

Innovative Measures for Public Transport

Online training event, Croatia, 9th June 2020

Prof Tom Rye

Molde University College, Norway, and Urban Planning Institute, Ljubljana, Slovenija

1. Innovation in PT – not rocket science!
2. PT and future mobility services (MaaS, ridesourcing)
3. PT and COVID??????

It's not rocket science!

1. What makes people choose public transport in place of another mode? It has to be:

- Cheaper
- Faster
- More convenient



$$G_{car} = t_{walk} * v_{walktime} + t_{ride} + \frac{d * VOC}{(occ * VOT)} + \frac{c_{park}}{(occ * VOT)}$$

FAST, RELIABLE, FREQUENT



Making PT relatively faster

- Bus/tram priority on road
- Continuum from painted lane to new busway
- Cost €100,000 to €7million per km
- Benefits significant e.g. Nantes' 7km BRT route
 - Halved bus journey time (40 to 20 min in peak)
 - Halved car traffic on route
 - 25% of new users from car

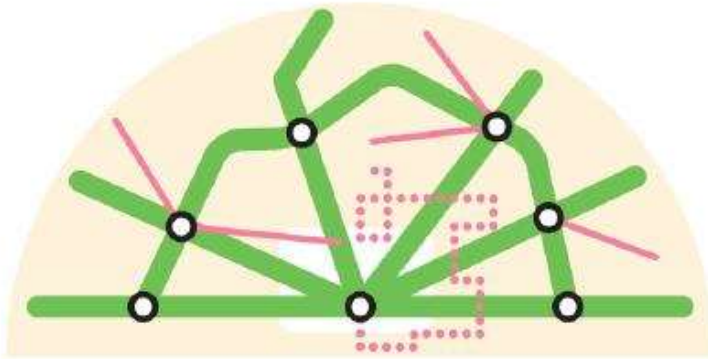


Cost – pricing and subsidy

	Public operating funding (€m)	Ridership (millions)	Population (millions)	Public funding/ person	Public funding/ trip	Trips/ person
All Sweden 2014	1,007	775	9.8	€102	€1.29	78
Gothenburg city 2013 (includes tram)	68.6	172.7	0.52	€132	€0.38	332
Vienna 2018 (source: Wiener Stadtwerke Annual Financial Statement)	170	965	1.87	€91	€0.17	516

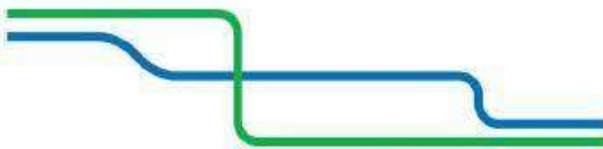
- Season ticket prices:
- Vienna – 365€ a year for main zone
- Gothenburg – 700€ for large zone

SIMPLICITY OF NETWORK

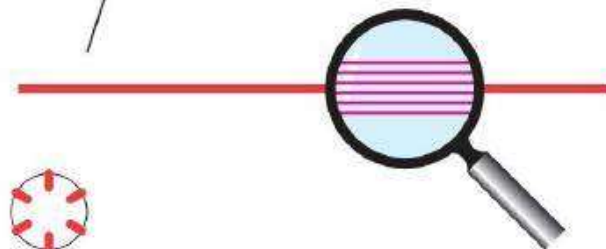


One stable, easy-to-use network for all at all times

Before
Two low frequency lines that run in the vicinity of each other



After
... replaced by one line with doubled frequency.





Lemgo

OTHER FACTORS

QUALITY VEHICLES AND STOPS



QUALITY INTERCHANGE

Time spent in an interchange is perceived twice as long as time on board a vehicle

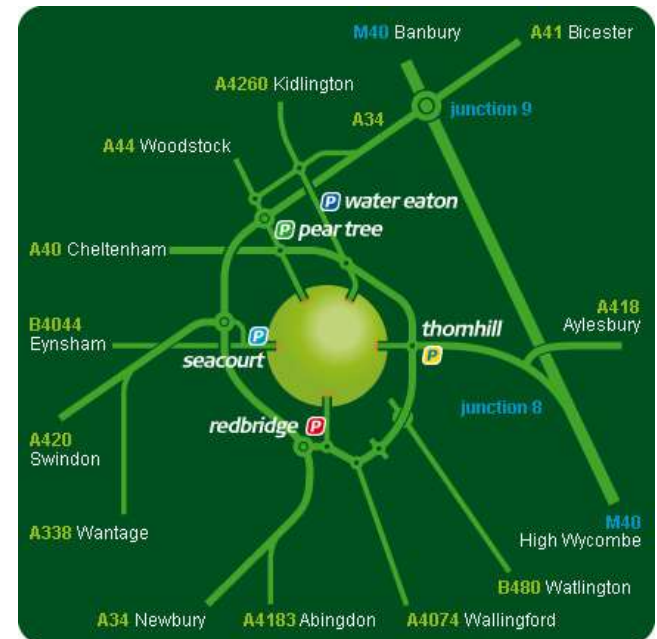


MULTI-MODALITY

- Complement public transport with other more flexible options:

Conventional public transport modes do not offer door-to-door solutions in all situations

- Park & Ride
- Car-sharing
- Shared taxis and DRT
- Bike sharing



Improving service quality and marketing

welcome to **spondon flyer**
the really quick way to Derby

spondon flyer is the really quick and frequent way to travel between Spondon and Derby city centre, with buses running every 10 minutes throughout the daytime, it's perfect for getting you to and from work or out shopping.

You'll like the rather stylish buses with bright exterior design. They're comfortable too with leather seats and a designer interior, and easy to get on and off, thanks to the wide door and level floor at the front of the bus. There are special places for buggies, and wheelchairs you can simply glide on - there's even a dedicated spot close to the door that's safe for you.

It's these features that make travelling on **spondon flyer** a really good experience.

Welcome on board!



our fares

news & info

what's on



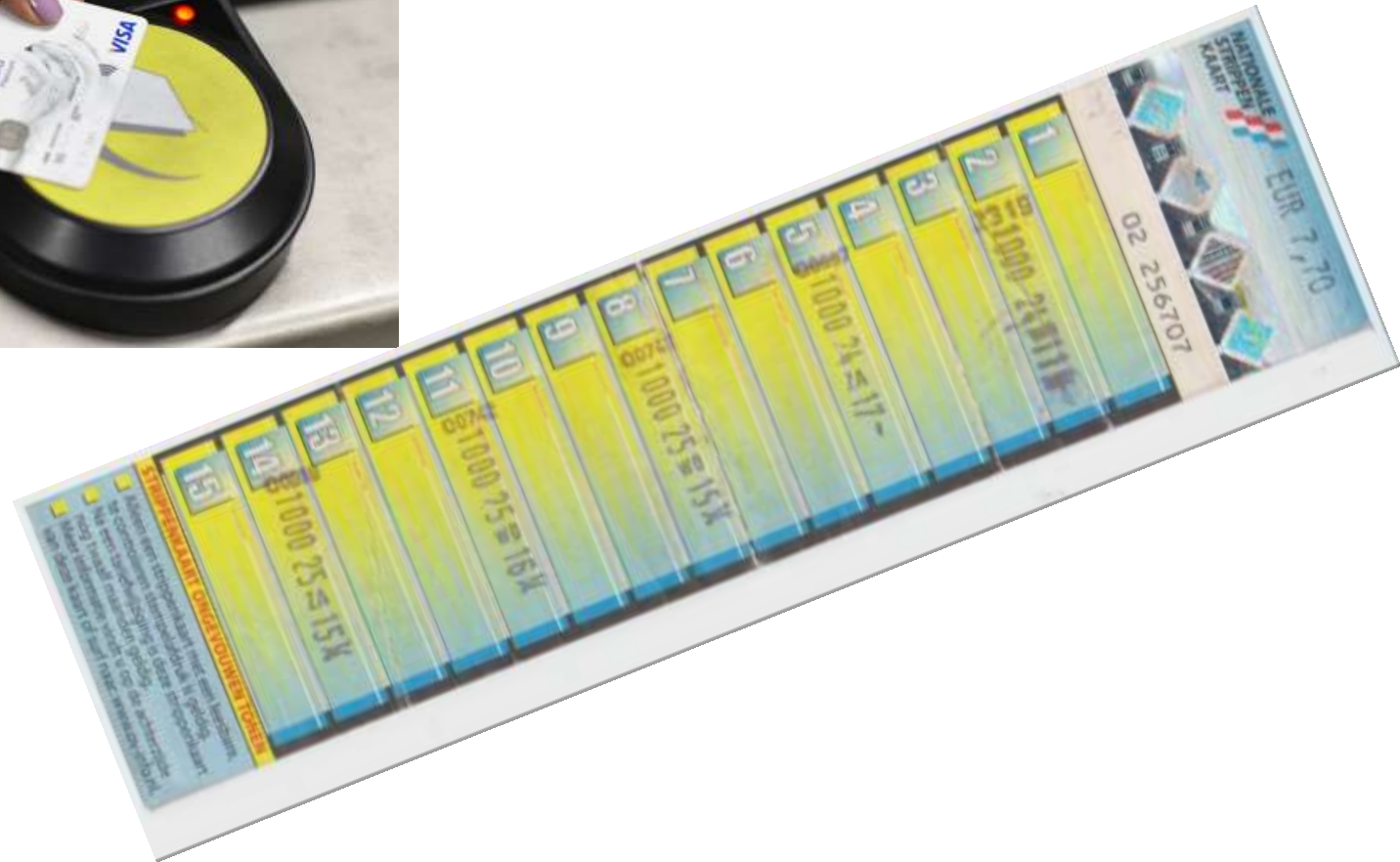
timetables & maps

timetables and route maps for your journey



INTEGRATED TICKETING

(Not necessarily “smart” or high-tech)

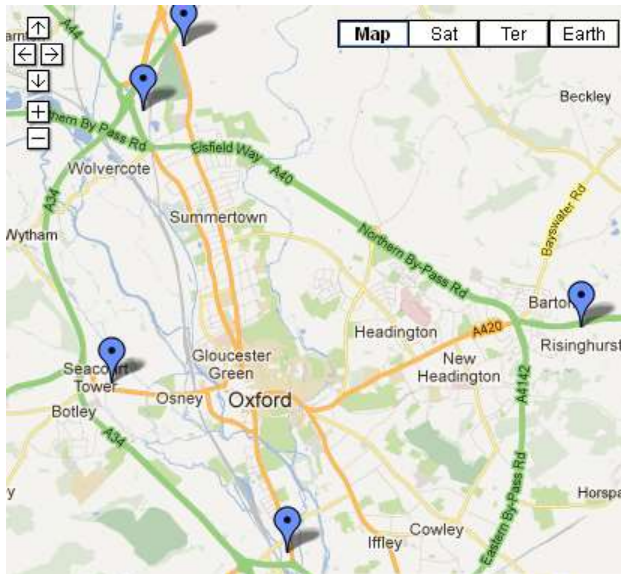
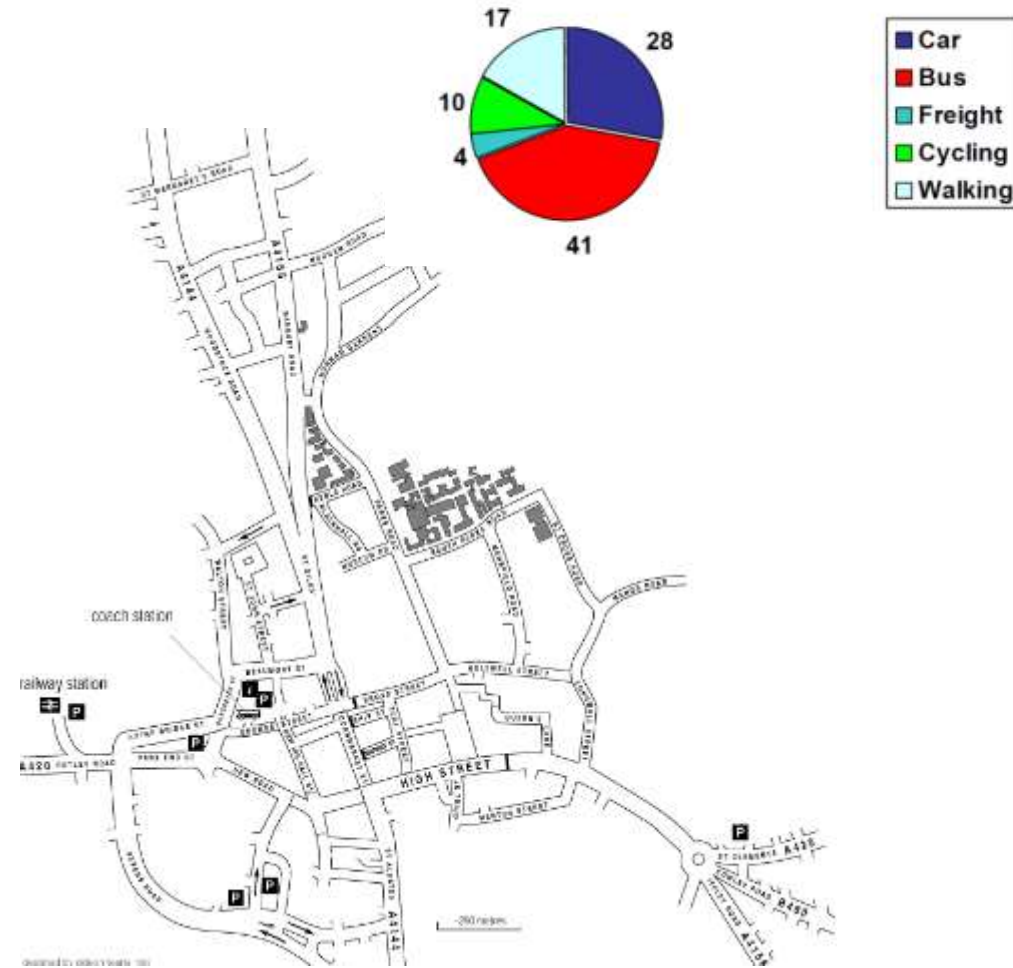


**CHANGING THE
CONTEXT FOR
PUBLIC
TRANSPORT**

Make PT faster by restraining cars

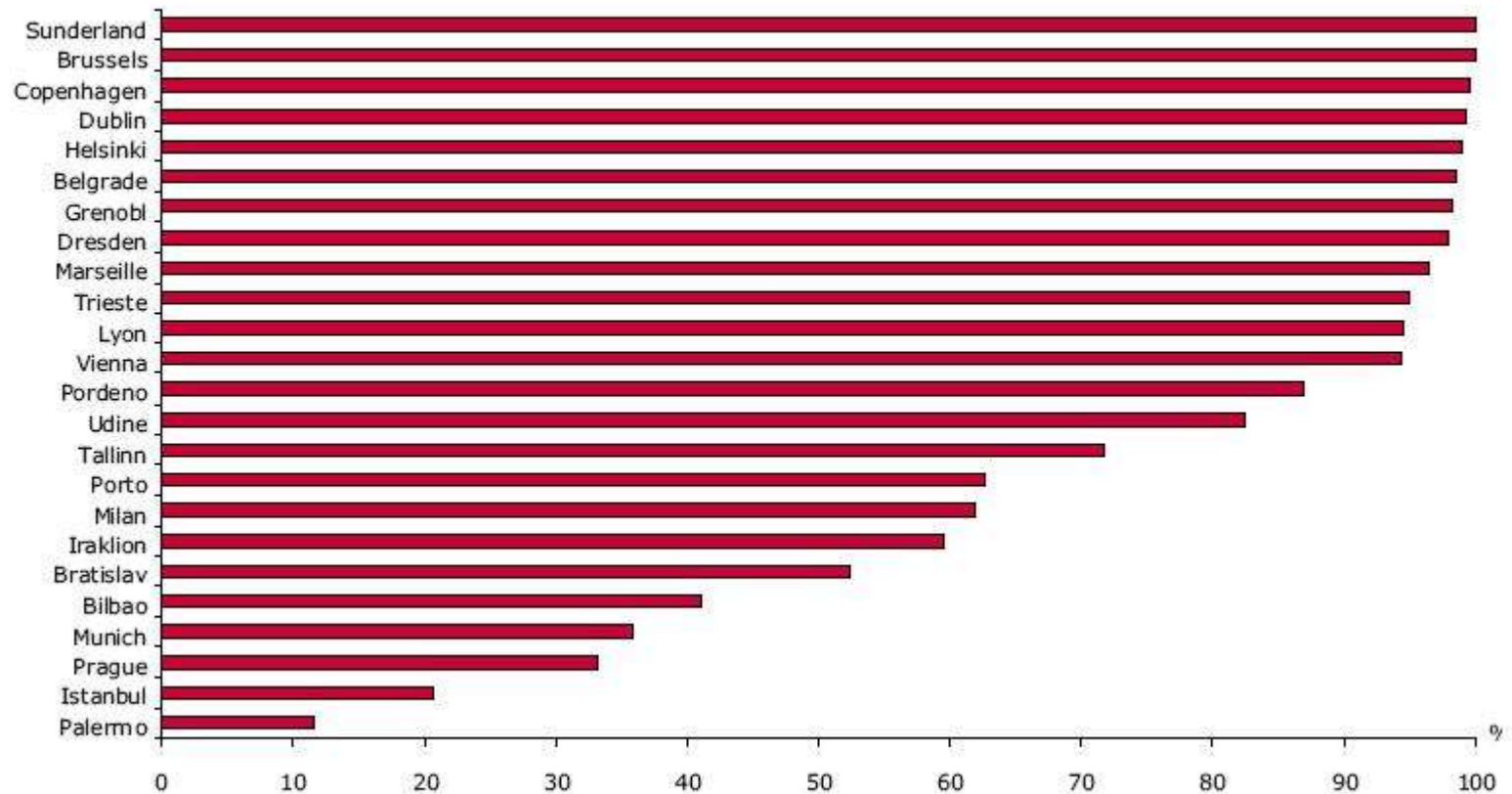
- Gradual reduction in road space *and parking*
- Access by P&R
- Focus new development in areas served by public transport
- Municipality and operator working closely together

Trips to Oxford City Centre
2008 County Council cordon count



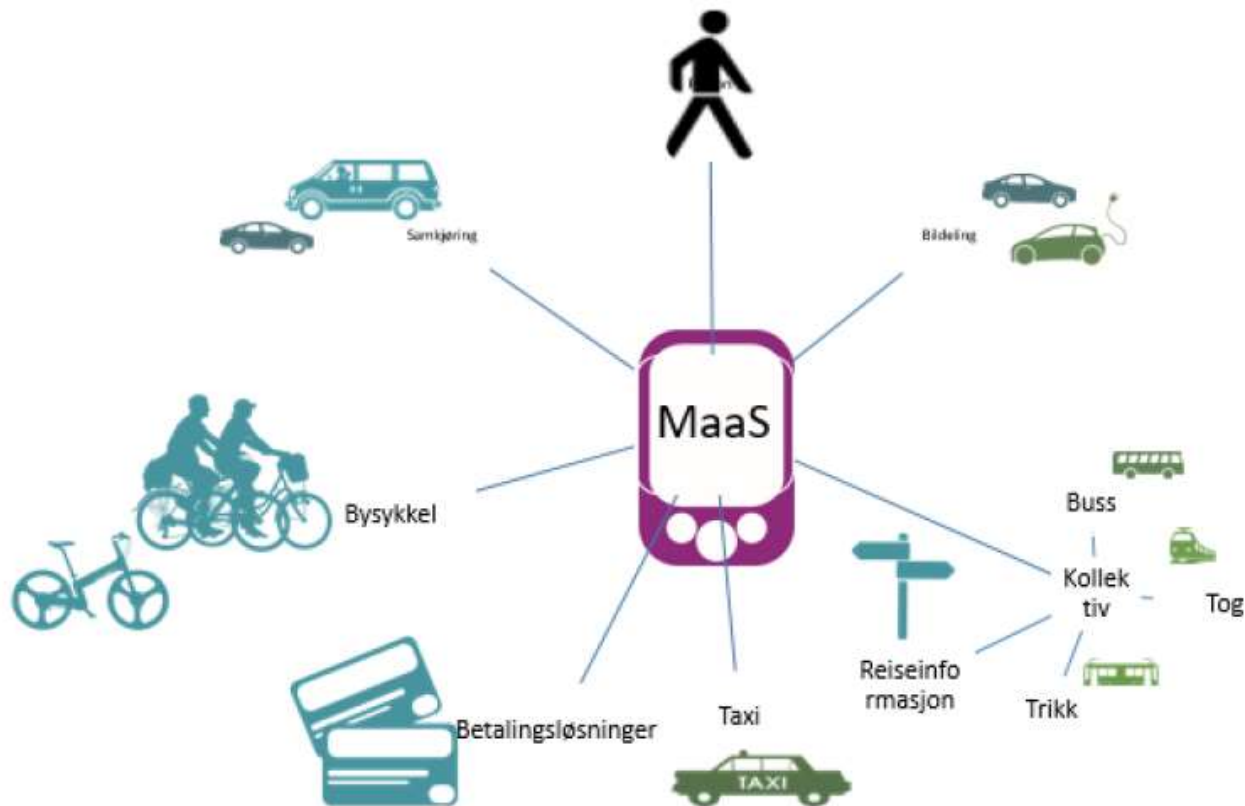
Cut urban sprawl

Figure 2 Low density residential areas as a proportion of all residential areas built after the mid-1950s, selected European cities



Source: MOLAND (JRC) and Kasanko *et al.*, 2006.

MAAS, UBER AND SO ON



Figur 3.1 MaaS som koordinerende enhet, og aktør mellom den reisende og transportmidlene.

Uber and MaaS impacts

- Academic studies on impact of Uber on PT – very inconclusive, context dependent
- Uber market share small **overall** – but important in some places/at certain times

- MaaS – integrated package of mobility services
- Probably needs to be public sector led
- Almost no evaluation to date

Table 2. Reported changes in choice of transport mode, ex-post (n=160)

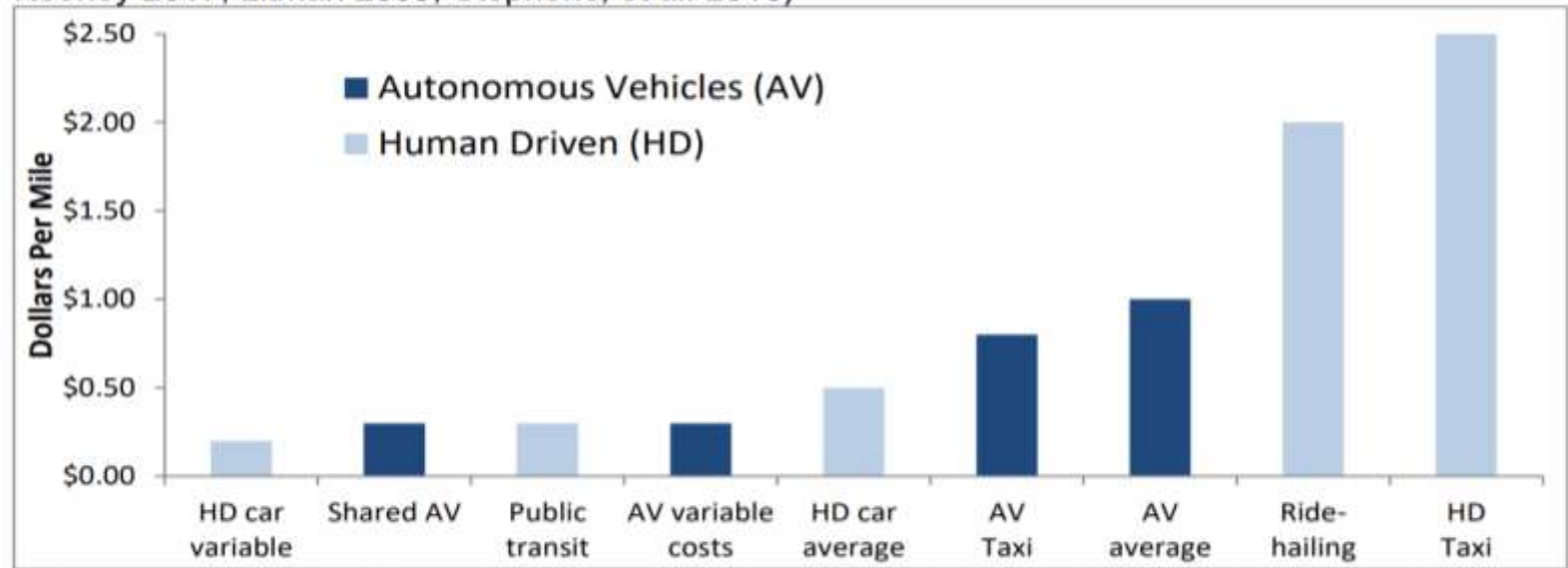
	More seldom	As before	More often
Private car	48%	48%	4%
Bicycle sharing	16%	61%	23%
Bus/tram	4%	46%	50%
Local train	7%	75%	18%
Car sharing	6%	37%	57%
Taxi	12%	68%	20%
Walk	6%	73%	21%

Table above – small scale trial, Gothenburg, 2014

Source: Karlsson et al (2016)

Costs to use new modes

Exhibit 5 Cost Comparison (AAA 2017; Bösch, et al. 2017; Johnson and Walker 2017; Keeney 2017; Litman 2009; Stephens, et al. 2016)



Autonomous vehicles (AVs) are likely to cost more than human-driven private vehicles (HVs) and public transit, but less than human-driven taxis and ridehailing services.

- Source: Litman (2020) – excellent report, on CANVAS

COVID19 impacts

- Very difficult for PT demand and operations
- Needs in short term:
 - More subsidy
 - Faster journeys (priority, cut time at stops)
 - Build trust (masks, cleaning)
- Don't want to predict further

Thank you! Hvala lepa!

Questions?