



TA Board of Directors

Meeting of October 1, 2026

Correspondence as of September 4, 2026

<u>#</u>	<u>Subject</u>
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| 1. | Slides from CAC meeting item 10a, the need for mode shift to meet Measure A and W Goals and Core Principles. |
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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](#)

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders.

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.

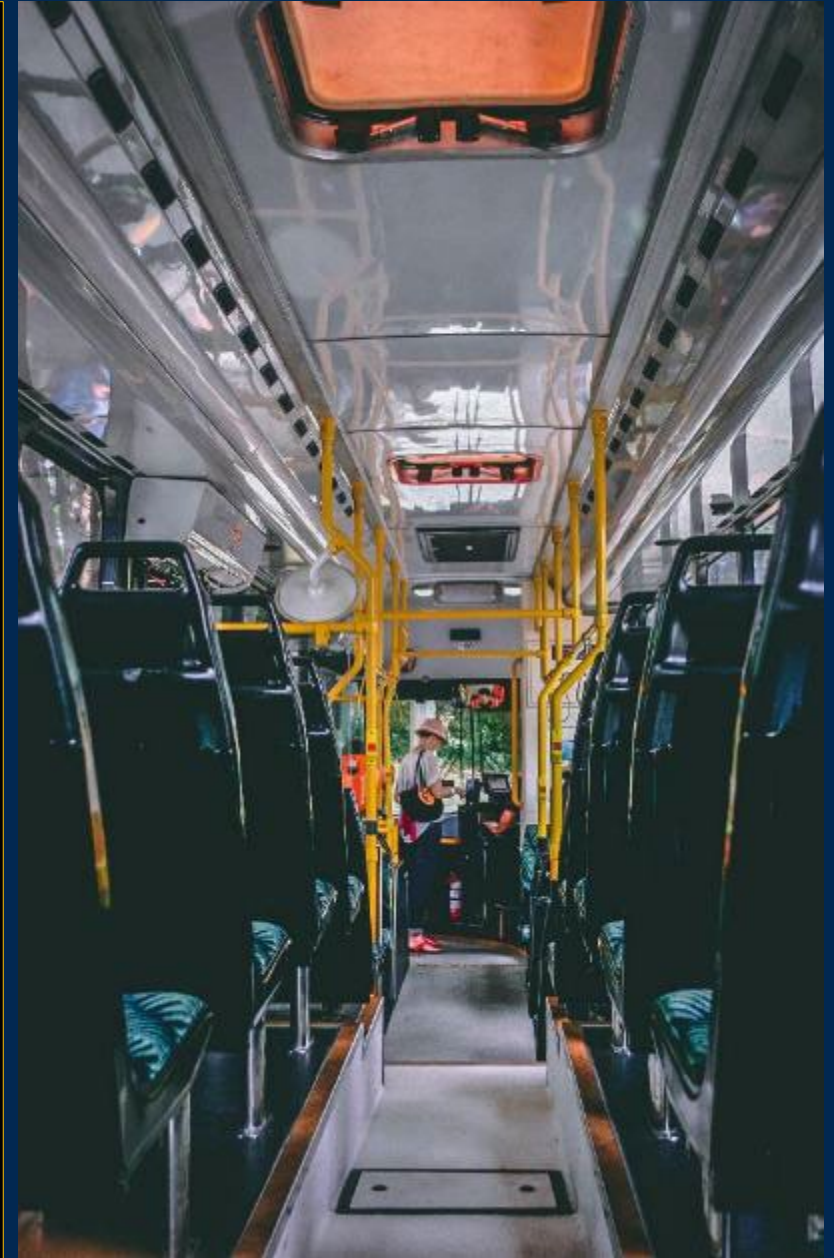
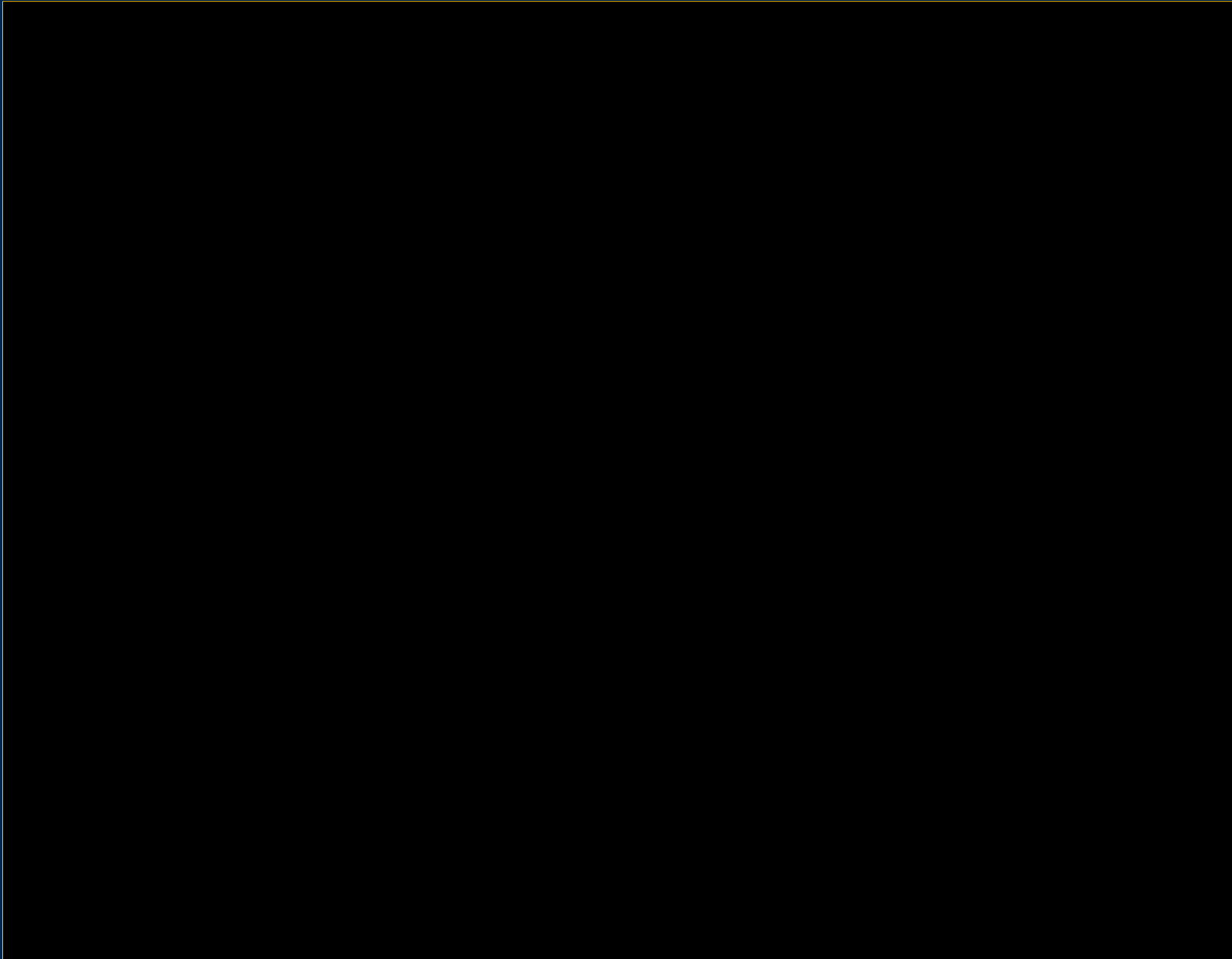
Slides are attached. You can also watch the meeting video for the full context: https://samtrans.granicus.com/player/clip/1531?view_id=2&redirect=true. Granicus is currently down, so I can't find the exact time, but I believe that 10a started at about 6:15 or 6:20PM.

Thank you again,

giuliano

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

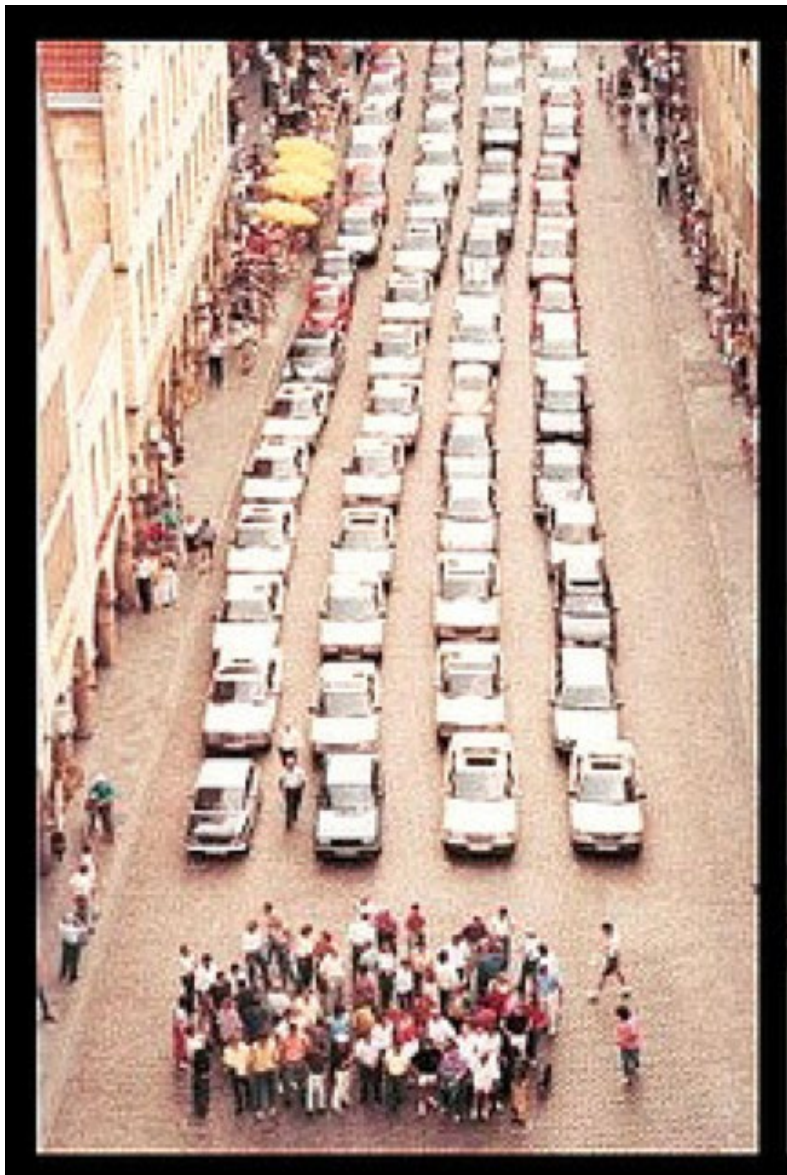












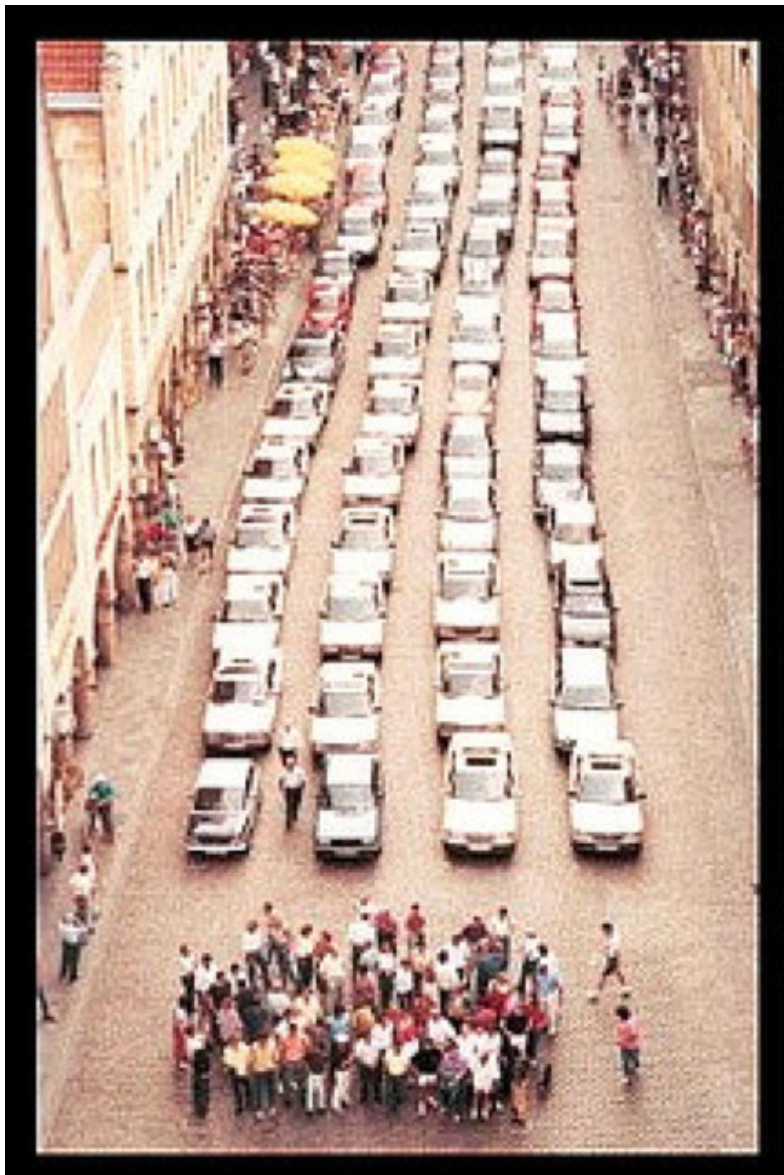
Car



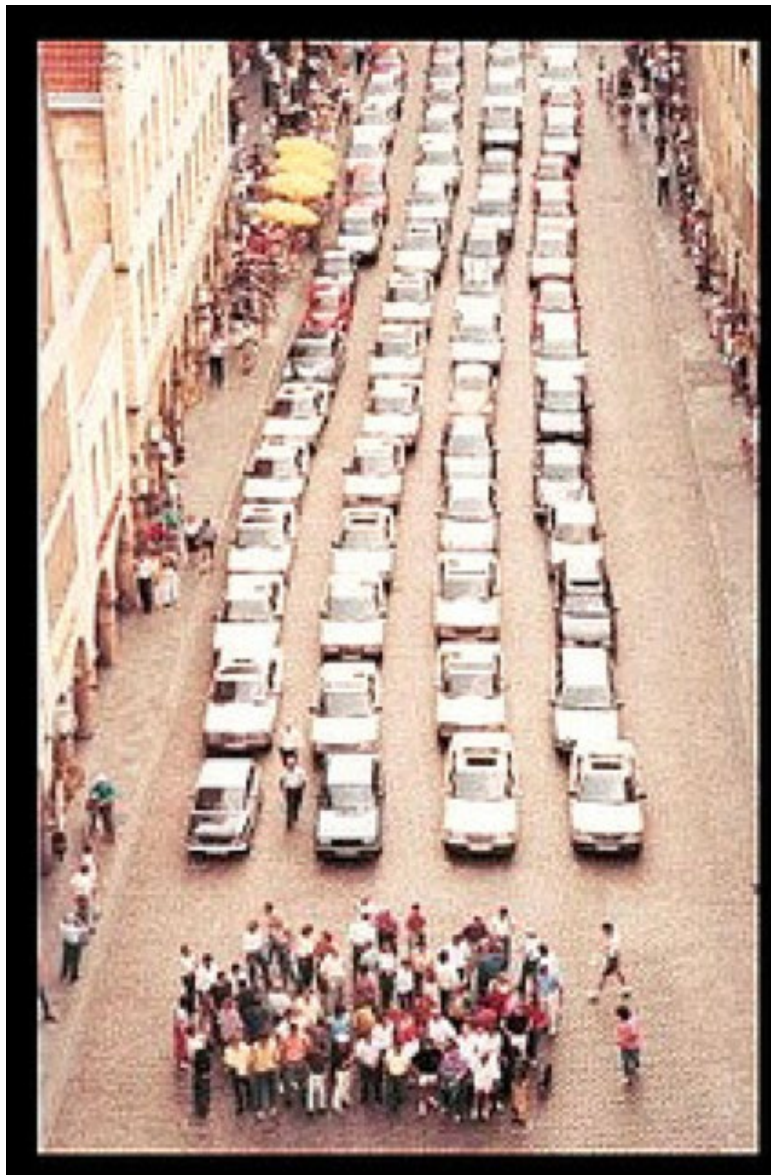
Bus



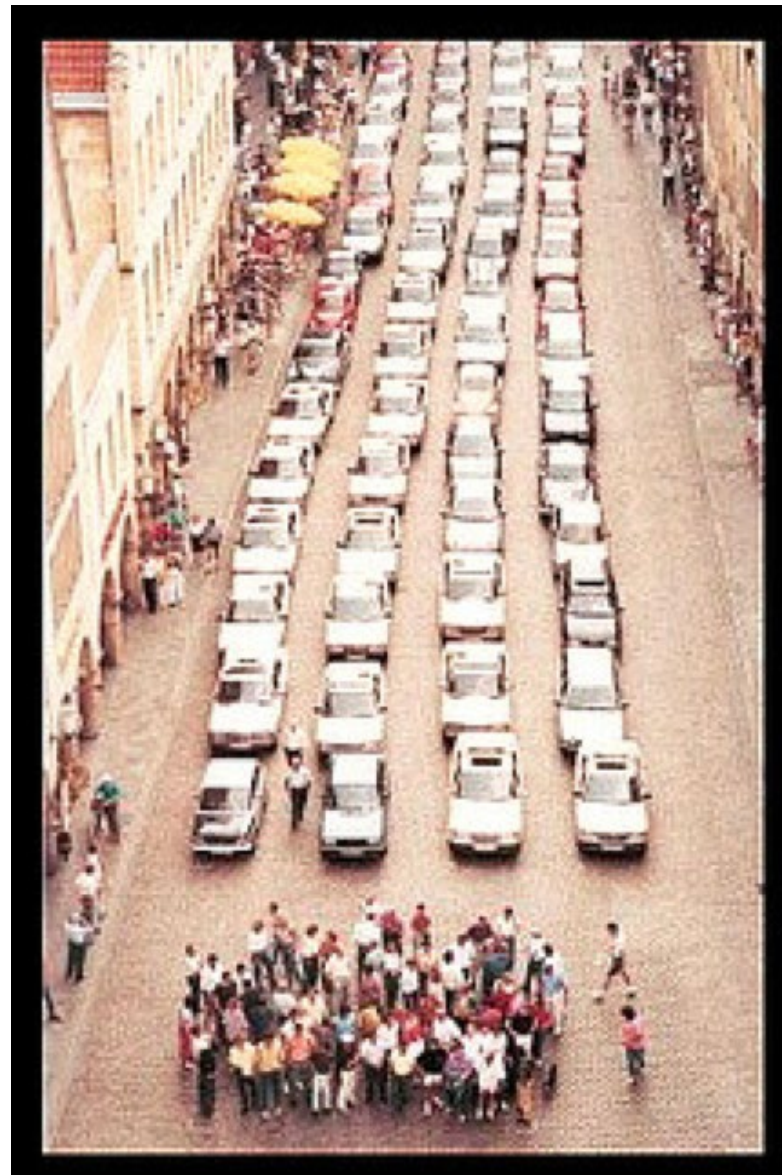
Bike



AV



EV



TNC



23 CREEPS & WEIRDOS

LUCKILY, THERE'S AN AFFORDABLE ALTERNATIVE.

Chevrolet Cavalier VL Sedan

\$12,998 OR **0%** OR **\$178/mo**

CASH PURCHASE PRICE* INCLUDES FREIGHT AND PDI. FINANCING UP TO 60 MONTHS. *MSRP. EXcludes tax, title, license, and dealer fees. **MSRP. Excludes tax, title, license, and dealer fees. ***MSRP. Excludes tax, title, license, and dealer fees.

\$1000

If you're a recent or soon-to-be university graduate or GED/GEP graduate, you can save an additional \$1000 on the purchase price of a new vehicle.





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.

A photograph taken from the interior of a transit vehicle, looking out through a large window. The scene outside is a snowy street. In the immediate foreground, the rear of a red car is visible. Further down the street, a white car is parked. The background shows a snowy landscape with some trees and buildings under a bright, overcast sky. The text "Getting people to ride transit" is overlaid on the right side of the image, with a horizontal line underneath it.

**Getting
people to ride
transit**

Needs for Transit

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

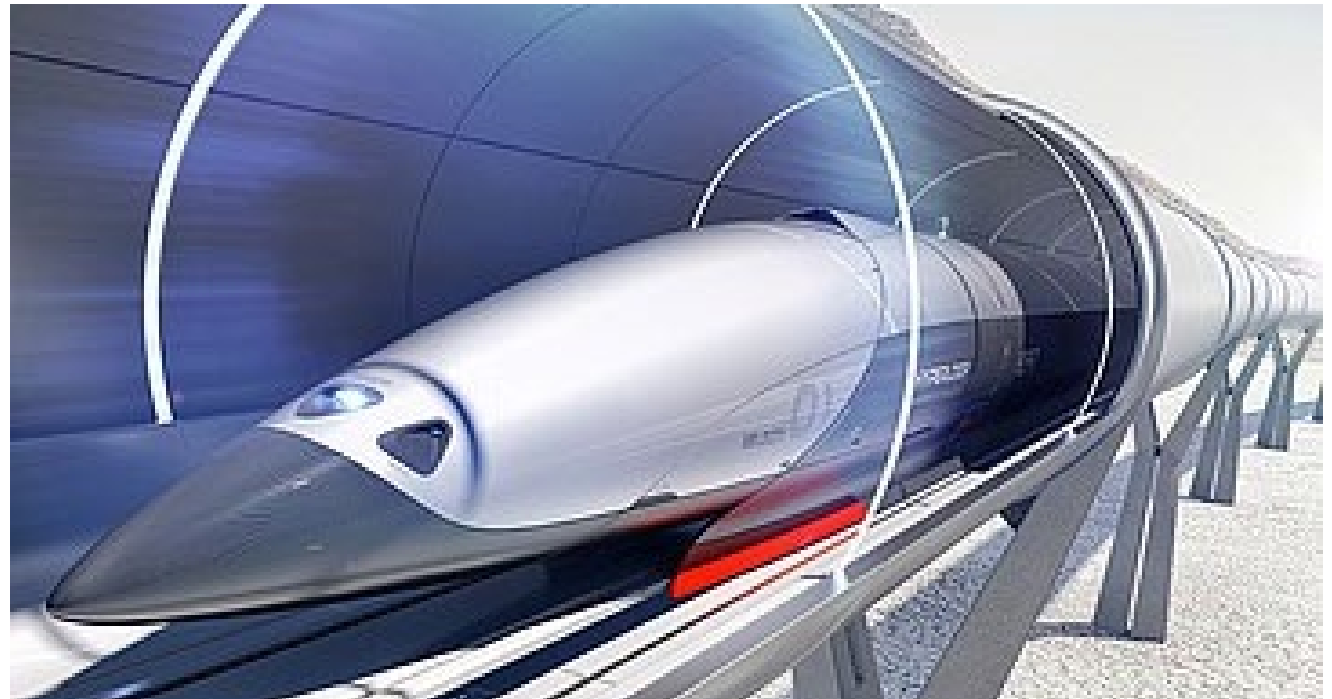
- Seamless travel with collective transportation as the backbone
 - Best of high-capacity public transportation for the bulk of travel distances
 - Localized services for short trips and first-mile, last-mile connectivity
- Mobility must be transformed to be seen more like a high-quality utility
 - Connection 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

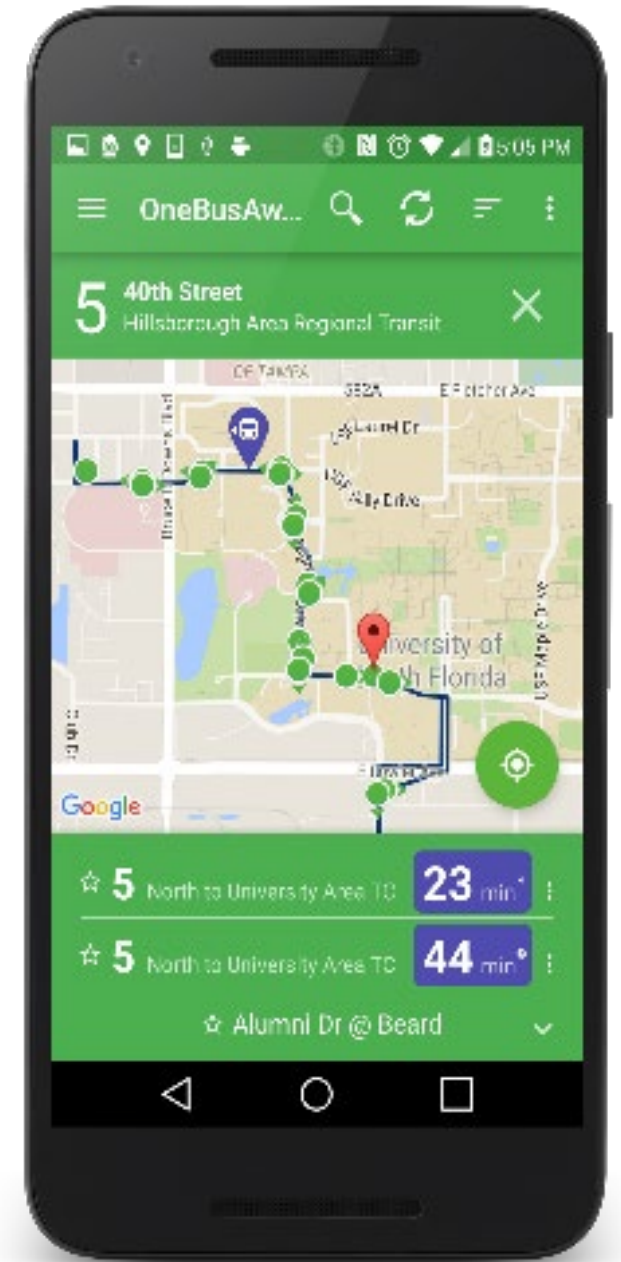


Needs for Transit

“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



The background image shows a busy city street scene. In the foreground, a woman with long blonde hair is riding a bicycle with a large yellow crate on the back. To her right, a group of people are standing and talking. Further back, more people are riding bicycles. The background features several multi-story buildings, including a prominent red brick building and a modern glass-fronted building. A large white circular overlay is positioned on the right side of the image, containing the text "Getting people to ride bikes" in a bold, black, sans-serif font. A thin horizontal line is located below the text.

**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 bicyclists



Something I'd try

☐
☐
☐

Agree

Completely agree

☐
☐
☐
☐
☐
☐

How often have you bicycled on a road like this?

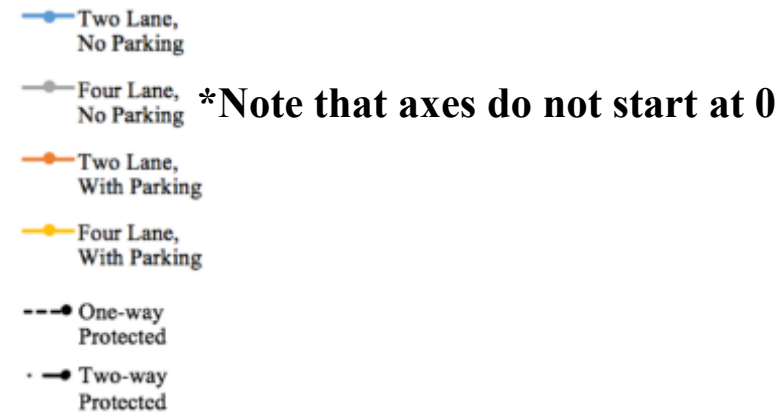
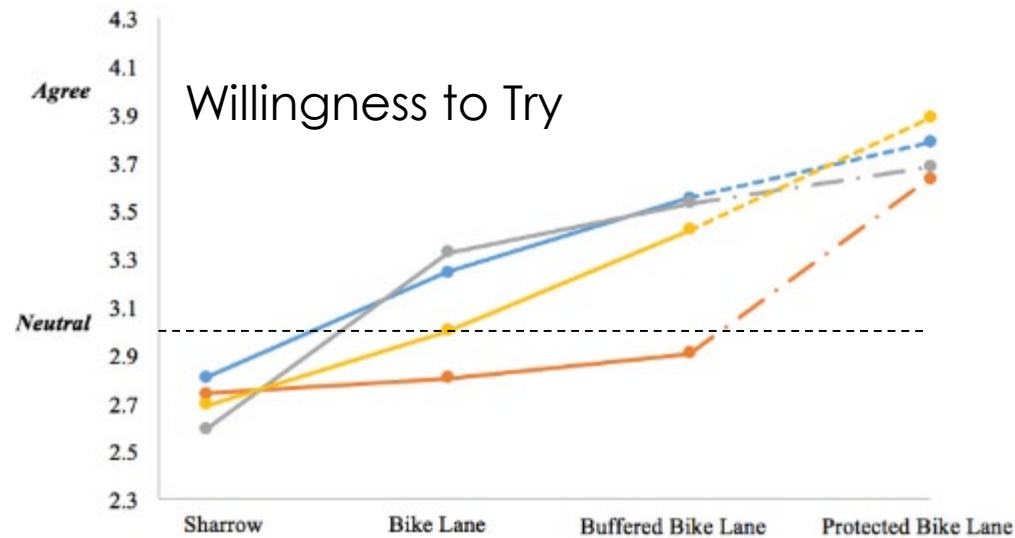
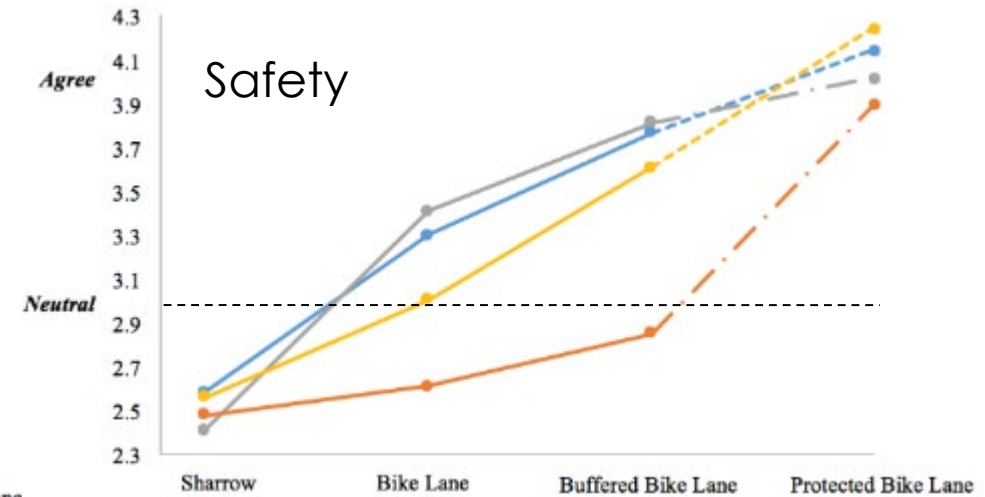
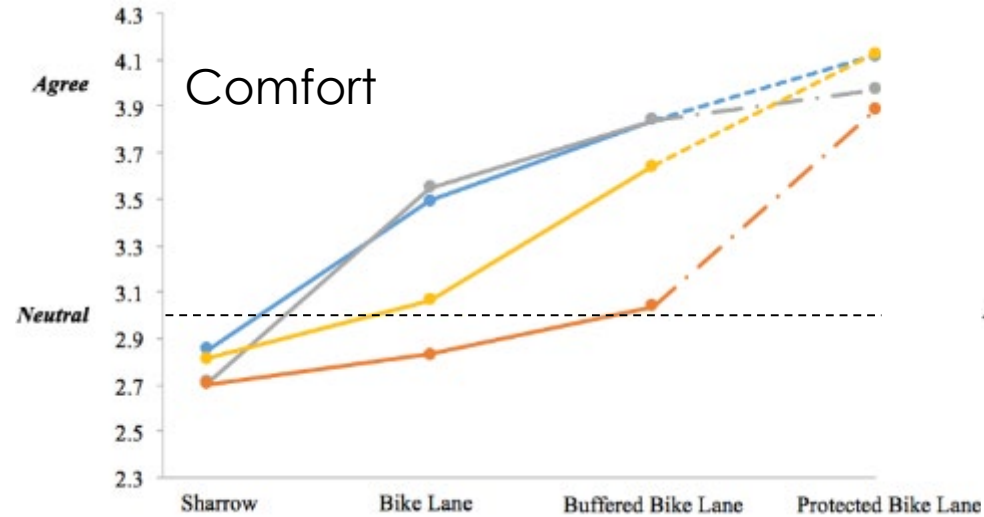
☐ Never

☐ Sometimes

☐ Often

☐ Not sure

User Preference Analysis



Instrumented Bicycle Data Collection

**1. Front
Component**
Compute
Functions
Arduino Uno

**2. Rear
Component**
Sensors
Raspberry Pi



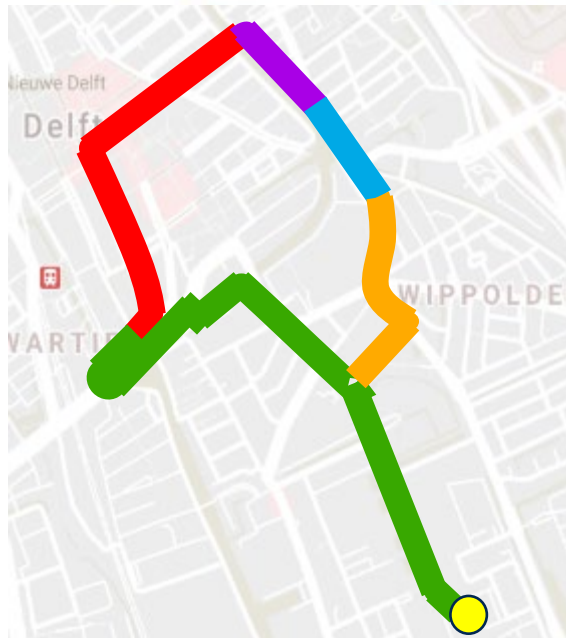
Instrumented Bicycle Study Area

Delft:

Small city, 100,000 population

~40% cycling modal share

28 participants



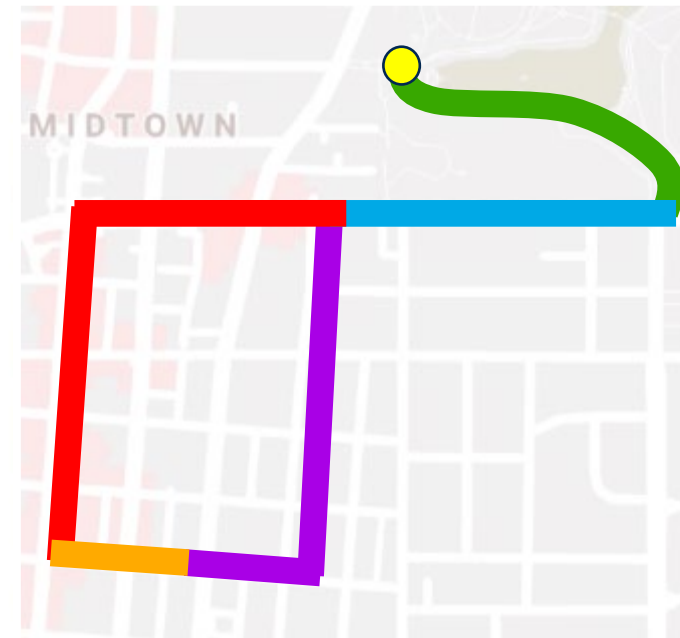
- Separate Facility
- Barrier Separated
- Residential
- Bike Lane
- Mixed Traffic
- Start/End

Atlanta:

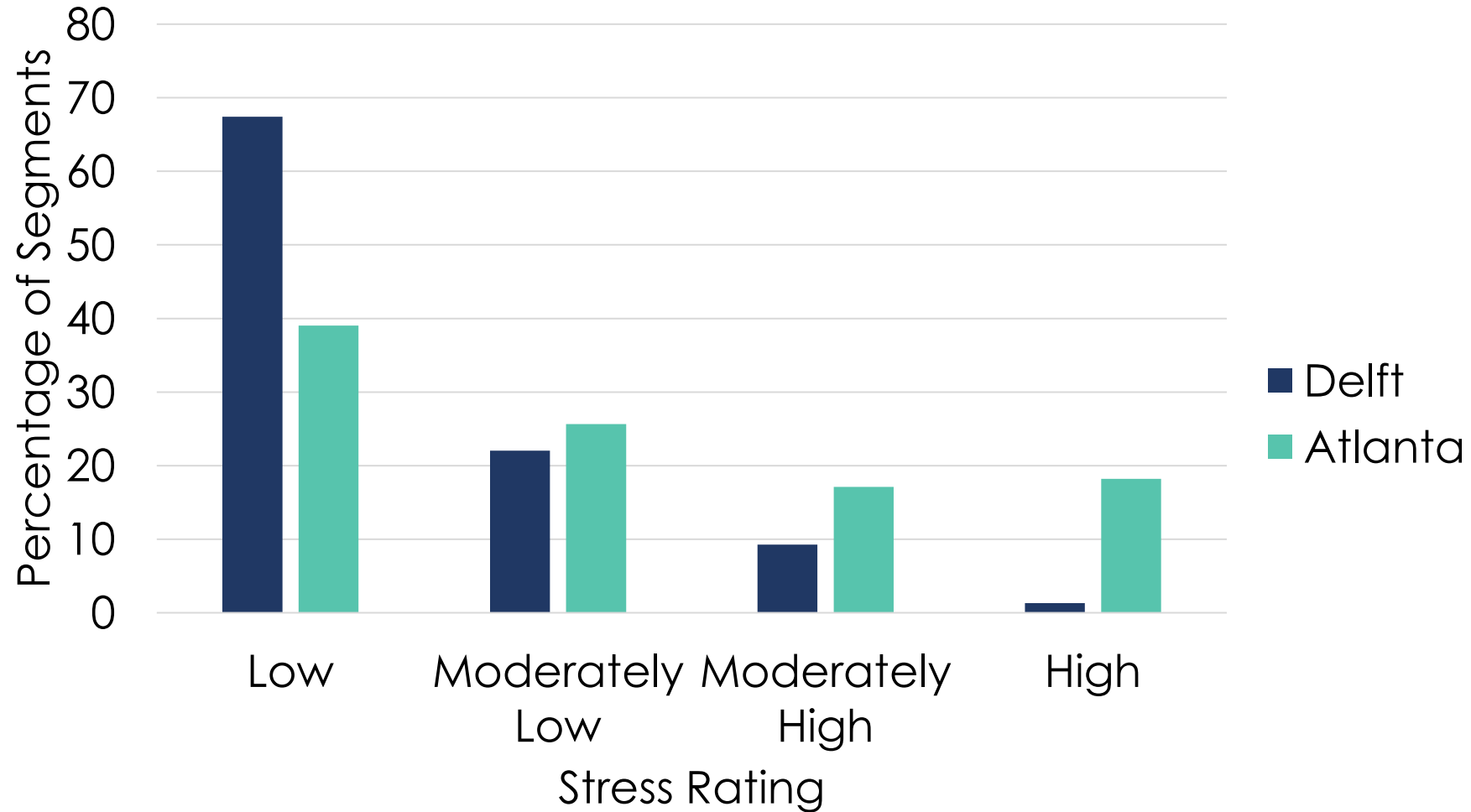
500,000 people, 6 mil in metro area

~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

A vibrant, sunlit city street scene. In the foreground, several people are riding bicycles. A woman in a red scarf and glasses is prominent on the left, followed by a man in a maroon jacket. Behind them, other cyclists and pedestrians are visible. In the background, three red double-decker buses are parked or moving along the street. The scene is lined with trees that have bright yellow autumn foliage. A semi-transparent circular graphic is overlaid on the right side of the image, containing the text.

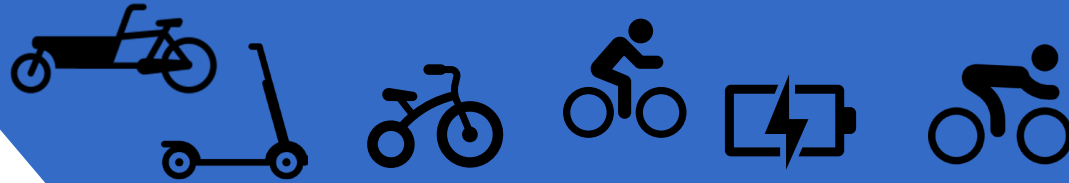
Transit plus Bike

Dutch STOMP Principles

Stappen
(Walking)



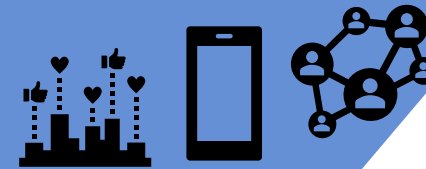
Trappen
(Bicycling)



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!