



URBANISM NEXT — EMERGING TECHNOLOGY, HEALTH, AND EQUITY

State Autonomous Vehicle Subcommittee on Health and Equity

11-19-2019

Nico Larco

Director - Urbanism Next Center
Professor – Department of Architecture
University of Oregon

nlarco@uoregon.edu

 @nicolarco

Becky Steckler, AICP

Program Director - Urbanism Next Center
University of Oregon

beckys@uoregon.edu

 @basteckler



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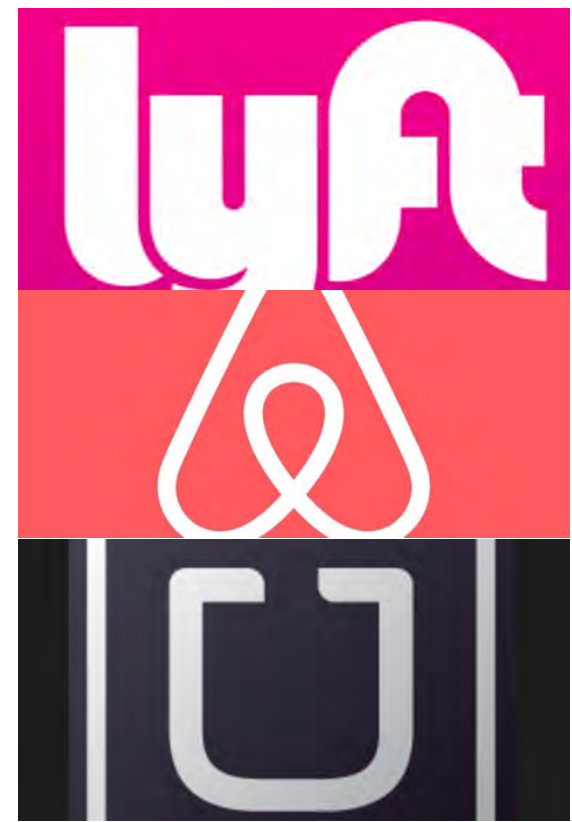
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New Mobility Services



Public Transit



Microtransit



Ride Hailing, Ride-Share,
Transportation Network Company (TNC)



Car-Share



Bike-Share



E-Scooters (Steps)



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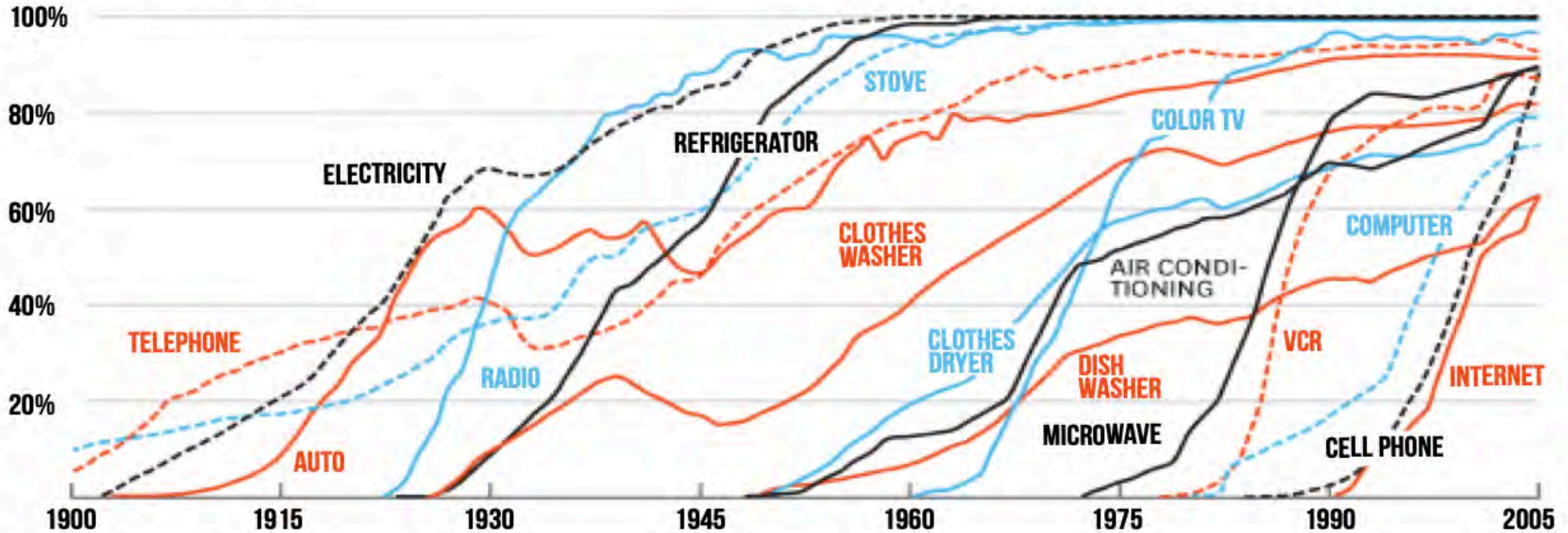
New Mobility Services (US)



Rate of New Technology Adoption

CONSUMPTION SPREADS FASTER TODAY

PERCENT OF U.S. HOUSEHOLDS



SOURCE: MICHAEL FELTON, THE NEW YORK TIMES

HBR.ORG



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(In 2018)

4.2 BILLION TNC TRIPS IN US.



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(In 2018)

**36% OF PEOPLE
51% OF MILLENNIALS
19% IN RURAL AREAS**



Pew, 2019



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(In 2018)

**36 MILLION DOCKED
BIKESHARE TRIPS IN U.S.**



NACTO, 2019



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84 Million Trips on Shared Micromobility in 2018



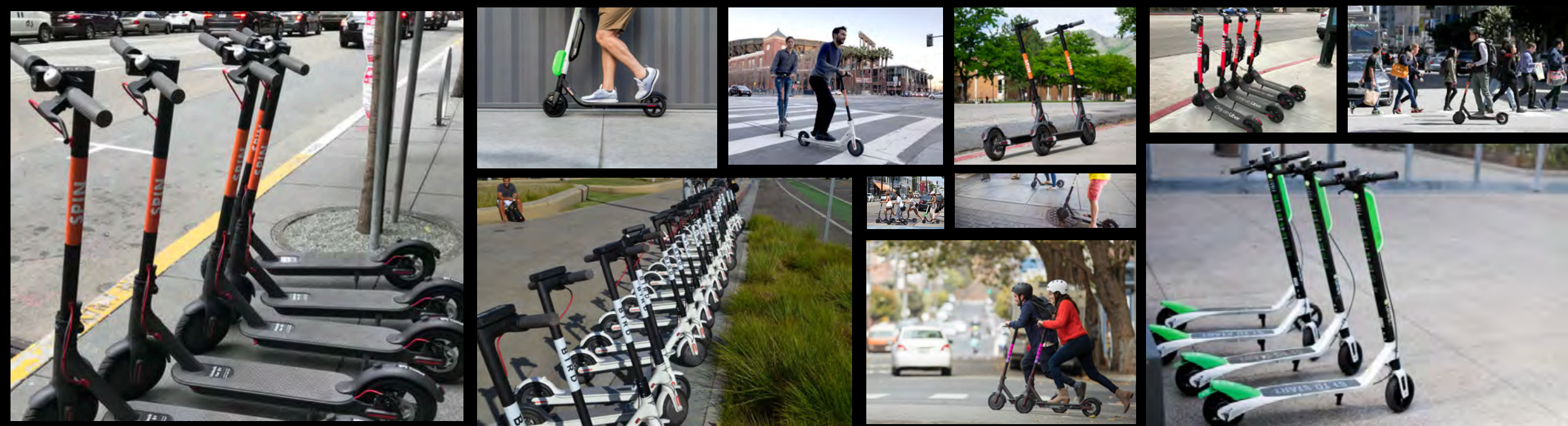
Source: NACTO

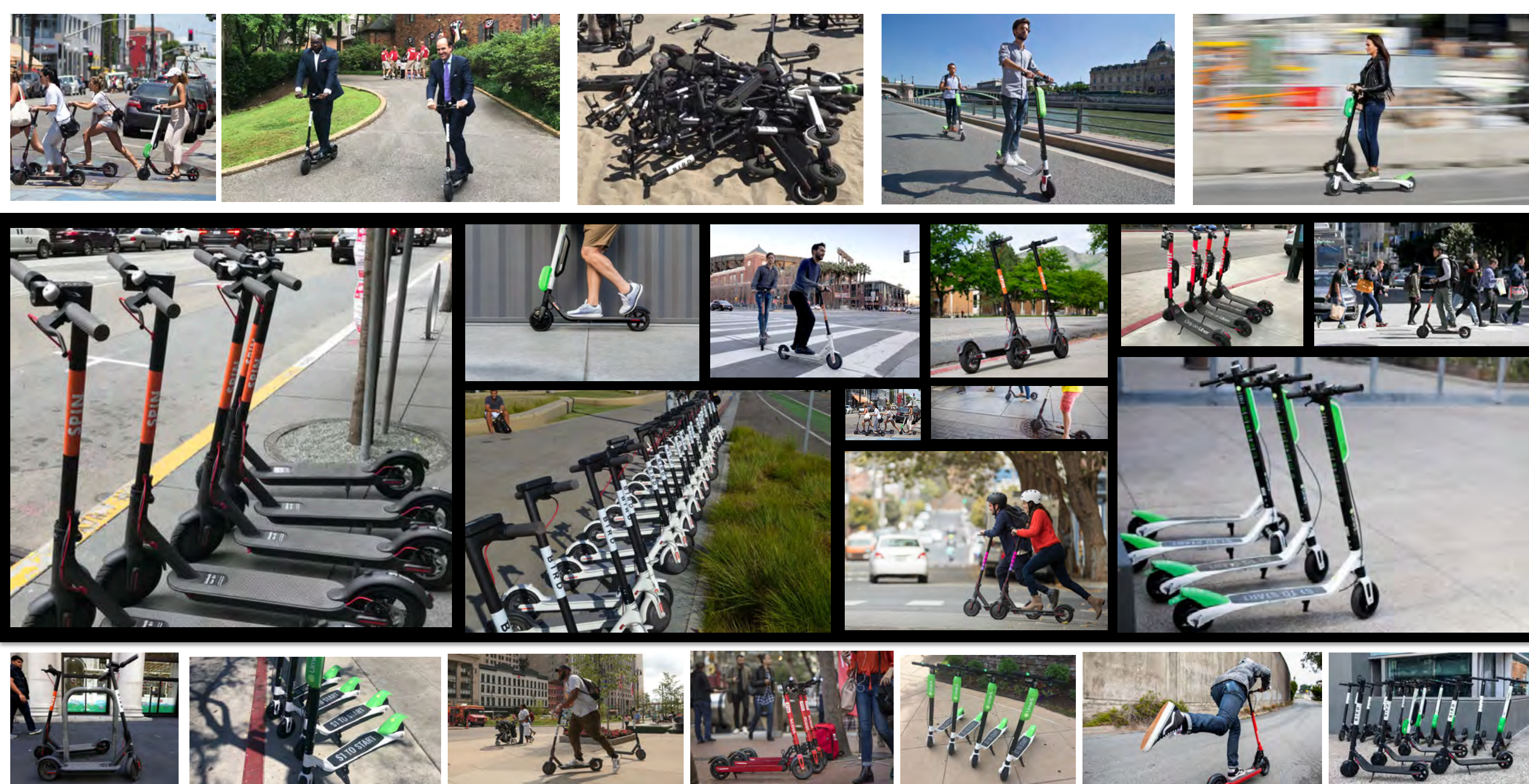
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(In 2018)

**38+ MILLION E-SCOOTER
TRIPS IN U.S.**



NACTO, 2019



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84 Million Trips on Shared Micromobility in 2018



Source: NACTO

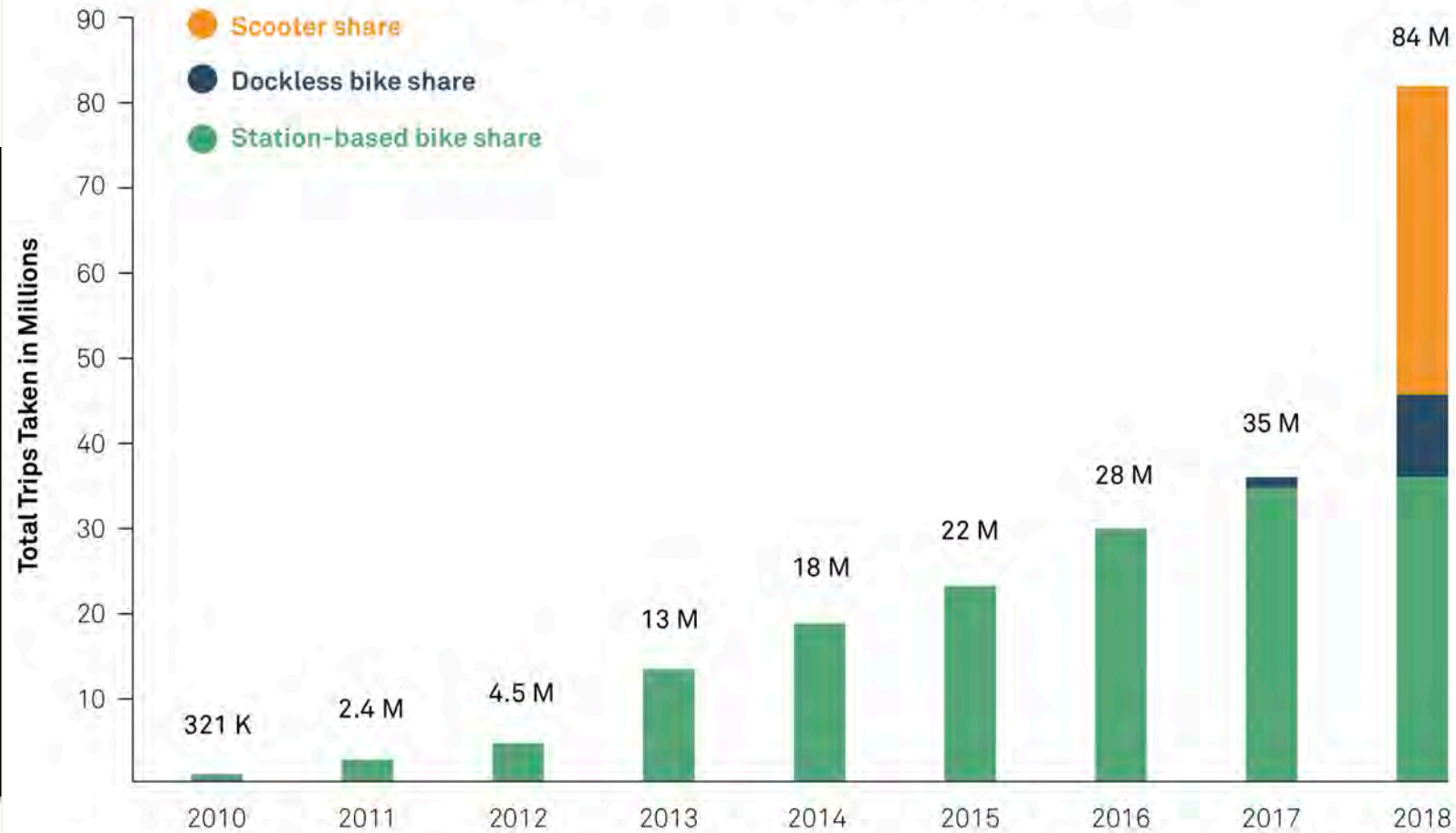
NACTO, 2019



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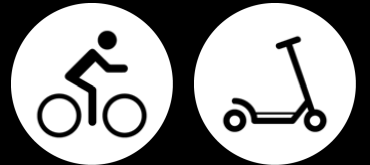
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84 Million Trips on Shared Micromobility in 2018



Source: NACTO

NACTO, 2019



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Rate of New Technology Adoption



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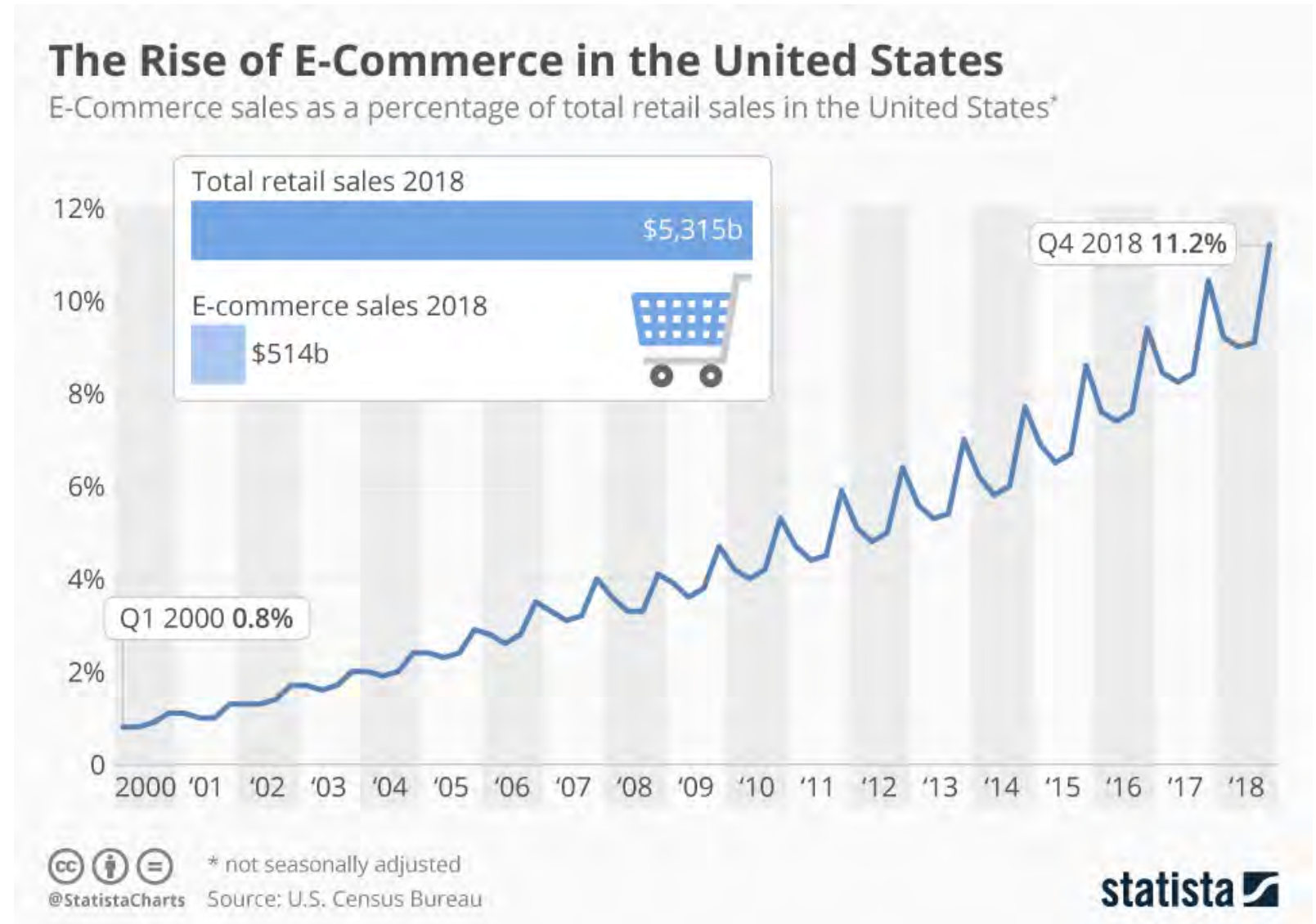
DEPLOYMENT WILL BE STEPPED



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Rise of E-Commerce



Rise of E-Commerce

JANUARY 10, 2017

E-COMMERCE: BRICK-AND-MORTAR SLIDE CONTINUES – 12% DROP IN STORE TRIPS THIS PAST HOLIDAY

U.S. Retail Stores' Planned Closings Already Exceed 2018 Total
The New York Times
APRIL, 2019



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16 Billion E-Commerce Packages Delivered in the US in 2018
118 Packages/Household... One every three days...



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**CHANGE IS HAPPENING
NOW.**



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Increase in Congestion / VMT



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Role of Transit



**BUST A
COMMUTE.**

Redeem up to \$50 in FREE Lyft credit now.
Use code **FASTLAP**

DOWNLOAD & RIDE

Subject to Lyft's Terms



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HEALTH AND EQUITY



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- 1 in 4 Americans have a chronic disease, which costs us \$3.5 trillion in annual health care (CDC).
- 4.1 million people in Washington have at least one chronic disease
- Washingtonians will spend approximately \$915 billion to treat chronic diseases between 2016-2030.

What **Makes** Us Healthy

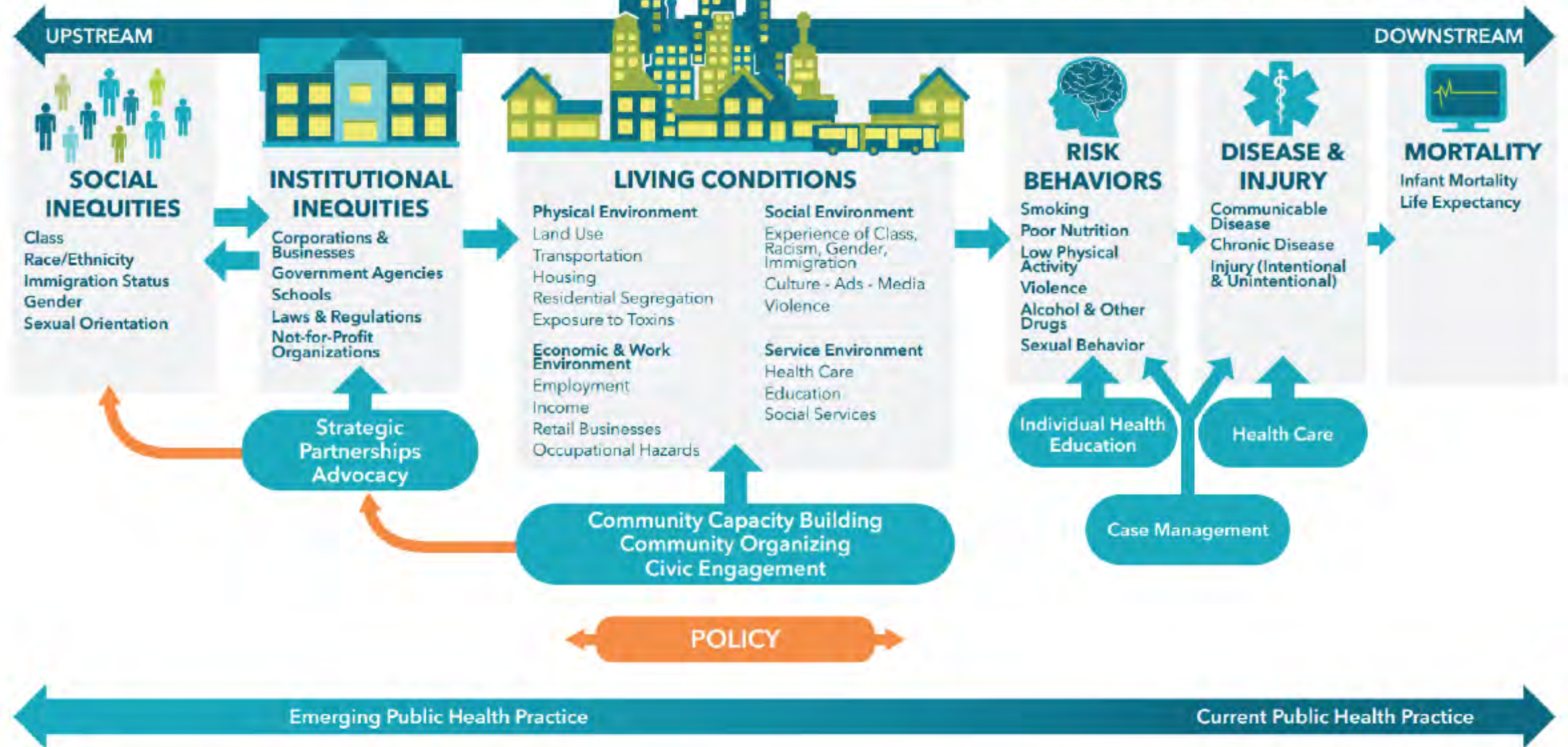


Source: Bipartisan Policy Center

What We **Spend** On Being Healthy

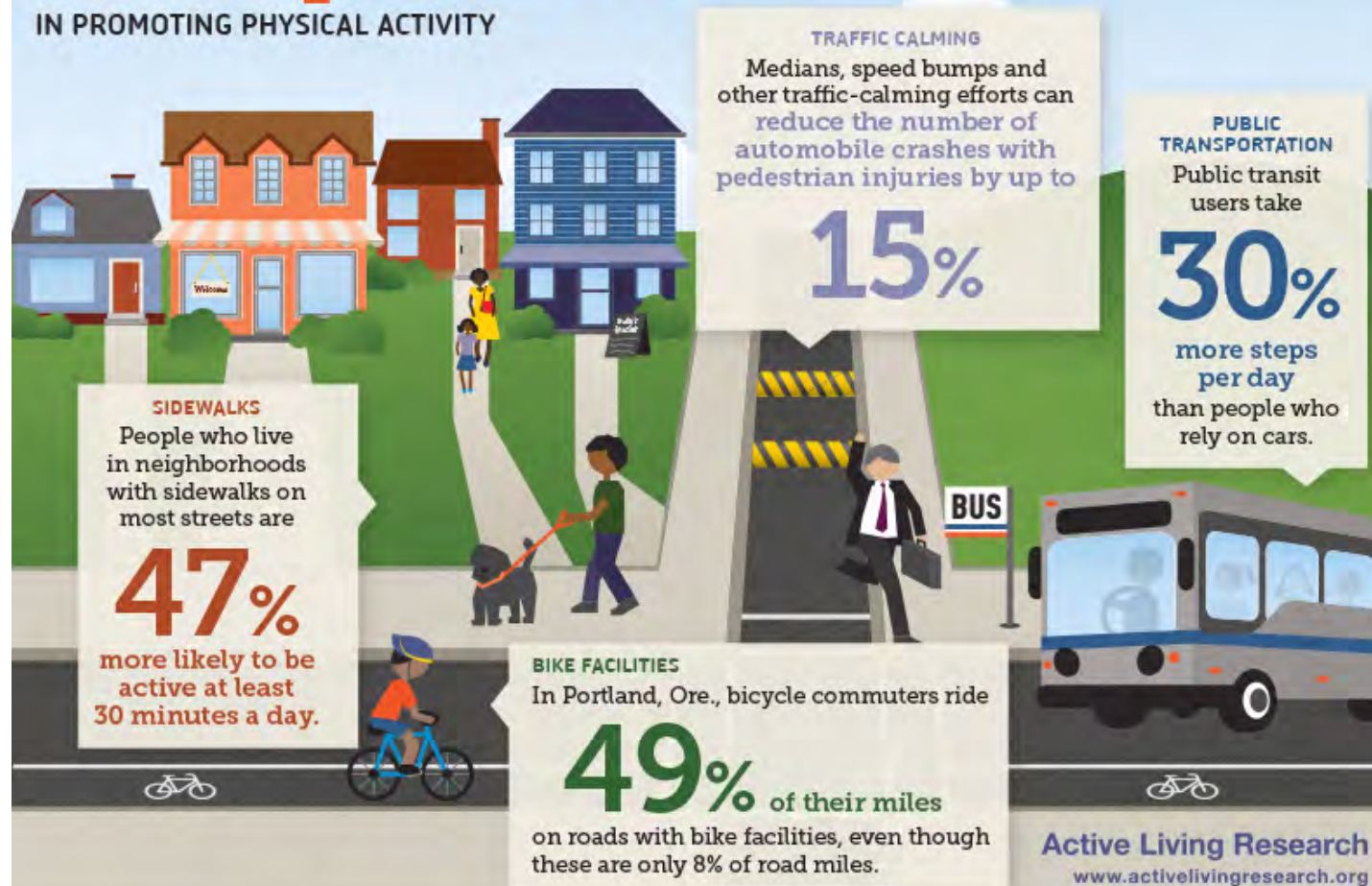


A PUBLIC HEALTH FRAMEWORK FOR REDUCING HEALTH INEQUITIES BAY AREA REGIONAL HEALTH INEQUITIES INITIATIVE



THE ROLE OF Transportation

IN PROMOTING PHYSICAL ACTIVITY



Sources: SIDEWALKS: Sallis J, Bowles H, Bauman A, et al. "Neighborhood Environments and Physical Activity among Adults in 11 Countries." *American Journal of Preventive Medicine*, 36(6): 484-490, June 2009. BIKE LANES: Dill J et al. Bicycling for Transportation and Health: The Role of Infrastructure. *Journal of Public Health Policy* (2009) 30, 595-5110. doi:10.1057/jphp.2008.56). TRAFFIC CALMING: Bunn F, Collier T, Frost C, et al. "Area-Wide Traffic Calming for Preventing Traffic Related Injuries." *Cochrane Database of Systematic Reviews* (1), January 2003; Elvik R. "Area-Wide Urban Traffic Calming Schemes: A Meta-Analysis of Safety Effects." *Accident Analysis and Prevention*, 33(3): 327-336, May 2001. PUBLIC TRANSPORTATION: Edwards R. "Public Transit, Obesity, and Medical Costs: Assessing the Magnitudes." *Preventive Medicine*, 46(1): 14-21, January 2008.

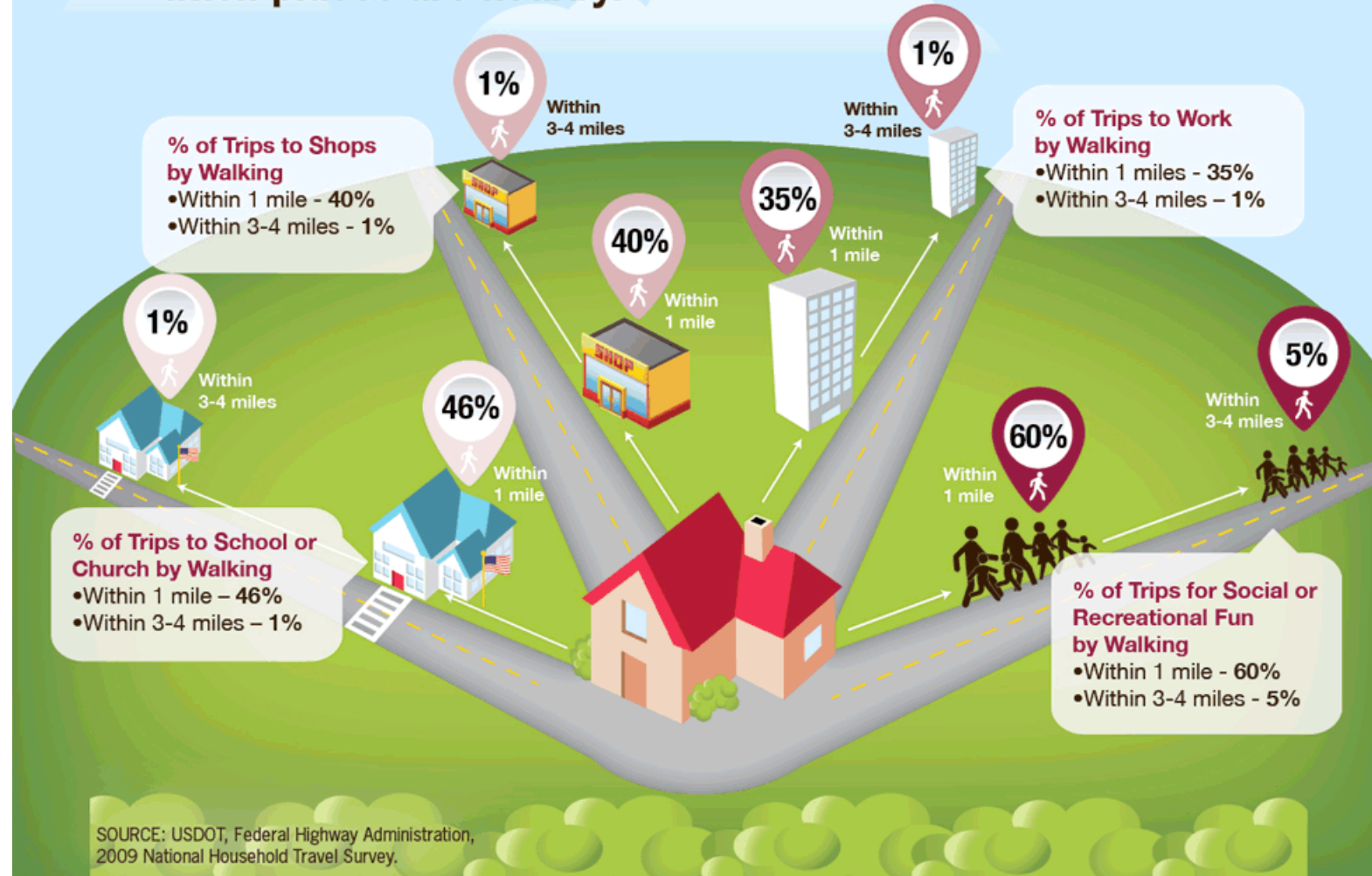


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People walk

to get to places they want to go
when places are nearby.



Mode Shift

60%

Of TNC Trips Would Have
Been Taking By Transit,
Walking, or Biking

(Schaller, 2018)



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Mode Shift

Each Year
After TNCs
Enter Market

=



1.3%

Heavy Rail Ridership



1.7%

Bus Ridership

(Graehler, Mucci and Erhardt, 2018)



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Implications for equity



Source: Freepik

- Is it available where I am and where I want to go?
- User-related issues
 - Access to technology
 - unbanked
 - Can I afford it?
 - Data requirements
 - Drivers license requirements
- AV cameras poor at recognizing people of color, short, women, etc (bias in AI)
- Cannibalization of transit

WHAT TO DO?



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START WITH COMMUNITY GOALS.



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**START WITH COMMUNITY GOALS.
BE NIMBLE.**



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**START WITH COMMUNITY GOALS.
BE NIMBLE.
THINK AHEAD.**



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Greenlining Institute – New Mobility Equity Framework

Goal #1

Increase Access to Mobility

1. Affordability
2. Accessibility
3. Efficiency
4. Reliability
5. Safety

Goal #2

Reduce Air Pollution

6. Clean Air and Positive Health Benefits
7. Reduction in Greenhouse Gases
8. Reduction in Vehicle Miles Traveled

Goal #3

Enhance Economic Opportunity

9. Connectivity to Places of Employment, Education, Services, & Recreation
10. Fair Labor Practices
11. Transportation-Related Employment Opportunities
12. Inclusive Local Business & Economic Activity



Old Rules are Still the New Rules...

- Compact Development
- Urban Growth Areas / Greenbelts
- Transit Oriented Development
- Promote Mixed Use Zoning
- Promote Dense Development
- Create walkable places
- Preserve open space and farmland



Photo via MNCPPC



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Set Priorities

Pedestrians



Bike/Transit



Freight/Service



Private Vehicle



**Prioritizing Users in
Street Design (NACTO)**

Set Priorities

Pedestrians



Bike/Transit / **Micro / Shared AV**



LYFT LINE
uberPOOL

Freight/Service / **Delivery**



Private Vehicle / **AV**



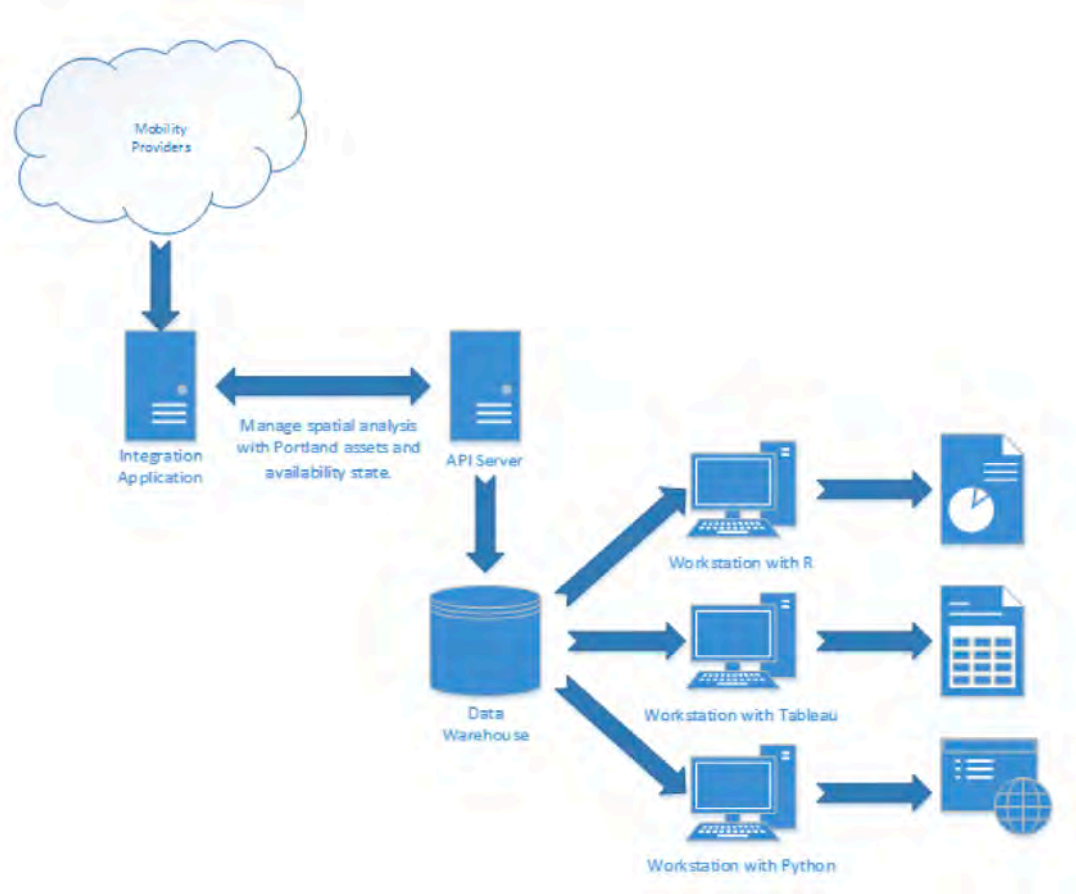
Zero Occupancy AV (?)



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Don't forget about the data



- The transportation system is changing. Fast. We need information now to understand that change.
- Vehicles aren't sticking to highways, so we need better information.
- Data is necessary to understand equity and health outcomes

AVS AND MAAS ARE NOT TRANSPORTATION ISSUES



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E-COMMERCE IS NOT A RETAIL ISSUE



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NATIONAL URBANISM NEXT CONFERENCE

MAY 13, 2020 PRE-CONFERENCE WORKSHOPS

MAY 14-15, 2020 CONFERENCE SESSIONS

Portland, OR



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