

Infrastructure is Destiny

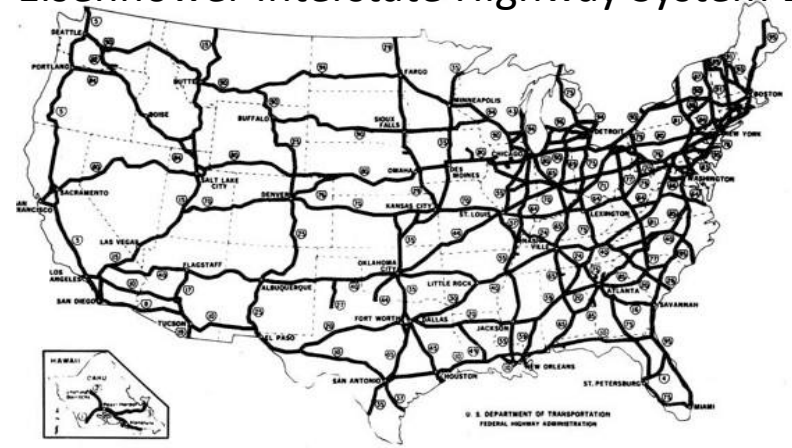
@rmchase

# Levittown, NY 1947-1951

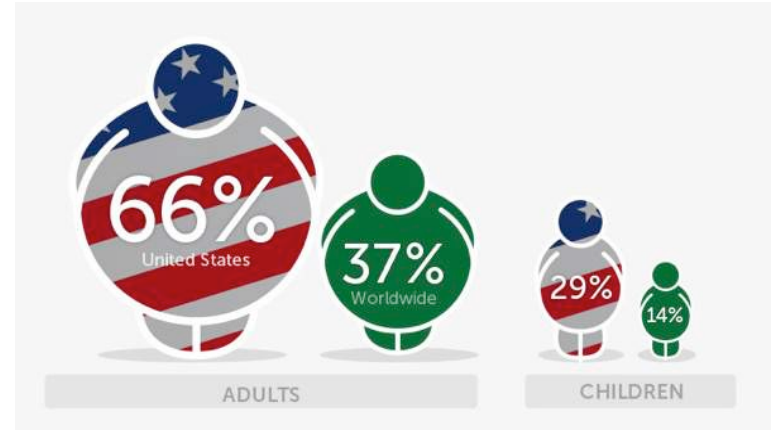


# Eisenhower Interstate Highway System 1956

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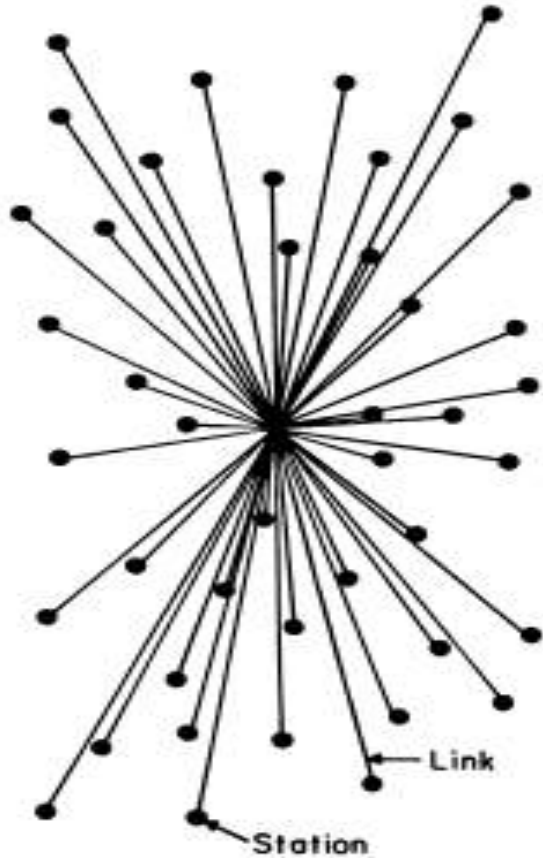
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## CAR TRAVEL

Point-to-point

30 minute drive to anything



## GENERIC PLACES

evaluation based on smallest unit

easy substitution



# HUMAN NATURE

(our personal Infrastructure?)

We strongly favor convenience (EASY) & (CHEAP) economics



Over the last 100 years, we have specifically & pro-actively made personal cars easy and cheap.  
Underpricing air pollution, curb access, congestion, even transport infrastructure!



In a private car ownership world, I only think about the *marginal* cost of travel.  
(in shared travel, I often pay the *full* costs of the trip)

# What is my cost for this trip?



**Technology has made sharing easy**

**30 seconds to make a reservation, wireless self service door unlock, automatic billing.**



Smart phones & standard data  
make **TRANSIT APPS** possible



**Mass Transit and multimodal  
options made visible,  
convenient and accessible to  
both regulars and tourists.**

**Reliable door-to-door taxis, easy payment, finding someone whose trajectory matches your own!**

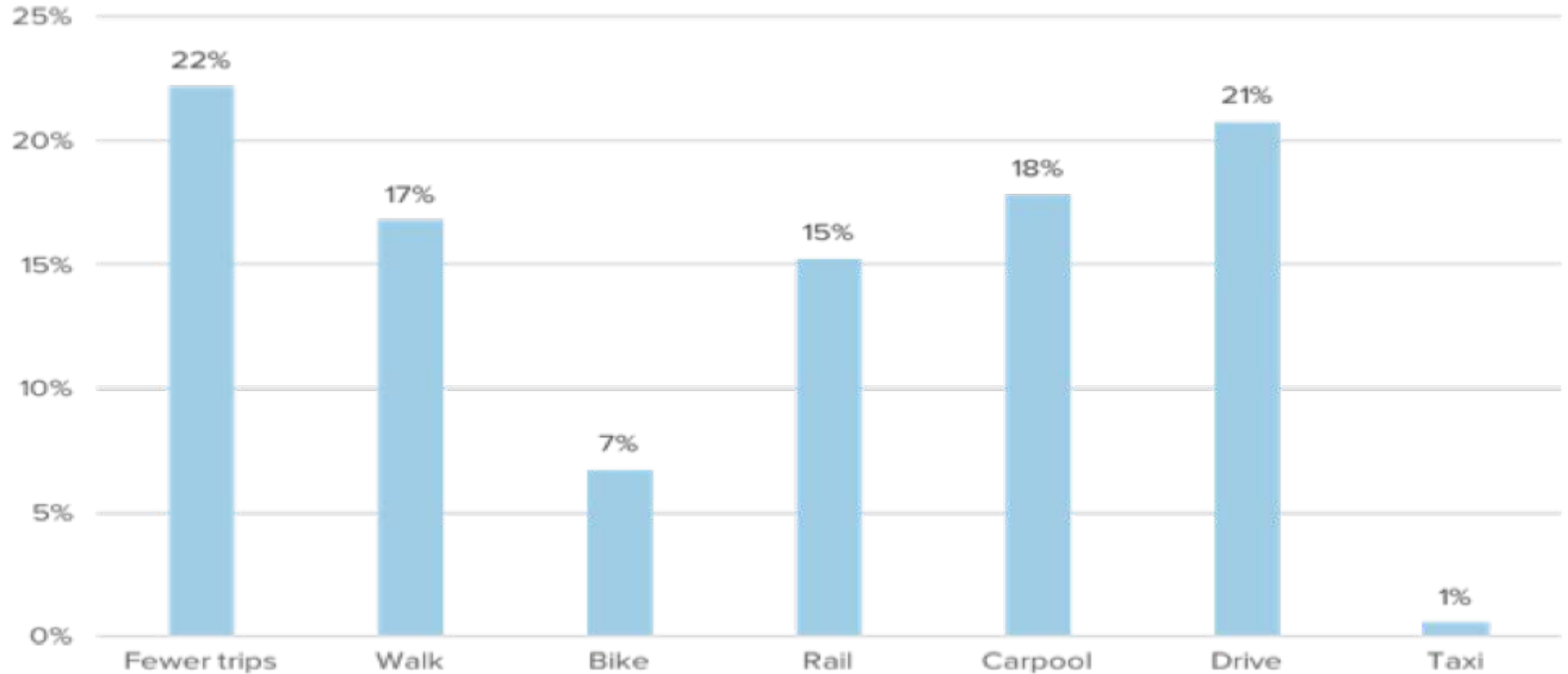
GPS, smart phones & AI  
make **E-HAILING & RIDESHARING** possible



UBER, LYFT, DIDI, OLA, CAREEM, VIA, CHARIOT

## What would you do if e-hailing/ridesharing did not exist?

24% of people chose not to walk or bike





**"What you want,  
before you want it."**

**amazon.com**  
amazon smile logo



In a world of Autonomous Vehicles  
– **free of the cost (or personal time) of drivers** –

**current underpricing problems**

(air pollution, curb access, congestion, even transport infrastructure)

will be **MAGNIFIED**

because car travel will be even cheaper.



## Today's Retail in Urban Areas



Suburban warehouse

# RETAIL AUTOMATED TRIPS

OBSERVER

POLITICS | ARTS & ENTERTAINMENT | STYLE & DESIGN |

SELF DRIVING CARS

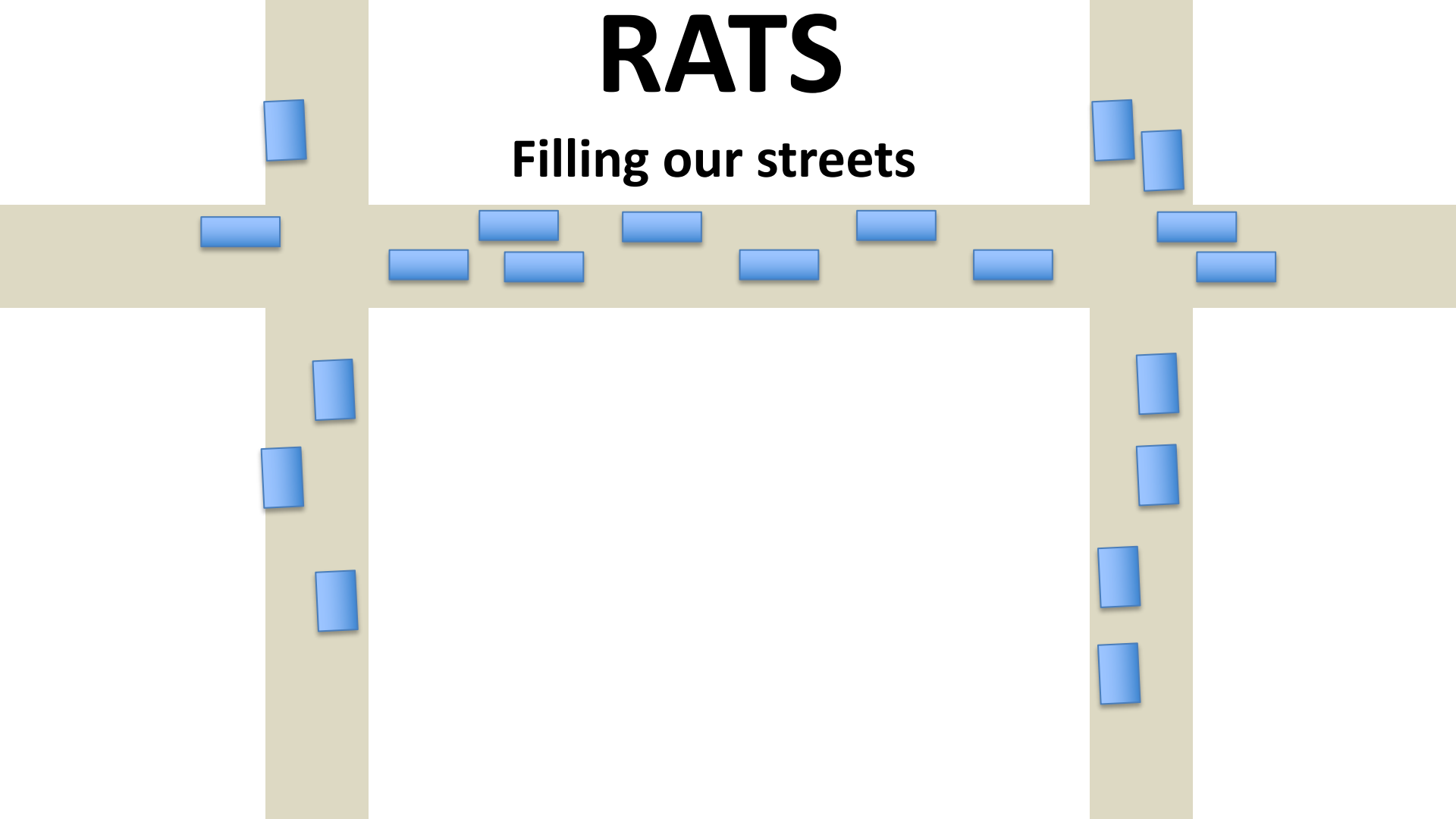
## Self-Driving Cars Will Fill the Streets With RATS, Zipcar Co-founder Says

By [Brady Dale](#) • 11/21/16 7:19am



# RATS

Filling our streets





RATS in cities BAD!

RATS in countryside?

DENSITY MATTERS  
For AV policy &  
benefits

**If we understand that people naturally choose easy & cheap,  
& INFRASTRUCTURE IS DESTINY  
& AVS ARE IMMINENT (AT LEAST IN CITIES)**

Over next 5 years

We need to specifically & pro-actively rework our  
PHYSICAL, SOCIAL, ECONOMIC & DATA INFRASTRUCTURE

**shared & active transport**

**EASY & CHEAP**

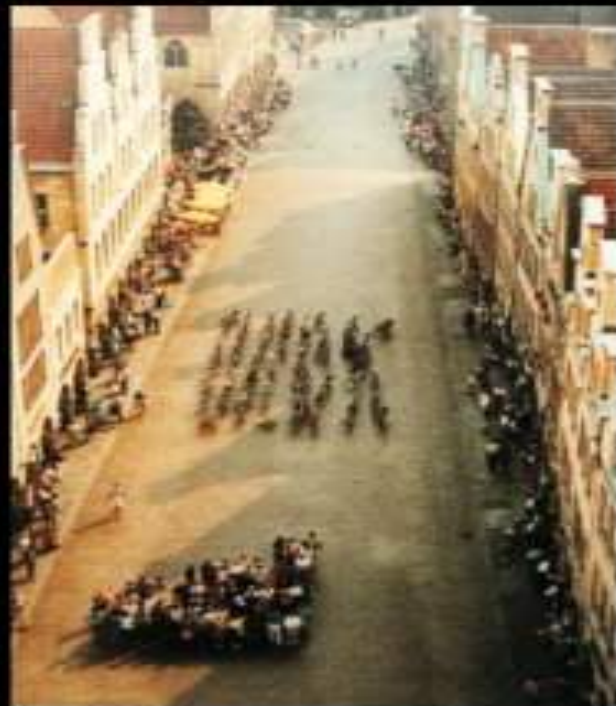
space required  
to transport **60** people



car

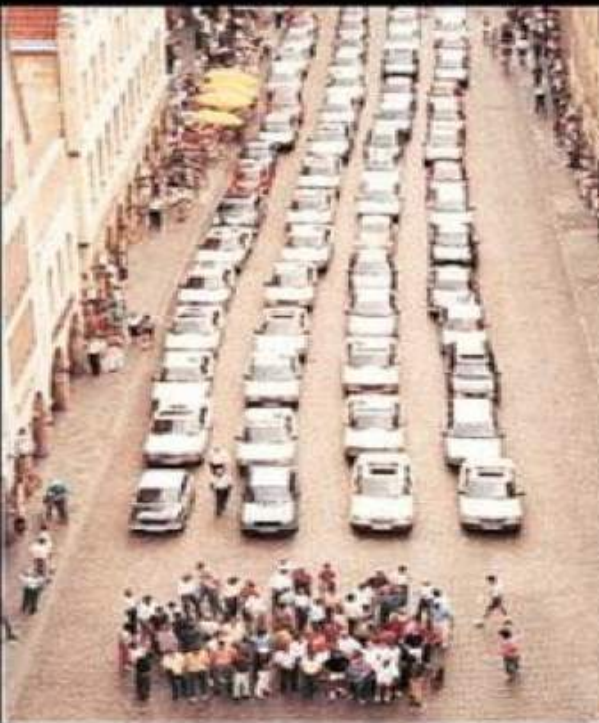


bus



bicycle

space required  
to transport **60 people**



car

Here are 200 people in 177 cars



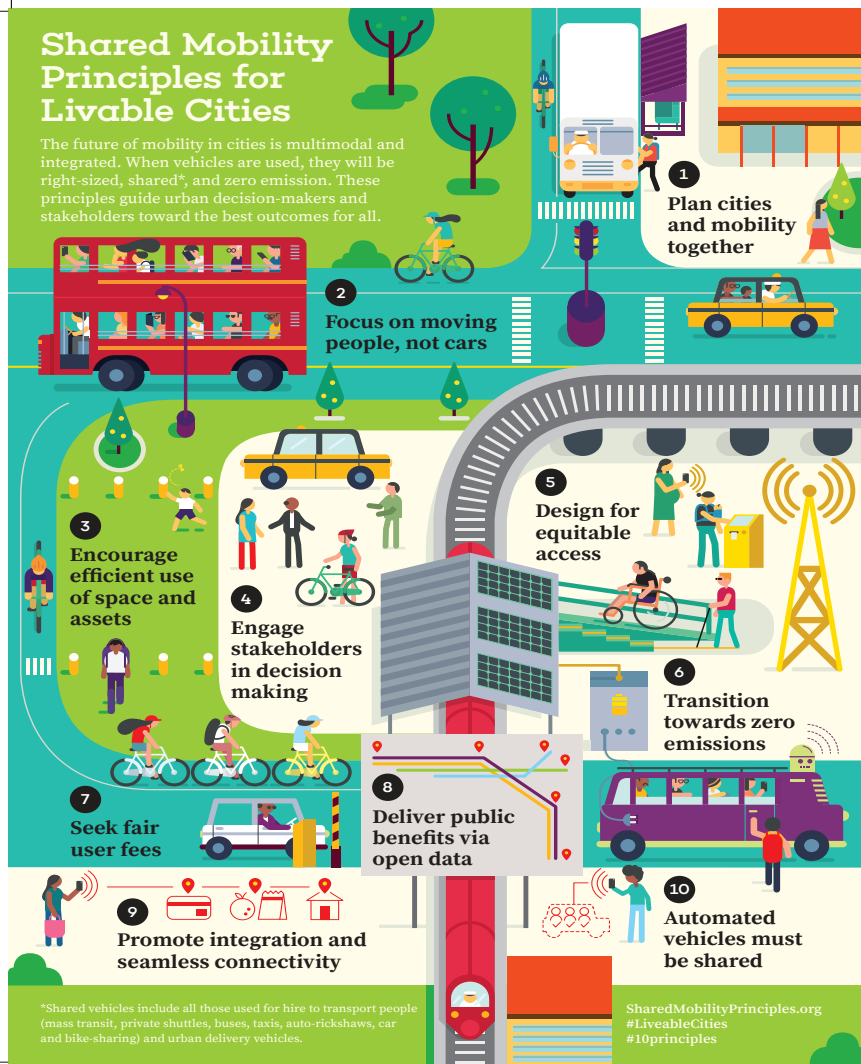




We are getting a chance to  
**DO-OVER**  
Cities

# Shared Mobility Principles for Livable Cities

The future of mobility in cities is multimodal and integrated. When vehicles are used, they will be right-sized, shared\*, and zero emission. These principles guide urban decision-makers and stakeholders toward the best outcomes for all.



\*Shared vehicles include all those used for hire to transport people (mass transit, private shuttles, buses, taxis, auto-rickshaws, car and bike-sharing) and urban delivery vehicles.

SharedMobilityPrinciples.org  
#LiveableCities  
#10principles

## Founding NGOs November 2107



## Multinational Passenger Service Cos endorse February 2018



## **Shared Mobility Principles for Livable Cities**

Multimodal, integrated.

Vehicles are right-size, shared, zero emission.

1. Plan cities and mobility together
2. Focus on moving people, not cars
3. Encourage efficient use of space and assets
4. Engage stakeholders in decision making
5. Design for equitable access
6. Transition towards zero emissions
7. Seek fair user fees across all modes
8. Deliver public benefits via open data
9. Promote integration and seamless connectivity
10. Automated vehicles must be shared

**[SharedMobilityPrinciples.org](https://SharedMobilityPrinciples.org)**

# #7 Fair user fees across all modes



#2 Move people, not cars

#3 Encourage efficient use of space & assets

#2 Move people, not cars

#3 Encourage efficient use of space & assets



**60** people/lane/block

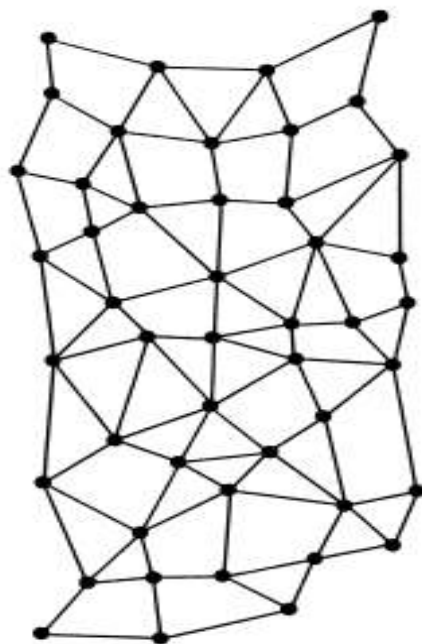
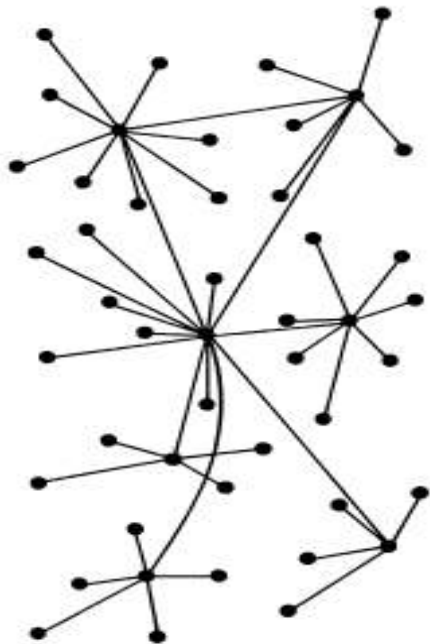
**40** people/lane/block

**12** people/lane/block

## WALKABLE/BIKABLE TRAVEL

Distributed, networked

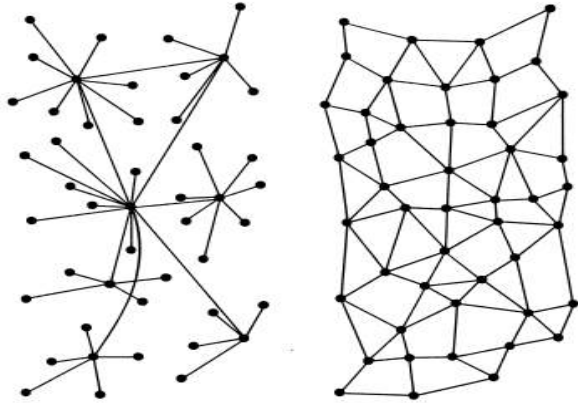
Specific local combination unique



## WALKABLE/BIKABLE TRAVEL

Distributed, networked

Specific local combination unique



## SPECIFIC COMMUNITY

Evaluation based on complex bundle

15 minute walk/bike to specific local places

+ 30 minute mass transit to wide range

+ 30 minute motorized transport to anything



#8 Public benefits  
via open data



Interoperability btwn modes  
Competition w/in modes



**<-Continuuuummm->**



[SharedStreets.io](https://www.sharedstreets.io)

# SHARED MOBILITY PRINCIPLES FOR LIVABLE CITIES



- #6 Transition to Zero Emission & Renewable
- #3 Efficient Use of Resources
- #7 Fair User Fees across all modes
- #8 Public benefits via open data
- #9 Work toward integration & seamless connectivity
- #10 AVs in dense metros must be electric & shared**

Standard APIs

Connected  
& integrated

Zero  
Emission

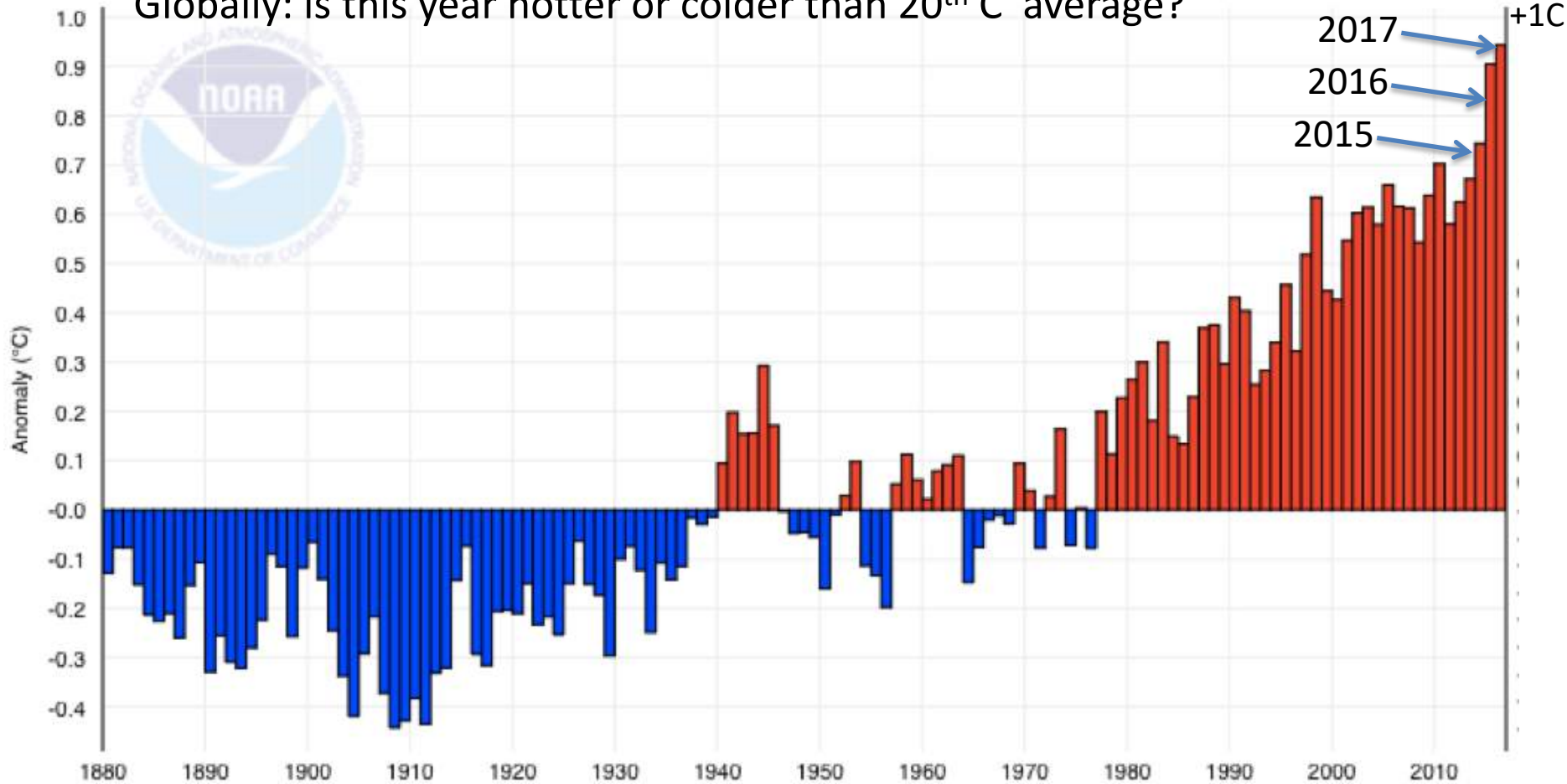
Efficient use  
of resources

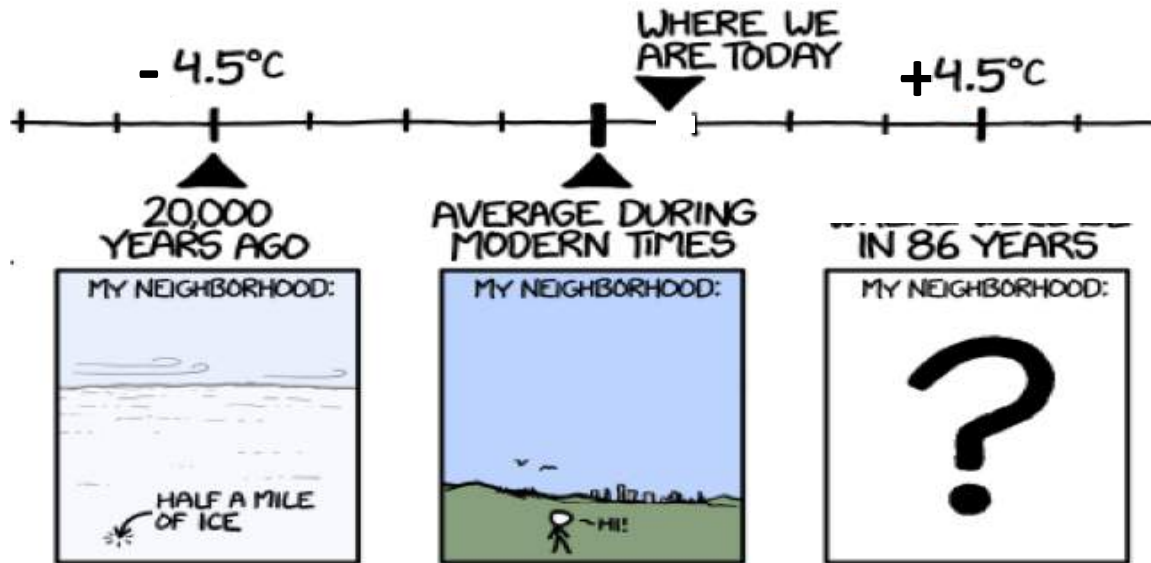
Fair User  
Fees

**We don't have time for delay**  
**GLOBAL INFRASTRUCTURE**

## Scientists predict +5-6C by 2100 under BAU

Globally: is this year hotter or colder than 20<sup>th</sup> C average?





THICKNESS OF THE ICE SHEETS  
AT VARIOUS LOCATIONS  
21,000 YEARS AGO  
COMPARED WITH MODERN SKYLINES



Credit: Randall Monroe

## **Our Mission:**

Channel the tech-driven disruption in the mobility sector to (re)build cities that are sustainable, livable, and just.





**INFRASTRUCTURE IS DESTINY**

**We have to get this transition right.**



# To Do



SharedMobilityPrinciples.org

1. Support Shared Mobility Principles
2. Start fixing pricing (fair user fees)
3. Join others working on open data standards & privacy.
4. Build community! (make your town special; & increase walking/biking)
5. Have community dialogue about:
  - Retail vs online shopping & RATS
  - Role of AVs and shared transport



[bit.ly/avheaven](https://bit.ly/avheaven)



**OPEN TRANSPORT PARTNERSHIP**

Sharedstreets.io

@rmchase

END

No mapping standards for curb and lane use

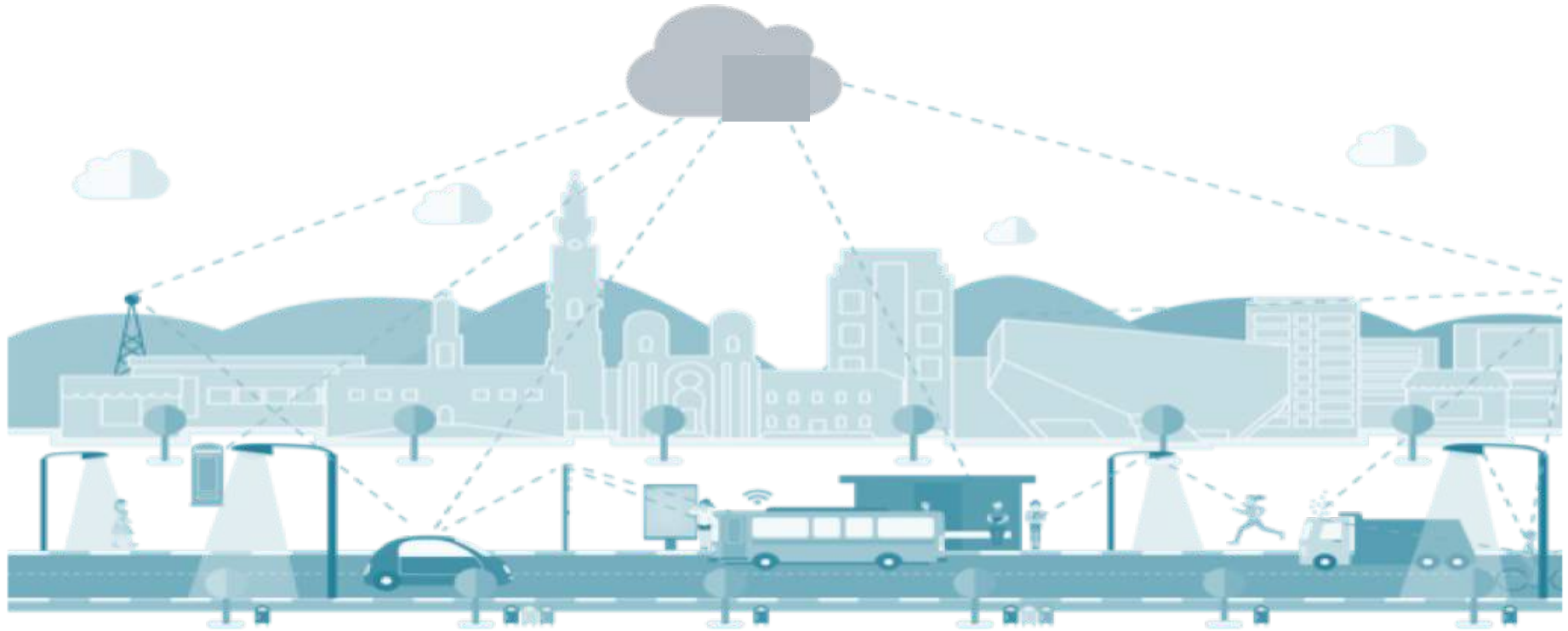
Open Transport Partnership



## #4 Engage stakeholders in decision making



## #9 Work toward integration and seamless connectivity





Self driving or not  
*same problems*

**METAL BOXES ON SCARCE STREETS**



We already live in transport  
**HELL**

