Eldsjäl 2.0

Electric Shared self driving vehicles in a fossil free future transport system

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What we are going to talk about

- Eldsjäl 1.0
  - Short summary
- Eldsjäl 2.0
  - Conclusions and recommendations for future studies

Eldsjäl 1.0

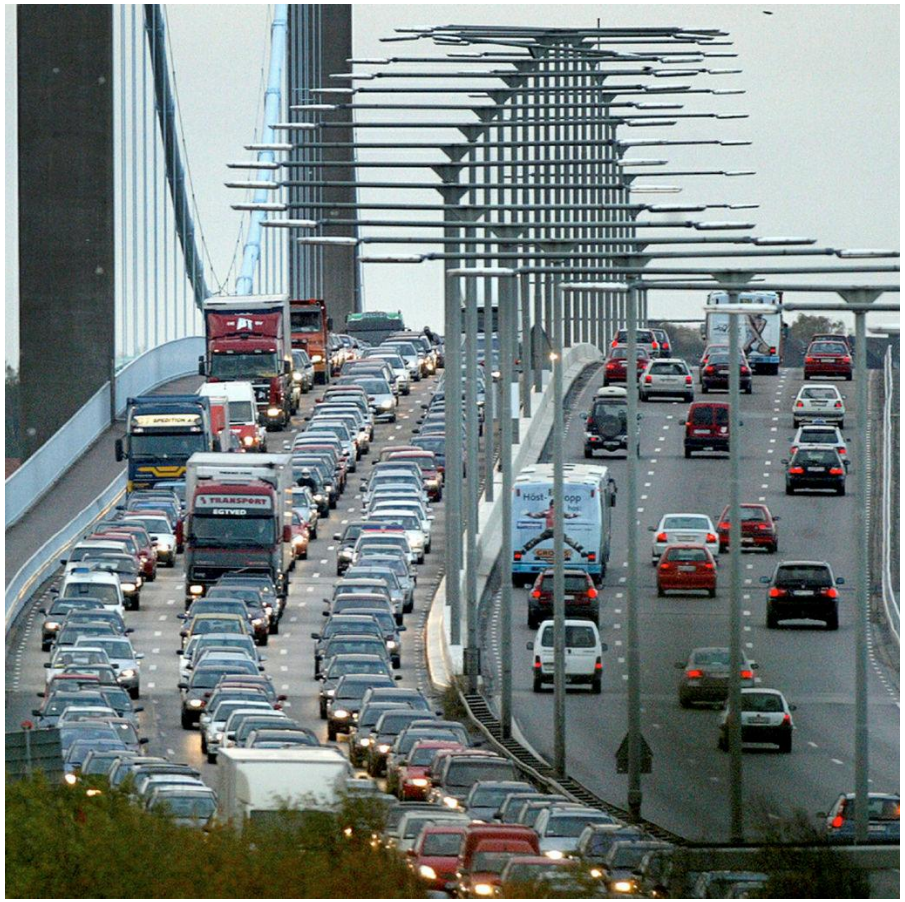
Electric Shared self driving vehicles in a fossil free future transport system

Trivector

Göteborgs Stad

Purpose of the project

- Analyse how self driving vehicles will affect our city by modelling different scenarios.
- Dialogue with residents in the city about:
  - Which preferences do they have about using self driving vehicles?
  - Their views on the effects of self driving vehicles



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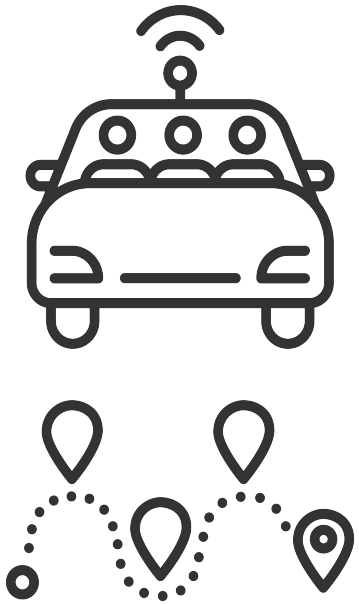
Traffic simulation software Company

Two types of self driving vehicles

Ride share

You (may) travel with other people that you don’t know

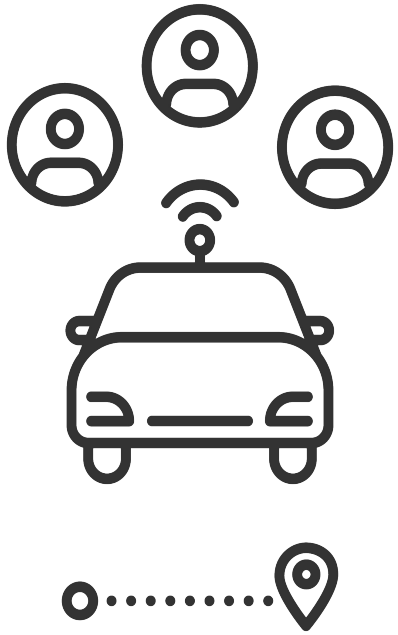
You share the ride with other people
Possible detour during the ride



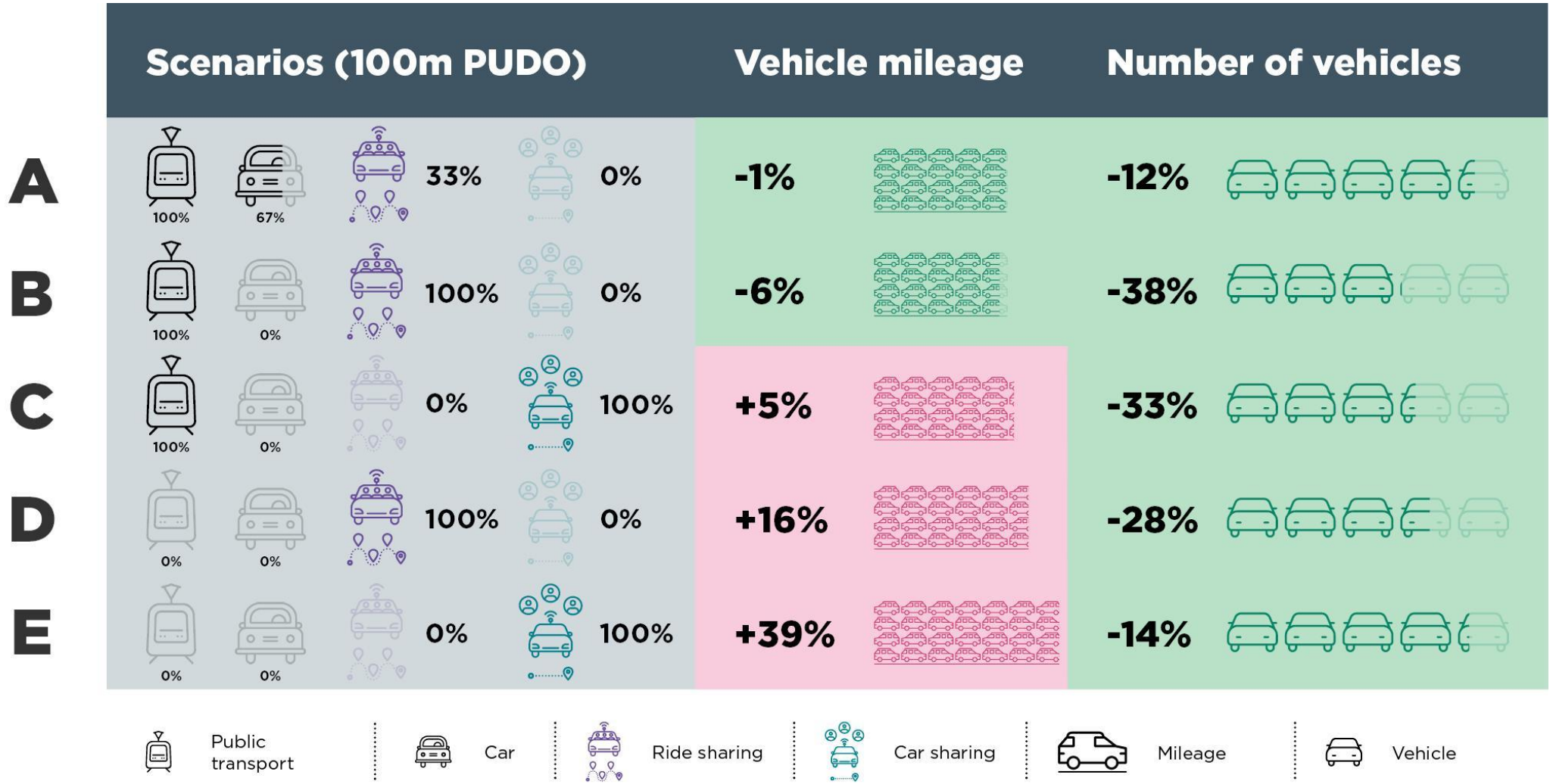
Car share

You travel by yourself or with people you do know.
Before and after your trip, the car serves other people

You share the car with other people, but not the ride



Results from the simulations



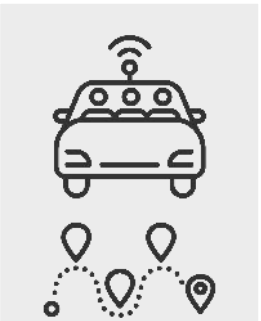
Effect on different street types

Number of vehicle passages per max hour – compared with today's traffic	B.	C.	D.	E.
Freeways in the city	-17%	1%	4%	22%
Central streets	-3%	21%	69%	81%
Residential streets	4%	29%	69%	138%

Results from dialouge

- Most people are **positive to self-driving vehicles**
- **Car drivers** prefer car share over ride share
- **Public transport passengers** are attracted to ride share
- Both car- and ride share will exist, where convenience costs more.
- Many highlight **environmental aspects** as an advantage of self-driving shared vehicles
- Almost everyone thinks the traffic will be calmer:
  - Slower, keep distance, follow the rules of the road
- Many believe travel habits will change:
  - the number of car trips will be fewer when people do not own their own cars and plan car trips better.

Car sharing
Convenient but expensive
Flexible, suitable for more types of travel
Less sacrifice in time
Better conditions for not having to own a car
Attracts car drivers



Ride sharing
More sustainable to share
Lower cost
Unpredictable and less flexible
More social – both pro and con
Mainly attracts public transport travellers

> *If you know the people you're going with, you're less likely to have to wait. It's about trust between passengers whether the journey will work or not.*

> *I would like a guarantee that the journey will not be too long. Or that it will be cheaper as compensation.*

> *I appreciate the social aspect of public transport today. You can observe different types of people and their behavior and that's interesting.*

Eldsjäl 2.0

Electric Shared self driving vehicles in a fossil free future transport system – 2.0

Göteborgs Stad

Purpose of the project

- Use the results from Eldsjäl 1.0 and add with a:
  - Benchmark
    - Research
    - Different projects
  - Round table discussions with stakeholders
    - Understand different perspectives of self driving veichles
  - Conclude findings from part 1 and part 2

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Benchmark and roundtable

- Benchmark study
  - It is a hot topic…
  - Project mainly focus on technical issues
  - Few studies out of city and user perspective
- Roundtable discussions
  - How and where can public transport be supplemented with autonomous vehicles
  - Towards which target picture should society steer

Projects

MOIA ride sharing
Kolumbus
Autonomous buses in Barkarby
Synergetic Autonomous transports (SAT)
Scottlands driverless buses

Participants

Göteborgs stad
Lunds kommun
Stockholms stad
Trafikverket
Keolis
Trivector
Samtrafiken
Volvo Cars
Cevt
Nevs
K2/Malmö Universitet

Conclusions

Three main areas that should be considered further

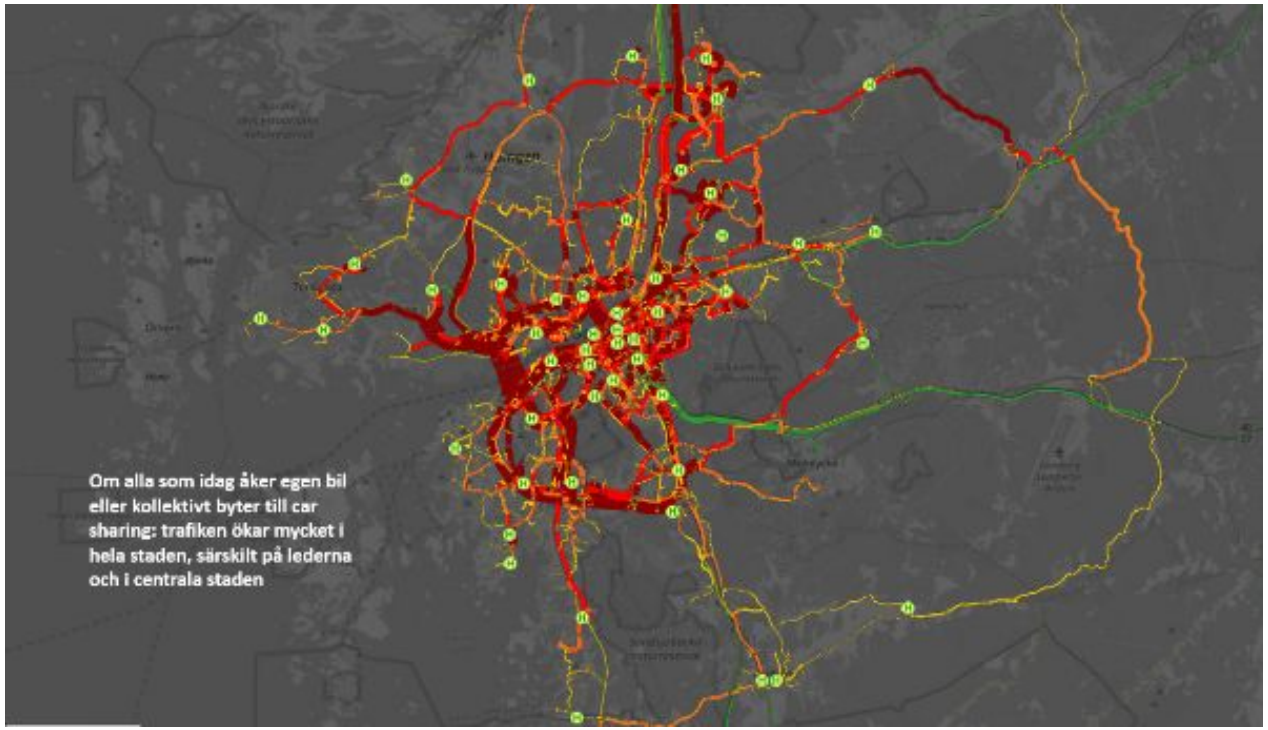
1. Potential of self driving vechicles

- Identify **geographical areas in Gothenburg** where it is positive to use shared self-driving vehicles.
- Map **different traveler groups** and gain an understanding of who is more likely to shared self-driving vehicles out of perspectives such as security, comfort, waiting time, switching between transport modes
- In which areas is it **beneficial from a socio-economic and/or environmental perspective** to introduce self-driving vehicles?

2. Governance

- What are the city's **most important goals that set limits on how self-driving vehicles should be introduced and used**?
- What mechanisms can help **steer so that shared self-driving vehicles contribute to a sustainable transport system** instead of increasing vehicle milage?
- How does the city want **to design the service practically** and what control mechanisms are in place to achieve this?
  For example:
  - location of holding areas.
  - stops for self-driving vehicles (PUDOs)
  - surface use
- how can **different business models** affect usage

3. Realistic scenarios and improved simulations



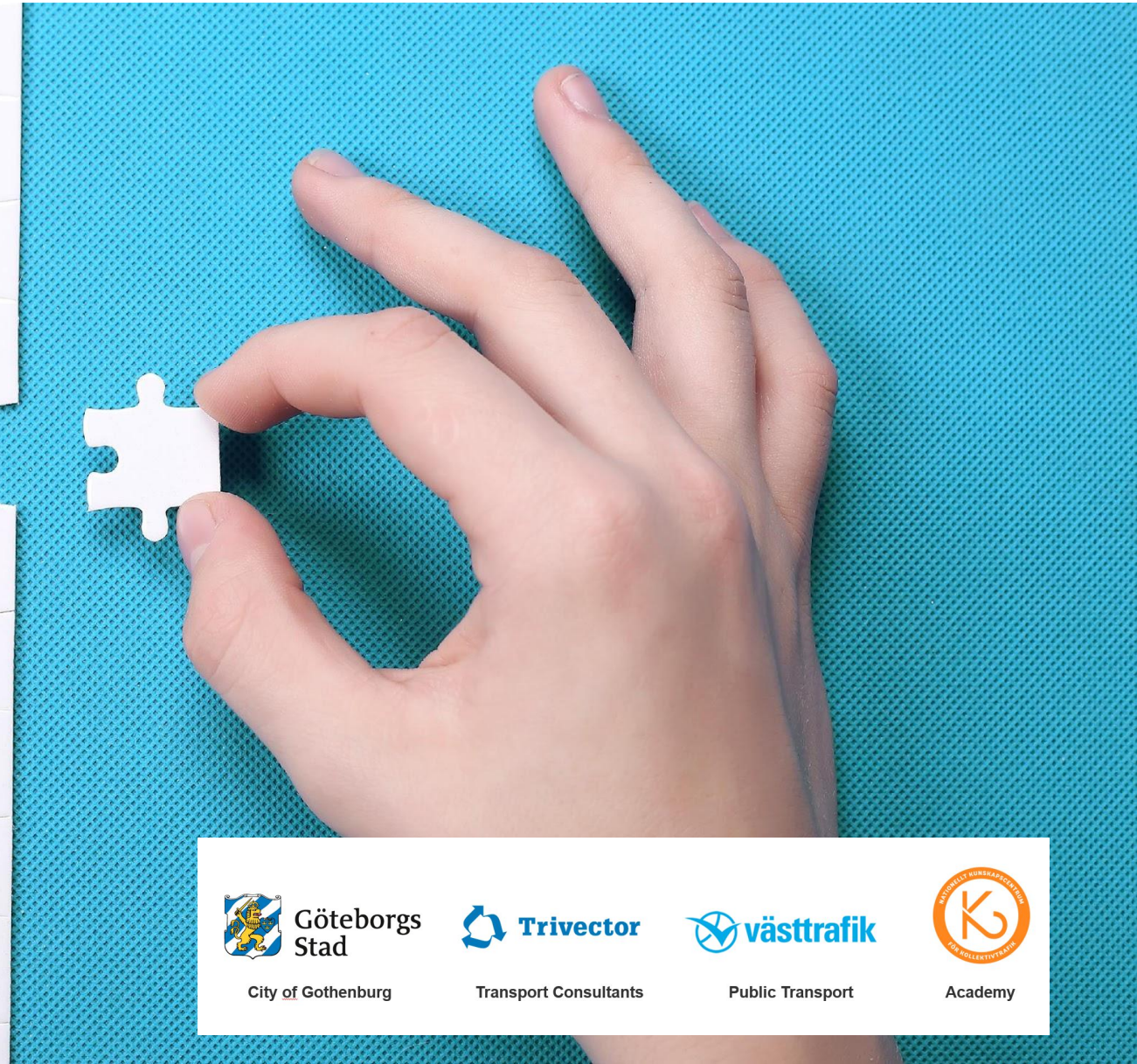
- Combine ride share and car share in scenarios
- Test different scenarios on **combination trips**
  - Self-driving + public transport
  - Self-driving + micro mobility
- Define where **self-driving vehicles are allowed**.
  For example:
  - Not in large routes used by high-capacity public transport
  - Use self-driving vehicles as feeder traffic to major interchange points
  - Not in innercity area

What happens now?

- As you heard there are many pieces of the puzzle that remain to be put together to understand how the public sector should deal with self-driving vehicles

- We who worked on this project are now discussing whether and, if so, in what form we should proceed

- If you have thoughts and ideas, we would like to discuss them with you!



Thank you!

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