

TRANSFORMING TRANSPORTATION



Building a greener world by 2030



OUR TEAM AND GOALS



Nicole



Joaquin



Louise



Yalu

To halve the emissions of the transportation sector while increasing mobility for all people by 2030, with a clear path for achieving a net-zero system moving forward beyond 2030.

PLAN FOR THE PRESENTATION



Problem State



Preferred State



Implementation
Plan

THE PROBLEM

14%

of global GHG emissions
are due to transport

95%

of the world's transportation
runs on fossil fuels

THE PROBLEM

Cost



Existing infrastructure is expensive to replace

Love of Cars



City planning prioritizes cars over cleaner alternatives

Trade



International trade depends on highly emissive ships, planes and trucks

Equity



Access to transportation is not equitable



TjSingh @covsinghtj · Apr 3

Himalaya mountains can be seen from Jalandhar since pollution has reduced in Punjab. Beautiful sight 🙌 #punjab #COVID19 #pollution



252

6.2K

17.6K



[4] Twitter, @covsinghtj

PREFERRED STATE

- Better transit options
- More walking and cycling
- Less dependence on privately owned cars
- Zero-emission vehicles are widespread
- Less flying and shipping, with more optimal routes



OUR CRITERIA

Is it
expensive?



Increases
health?



Increases
equity?



Is it easy
to do?



Improves
safety?



PREFERRED SYSTEM



Phasing Out Gasoline Cars

- Incentivize EVs
- More high speed rail
- More walking & biking
- Higher car mileage



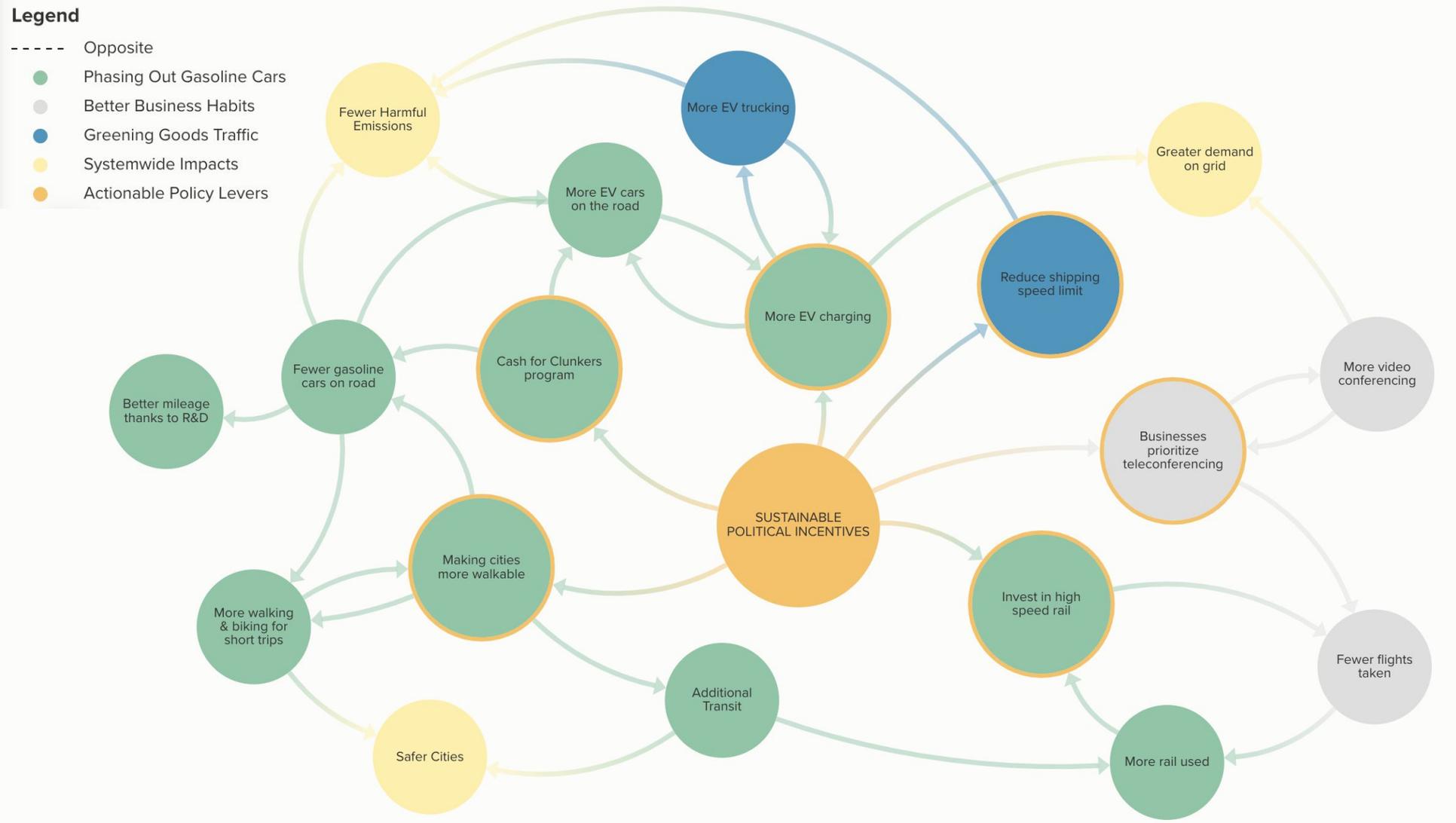
Greening Goods Traffic

- Incentivize alternative fuels with low emissions
- Reduce shipping speed limit



Better Business Habits

- Encourage working from home
- Reduce business trip flights



OUR IMPLEMENTATION STRATEGY!

		2020-2021	2022-2023	2024-2025	2026-2027	2028-2029
Phasing Out Gasoline Cars	EVs	International agreement to tie auto bailouts to EV manufacturing	Policy incentivizes EV charging infrastructure construction	EV purchases are incentivized, 10% of cars are electric now	EV purchases are incentivized, 30% of cars are electric now	EV purchases are incentivized, 50% of cars are electric now
	Rail	Invest in rail infrastructure, like existing transit	Start investing in long-distance high speed rail	Major shift towards high speed rail ,		
	Other	Walking and biking for short trips become predominant post-COVID	Investments are made to improve safety for walking & biking		Research into car mileage improves it by 25%	Cars on the market now all have 25% higher mileage
Greening Goods Traffic	Trucking	Trucking companies begin researching alternative fuels		Alternative fuel trucks begin sales in general market		Trucking industry is 30% clean
	Shipping		Global shipping speed limit is implemented, cutting emissions 20%			
Better Business Habits	Business	Shifting mindsets to accommodate work from home, transit, and less flying	Reduce magnitude of business trips by 30%		Work-from-home becomes widespread	

kinda complicated...

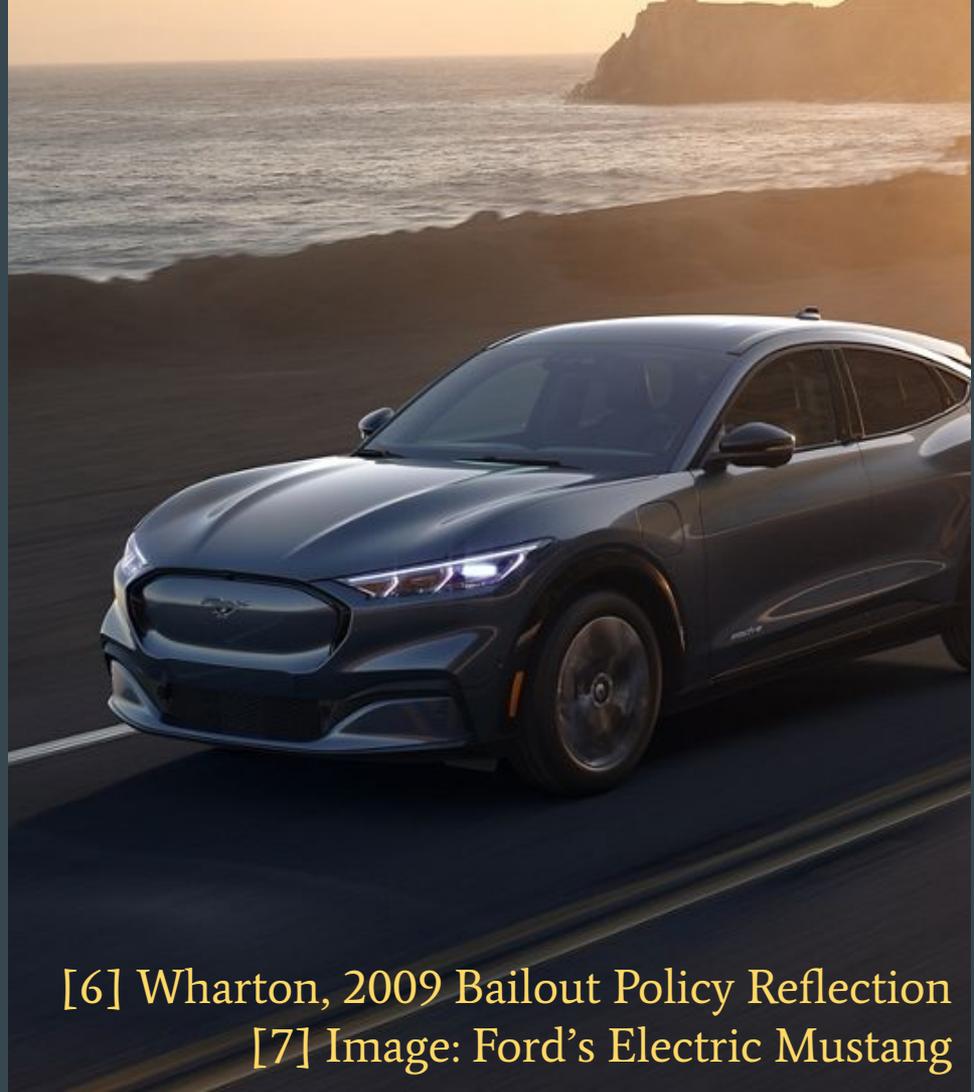
PHASING OUT GASOLINE CARS

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GREEN AUTO BAILOUTS

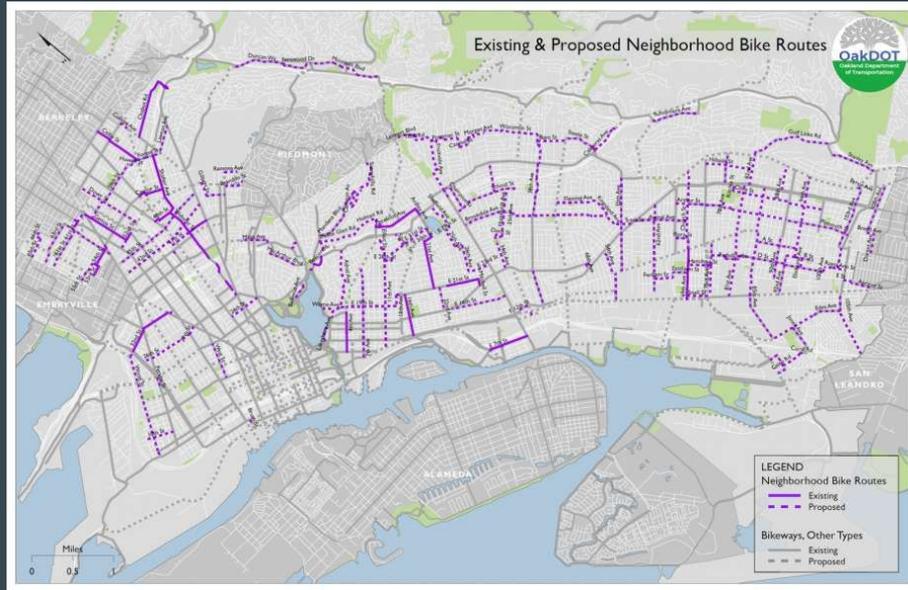
- Tie bailouts to zero-emissions vehicle research, like
 1. EV research
 2. Battery recycling
- Reminiscent of 2009: Big 3 bailout was tied to stringent fuel economy standards



[6] Wharton, 2009 Bailout Policy Reflection

[7] Image: Ford's Electric Mustang

WALKING, BIKING & TRANSIT



Oakland's Slow Streets, 74 miles of car-free roads



BART improving its tracks due to lower train frequency

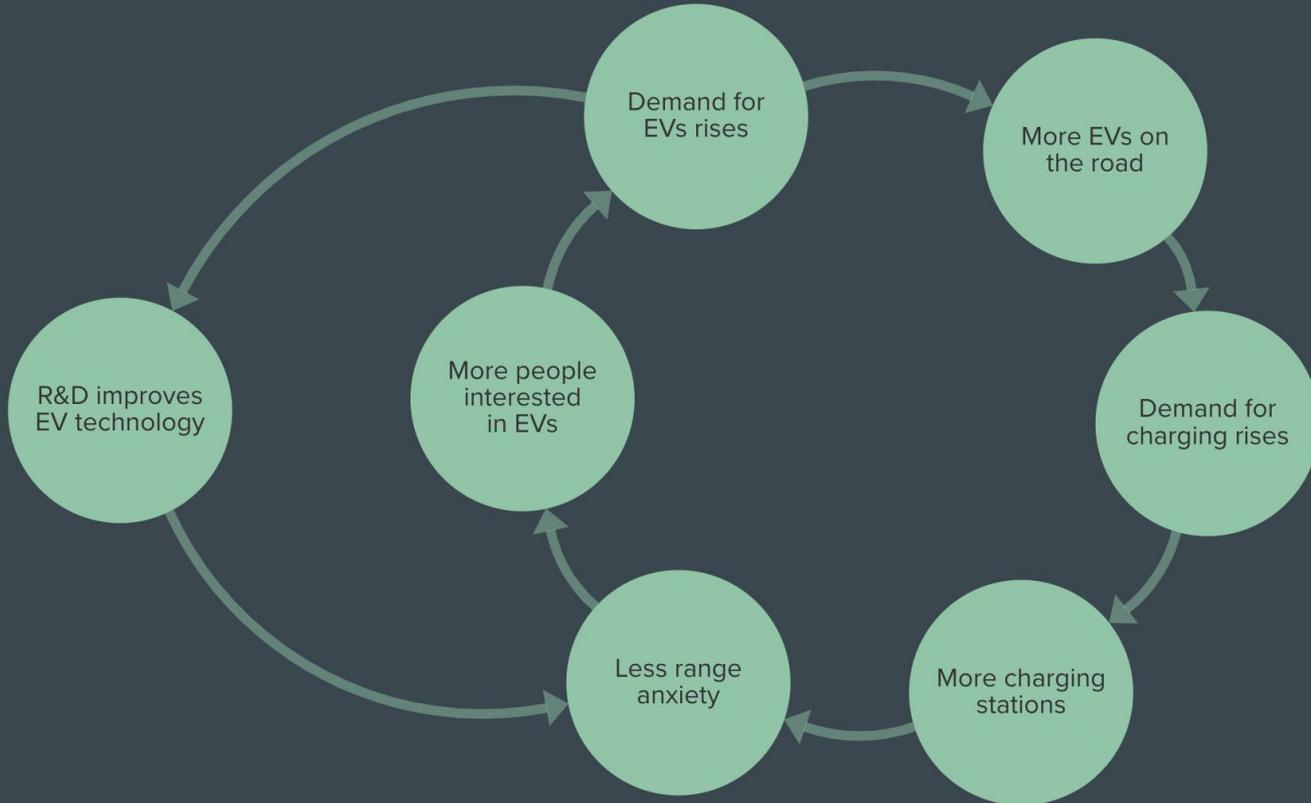
[15] SFGate, Oakland's Closed Streets
[16] Instagram, @sfbayarearapidtransit

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THE CYCLE OF EV REINFORCEMENT



SAFER STREETS FOR CYCLISTS AND PEDESTRIANS



Italy

Milan announces ambitious scheme to reduce car use after lockdown

Coronavirus-hit Lombardy city will turn 35km of streets over to cyclists and pedestrians



In Copenhagen,

62% of people commute to

work by bike

250 miles of bike paths

[8] The Guardian, Milan article

[9] LA Times, Copenhagen bike commuters

An aerial photograph of a high-speed rail line stretching diagonally across a vast, green agricultural landscape. The landscape is divided into numerous small, rectangular plots of varying shades of green. A single high-speed train is visible on the tracks, moving from the bottom left towards the top right. In the upper right quadrant, there is a small cluster of white buildings, possibly a village or farmstead. The overall scene is captured from a high angle, showing the scale of the infrastructure relative to the surrounding farmland.

INVESTING IN RAIL

“High speed rail lines can *reduce aviation transport* on the same routes by as much as 80%”

[13] CarbonBrief, IEA Report

[14] Image: China Discovery, High Speed Rail

PHASING OUT GASOLINE CARS

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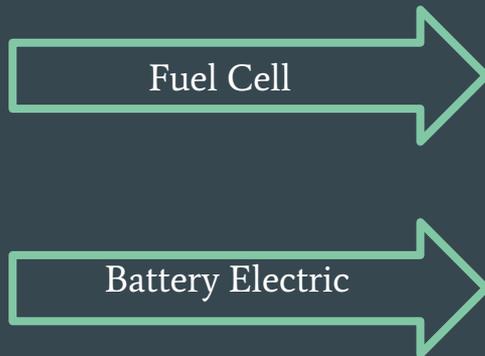
GREENING GOODS TRAFFIC



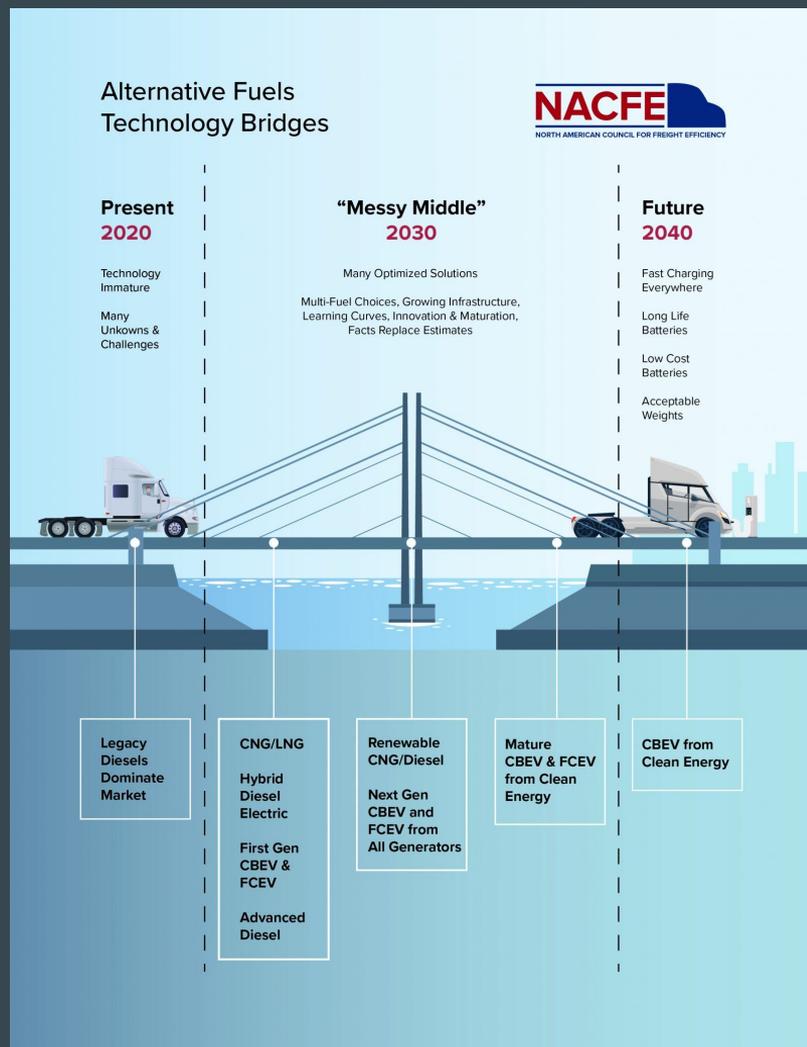
TRUCKING

20%

of transportation emissions
come from trucking



[22] USDT, Policies to reduce GHGs



ZERO-EMISSIONS TRUCKING

Daimler and Volvo have joined forces

- Motivated by COVID-19
- Mission to develop truly CO₂ neutral tech

Hyundai, Toyota, and Robert Bosch are following

0.36
GtCO_{2e}

Saved
Yearly!



JOINING FORCES FOR
HYDROGEN-POWERED
CO₂-NEUTRAL
TRANSPORTATION

DAIMLER
Daimler Truck

VOLVO
VOLVO GROUP

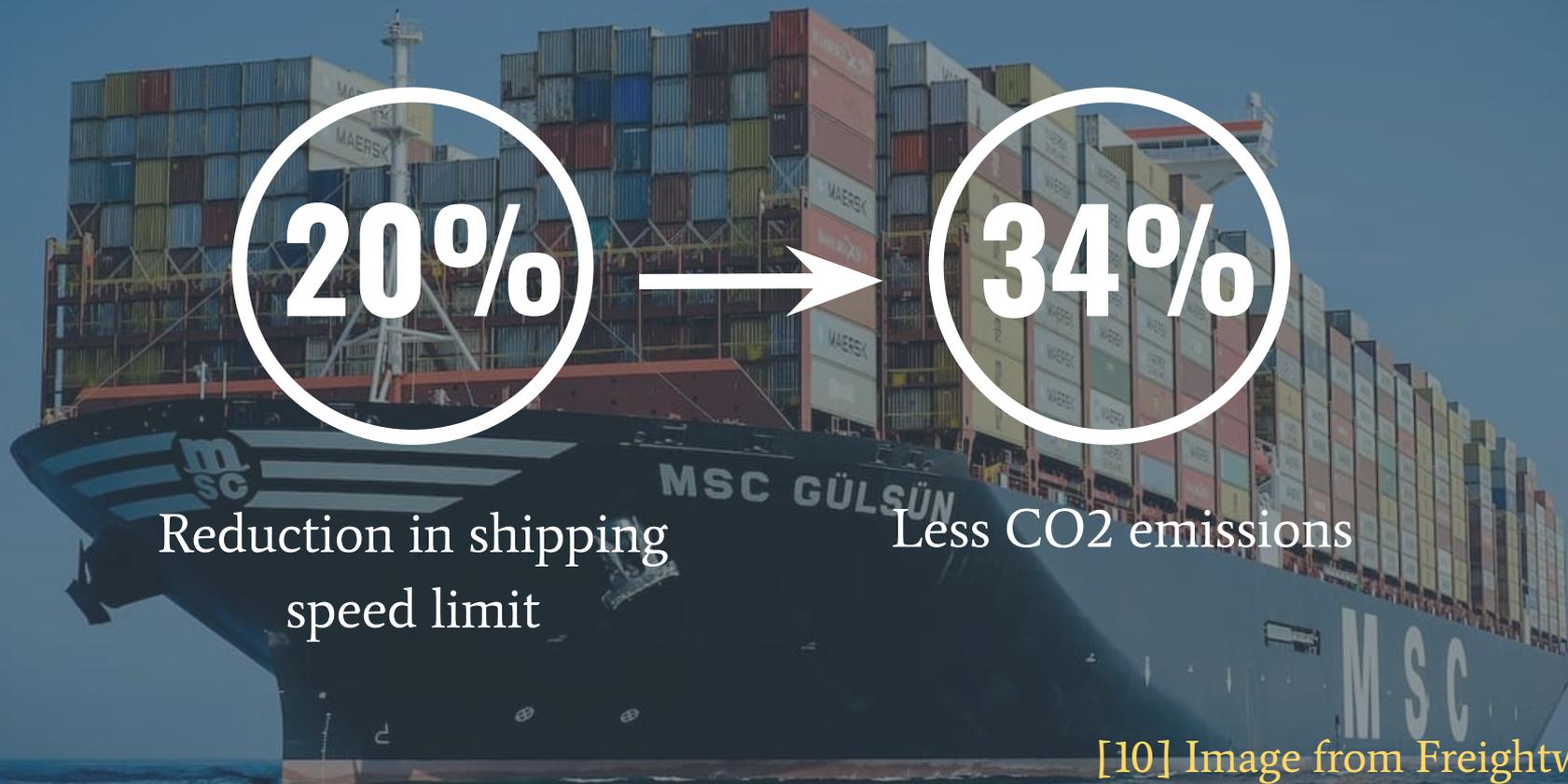
■ Press release

The Volvo Group and Daimler Truck AG to lead the development of sustainable transportation by forming joint venture for large-scale production of fuel cells

4/21/20
AB Volvo

[12] Volvo Press Release

[23] Forbes, Hydrogen Fuel Cell



[10] Image from Freightwaves

[11] Statistics from Seas at Risk report

BETTER BUSINESS HABITS

Business

2020-2021

Shifting mindsets to accommodate work from home, transit, and less flying

2022-2023

Reduce magnitude of business trips by 30%

2024-2025

2026-2027

Work-from-home becomes widespread

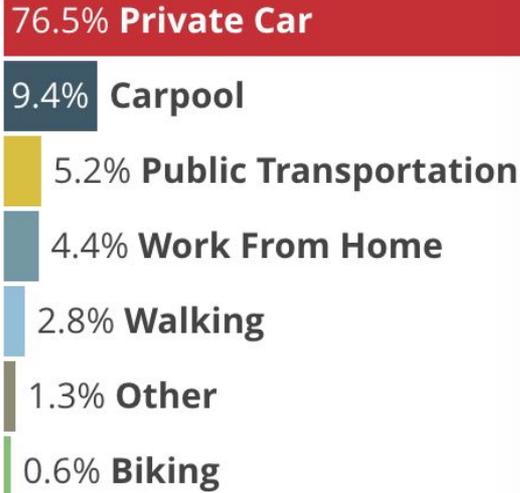
2028-2029

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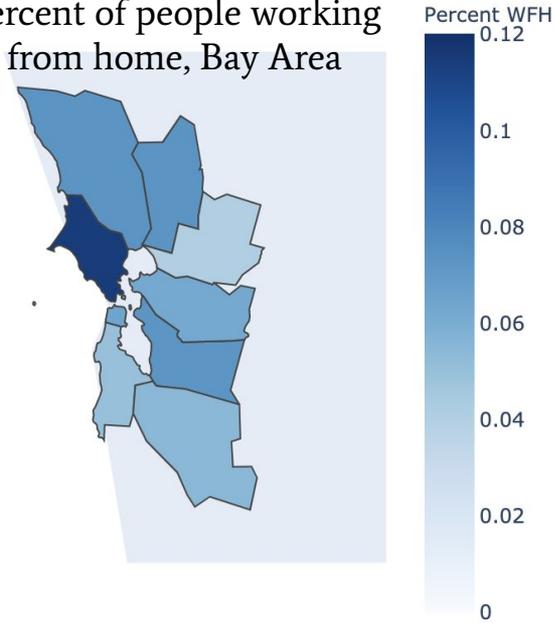


WORKING FROM HOME

HOW DO AMERICANS GET TO WORK?



Percent of people working from home, Bay Area



[17] WWF, Commuting Impact

[18] Data from Bay Area Census

[19] Photo from Gadgets360

0.91
GtCO₂e

The infographic features a large white arrow pointing from left to right. On the left, a white circle contains the number '0.91' and 'GtCO₂e'. On the right, another white circle contains '0.032' and 'GtCO₂e'. Between the circles, text indicates a '30% drop in business flying' and that '12% of flights are business'. The background is a photograph of an airport tarmac at dusk, with a large passenger jet and ground service equipment visible.

Total emissions
from flights, 2018

12% of flights
are business

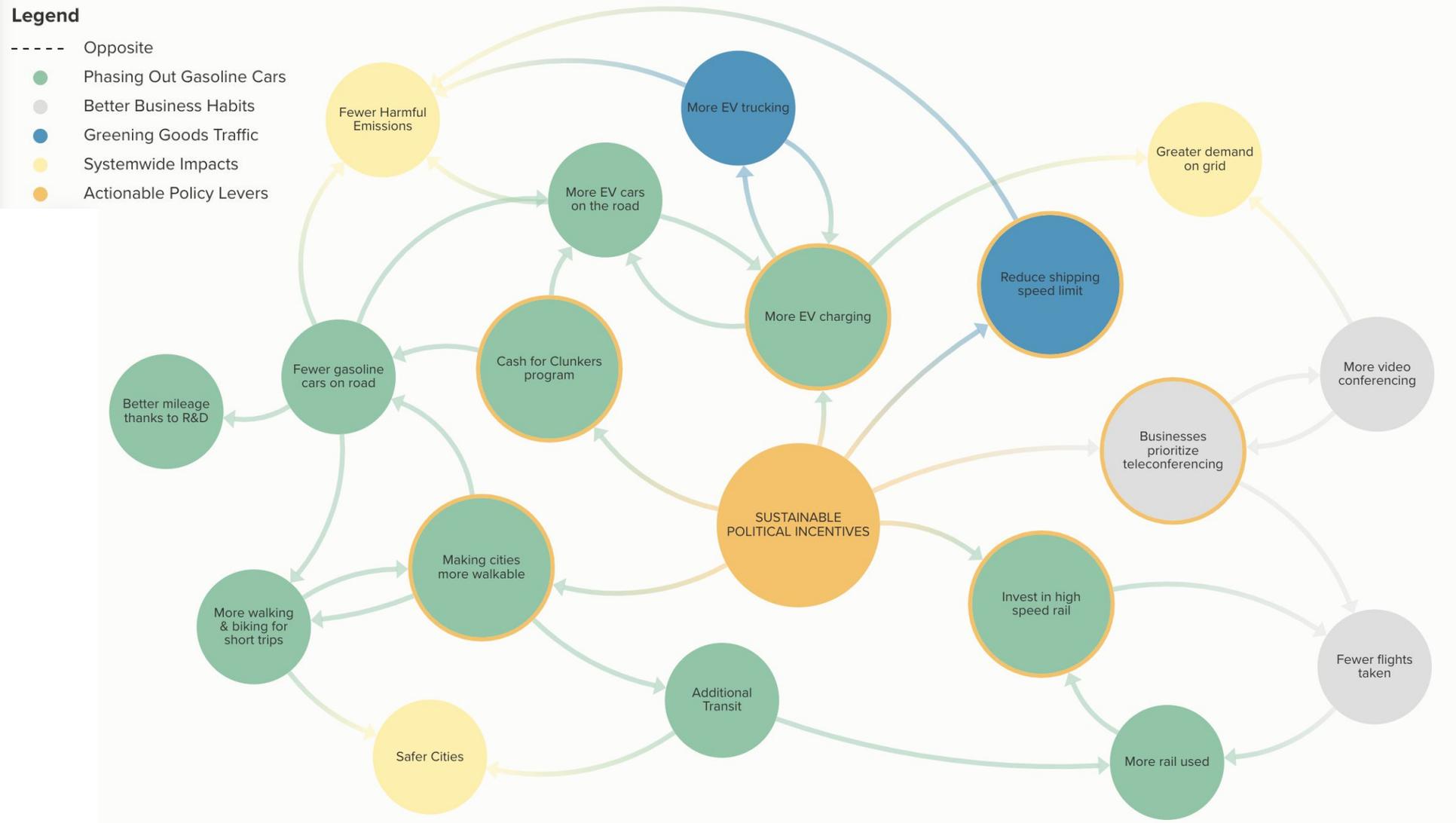
30% drop in
business flying

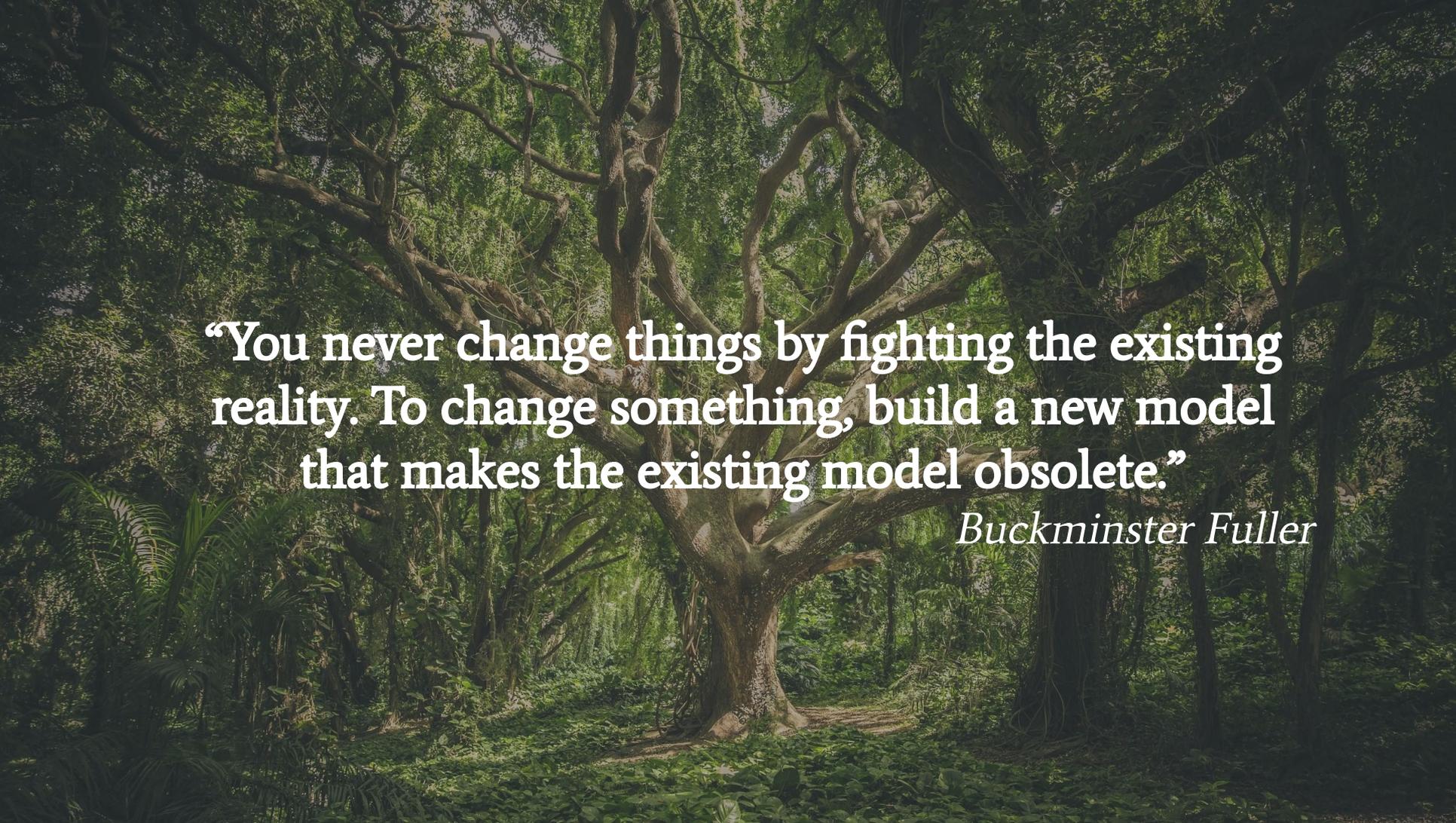
0.032
GtCO₂e

Expected emissions
reduction
(equal to all of Sweden!)

[20] Data from Trondent

[21] Photo from ACI Insights



A large, ancient tree with a thick, gnarled trunk and sprawling branches dominates the center of the image. The tree is surrounded by a dense forest of other trees and lush green undergrowth. The lighting is soft and dappled, suggesting a sun-dappled forest floor. The overall atmosphere is serene and majestic.

“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”

Buckminster Fuller

THANK YOU! ANY QUESTIONS?

