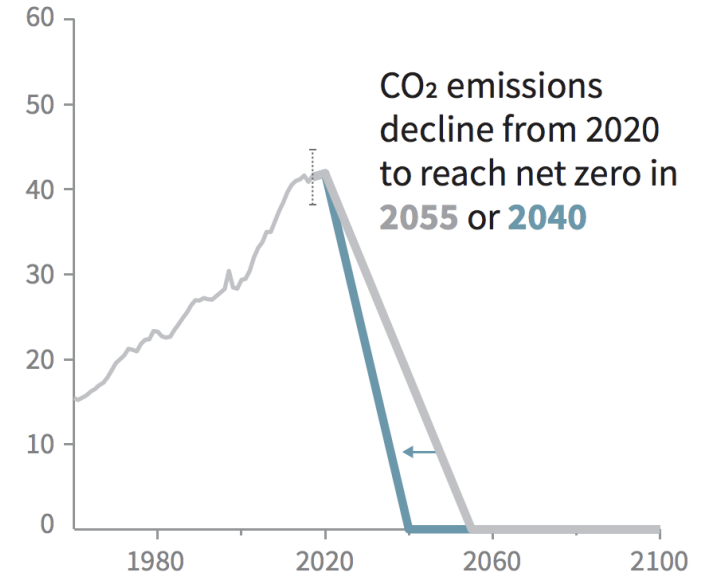


Where are we today?

Bad news

- 8.5 years to reduce carbon emissions by 50% to keep emissions below 1.5 degrees of warming
- Transport sector is a significant and intractable contributor to emissions (27%)
- Light duty cars & trucks comprise 65% of that.

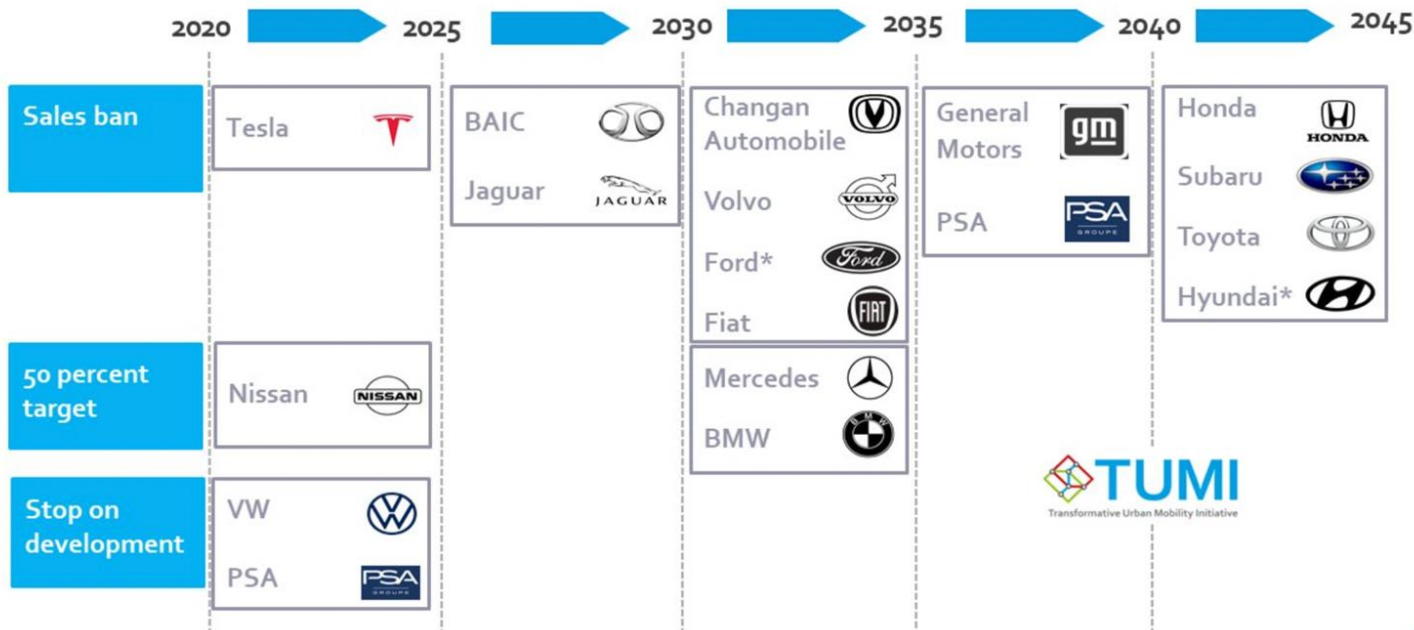
b) Stylized net global CO₂ emission pathways
Billion tonnes CO₂ per year (GtCO₂/yr)



Good news

- As of early 2021, 59 countries responsible for 53% of global greenhouse gas (GHG) emissions have set targets to [zero out their emissions](#), most committing to do so by 2050. This includes more than half of the G20 economies.
- Trillions of stimulus dollars committed for immediate spending

Major automobile manufacturers have announced exits from the internal combustion engine market



Source: McKinsey, TUMI Research, Press Research, UN Climate Change Conference Climate Champions Research

*Partial sales ban

POLL

(Look for survey tab on right-hand side of screen, revealed by the chat icon)

Do you think *existing companies and existing governments* will **evolve** fast enough to address climate change and inequality?

OR

Do you think they will move too slowly, and people will **rise up**?

Is our future one of **EVOLUTION or REVOLUTION**?

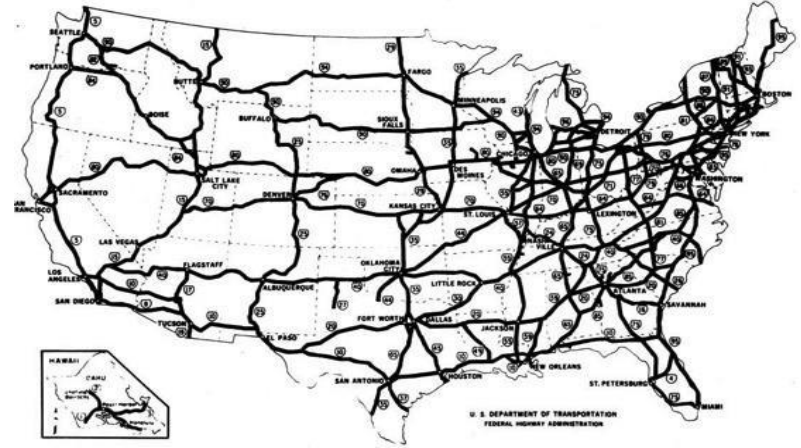
Infrastructure is Destiny



IN THE USA: Levittown, NY 1947-1951

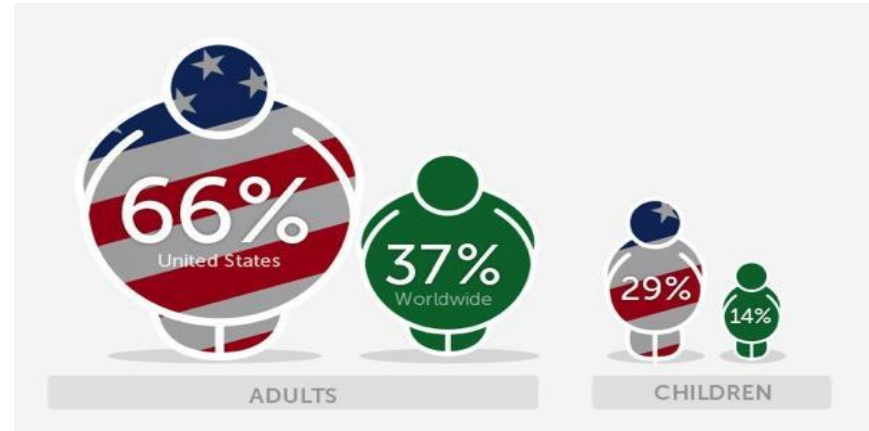


Eisenhower Interstate Highway System 1956



+

+

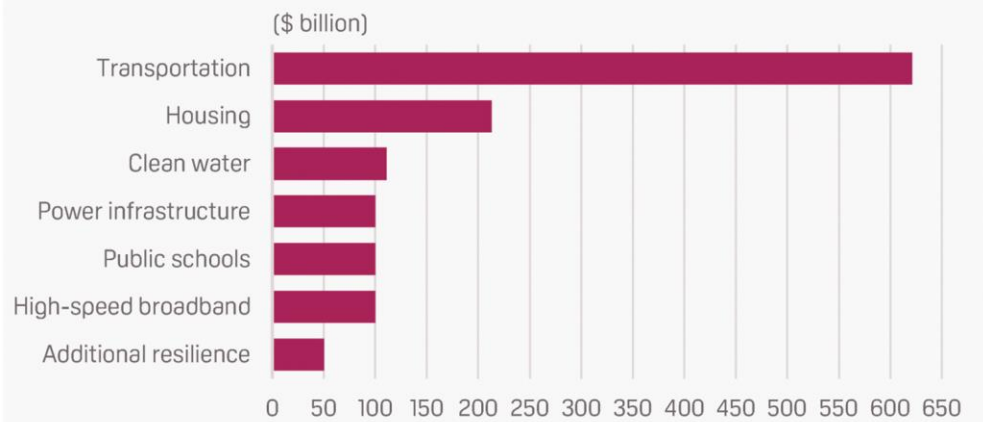


Over the last 100 years, we have specifically and proactively made personal cars
cheap and convenient

**OUR PHYSICAL, REGULATORY & TAX INFRASTRUCTURE
encourages the overconsumption of car travel**



AMERICAN JOBS PLAN KEY INVESTMENTS



Source: White House

Subsidizing personal car ownership (EVs) is not the answer.

Transportation
\$621 bn
27%



of Vehicles manufactured by country

EVs-for-all
is good politics,
not good policy

# ↕	Country ↕	2020 ^[2] ↕
	World	77,621,582
1	China	25,225,242
2	United States	8,822,399
3	Japan	8,067,557
4	Germany ^[25]	3,742,454
5	South Korea	3,506,774
6	India	3,394,446
7	Mexico	3,176,600
8	Spain	2,268,185
9	Brazil	2,014,055
10	Russia ^[30]	1,435,335
11	Thailand	1,427,074
12	Canada	1,376,623
13	France	1,316,371
14	Turkey	1,297,878
15	Slovakia	1,220,000
16	Czech Republic	1,159,151
17	United Kingdom	987,044
18	Iran	880,997
19	Italy	777,165
20	Indonesia	691,286
21	South Africa	447,218
22	Malaysia	485,186
23	Poland	451,382
24	Romania	438,107
25	Hungary	406,497

Vehicles manufactured per capita (job importance to economy)

# ↕	Country ↕	Prod. veh. per 1000 people ↕
1	 Slovakia	183.93
2	 Czech Republic	133.61
3	 Slovenia	91.71
4	 South Korea	79.69
5	 Japan	76.68
6	 Germany	68.11
7	 Spain	60.95
8	 Canada	58.92
9	 Hungary	52.00
10	 United States	34.06
11	 France	33.05
12	 Mexico	32.14
13	 Thailand	28.75
14	 United Kingdom	26.49
15	 Turkey	20.98
16	 Sweden	22.00
17	 China	20.81
18	 Brazil	20.37
19	 Italy	18.91
20	 Iran	18.46
21	 Romania	18.40
22	 Poland	17.95
23	 Portugal	17.06
24	 Finland	16.59
	World	12.87

Health Impacts of Automobility

Continued automobility is not the best for the **health** of people.

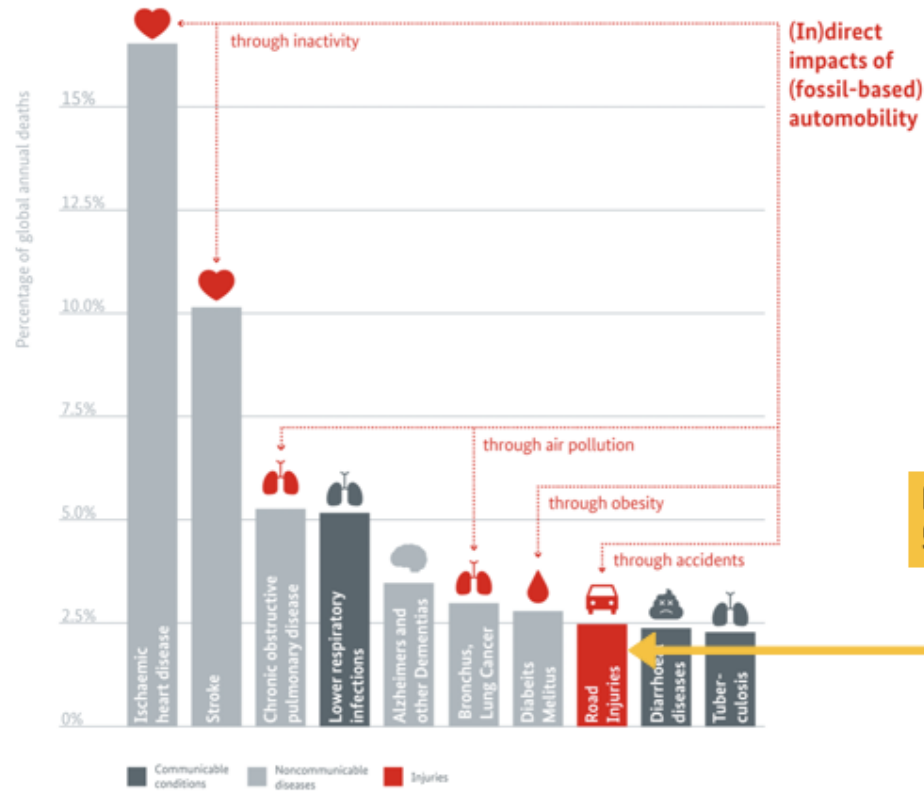


Illustration based on: WHO (2018). Global Health Estimates 2018: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016, World Health Organization. http://www.who.int/healthinfo/global_burden_disease/estimates/en/ (accessed: 20.09.2020)

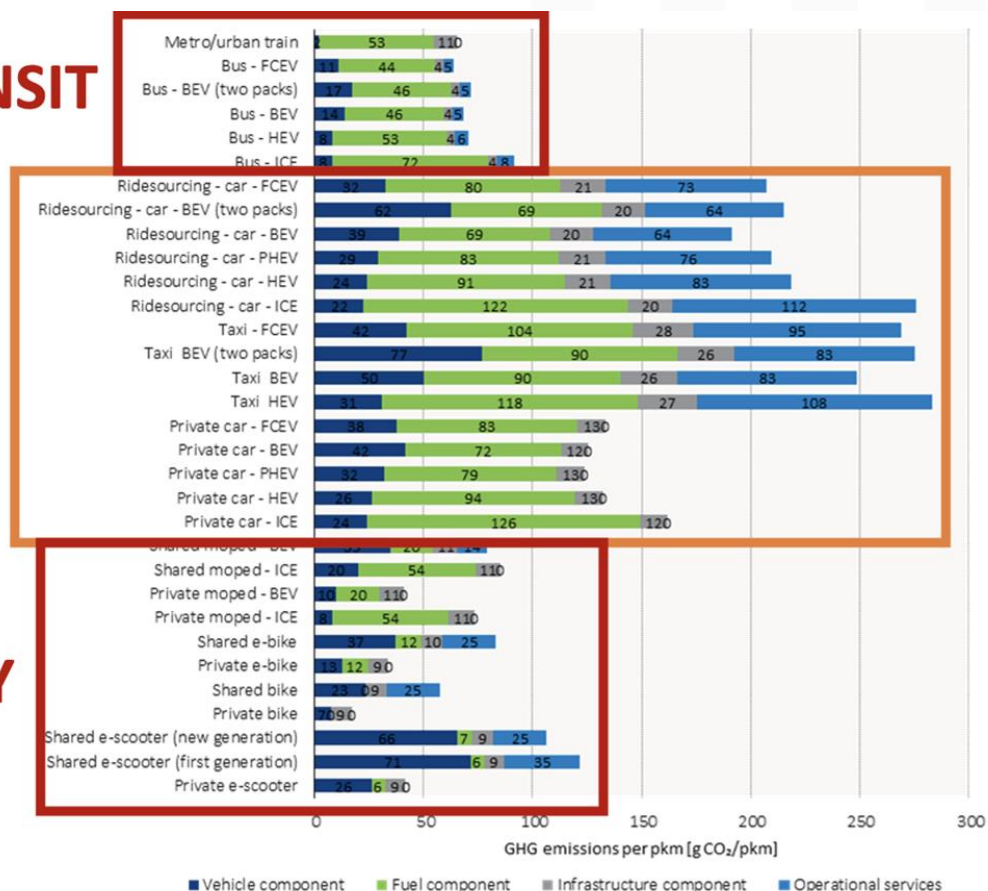
It is not the best if we seek to create **net zero mobility**.

Emissions per PKM

TRANSIT

CARS

MICROMOBILITY



Source: International Transport Forum

It is not the best if we seek to address **racial and income inequalities** and improve access

When our transport policy is car dependent:

- 8% of US households don't have access to a car.
 - 4.6% of white households
 - 19% of black households

When we choose to underfund public transit:

- 5% of Americans use transit to get to work.
 - 23% of Blacks use transit regularly
 - 28% of all US essential workers ride public transit
 - 29% of these people are Black

When we choose to ignore the impact on people outside vehicle

- 20% of all traffic fatalities are pedestrians and bicyclists
 - Black pedestrians killed at 2x rate of Whites
 - Black cyclists killed at 1.75x rate of Whites

• Impact of infrastructure

- Street safety
- Design, Construction, maintenance
 - Disproportionate negative impacts on the black neighborhood

When we don't analyze Enforcement

- Blacks stopped more often, searched more often, yet contraband findings do not match this targeted approach
- Fines used to fund police departments; nonpayment leads to loss of driver's license and entry into prison/probation treadmill

It is not the best if we seek to create **jobs**

Analysis of US transportation infrastructure building after 2008 crisis found that:

-- public transit produced 70 percent more job hours than investments in highways,

The Downsides of Cars

~~CO2 emissions~~

Particulate Pollution (cardiovascular illnesses)

Encourages inactive lifestyle

Car crash death & injury

#2 (or #1) household expense (high cost of participation)

Space inefficient (parking & congestion)

Increases cost of housing

Encourages sprawled land use/habitat destruction

Expensive Infrastructure



40 years of Cycle-friendly infrastructure building

	US	Netherlands
Km cycled/person/yr	47	864
% Obesity >15 yrs old	36%	12%
Deaths per Billion km traveled	44	11

Netherlands bike mode share:

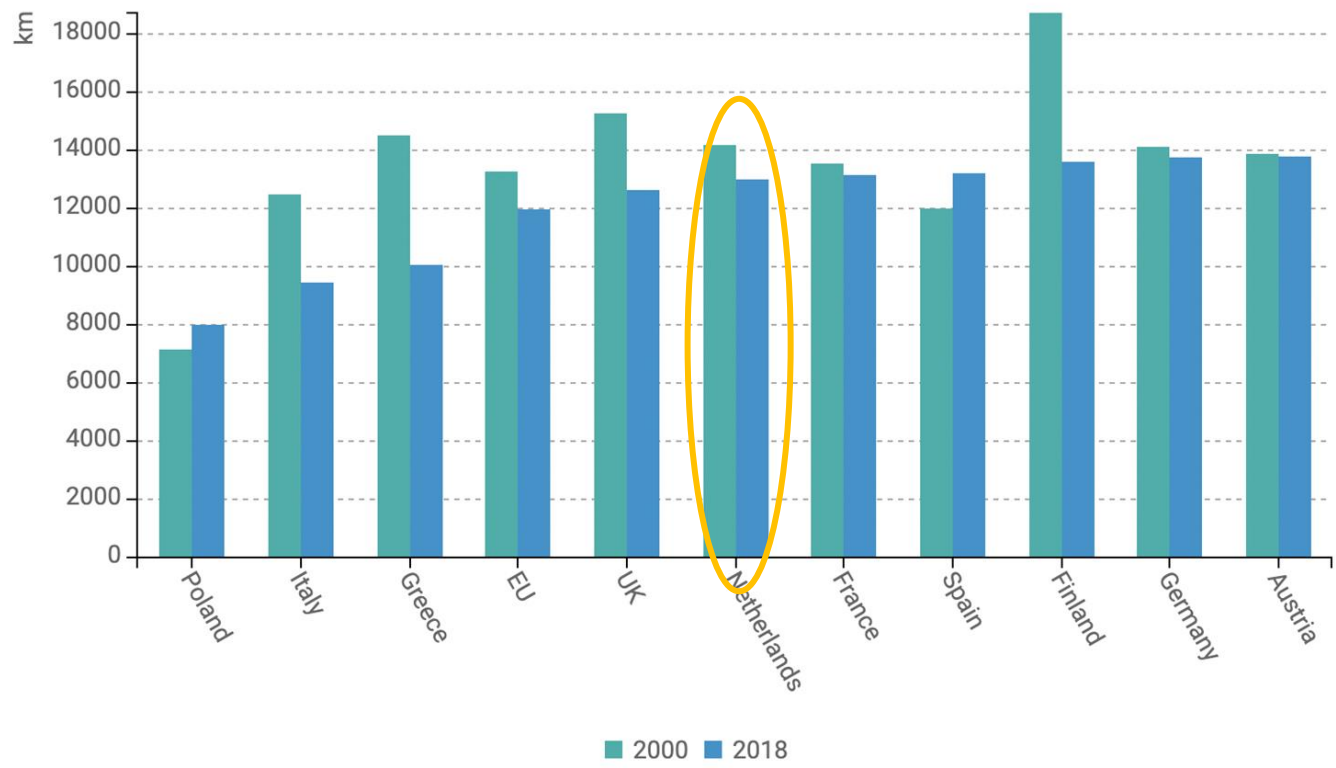
27% nationally
49% Amsterdam
51% Utrecht



Netherlands bike mode share:

27% nationally
49% Amsterdam
51% Utrecht

Change in distance travelled by car for selected countries



We need policy that rebalances mode share

- MORE active and shared transport modes,
- LESS personal car ownership and space allocation



We need to try new narratives

The unnoticed and ignored 50% of the population

At any given moment, more than 50% of the population
cannot get behind the wheel of a car

NO car, NO money, or NO drivers license

- » 20% younger than 16
- » 18% physically impaired
- » 9% households don't have a car
- » 42% have just one car (and when that is being used...)
- » license suspended

FREEDOM NETWORK



At each and every moment, for each and every infrastructure decision:

Refuse -- or delay -- investments in:

new fossil-fuel infrastructure, or

new policies that bolster or increase subsidies in personal
automobility.

Infrastructure is destiny



We need to speed the pace of evolution