Infrastructure is Destiny

@rmchase
Levittown, NY 1947-1951

Eisenhower Interstate Highway System 1956
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.
GPS, smart phones & AI make **E-HAILING & RIDESHARING** possible

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

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
- 22% fewer trips
- 17% walking
- 7% biking
- 15% rail
- 18% carpooling
- 21% driving
- 1% using taxis

Regina Chertow 2017
“What you want, before you want it.”
amazon.com
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
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
AV benefits are differentiated by population density.

AVs
Personal & Electric
Exurban

FAVES
Fleets of AVs that are Electric & Shared
Urban.

Safety benefits felt here.

Transformed land use (shared) & better air quality (electric) key benefits here.

space required to transport **60 people**

car  bus  bicycle
space required to transport 60 people
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.

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
8. Deliver public benefits via open data
9. Promote integration and seamless connectivity
10. Automated vehicles must be shared

*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.

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
#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
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 between modes
Competition within modes

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
We don’t have time for delay
GLOBAL INFRASTRUCTURE
Scientists tell us we will be +5-6°C with BAU by 2015-2016.

Scientists predict +5-6°C by 2100 under BAU.

Globally: is this year hotter or colder than 20th C average?
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

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

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SharedMobilityPrinciples.org

OPEN TRANSPORT PARTNERSHIP
Sharedstreets.io
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