Wednesday Morning WTS

Future of Transport in 2 Movements

1. Infrastructure is Destiny

2. Build on Solid Ground

This is the space required to move 60 people from A to B

Personal car

Bus

Bicycle

Source: City of Münster

This is the space required to move 60 people from A to B

Personal car

#1
Infrastructure is Destiny

Levittown, NY 1947-1951

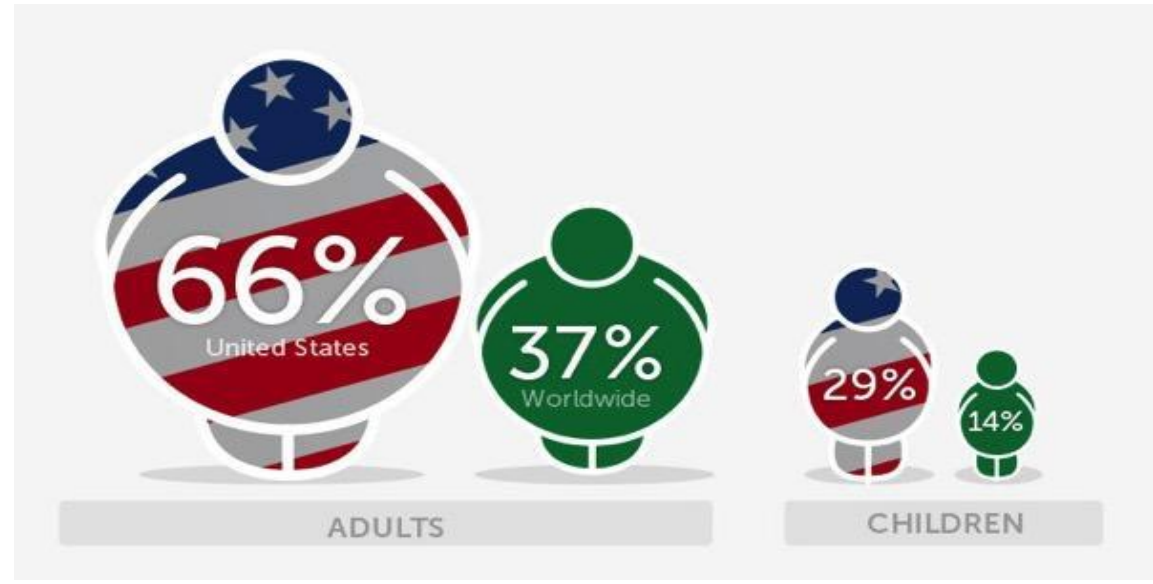# Eisenhower Interstate Highway System 1956

+

+

66% United States
37% Worldwide
29%
14%
ADULTS
CHILDREN
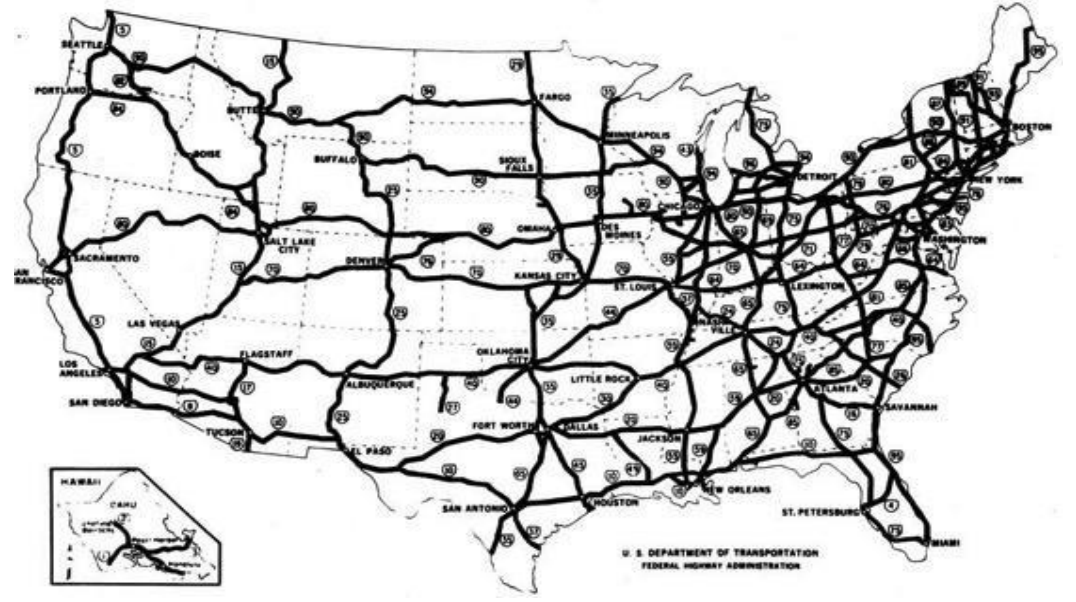
40 years of Cycle-friendly infrastructure building

	US	Netherlands
Km cycled/person/yr	47	864
% Obesity	36%	12%

HUMAN NATURE
(Engineer-speak: "Personal infrastructure")

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

Equality in infrastructure

IS THIS FAIR?

- Is everyone getting where they need to go?
- Are they paying the right price? In appropriate time? In good conditions?
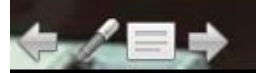- Are we improving their travel conditions?

For cars

For people

Over the last 100 years, we have specifically and proactively made personal cars *easy* and *cheap*.

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TAX & REGULATORY INFRASTRUCTURE

We have underpriced:

- Air pollution
- Congestion
- Curb access (in conditions of scarcity)
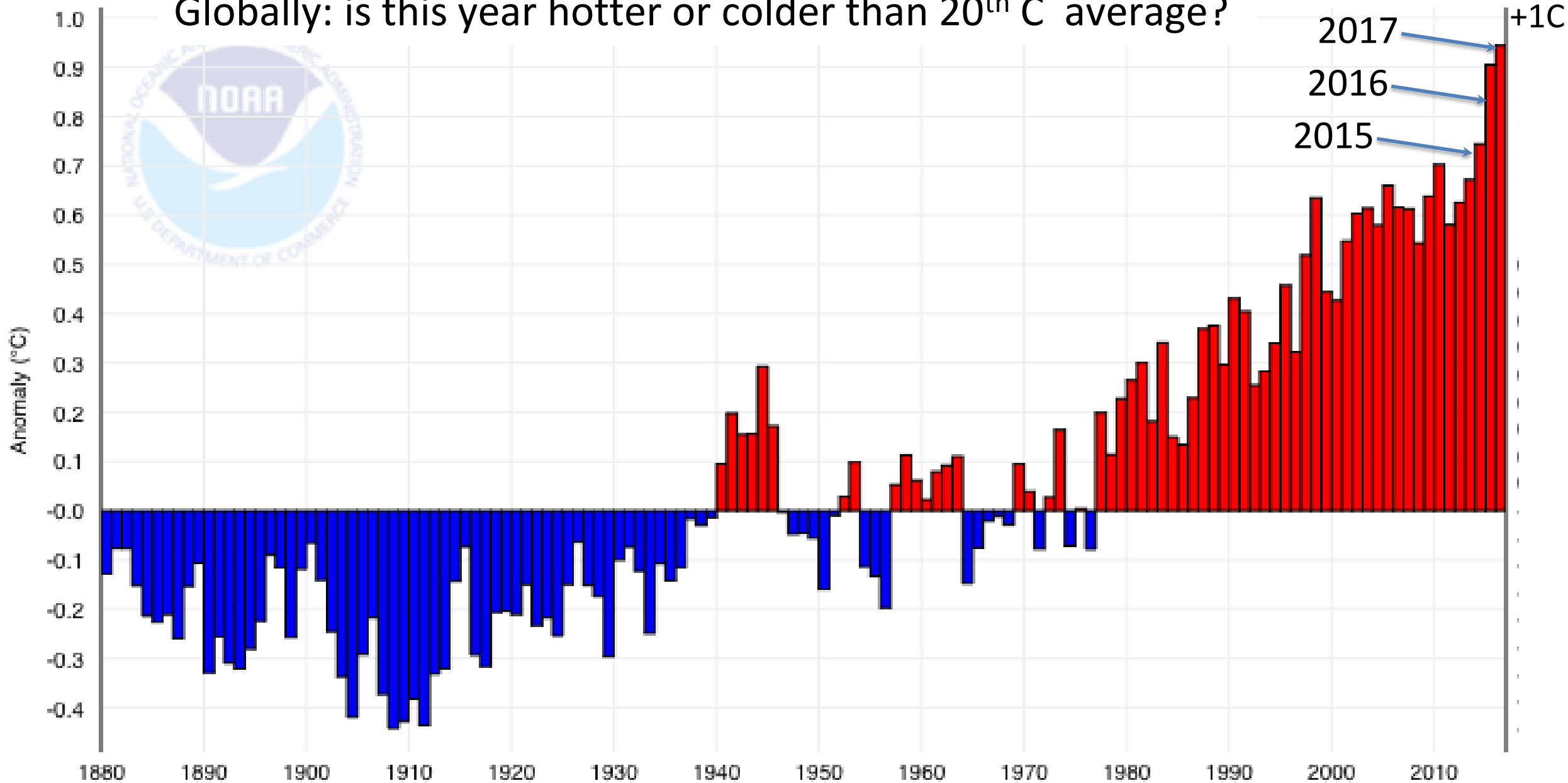- User fees for transportation infrastructure investment (in some countries)

With market pricing misaligned with reality, we are **overconsuming car travel**.

Our planetary infrastructure

Scientists predict +5-6C by 2100 under BAU

Globally: is this year hotter or colder than 20th C average?
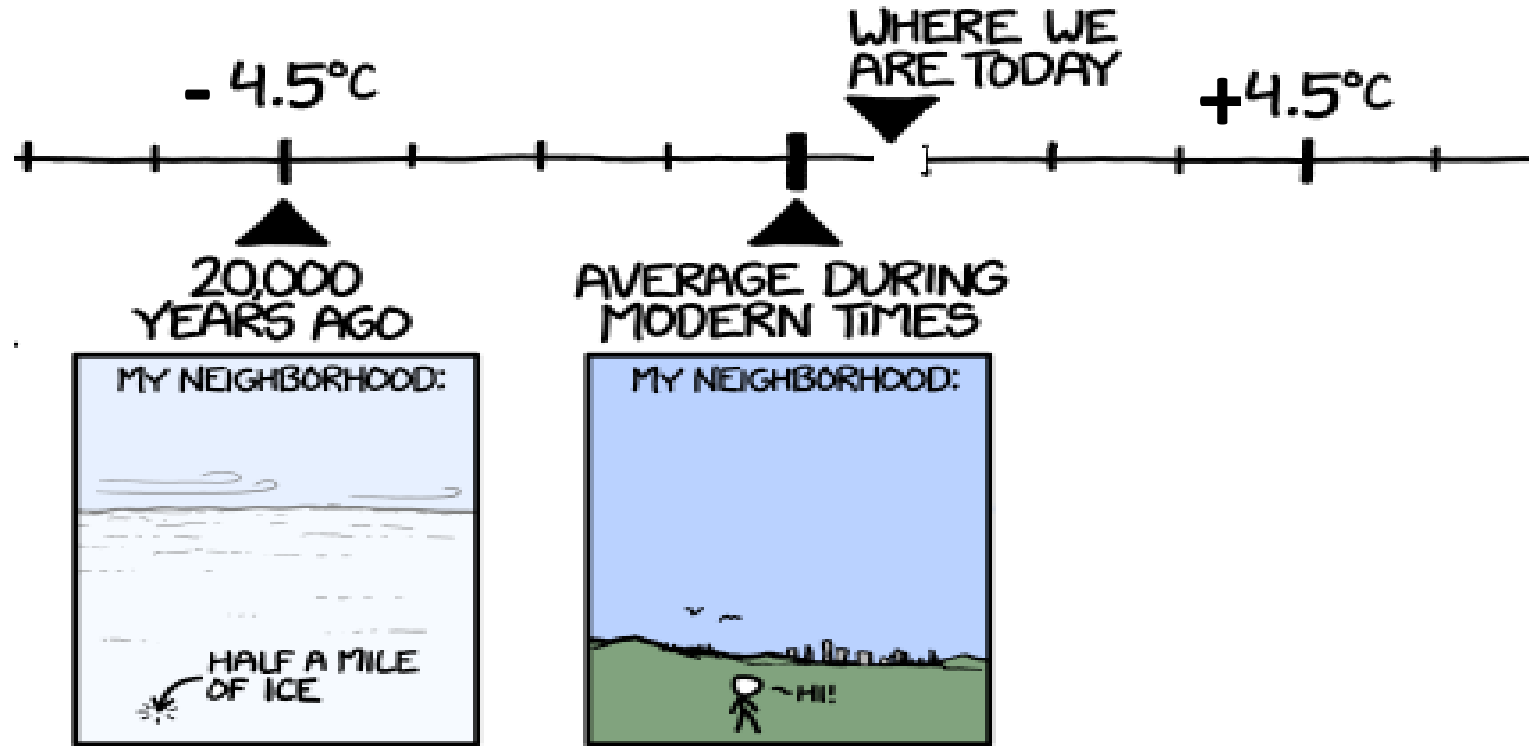
2017
2016
2015
+1C
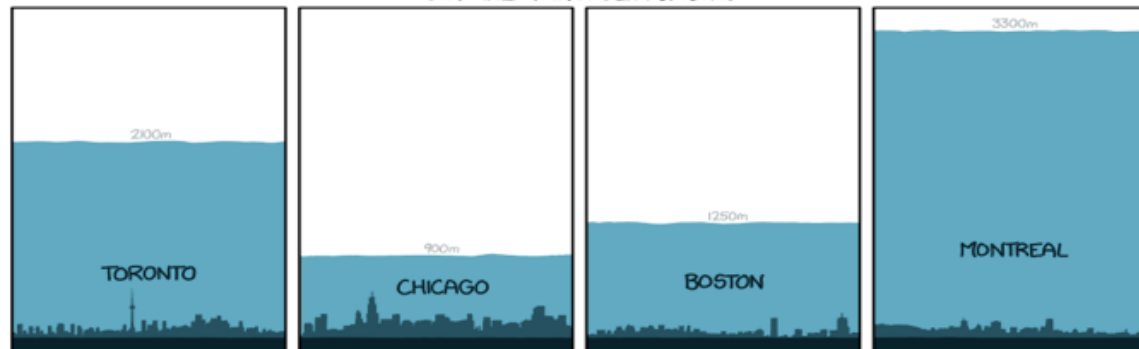
Credit: Randall Monroe

TECHNOLOGY

GPS, Internet, Wireless, Smartphones, e-payment, Open Data, Electric Batteries

Car sharing
Ride sharing
Transit apps
On-demand consumption
Electric batteries
Connected and
autonomous vehicles
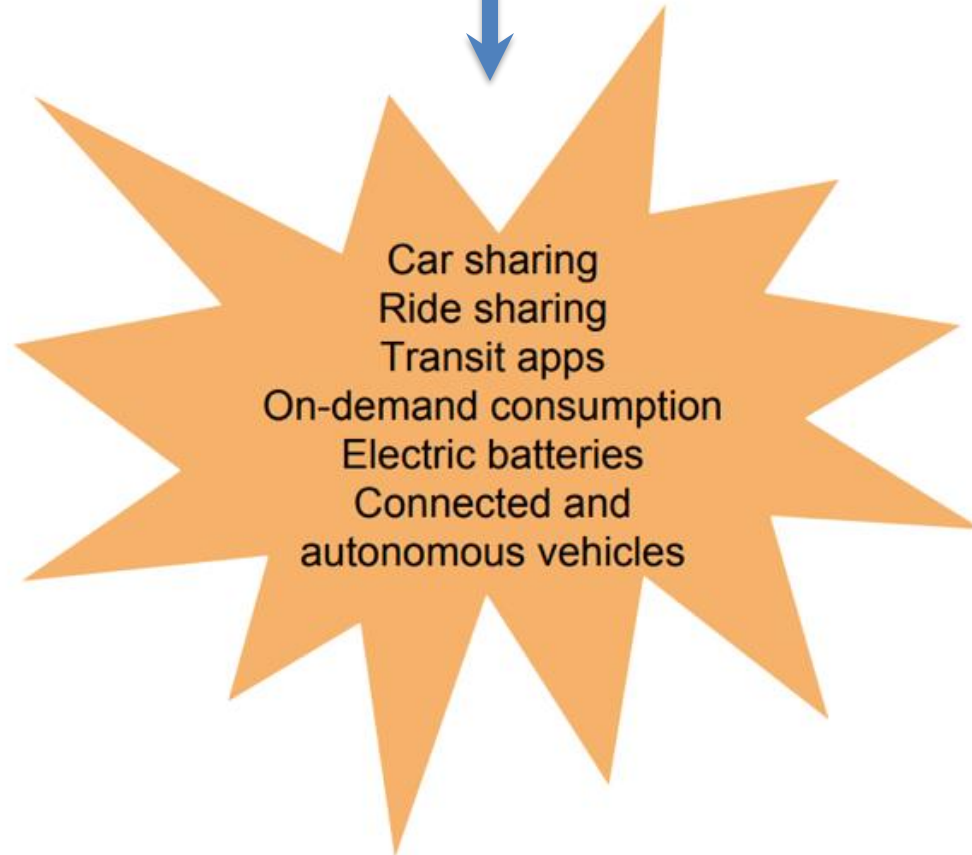
☺ Technology has made sharing easy

Car Sharing

Transit Apps

E-Hailing and Ride-Sharing

Q: If e-hailing/ridesharing did not exist?

24% of people would chose not to walk or bike
15% would have taken transit
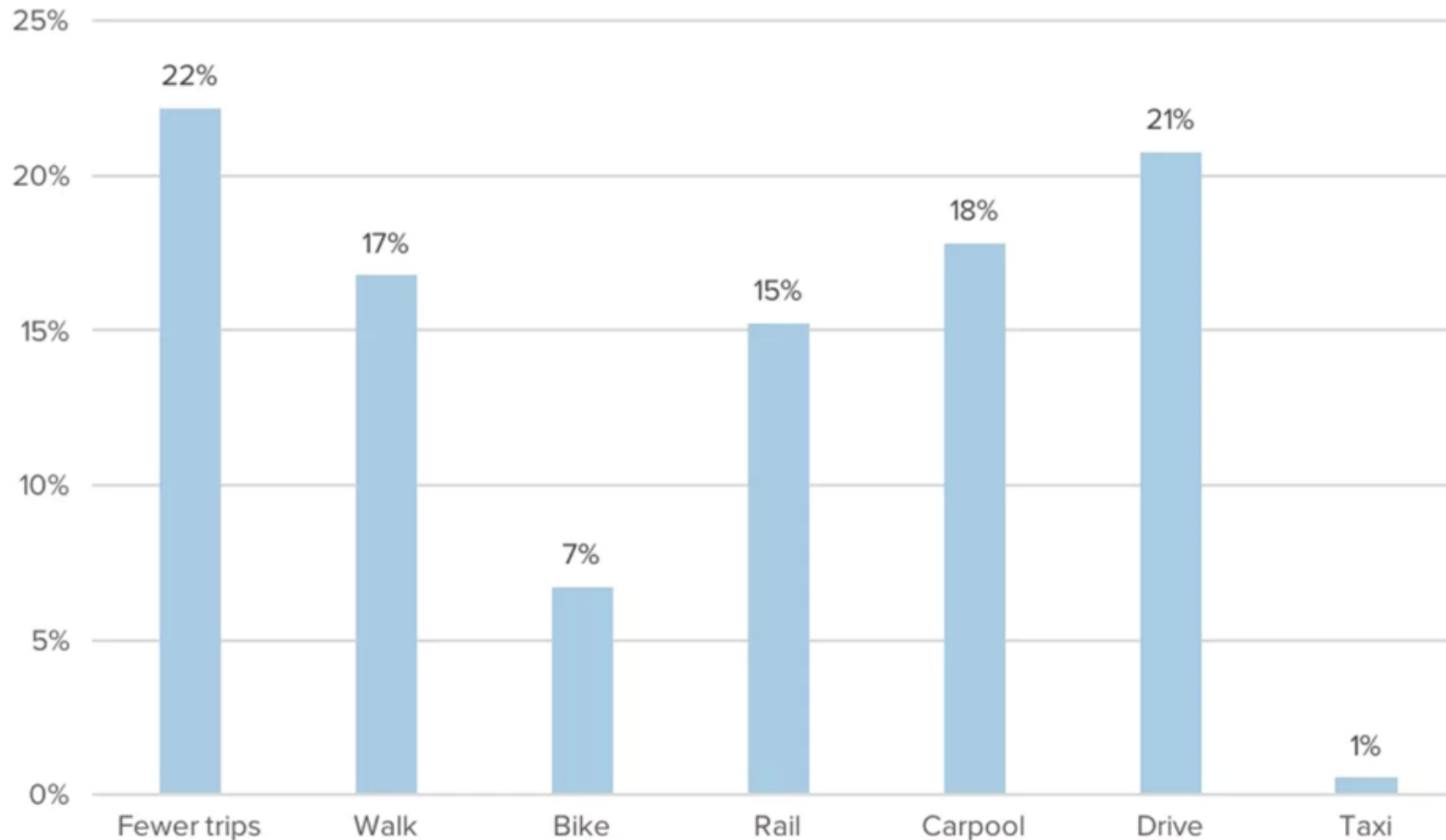
Source: Clewlow, R. R. and G. S. Mishra (2017) Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States.

The good, the bad:

🙂 On-demand consumption and delivery easy and convenient

☹ Consequences for city retail, and street and curb use

E-Commerce as a Percent of Retail Shopping

Projections 2015-2021

60%

17.5%

15.5%

13.7%

11.9%

10.2%

8.6%

7.4%

2015 2016 2017 2018* 2019* 2020* 2021*

Share of e-retail sales

1%

2000

2017

2030

Source: Statistica.com
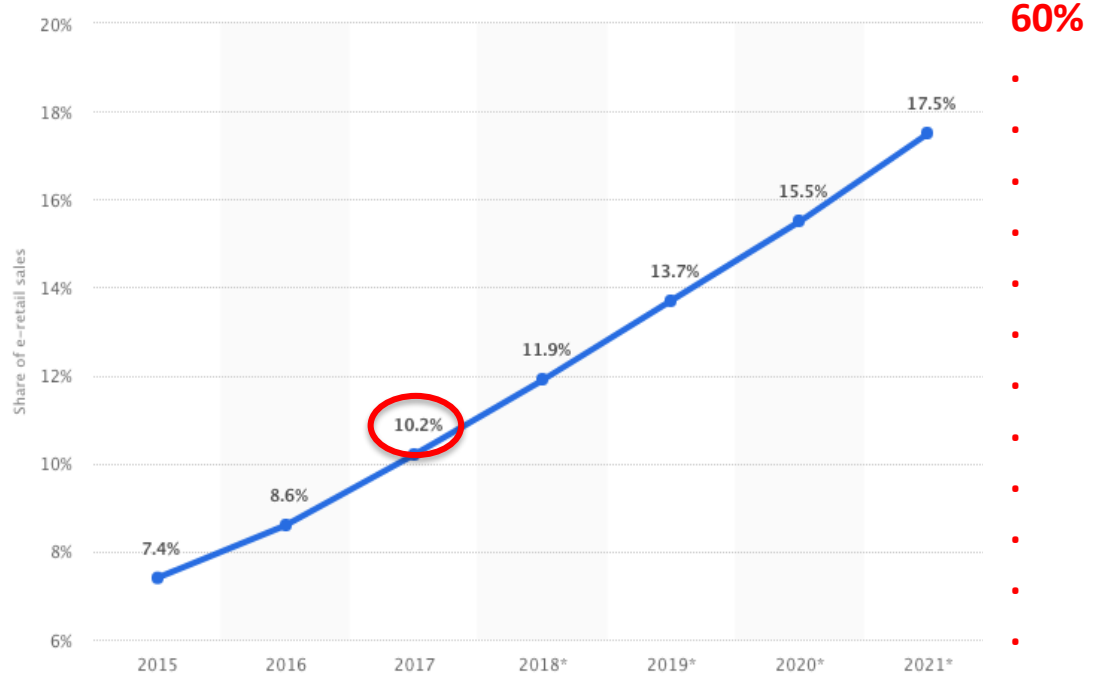
Enter self-driving cars…
making car trips even cheaper (no driver!)
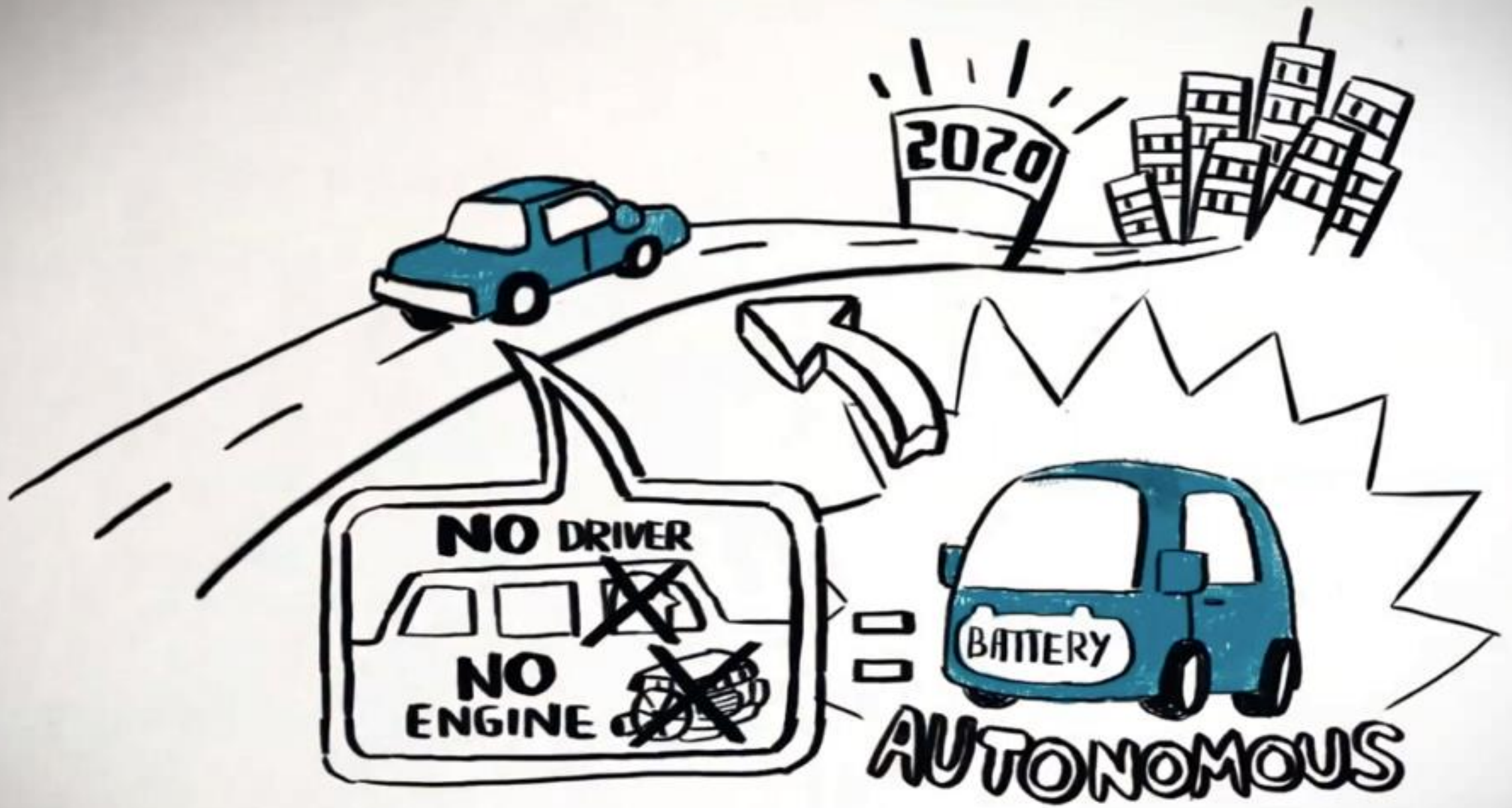
To view search YOUTUBE Robin Chase Self Driving Cars

**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
REGULATORY, TAX, PHYSICAL & DATA INFRASTRUCTURE
to make

active & shared transport
EASY, FAIR & CHEAP

#2 Build on solid ground

Common shared vision and Principles

The endorsers of the SHARED MOBILITY PRINCIPLES include:

C4O CITIES · I·C·L·E·I Local Governments for Sustainability · ITDP Institute for Transportation & Development Policy · NRDC NATURAL RESOURCES DEFENSE COUNCIL

ROCKY MOUNTAIN INSTITUTE · SHARED-USE MOBILITY CENTER · Transportation for America · WORLD RESOURCES INSTITUTE | ROSS CENTER

Shared Mobility Principles for Liveable Cities

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 Mobility Principles for Livable Cities

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

The endorsers of the SMPs include:
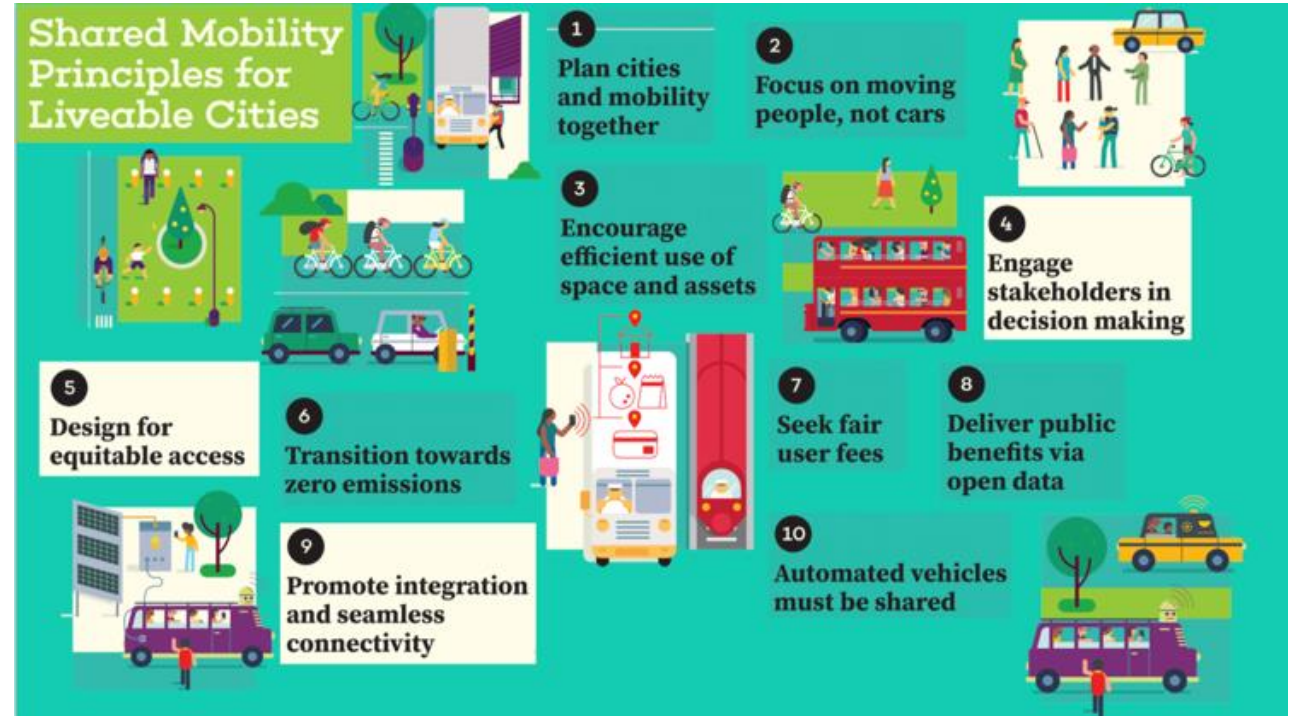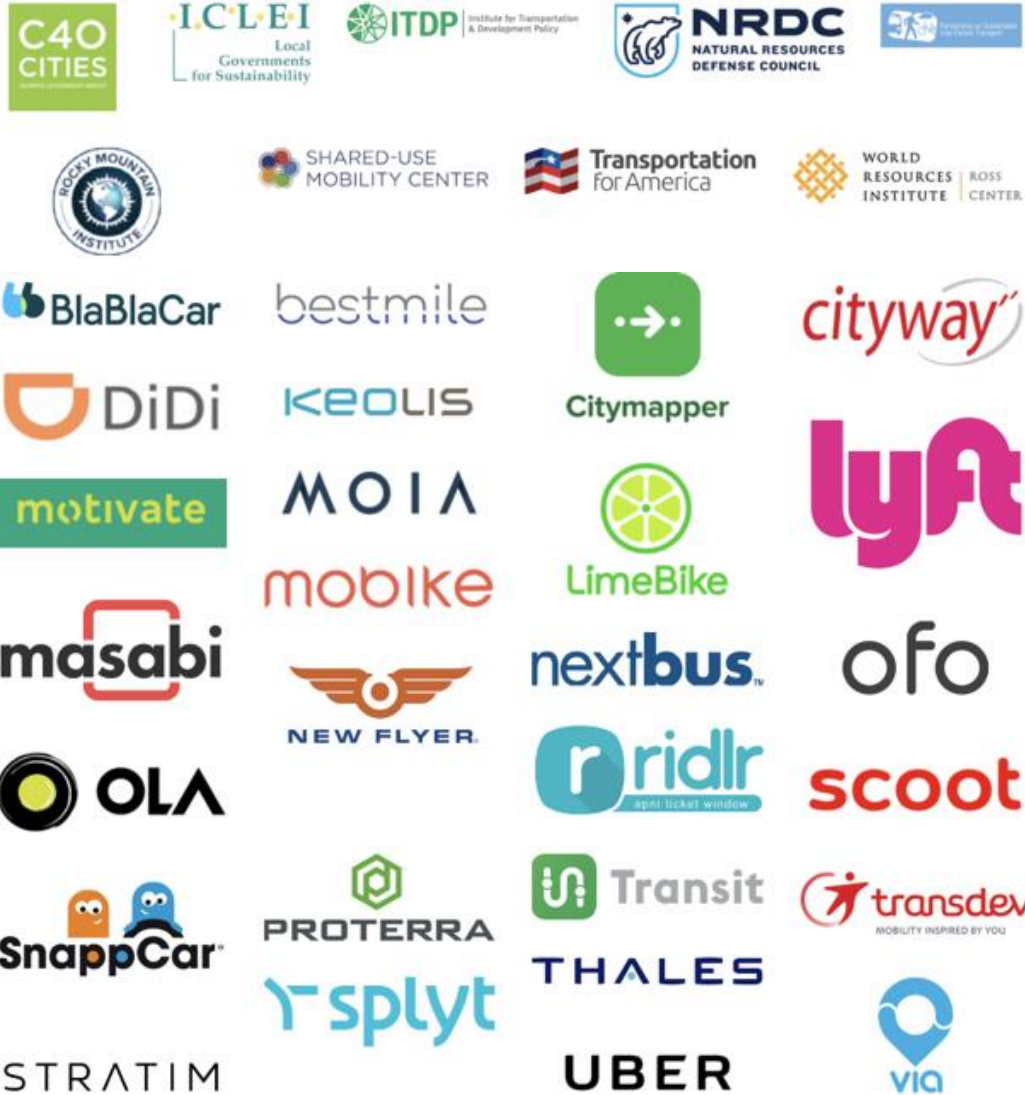

Shared Mobility Principles for Liveable Cities

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Absent such principles, we are stuck in a quagmire

Year 2000

ZIPCAR: Car rental or not? Commercial or personal plates? Can it park in loading zones? Is it an illegal "business" parked in residentially zoned areas?

Year 2007 Velib:
Are shared bikes public transportation? What use of public ways? What if owned by a private company? Is my own bike as good as public transportation?

Year 2011
SIDECAR (RIDE HAILING):
Are they taxis?
Are drivers employees?
Require special
inspections? Type of
insurance?
Toggle between personal
and commercial use?

Year 2020?
When I rent out my own AV, is it a taxi?
Is it public transport if 4 people are in it?
How about if 1?

<-Continuuuummmm->

METAL BOXES ON SCARCE STREETS

METAL BOXES ON SCARCE STREETS

Two tools: **SPACE ALLOCATION & USER FEES**

SMP#3 Efficient use of Space; SMP#7 Fair User Fees across all modes

www.sharedmobilityprinciples.org

SPACE ALLOCATION to move people & reflect social/environmental goals

SMP #2 Move People, not Vehicles

SMP #3 Encourage efficient use of space & assets

60 people/lane/block   40 people/lane/block   12 people/lane/block

WHAT WOULD FAIR PUBLIC STREETS ALLOCATION RULES ACROSS ALL USES LOOK LIKE?

We need more protected infrastructure for

- Pedestrians in congested areas
- **Active curb access**: Dropoff/pickup/delivery/double parking
- **Small footprint lanes** (<1 meter wide), light weight (<?), slow speed (<12 mph/20 kph)
- Small footprint **storage/parking**

METAL BOXES ON SCARCE STREETS

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www.**sharedmobilityprinciples**.org

#7 Fair user fees across all modes
TODAY: Cities express ambivalence

In San Francisco

$110 fine for illegally parked car

In New York (recommended)

SMP#7 Fair User Fees Across all modes (per square meter?)

Personal cars free

Uber, Lyft, Via, Chariot
will outperform most bus services
                    and eventually morph into FAVES.

Fleets of
Autonomous
Vehicles that are
Electric and
Shared

FAVES will improve service frequency, access, convenience, at a lower cost.

Why Public Transport?

-- Ensures access for all (includes low density, differentially abled, the poor)
-- Thinks long-term (makes big capital investments with often include public land)
-- Manage monopoly status on most densely travelled routes to create efficiencies (?)

Does it include?
-- ownership or operation of vehicles
-- Provision of jobs, middle class lives and career ladder

TODAY*: User Fees (congestion pricing) and lane allocation are and will be critical to making high volume public transit compete favorably with personal or TNC cars.*

Future of Public Transport?

Mobility manager? Algorithms, software, rules for engagement

SMP #6 Transition towards zero emissions

- Starting today, all new bus purchases should be zero emission.

- Entire fleet conversion by 2025.

Signatories of C40's Green & Healthy Streets Initiative

Paris	Mexico City	Tokyo
London	Milan	Vancouver
Los Angeles	Oslo	Warsaw
Copenhagen	Quito	Birmingham
Auckland	Rome	Honolulu
Barcelona	Rotterdam	Oxford
Cape Town	Seattle	Greater Manchester
Heidelberg,	Seoul	Santa Monica
Medellin		West Hollywood

We start TODAY

active & shared transport
EASY, FAIR & CHEAP

**Rational space allocation & user fees
mean that when AVs, or other unimaginable innovations come
we have built on solid ground.**

INFRASTRUCTURE IS DESTINY

We have to get this transition right.

END & Appendix

Today we have a unique and irreplaceable window of opportunity

- provides a concrete and visible time horizon for action, with
- a built-in refreshment of our vehicle stock
- a host of focusing problems for all stakeholders

A chance to **DO-OVER** Cities

Recommendations
Shared Mobility Principles as North Star

#1 Road User Fees
per square meter/distance
cover building &
maintenance

#2 Congestion Pricing
per square meter/distance
prioritizes high value use in peak
times

#3 Occupancy
Incentives
Converts sq m/yards into
humans preserving privacy

#4 Intensively used vehicles must be ZEV
Set target dates for new vehicles (2020)
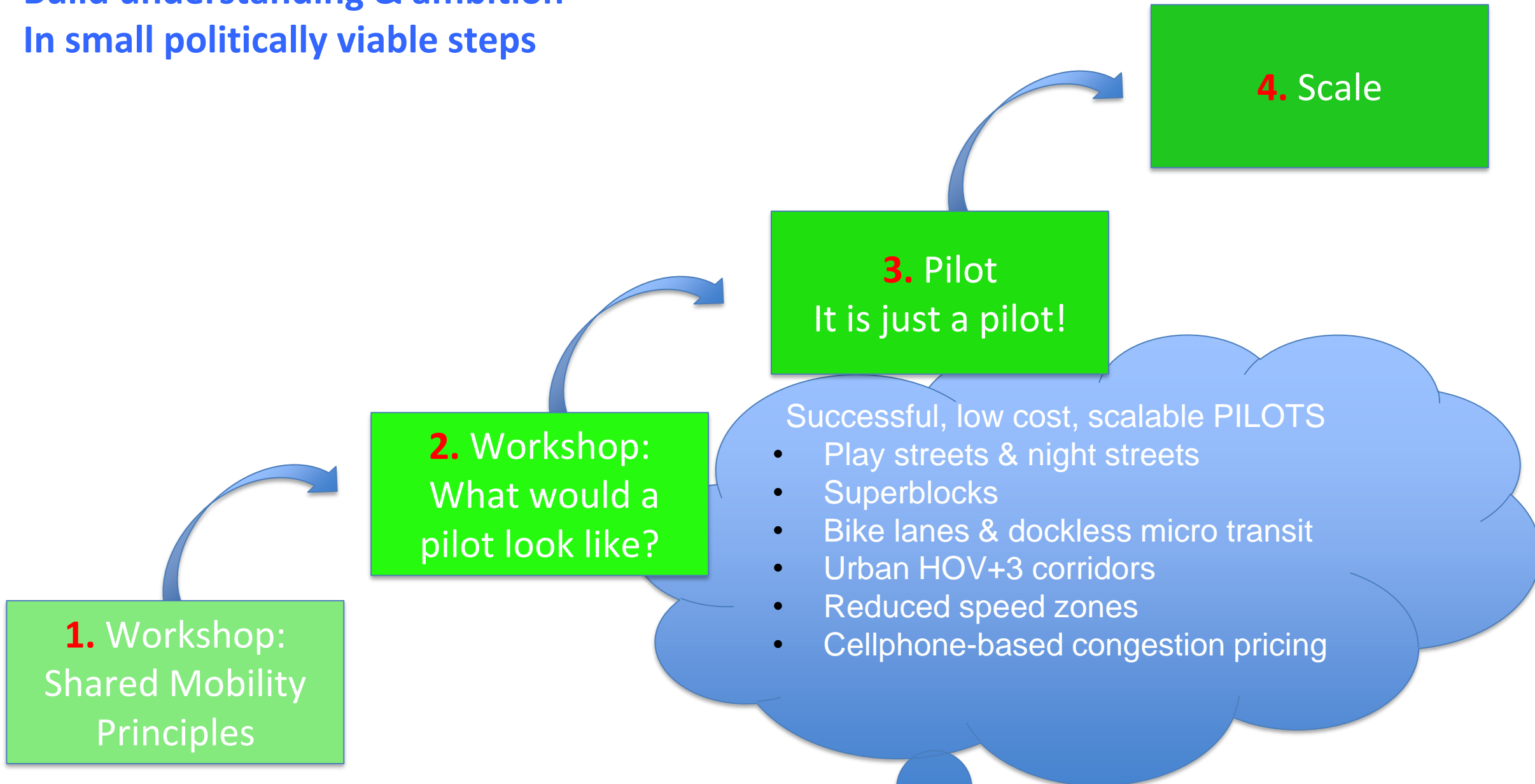and for entire fleet (2025)

This will capture:
- fleet vehicles
- Pickup/dropoff/delivery vehicles
- Utility vehicles
- Shared vehicles (ebikes; taxis; buses)

#5 Standard Open APIs & Reporting Requirements
- urban planning
- interoperability between modes
- competition among modes
- personal data bill of rights

**Build understanding & ambition
In small politically viable steps**

4. Scale

3. Pilot
It is just a pilot!

2. Workshop:
What would a
pilot look like?

1. Workshop:
Shared Mobility
Principles

Successful, low cost, scalable PILOTS
- Play streets & night streets
- Superblocks
- Bike lanes & dockless micro transit
- Urban HOV+3 corridors
- Reduced speed zones
- Cellphone-based congestion pricing

Moderator

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Member, APTA Executive Committee
President & CEO
Urban Engineers of New York, P.C.
New York, NY

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John M. Nations
President & CEO, Bi-State Development Agency
St. Louis, MO

Rob Gannon
Member, APTA Board of Directors
General Manager
King County Metro Transit Division/Department of Transportation
Seattle, WA

NEW YORK CITY

APTA

October 13-16, 2019

See You Next Year