

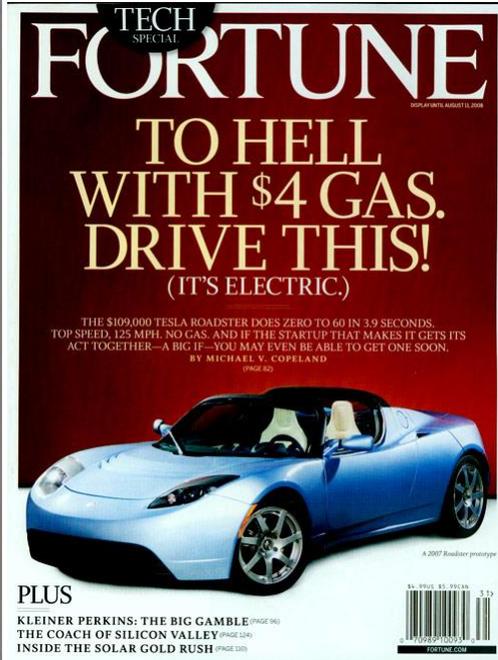
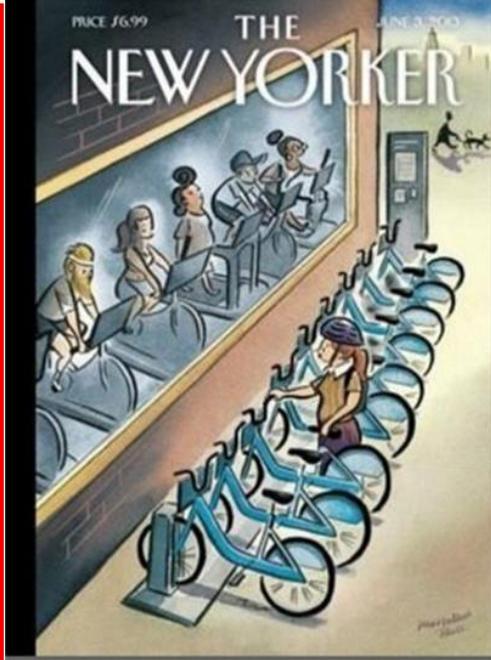


New Urban Mobility
alliance

The mobility revolution for people and the planet...and other coming disruptions in cities

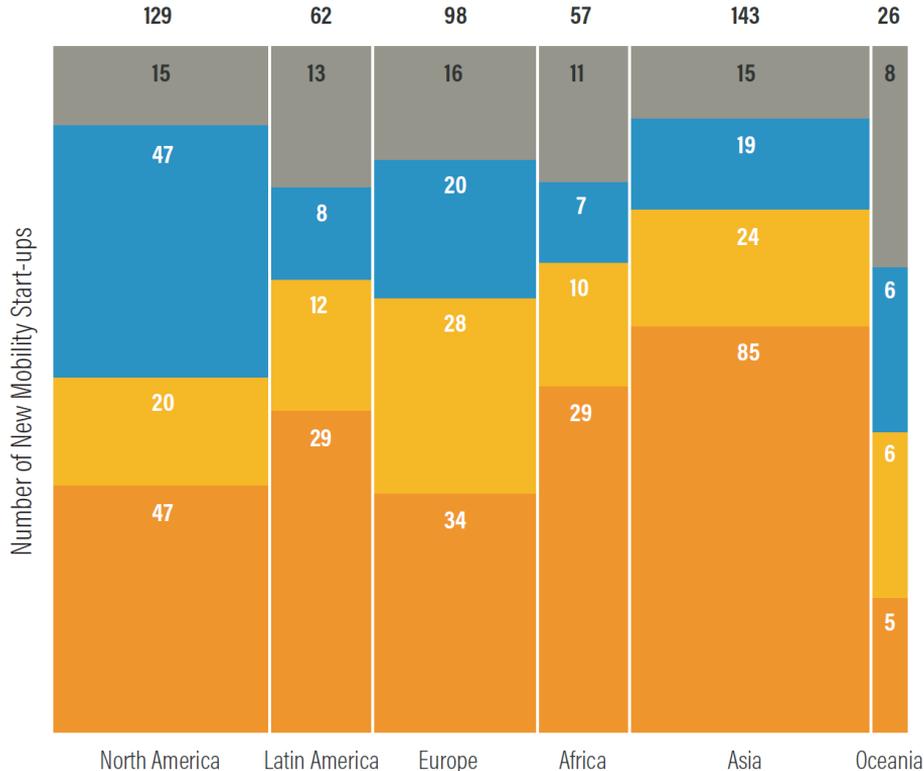
2019 New Jersey Complete Streets Summit
September 24, 2019

THE RISE OF NEW MOBILITY SERVICES



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

MORE THAN JUST UBER



Commuter experience refers to business models that support an improved experience for users, often via information sharing that helps people make better decisions

Product innovation refers to business models that modify or improve transportation assets, like electric vehicles

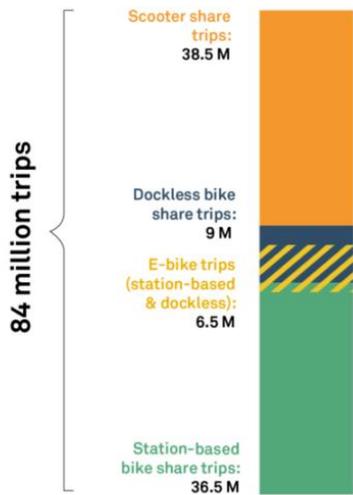
Data-driven decision-making refers to business models that use technologies such as sensors and GPS to provide additional insight to drivers and planners

Shared mobility refers to business models where transport options are shared among users, from cars to bicycles

New mobility start-ups by region and type

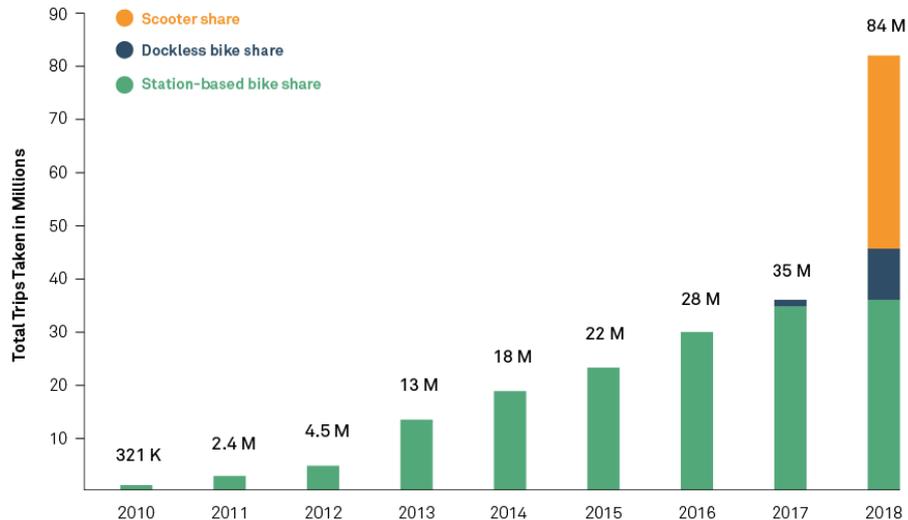
IN 2018, 84 MILLION TRIPS WERE TAKEN ON SHARED MICROMOBILITY IN THE US...

Breakdown of 2018 trips



Source: NACTO

84 Million Trips on Shared Micromobility in 2018

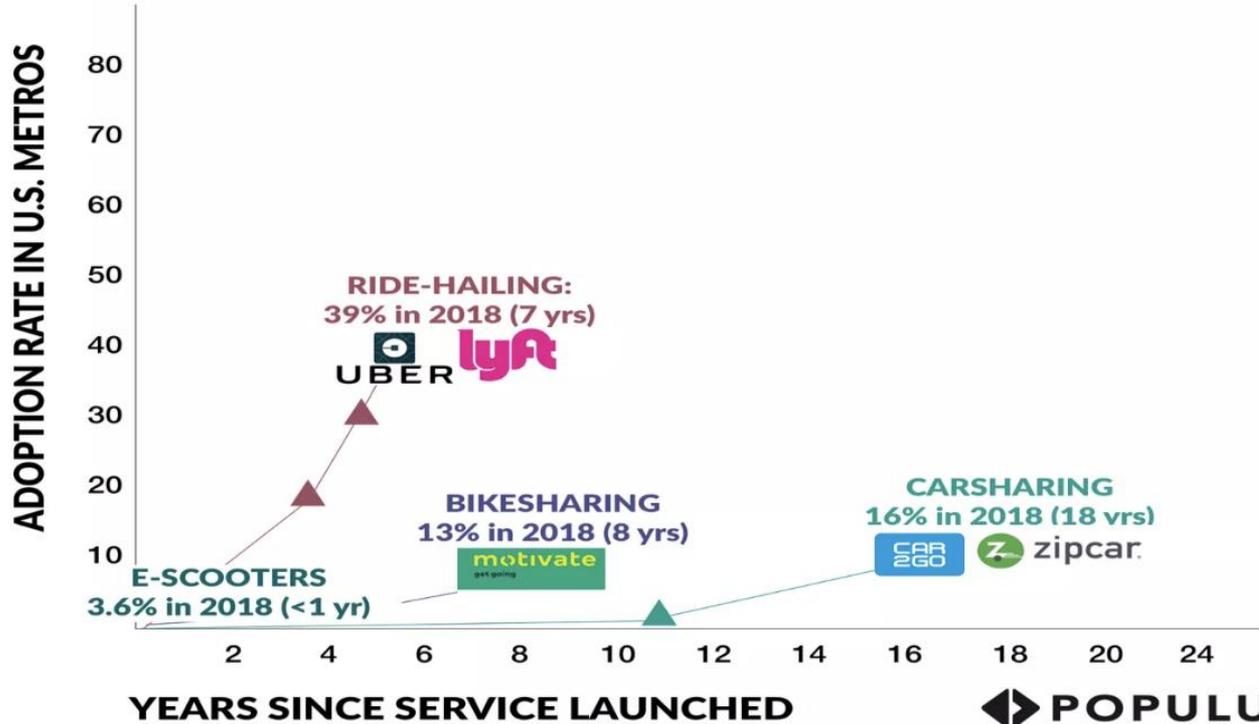


Source: NACTO

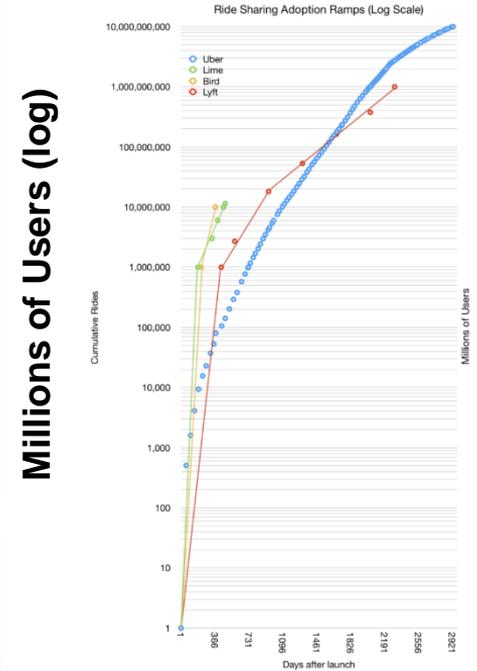
Source: NACTO, 2018, ["2018 Shared Micromobility Ridership Report"](#)



IT'S HAPPENING ...FAST(ER)



E-Scooter Growth

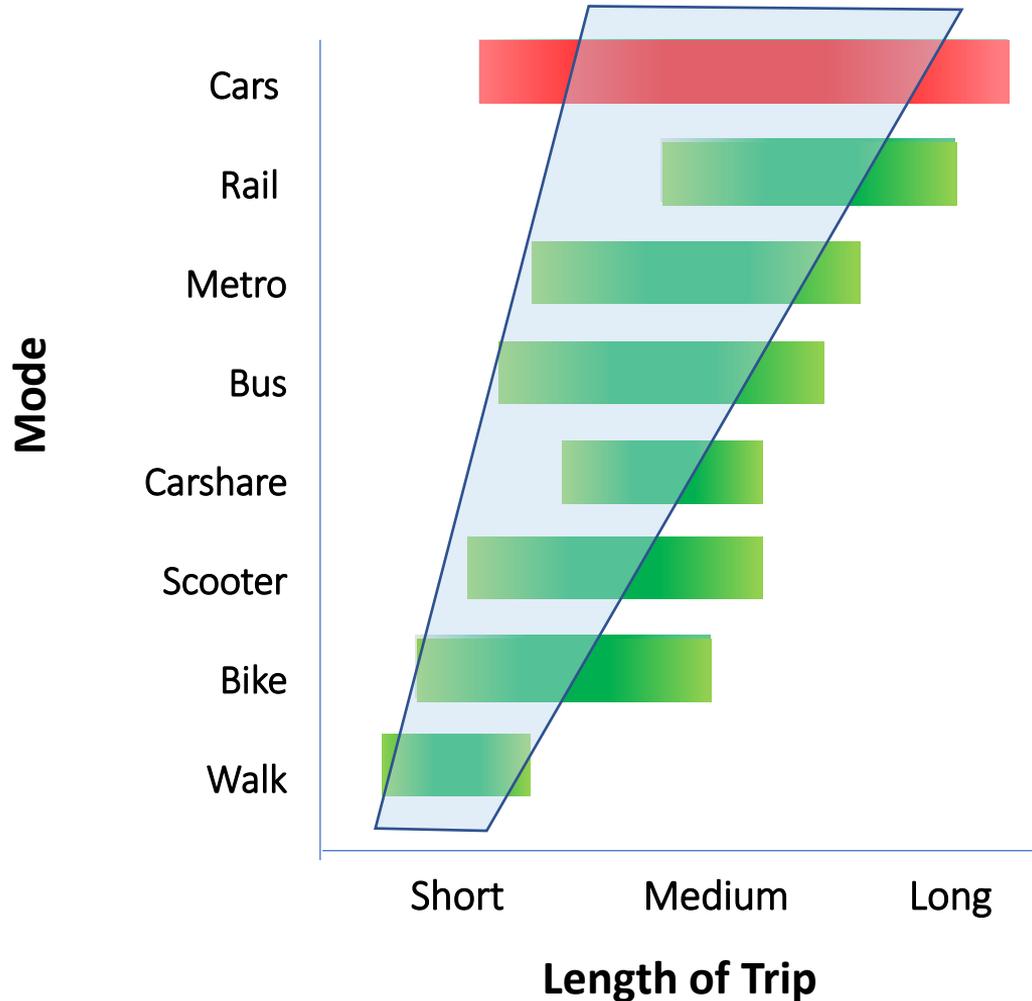


MANY COMPANIES ARE PROVIDING MICROMOBILITY SERVICES ACROSS THE WORLD



The Mobility Ecosystem is Changing

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



THIS WILL NOT ONLY CHANGE HOW PEOPLE TRAVEL IN CITIES...

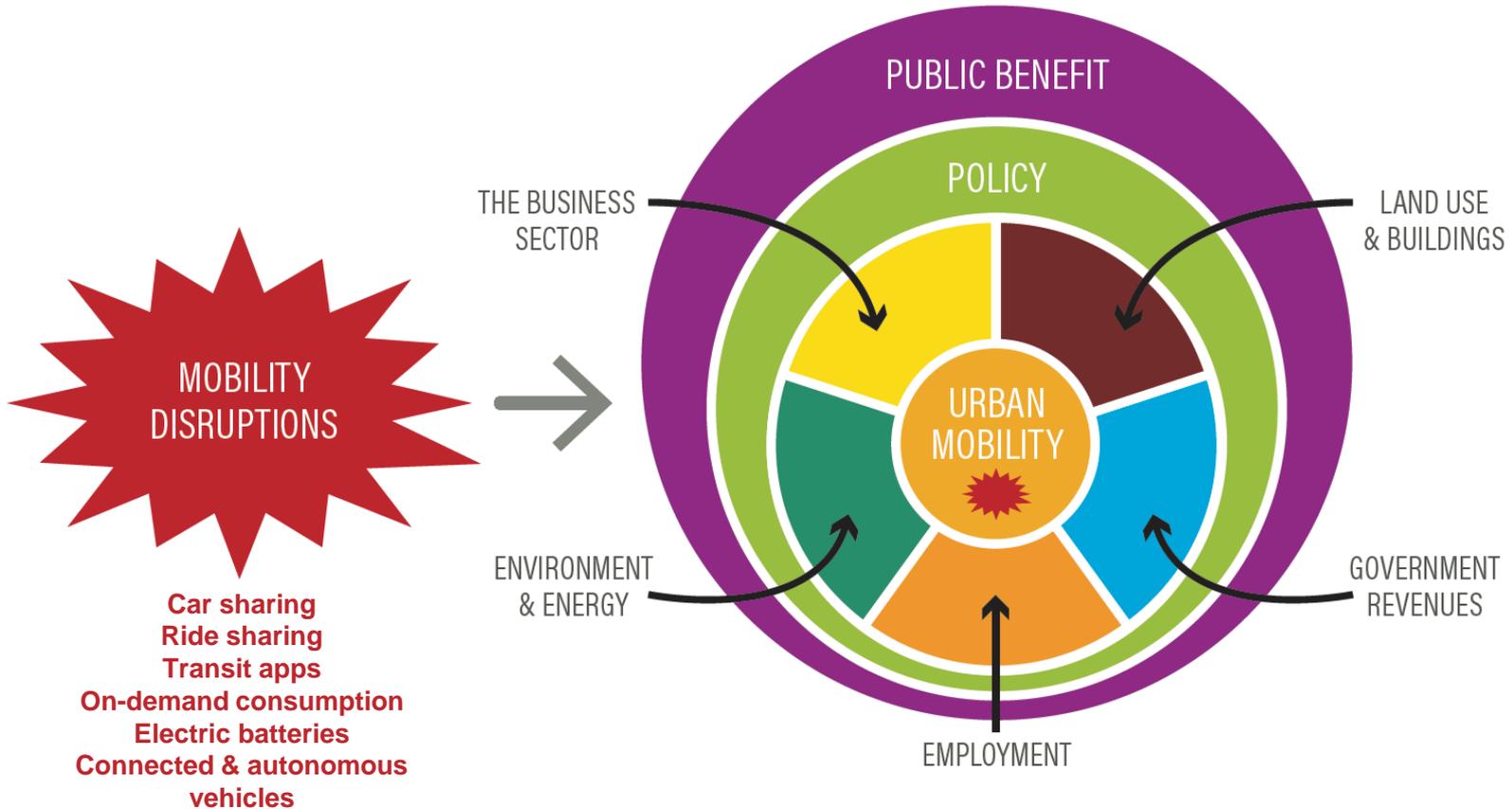


THIS WILL NOT ONLY CHANGE HOW PEOPLE TRAVEL IN CITIES...



IT WILL CHANGE CITIES THEMSELVES

THE IMPACTS ARE FAR-REACHING





5TH AVE,
NEW YORK, 1900

We've seen **rapid transformation**
in cities before, we know what's
possible...



5TH AVE,
NEW YORK, 1913

We've seen rapid transformation
in cities before, we know what's
possible...

OUR MOBILITY FUTURE

HELL



Massive sprawl



Single occupancy modes



Pollution



Unsafe streets

Historic job losses

Sudden drop in tax revenues

Unjust, unsustainable cities

HEAVEN

Compact and accessible

Shared modes

Decarbonized

Complete streets

Retained labor

New (and fair) revenue streams

Just, sustainable, livable cities



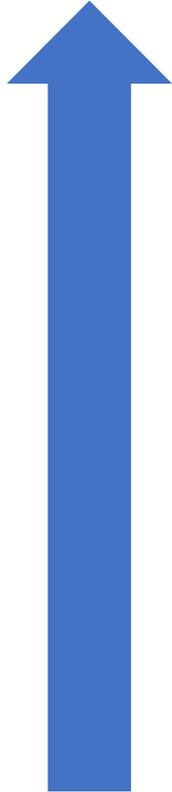
We need to move with greater urgency and impact

NUMO is **a global alliance** that channels **tech-based disruptions** in urban transport to create **joyful cities** where **sustainable & just** mobility is the **new normal**.

NUMO is an outgrowth of the Shared Mobility Principles and its allies are ready to **align actions and investments** to achieve transformational change on the ground.

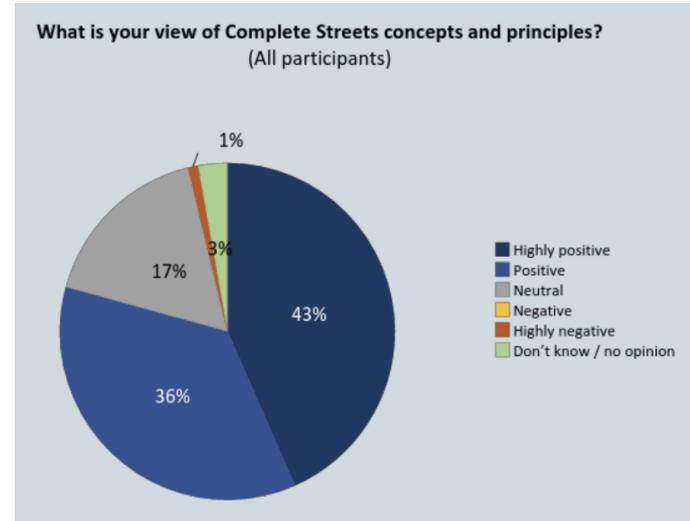
How are Cities Preparing for the Coming Changes?

Prioritize *People* Movement, Not Vehicles



- **Walking**
- **Bicycling**
- **Shared Scooters, other Micromobility**
- **Transit**
- **Fleets of electric, multiple passenger vehicles**
- **Other shared vehicles**
- **Taxi/commercial transit/shared vehicles**
- **Low or no occupancy vehicles, fossil-fueled non-transit vehicles**
- **Zero emission vehicles**
- **Other single-occupant vehicles**

Municipal leaders in Massachusetts want to advance complete streets



Source: Massachusetts Complete Streets Funding Program

Address fear of change

Rethink infrastructure and regulation

Co-design the future

See innovation as a brand for cities/communities

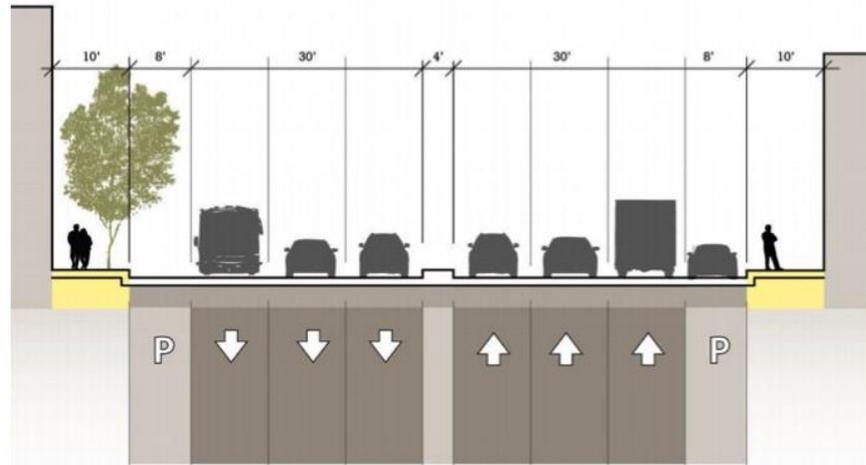
Articulate/increase the benefits

Manage the negatives



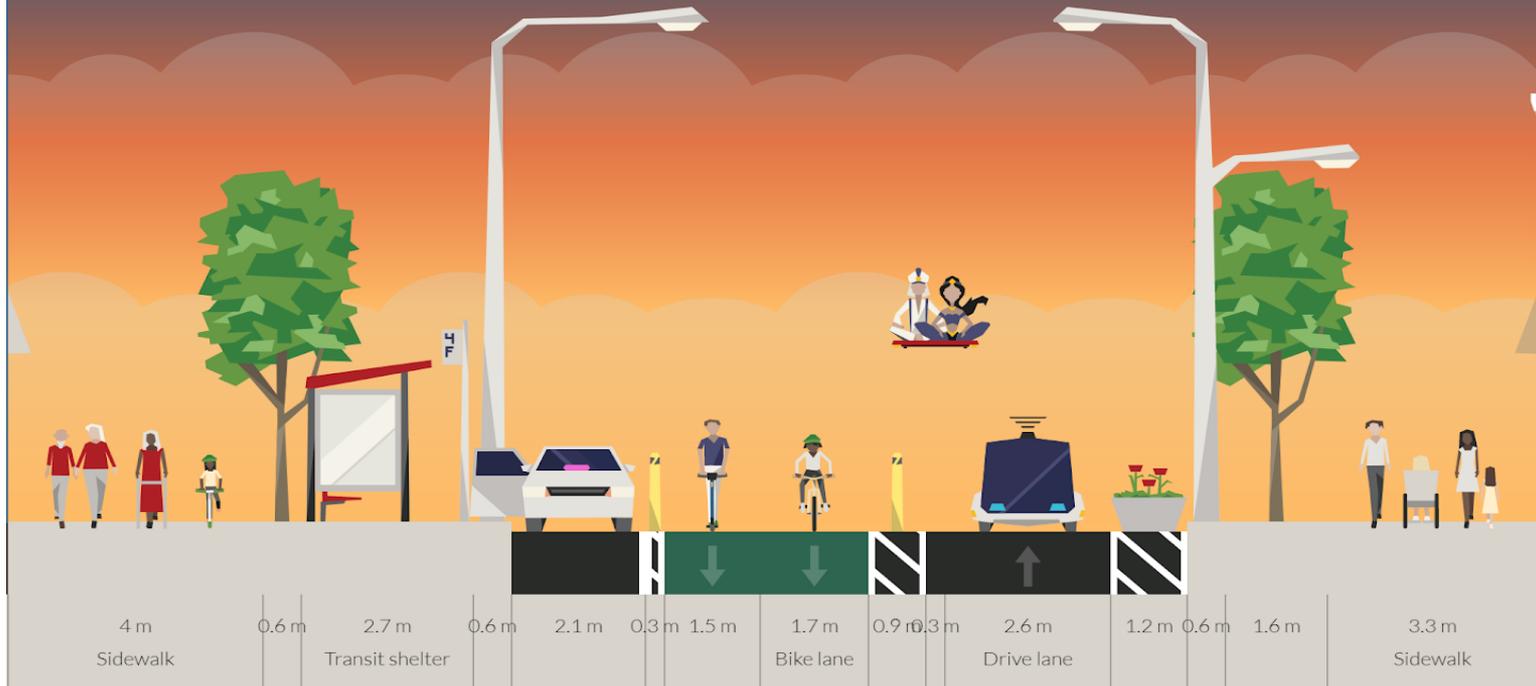
Re-imagine and Reallocate the Right of Way

- About 30% of every city is city-owned ROW, including on street parking.
- Cars:
 - NOW Used 5%; Parked 95%
 - FUTURE: Used \pm 50%; Parked to recharge, service
- Travel and Parking lanes



A reimagining of 19th Street in San Francisco; with fewer cars on the road due to the efficiency of autonomous driving, more space is left

The street of the future?



Made with StreetMix

Re-think data



Key Questions:

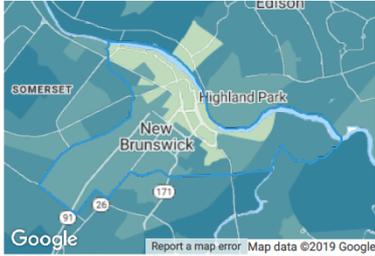
- What data should cities request from micromobility providers?
- What data should they request from other modes, including incumbent modes?
- How often should the requested data be provided and in what format?
- How will that data be managed and stored?
- Will there be any privacy guidelines for its collection, storage and usage?

Municipality: New Brunswick, NJ

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 Matters](#). 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: \$67,296 Commuters: 1.23 Household Size: 2.75 (New York-Newark-Jersey City, NY-NJ-PA)

Map of Transportation Costs % Income



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.



Neighborhood Characteristic Scores (1-10)

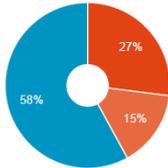
As compared to neighborhoods in all 955 U.S. regions in the Index



Average Housing + Transportation Costs % Income

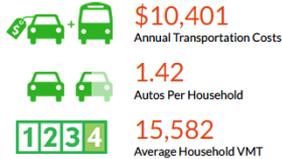
Factoring in both housing and transportation costs provides a more comprehensive way of thinking about the cost of housing and true affordability.

- Housing
- Transportation
- Remaining Income



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.

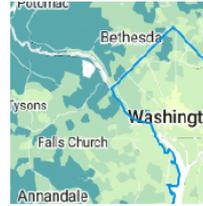


Municipality: Washington, DC

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 Matters](#). 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



Location Efficiency Metrics

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Neighborhood Characteristic Scores (1-10)

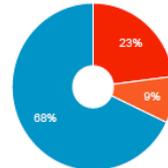
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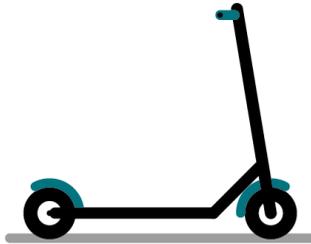
Transportation Costs

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



BENCHMARK

How the Media Sees Scooters



The New York Times

Opinion

Scooter Madness

Cities are swarming with electric scooters. But this is not the 'micro-mobility revolution' we need.

The Washington Post
Democracy Dies in Darkness

Gridlock

D.C. proposal aims to 'control' e-scooters

Bloomberg

Business

YouTube Star's Death Renews Concerns About E-Scooters' Safety

THE VERGE

Nashville is banning electric scooters after a man was killed

The mayor will only allow them to return with 'strict oversight for numbers, safety, and accessibility'

USA TODAY

E-scooters now seem less likely to run people off sidewalks

CITYLAB

A Lawyer Explains Why Electric Scooter Laws Don't Work

Bird, Lime, and other shared micromobility services are disrupting the legal landscape, too.



Search Region, City



131

22

36

9

6

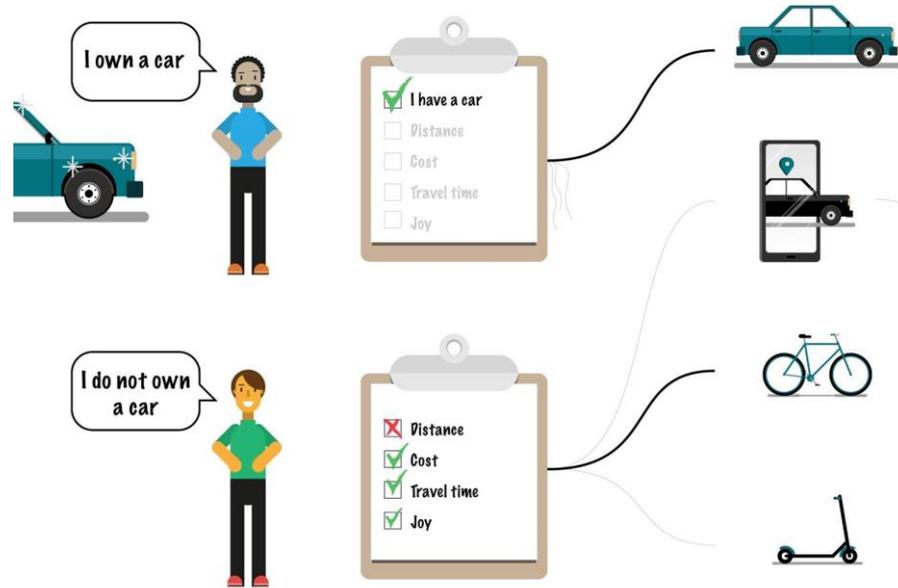
Cities and micromobility providers have *aligned priorities*

CITIES ARE ALREADY ACTING TO:

- Prioritize People over Vehicles
- Build Safe Infrastructure for Micromobility
- Vision Zero/Lower Auto Speeds/Safety
- Change Land Uses to encourage Short Trips
 - Density
 - Mixed Use
 - Transit-orientation
- Reduce Cars/Traffic in Cities



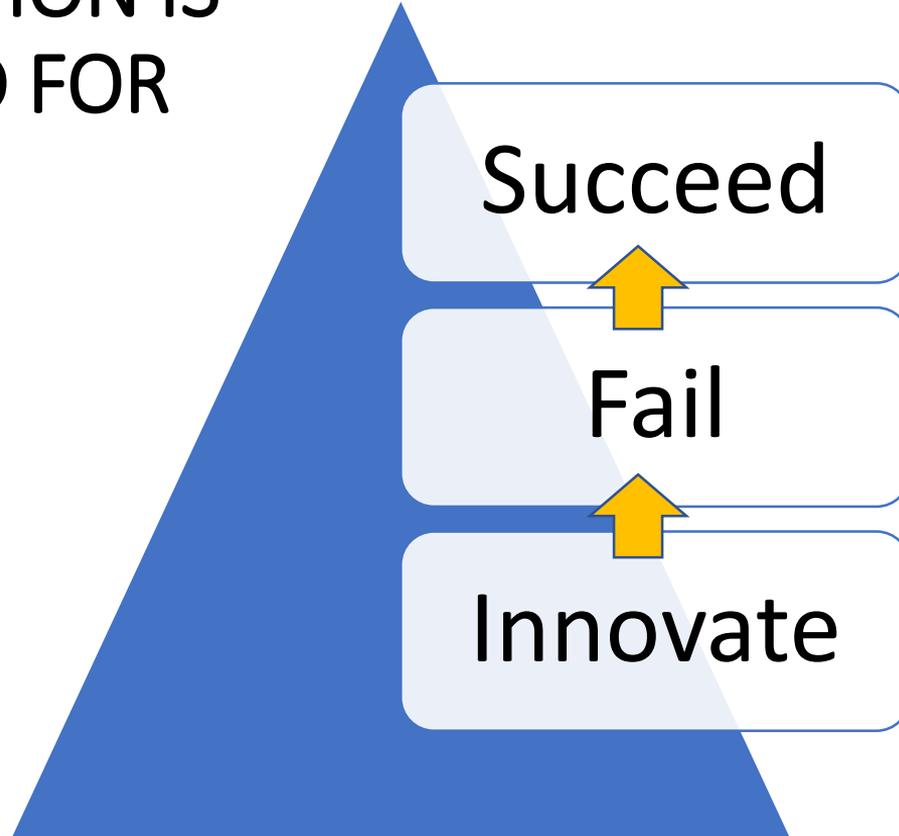
Automobiles are sticky



What cities and micromobility providers *have to gain*

- ↓ Car Traffic
 - ↓ GHGs emissions
 - ↓ Car Ownership
 - ↑ Retail “Foot” traffic
 - ↓ Barriers to > density
 - ↑ Equitable Low Cost Access
 - ↑ Market Share
- + Ability to Reallocate Parking Spaces, Street ROW to other uses
 - + Ways to Fill First-Mile, Last-Mile needs, Gaps in Transit Service

INNOVATION IS A BRAND FOR CITIES



SmartBike: DC's First Bikeshare



capital bikeshare™



- **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)***



Join.



Take.



Ride.



Return.





TO GET TO "HEAVEN," CITIES NEED DIFFERENT PRIORITIES

Encourage a culture of experimentation and learning to meet the needs of *all* residents.



What other Big Disruptions are coming?

Transportation and Mobility

- Opportunity for Disruption
- Technology-enabled options

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Transportation and Mobility

- Opportunity for Disruption
- Technology-enabled options

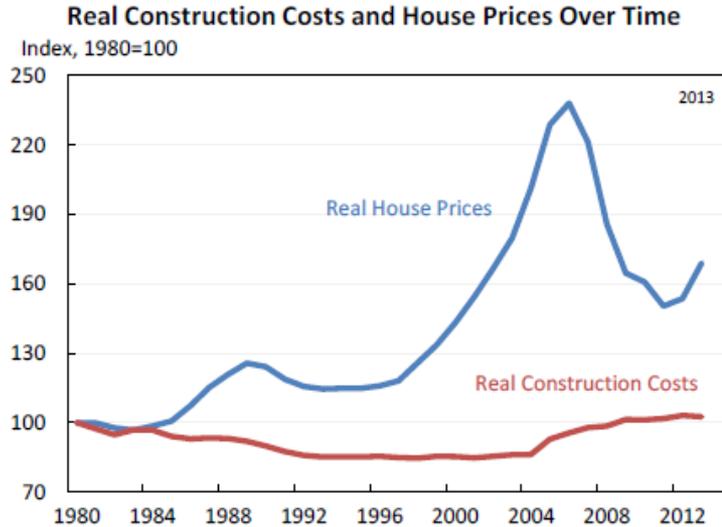
Changing Economy/Disparity

- Housing
- Demographics
- Limited in the geography

Climate Change/Resilience

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

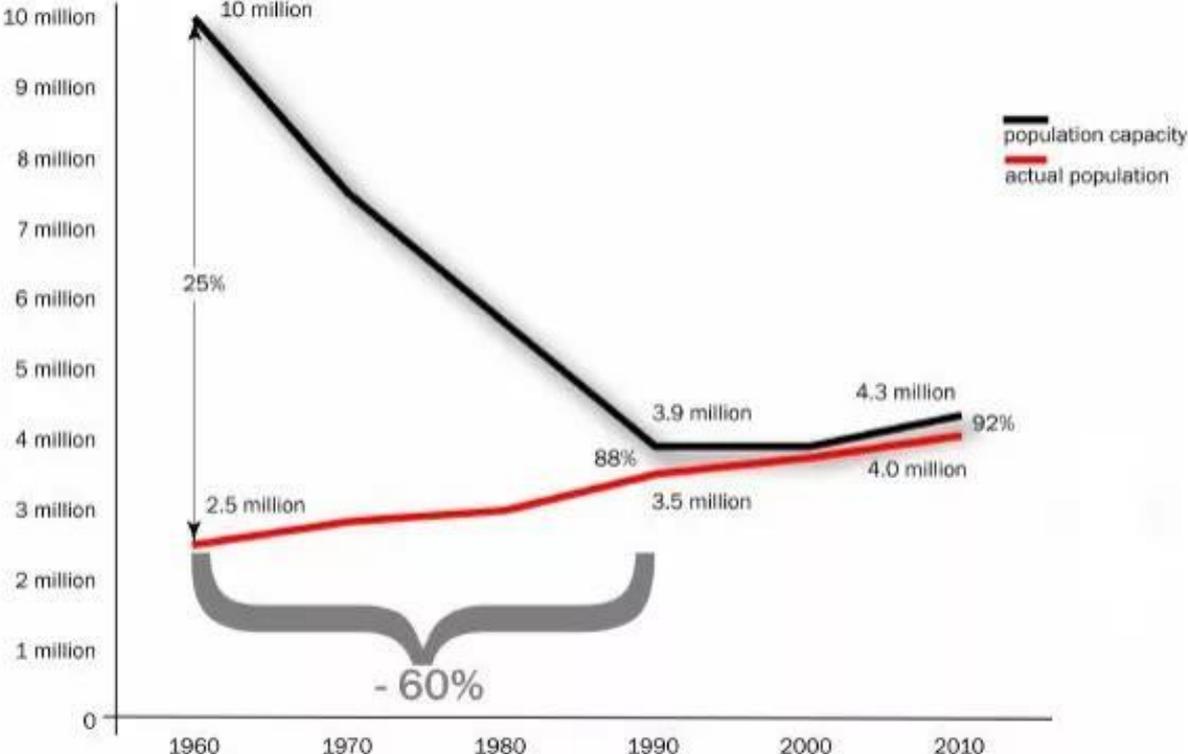
Accumulated barriers to Housing Development: Significant costs to Households, Local Economies



Source: Gyourko, Malloy (2015)



Los Angeles – Zoned Residential Capacity Over Time



Source: Morrow (2016)

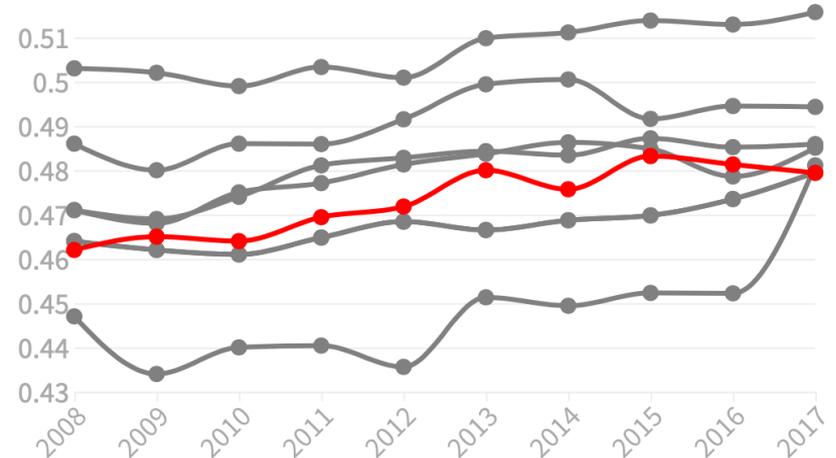
INEQUALITY IS RISING

- Inequality generally ticked upward throughout the East Coas.
- **New Jersey's** income inequality grew at a faster rate than all but a few other states

The selected states below have some of the largest concentrations of wealth in the country. Click on a dot to see what state it represents (New Jersey is in red):

Rising income inequality on the East Coast

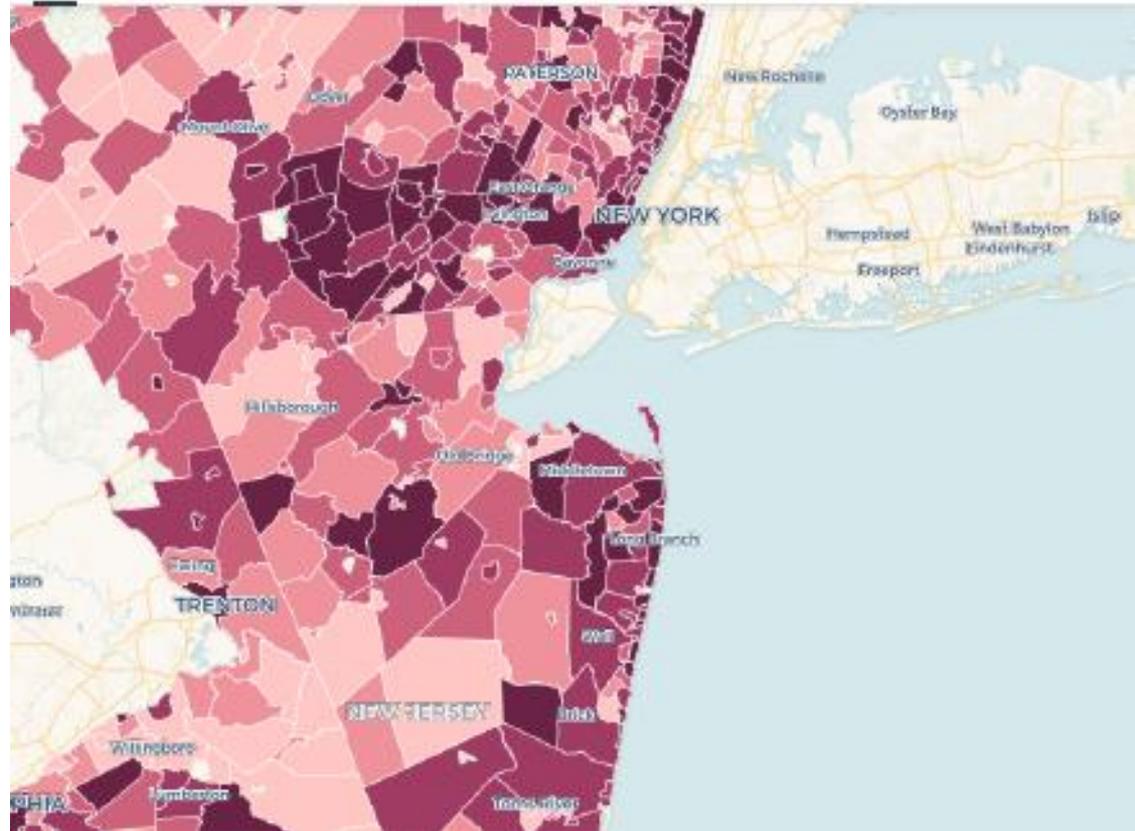
0 (equal) — 1 (less equal)



Source: Source: U.S. Census Gini Index of Income Inequality • Numbers are based on a decade's worth of 1-year estimates.

INEQUALITY IS RISING

- While Essex ranks as the most unequal county in New Jersey, there are high concentrations of wealth across the state.
- In the map at right, the darker areas are the more economically segregated.



Income Inequality Across N.J.

0 (EQUAL) — 1 (LESS EQUAL)

0.31



0.43 AVG

0.62

Its not just the
Knowledge
Economy...

Where do we
find jobs for
everyone else?



The worst flooding ever.

So far.



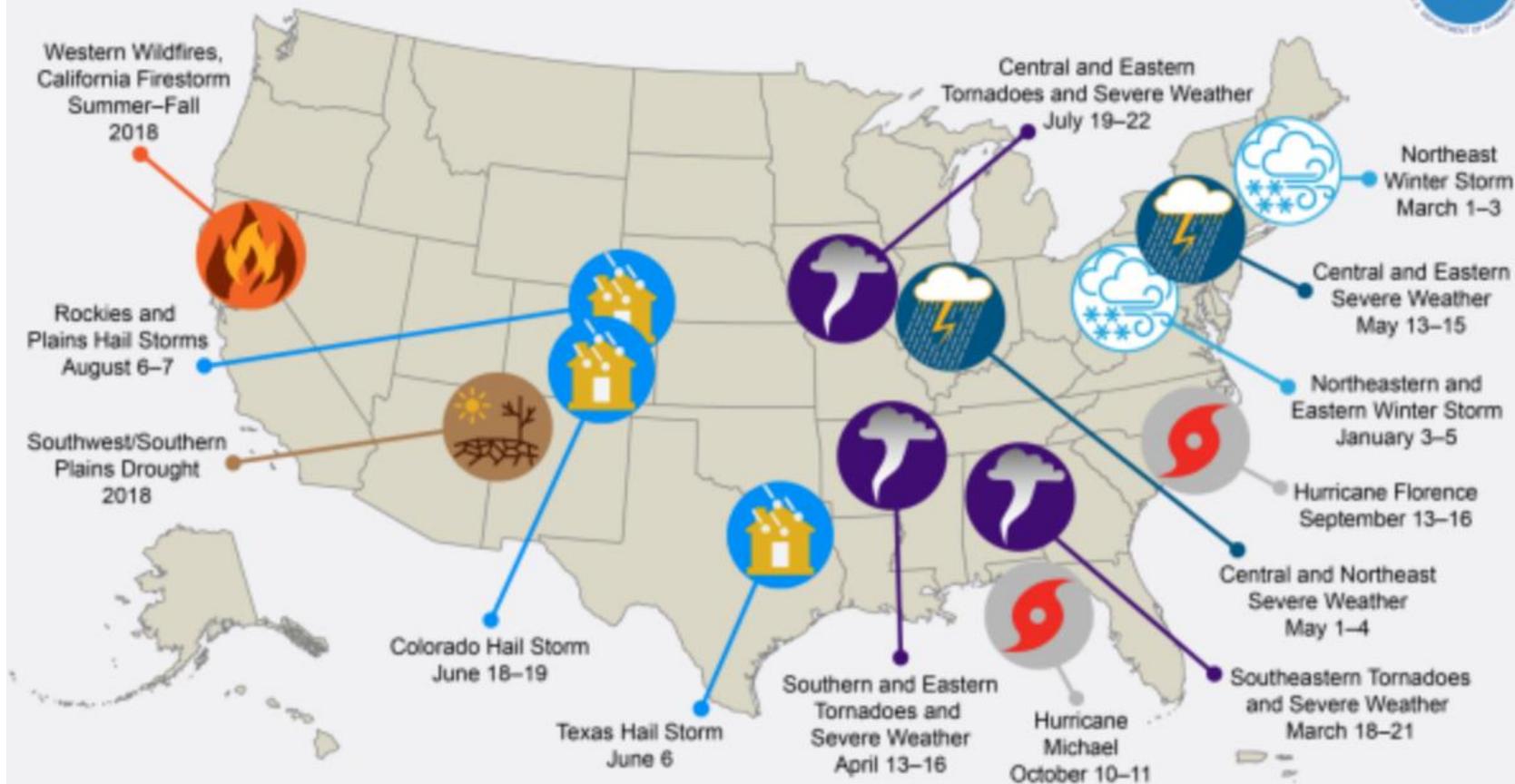
Homes near Silver Sands Beach in Milford were flooded by Hurricane Sandy in 2012. (MICHAEL McANDREWS / Hartford Courant)

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



U.S. 2018 Billion-Dollar Weather and Climate Disasters



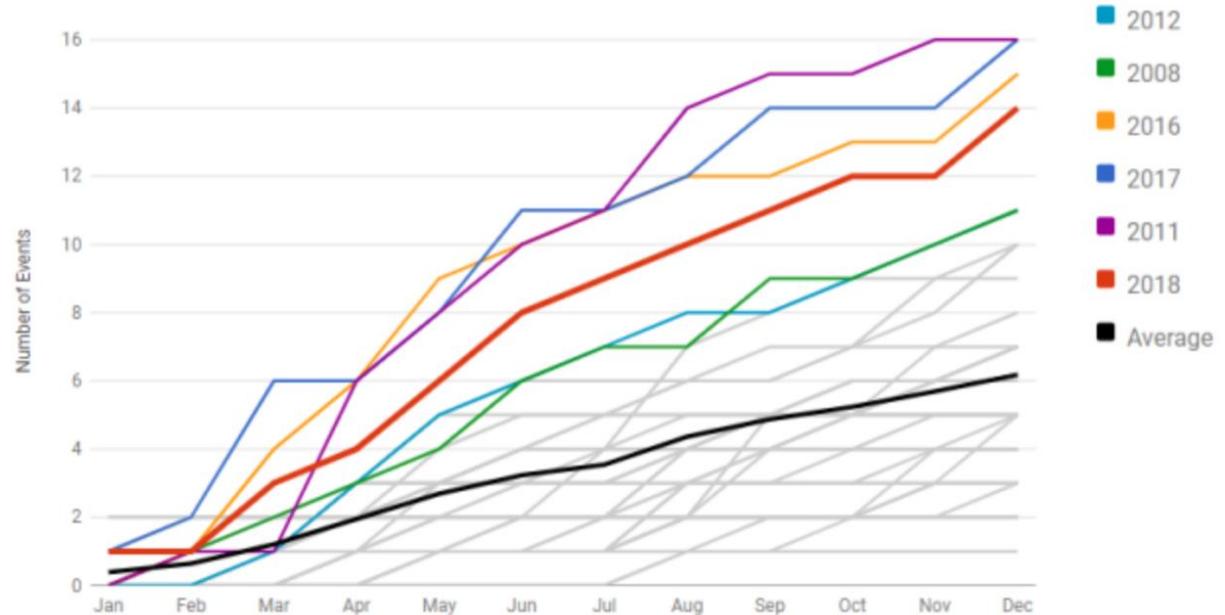
This map denotes the approximate location for each of the 14 separate billion-dollar weather and climate disasters that impacted the United States during 2018.

2018 Billion Dollar Disasters in Context

- 14 Separate billion-dollar disasters in 2018 represent the 4th highest total
- Behind:
 - 2017 (16 events)
 - 2011 (16)
 - 2016 (15)
- 3-year average of **15 disaster events** / year, the highest on record, and well above the annual inflation-adjusted average of **6.2 events per year** (1980-2018)

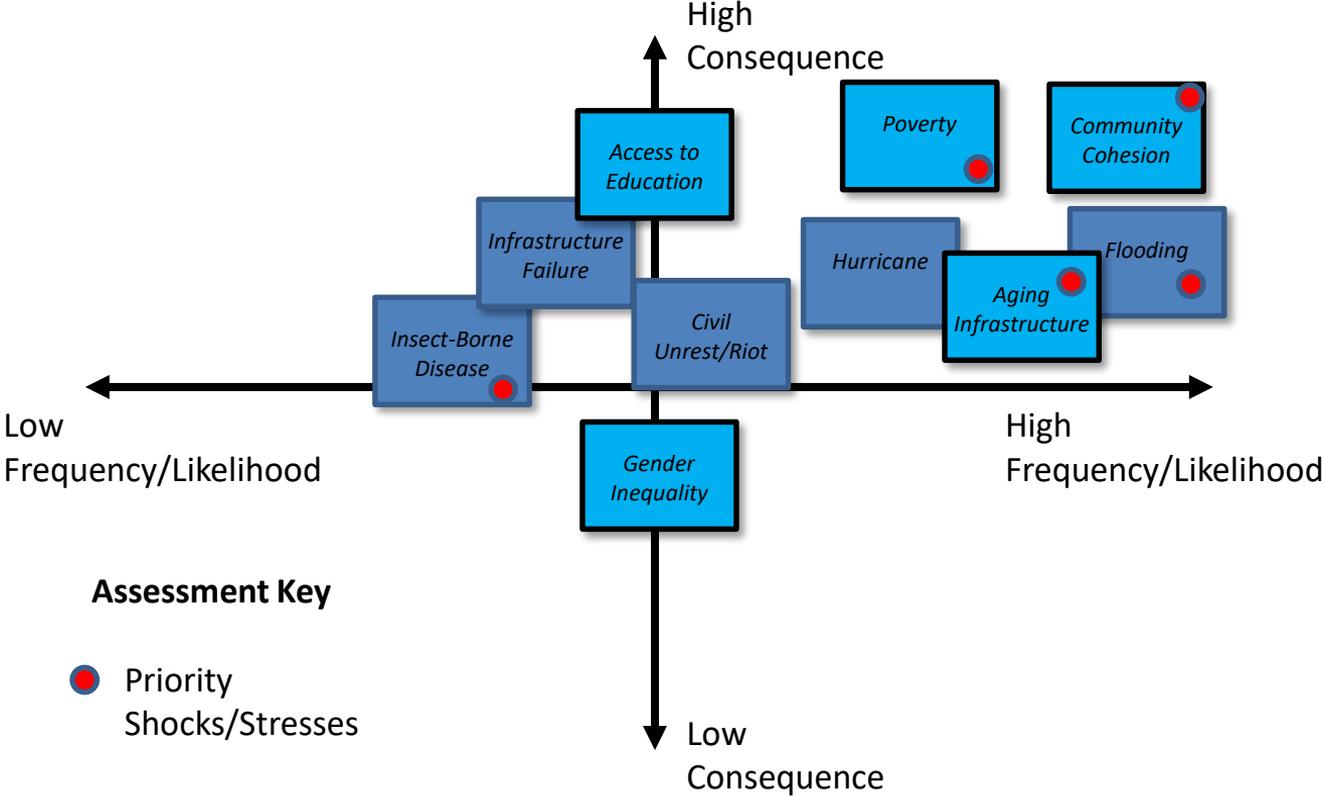
1980-2018 Year-to-Date United States Billion-Dollar Disaster Event Frequency (CPI-Adjusted)

Event statistics are added according to the date on which they ended.



The month-by-month accumulation of billion dollar disasters for each year on record. The value for a given year for a given month shows the total number of billion-dollar events that had occurred by that month. Note that there is considerable overlap, and some years' traces are obscured.

Assessing Shocks and Stresses



MICROMOBILITY LANES + STORMWATER MGT + DISASTER EGRESS

- Complete streets definitions might need to expand
- We need MUCH more safe infrastructure in any event
- Can we try to solve these three challenges at the same time?
 - STORMWATER FEES, CSO PROJECT \$
 - HAZARD MITIGATION \$
 - DISASTER RECOVERY \$
 - WATER REVOLVING LOAN FUND \$?
 - OTHER \$?



Aren't we doing Disaster Recovery and Resilience?

Reducing Disparities? Improving Transportation?

No, you are using Physical Planning and Investment to “Win the Economy (and all future economies)”

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

William Gibson