TA Board of Directors
Meeting of October 1, 2026

Correspondence as of September 4, 2026

#	Subject
1.	Slides from CAC meeting item 10a, the need for mode shift to meet Measure A and W Goals and Core Principles.

From:	Giuliano
To:	Giuliano
Subject:	Slides from CAC meeting item 10a, the need for mode shift to meet Measure A and W Goals and Core Principles.
Date:	Thursday, September 3, 2026 12:46:30 PM
Attachments:	2026-09September-01 CAC Meeting Mode Shift Presentation by Watkins.pptx

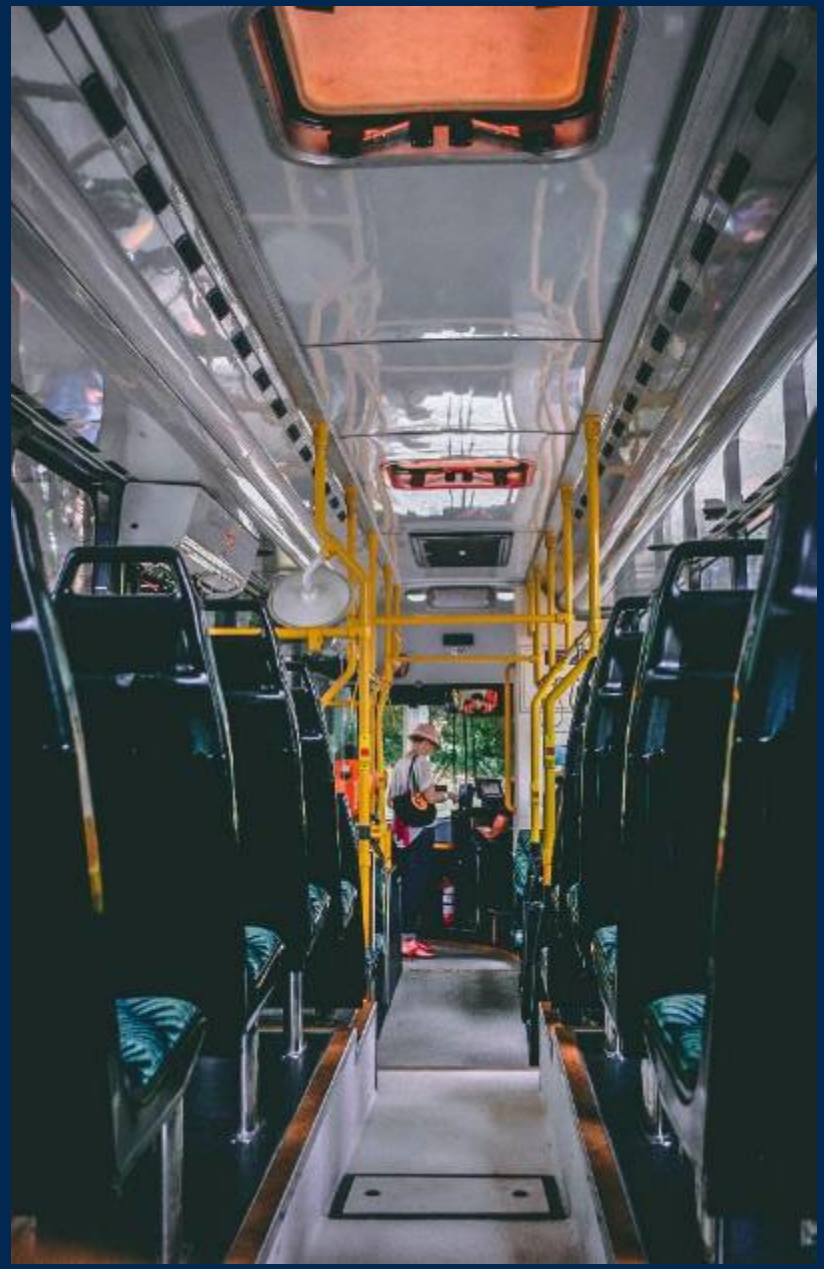
Thank you to the Board for providing the CAC the time for this item. Thanks especially to Dr. Kari Watkins and Dr. Susan Pike from the UC Davis Institute for Traffic Studies for presenting!

While this item was unfortunately much truncated by the loss of quorum, it was still a very interesting presentation and a productive discussion.

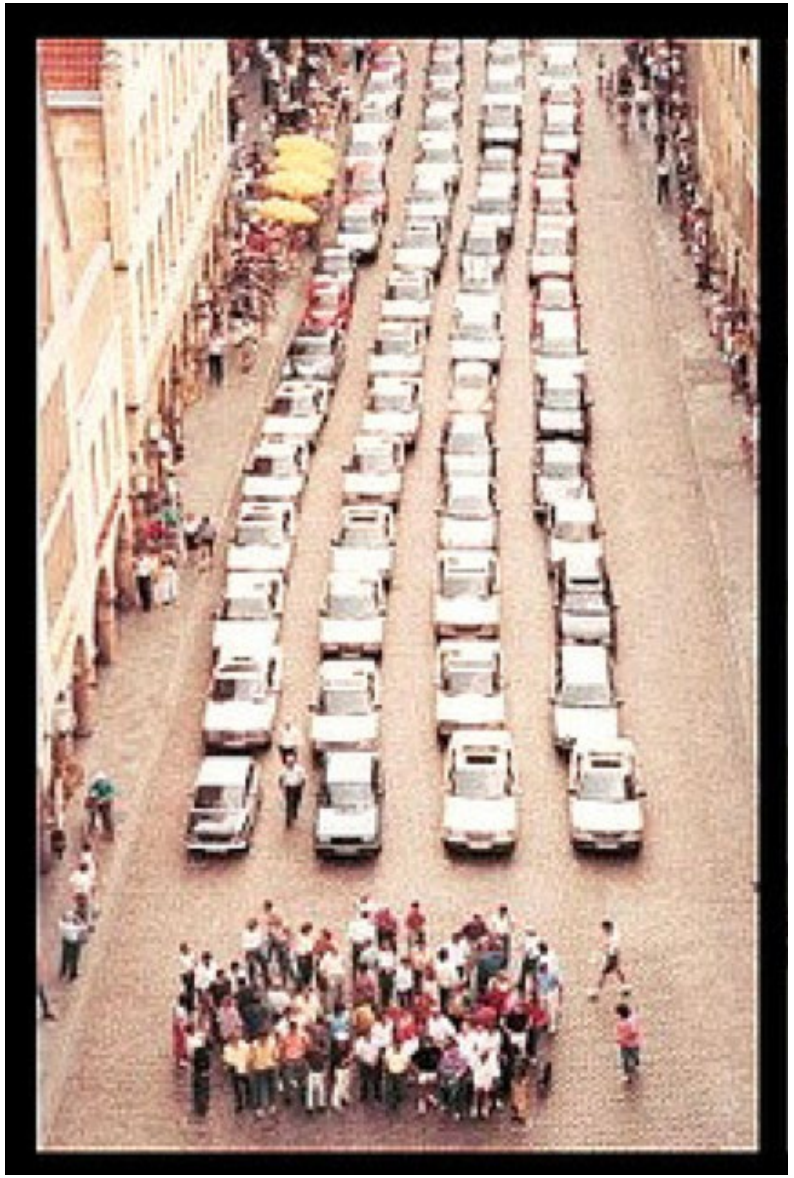
Slides are attached. You can also watch the meeting video for the full context: https://samtrans.granicus.com/player/clip/1531?view_id=2&redirect=true. Granicus is currently down, so I can't find the exact time, but I believe that 10a started at about 6:15 or 6:20PM.

Thank you again,

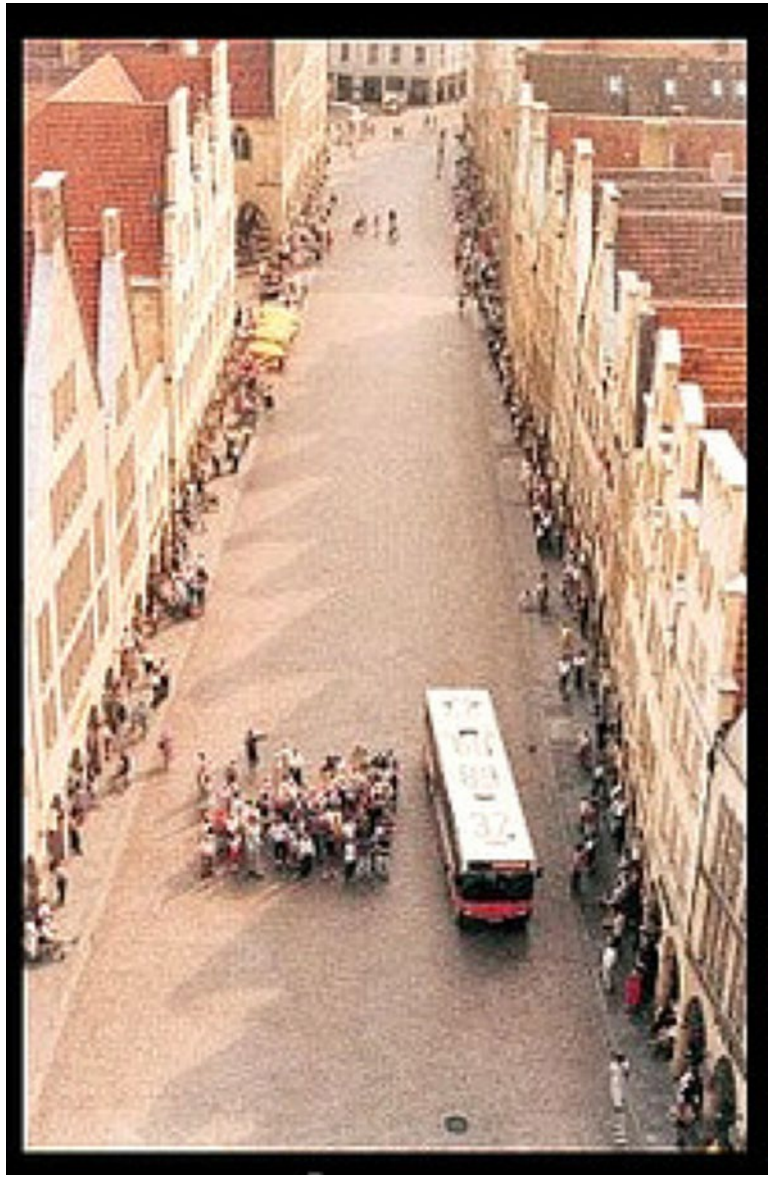
giuliano
--
Drive a bike a bit more often and cars a bit less. You'll be healthier and happier, and so will our world.




DELTA
20
Augusta
Birmingham
Fulton St
Central Ave
Downtown

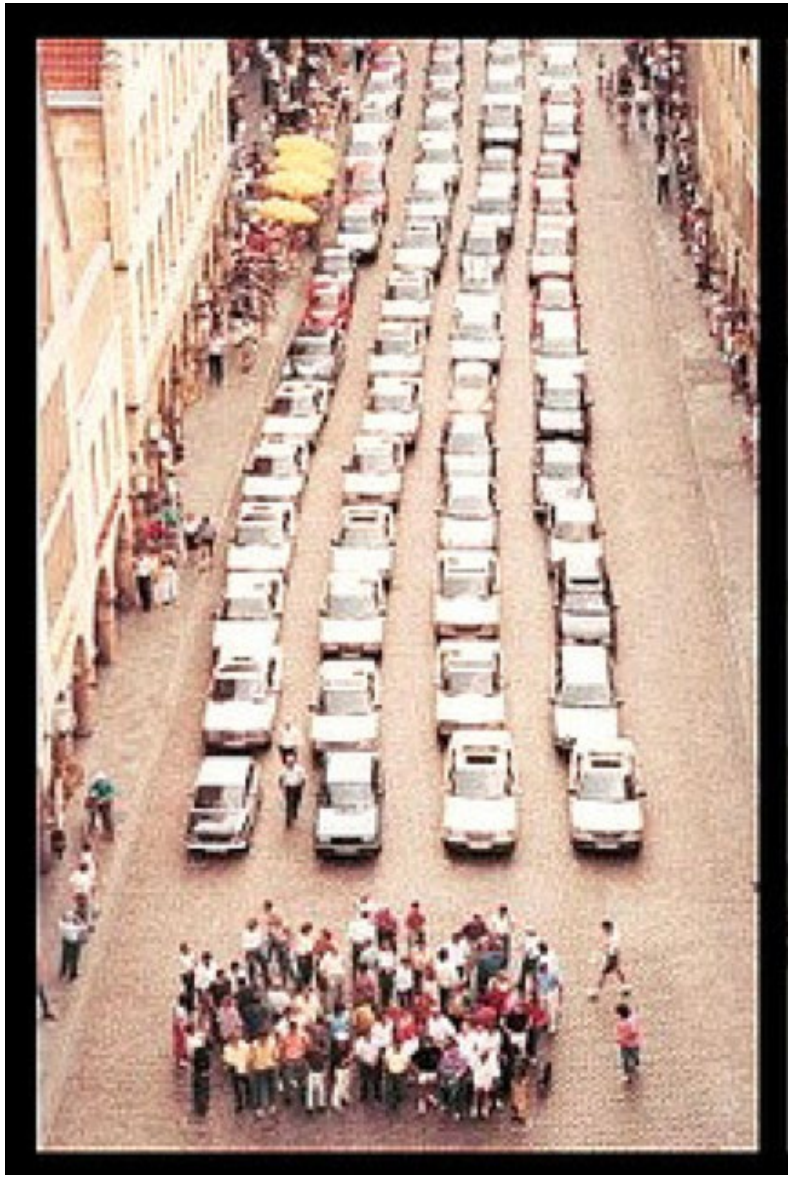


Car

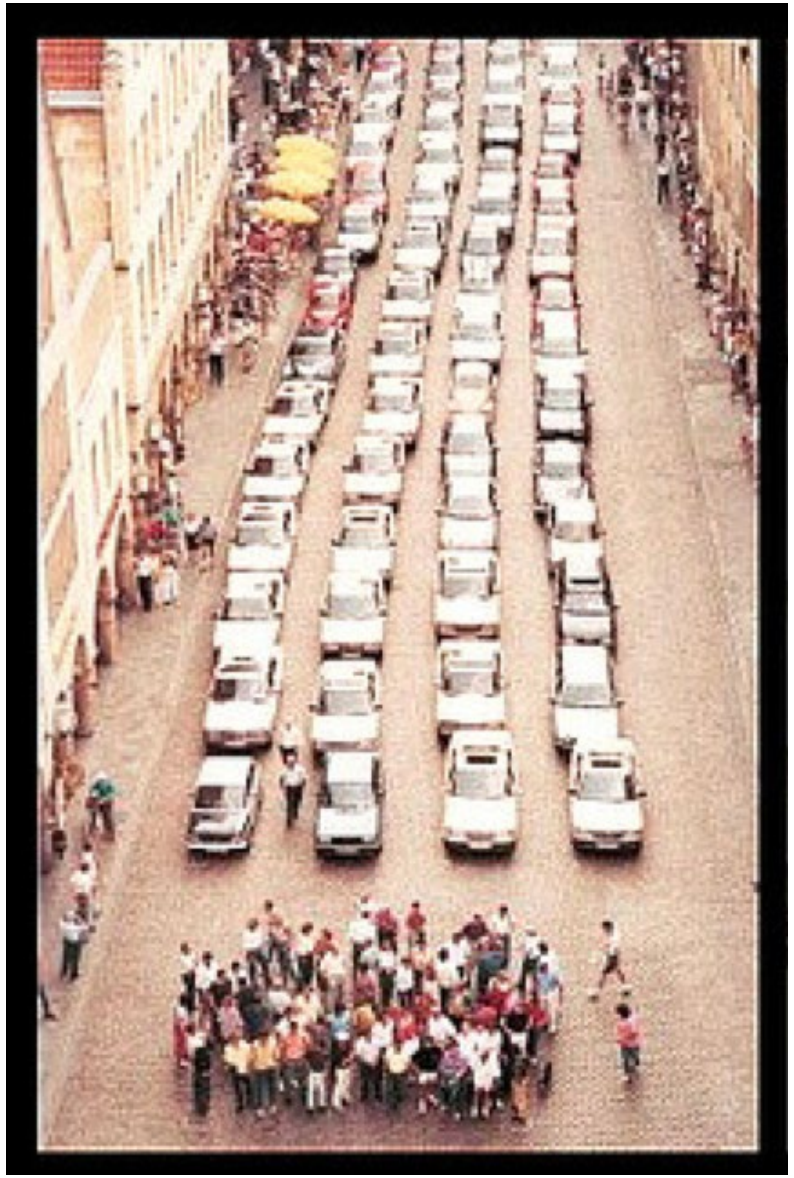


Bus

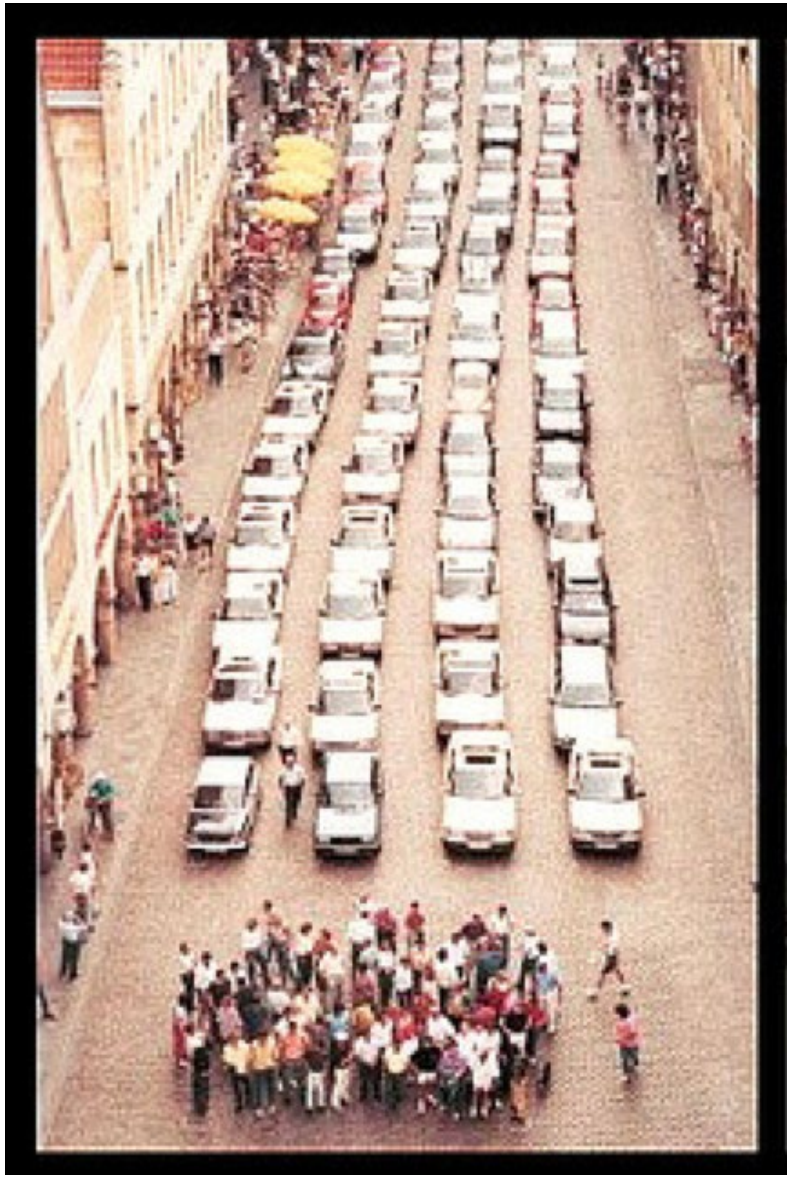
Bike



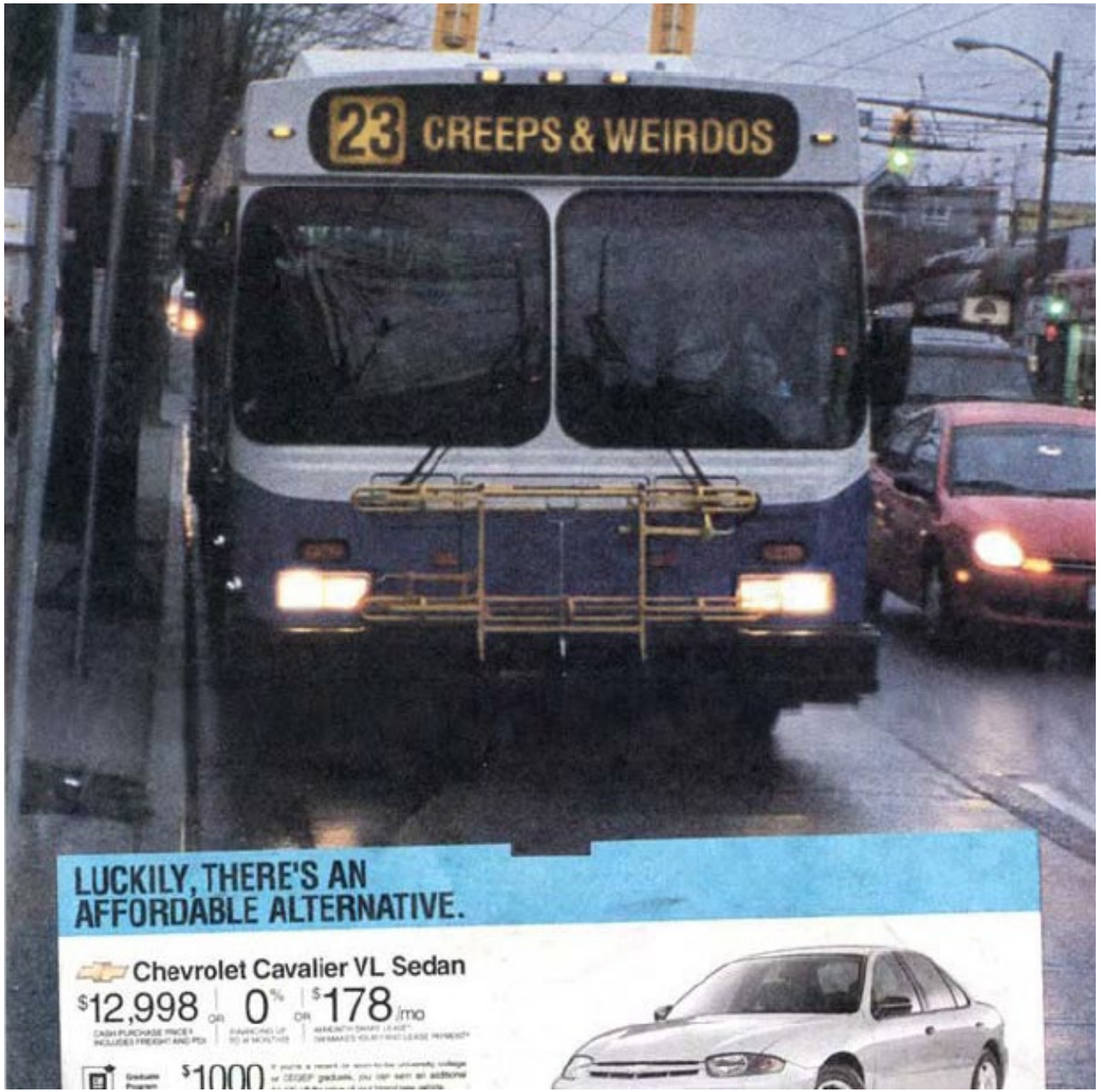
AV



EV



TNC


23 CREEPS & WEIRDOS
LUCKILY, THERE'S AN AFFORDABLE ALTERNATIVE.
Chevrolet Cavalier VL Sedan
$12,998 OR 0% OR $178/mo


MUNI
ONLY
GGT
MUNI
Fell


TCF
PRINCIPIA

How we use our physical space

and the priority and separation we give to active and public transportation

is critical to the future of our transportation system.

Getting people to ride transit

Needs for Transit

If travel is a utility, then mobility must be a service

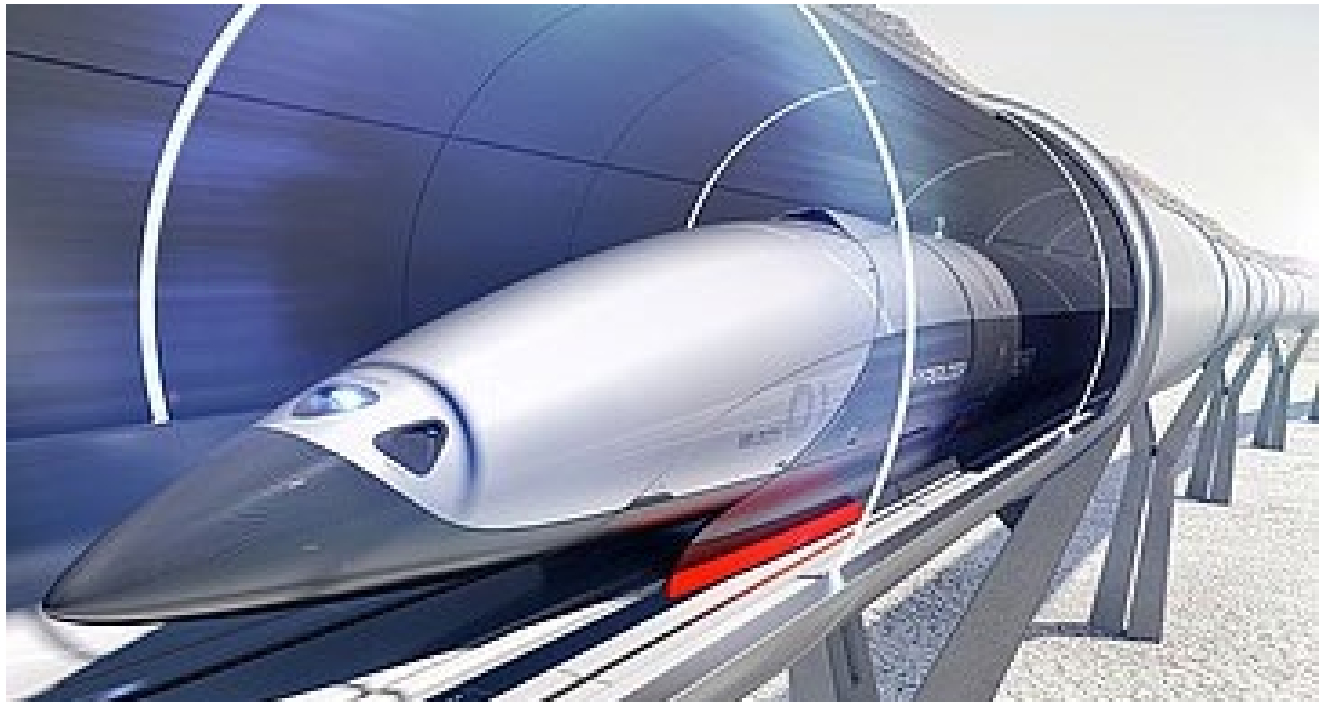
- Seamless travel with collective transportation as the backbone
  - Best of high-capacity public transportation for the bulk of travel distances
  - Localized services for short trips and first-mile, last-mile connectivity

- Mobility must be transformed to be seen more like a high-quality utility
  - Connection from one service to another must be efficient and pleasant
  - Rethink fare payment as travel patterns change

Needs for Transit

Focus first on service, then on technology

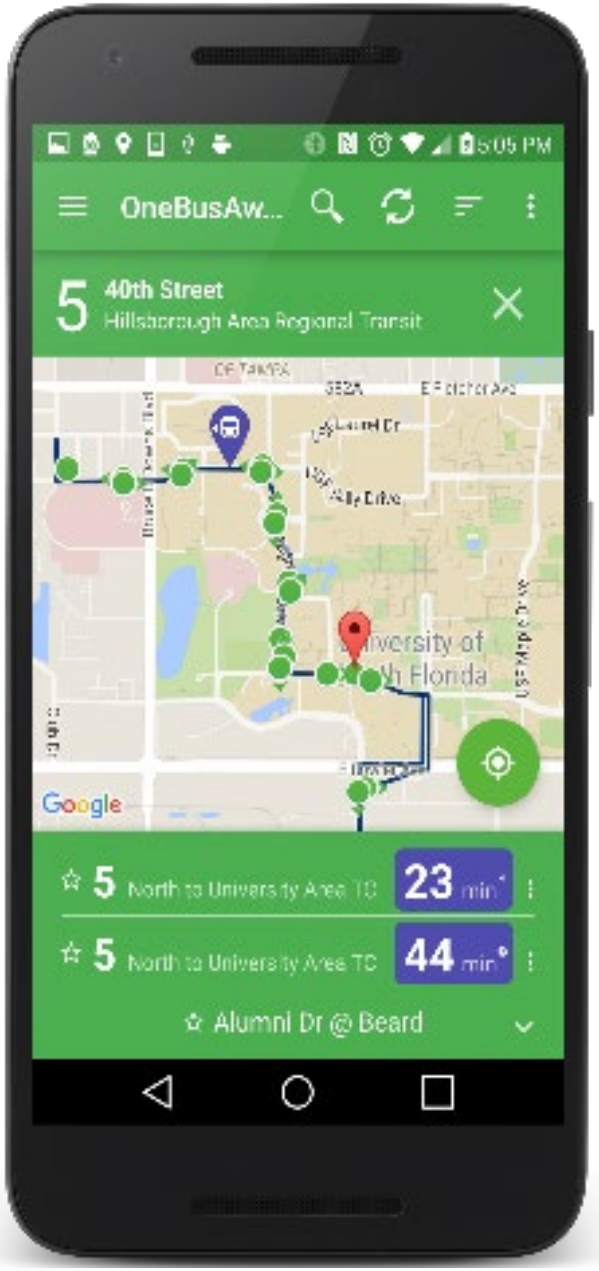
- Streetcar? Gondola? Hyperloop? Don't chase technology
- First create a **connected, accessible transit network**
- Link major nodes with frequent service



Needs for Transit

"Scientia potentia est" - knowledge is power

- Information intense society
- Inform customers in real-time
- Service disruption alerts
- Customer feedback mechanisms



More here: Watkins, K. "Does the Future of Mobility Depend on Public Transportation?", *Journal of Public Transportation,* Vol. 21: 1, pp. 53-59, 2018.

Needs for Transit

Spatial priority must be given to public transportation modes

- Transit + carpooling mixed with general traffic = no incentive to share
- Exclusive right-of-way to transit modes
- Spatial allocation for transit mode much more important with driverless vehicles

Getting people to ride bikes

User Preference Analysis

Sharrows on road without parking

Sharrows ("share arrows") show that motorists and bicyclists will be sharing the road. Please mark your reaction to **each** statement below:

Bicycling on a road like this is …	*Completely disagree*	*Disagree*	*Neutral*	*Agree*	*Completely agree*
				☐	☐
				☐	☐
				☐	☐

mes ☐ Often ☐ Not sure

Bike lane on road without

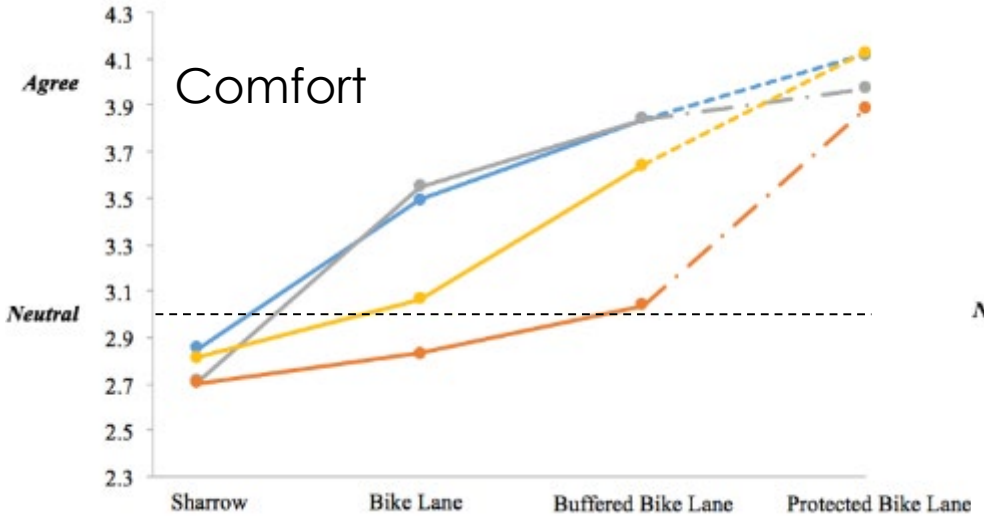
A bike lane is a dedicated lane for bicycli

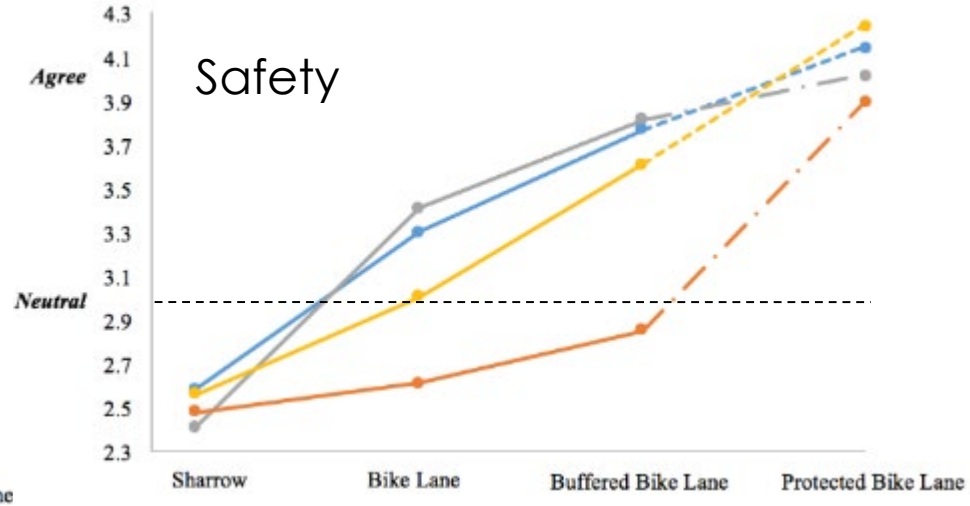
ent below:

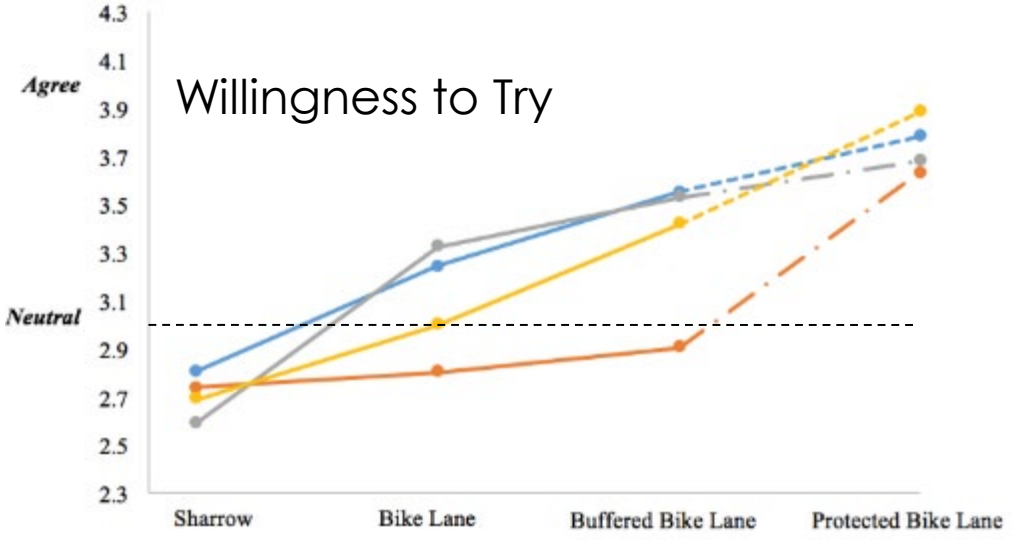
				Agree	*Completely agree*
				☐	☐
				☐	☐
Something I'd try	☐	☐	☐	☐	☐

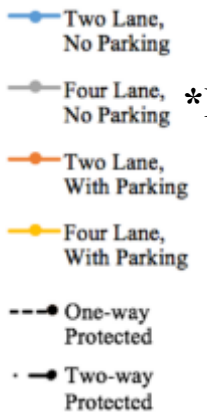
How often have you bicycled on a road like this? ☐ Never ☐ Sometimes ☐ Often ☐ Not sure

User Preference Analysis









***Note that axes do not start at 0**

Instrumented Bicycle Data Collection

1. Front Component
Compute
Functions
Arduino Uno

2. Rear Component
Sensors
Raspberry Pi

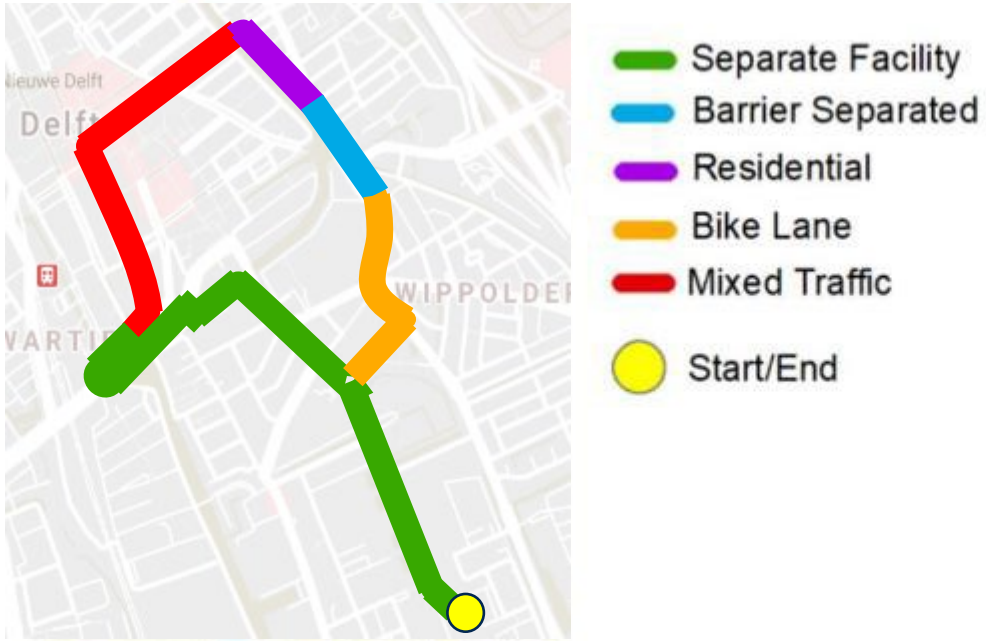
Instrumented Bicycle Study Area

Delft:

Small city, 100,000 population

~40% cycling modal share

28 participants

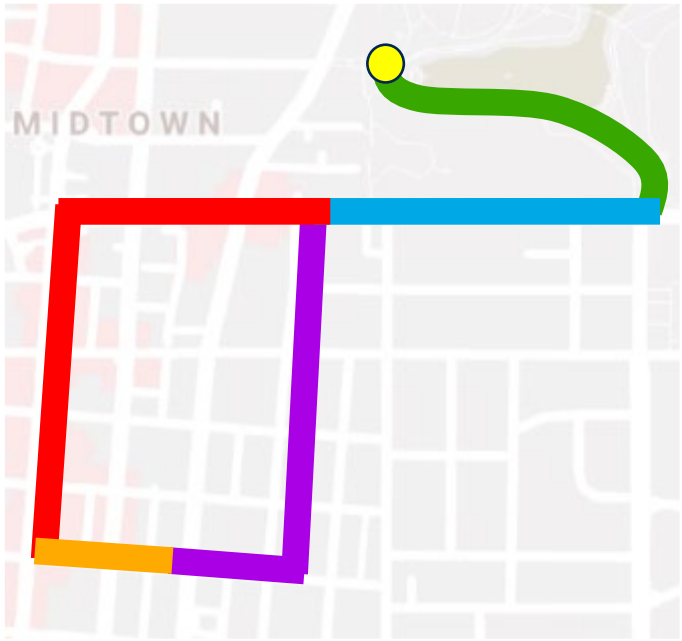


Atlanta:

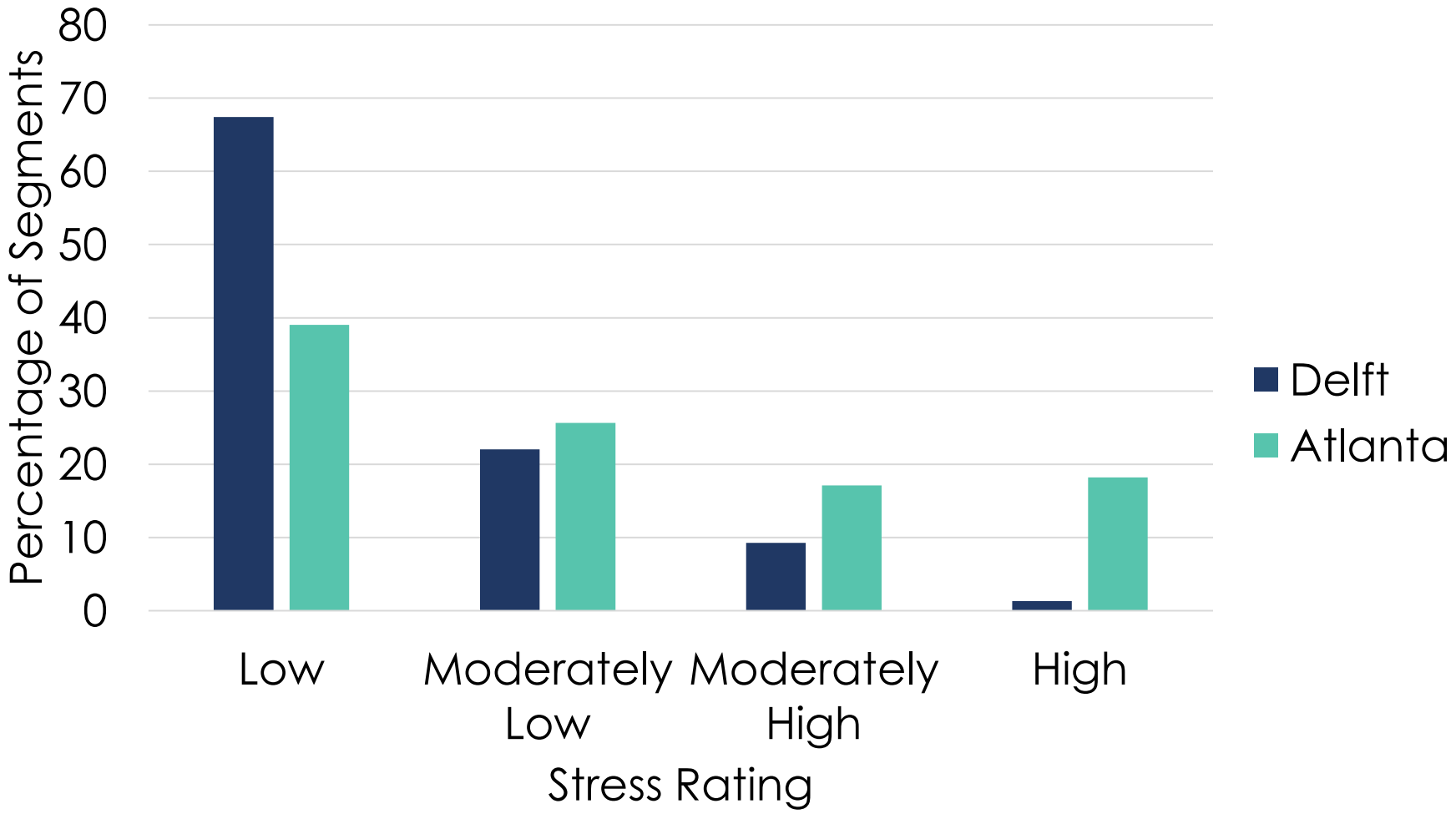
500,000 people, 6 mil in metro area

~1.5% cycling modal share

41 participants



Stress Rating



Thematic Analysis of Stress Survey

Causes of Stress

Theme	Delft	Atlanta
Motor Vehicles	**68%**	**93%**
Poor Pavement	**54%**	**71%**
Poor Infrastructure	32%	**78%**
High Volume	29%	54%
Anticipation	4%	46%
Speed Differential	18%	34%
Lane Restriction	32%	22%
Surprises	32%	17%
Bus/Truck	21%	22%
Pedestrians	32%	15%
Cyclists	**36%**	0%
Intersections	14%	10%

Stress Reducers

Theme	Delft	Atlanta
Quality Infrastructure	**93%**	**80%**
Low Volume	**89%**	**71%**
Familiarity	**75%**	29%
Speed Differential	29%	**41%**
Lack of Motor Vehicles	29%	37%
Good Pavement	32%	17%
Ambiance	11%	17%
Lack of Pedestrians	4%	5%
Lack of Intersections	7%	0%

Bicycle Research Conclusions

- **Separated / Protected facilities** should be a priority in bicycle facility design.
- **Minimize** impact of **parking** adjacent to bike lanes.
- Make **limited** use of **sharrows**.
- Main components of cyclist stress
  - Presence of motor vehicles
  - Poor pavement
  - Poor infrastructure (Atlanta)
  - Cyclists (Delft)
- Cyclists prefer to go at their ideal speed. Atlanta cyclists experienced higher, more stressful speed differentials pressuring them to go faster than their ideal speed.

More here:

Gadsby, Hagenzieker, & Watkins, "An international comparison of the self-reported causes of cyclist stress using quasi-naturalistic cycling", J of Transport Geography Vol. 91, 2021.

Gadsby, Tsai, & Watkins, "Understanding the Influence of Pavement Conditions on Cyclists' Perception of Safety and Comfort: Using Surveys and Eye Tracking", *Transportation Research Record,* Vol. 2676(12), 2022

Transit plus Bike

Dutch STOMP Principles

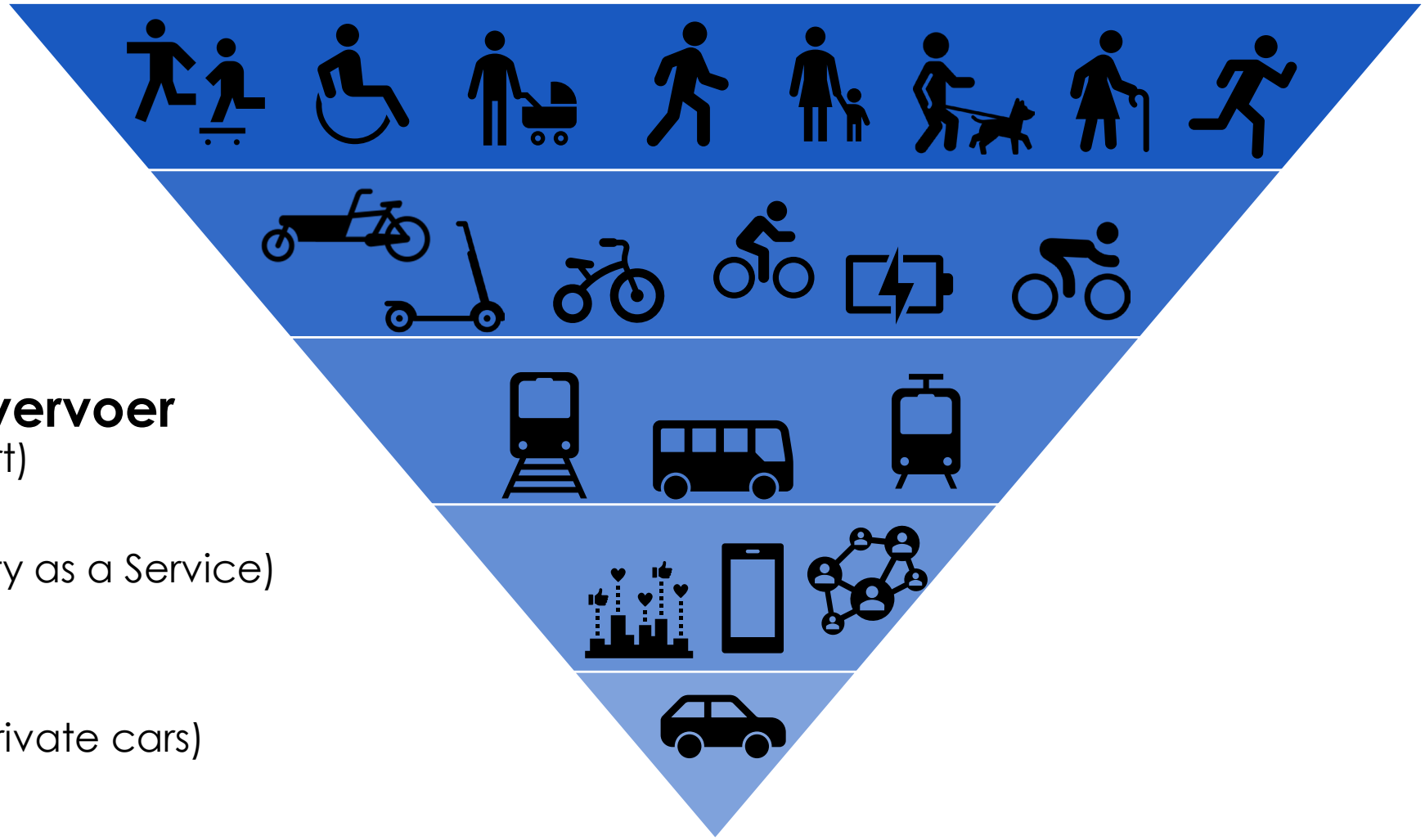
Stappen
(Walking)

Trappen
(Bicycling)

Openbaar vervoer
(Public Transport)

MaaS (Mobility as a Service)

Privéauto (Private cars)



Bike + Train

- Bicycling increases the catchment area of stations.
- Half of all train trips in NL begin with a bike ride.
- 25% of all bike trips are to / from a station

THANK YOU!

Dr. Kari Watkins

kewatkins@ucdavis.edu

Many thanks to research partners too numerous to mention!