"Addressing" bad addresses
	Diversify economy with	facilities	Lower energy	facilities	Need to train
	renewables	Composite poles, underground	costs- LPG &	Mix of fuel sources	Workforce on new technology
	Make USVI Caribbean/			Use Muni Arborist to	
	Global energy leader	Do risk mgt screen to prioritize		reduce tree impingement	Inertia to change
	> Energy efficiency of			Tree trimmings as	Costo not
	homes			compost-save disposal \$	Costs not Competitive
	Engage students on sustainability				·



Aren't we doing Disaster Recovery and Resilience?

No, we are using Physical Planning and Investment to "Win the Economy (and all future economies)"





Innovate - FAIL - Succeed



capital bikeshare 5



Regional bike transit system

Over 5,700 bikes at over 500 stations

DC; Arlington, Fairfax County & Alexandria, VA; Prince Georges County & Montgomery County, MD

32,000 Annual Members

410,000 Casual members

- 80% said they bicycle more often
- 40% said they drive less
- * \$819/year saved per member (\$15 million total)



















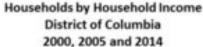


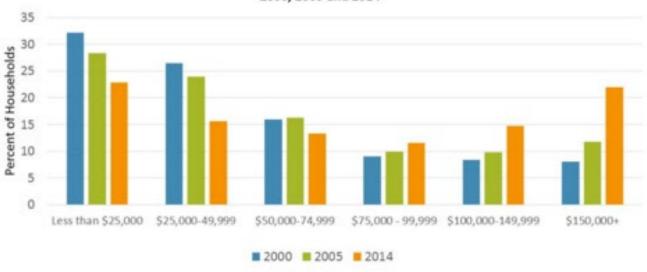


GROWING DISPARITY/CHANGING ECONOMY



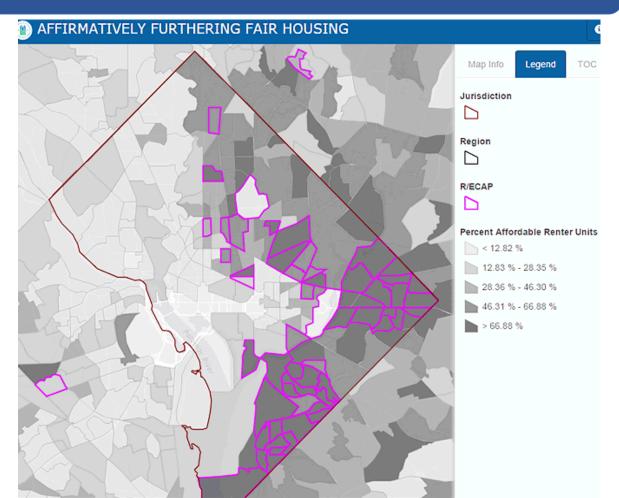
DC Households by Income





Source: U.S. Census Bureau, 2000 Census Summary File 3, 2005 American Community Survey 1-year file, 2014 American Community 1-year file. Tabulated by Usa Sturtevant.

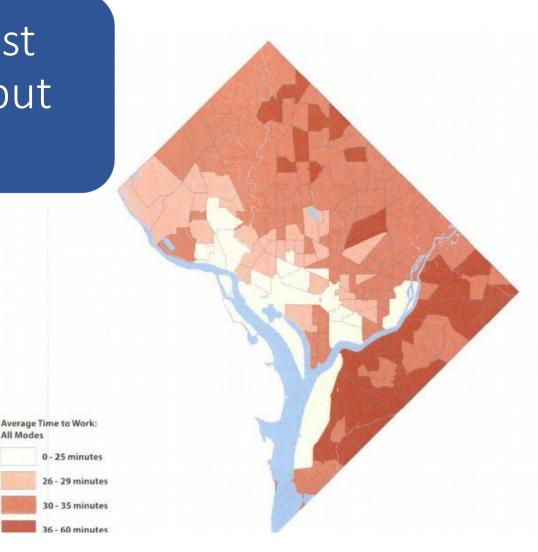
Poverty is concentrated



It is not just housing, but access...

- This map shows average Commute Times.
- The darker the census tract, the longer the commute to a job

All Modes

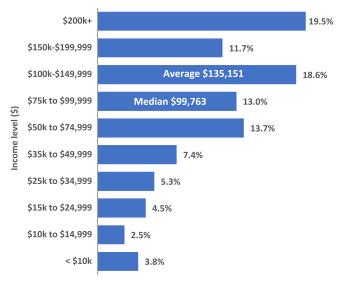


Income Disparity Growing

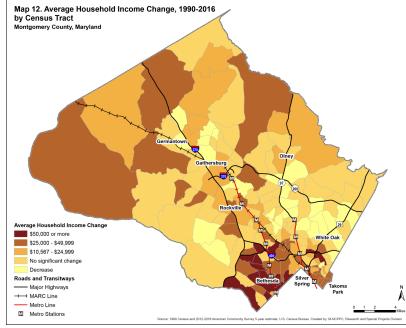
nign average income coincides with residents with advanced

degrees.
1 in 5 households have incomes of \$200,000 or more

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% of households

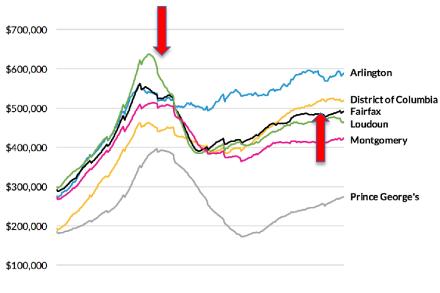


MONTGOMERY COUNTY TRENDS: A LOOK AT PEOPLE, HOUSING AND JOBS SINCE 1990

Source: 2016 American Community Survey, U.S. Census Bureau. Source: 2016 American Community Survey, 1-year estimates, U.S. Census Bureau.

Effects of Recession Linger



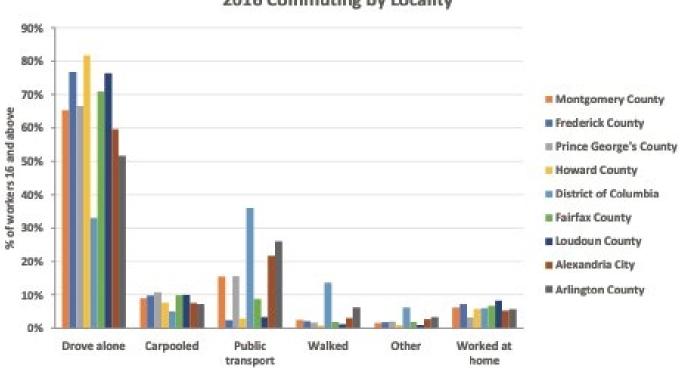


Source: Urban Institute analysis of data from CoreLogic Market Trends. **Notes**: Prices are for single-family home sales only. Median sales price is calculated as a 12-month moving average. Prices are adjusted for inflation annually.

URBANINSTITUTE

Commuting



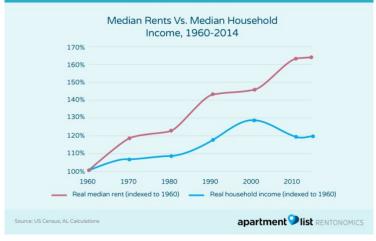


Accumulated barriers to Housing Development: Significant costs to Households, Local Economies





How Have Rents Changed Since 1960?



Do new housing types make sense for Montgomery County?

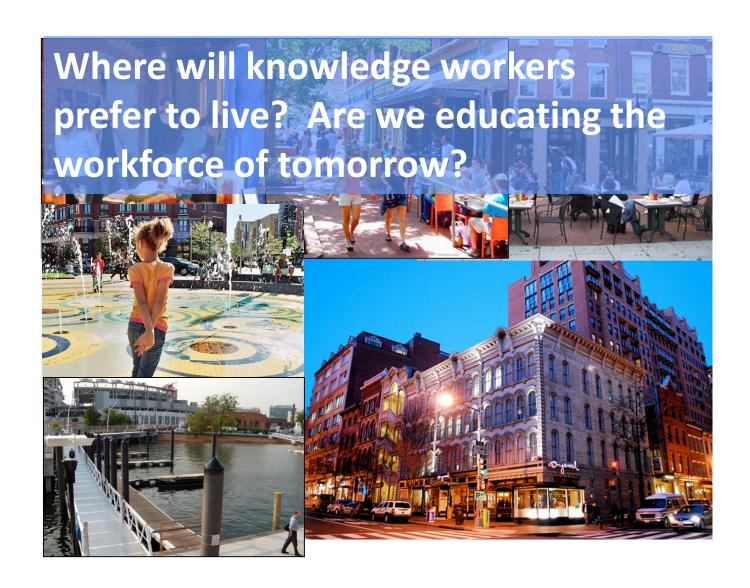


ADUs: getting more housing into opportunity-rich, single family neighborhoods



ADUs in Eugene and Portland, OR





The future has already arrived. It's just not evenly distributed yet.

William Gibson

