Less car dependent cities
Planning for low carbon in Oslo

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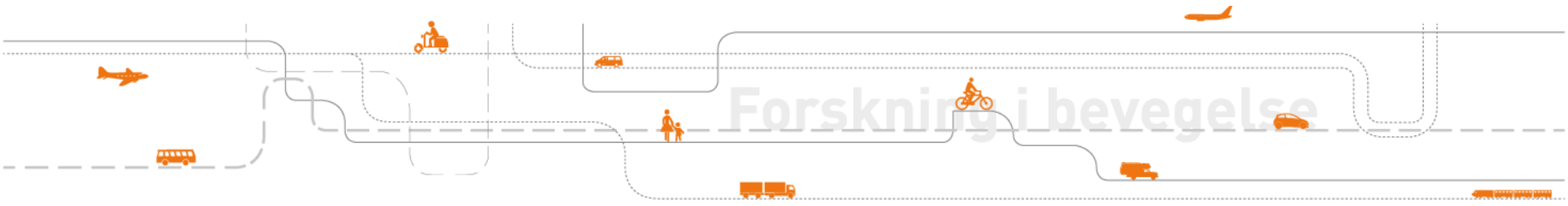
www.toi.no https://www.toi.no/sustainable-urban-development-and-mobility/category825.html



Interesting times…

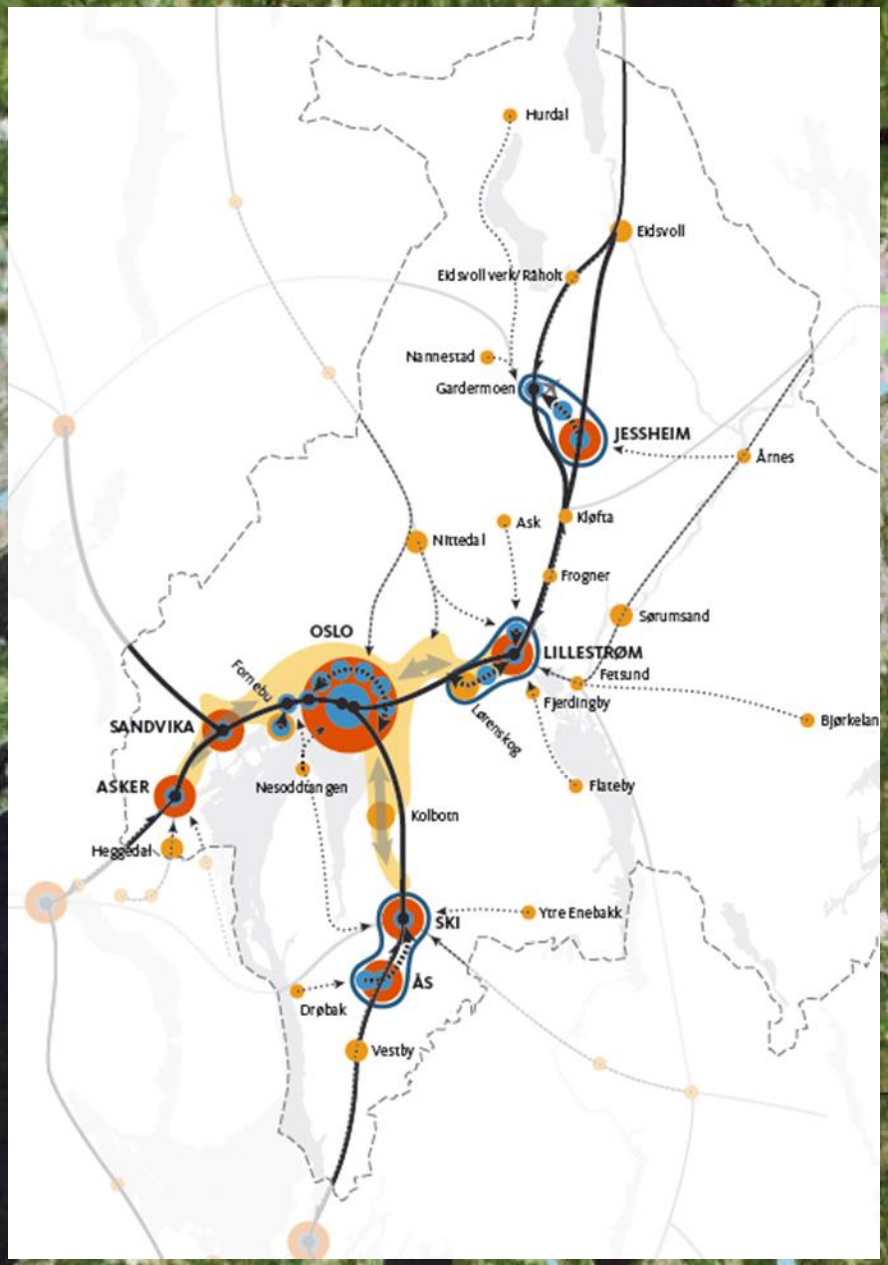
- Paradigm shifts – on a critical turning point

‘Automobile city’
Mobility

‘Sustainable city’
Accessibility

Interesting times…

- Paradigm shifts – on a critical turning point
- Norway: The zero-growth objective
- Planning for less car-dependent and transport demanding cities seems like the obvious solution:
  - Land use development as densification and transformation rather than sprawl, ‘right’ location
  - Improving public transport services, and conditions for walking and bicycling
  - Fiscal and physical restrictions on car-usage


Hurdal
Eidsvoll
Eidsvoll verk/Råholt
Nannestad
Gardermoen
JESSHEIM
Årnes
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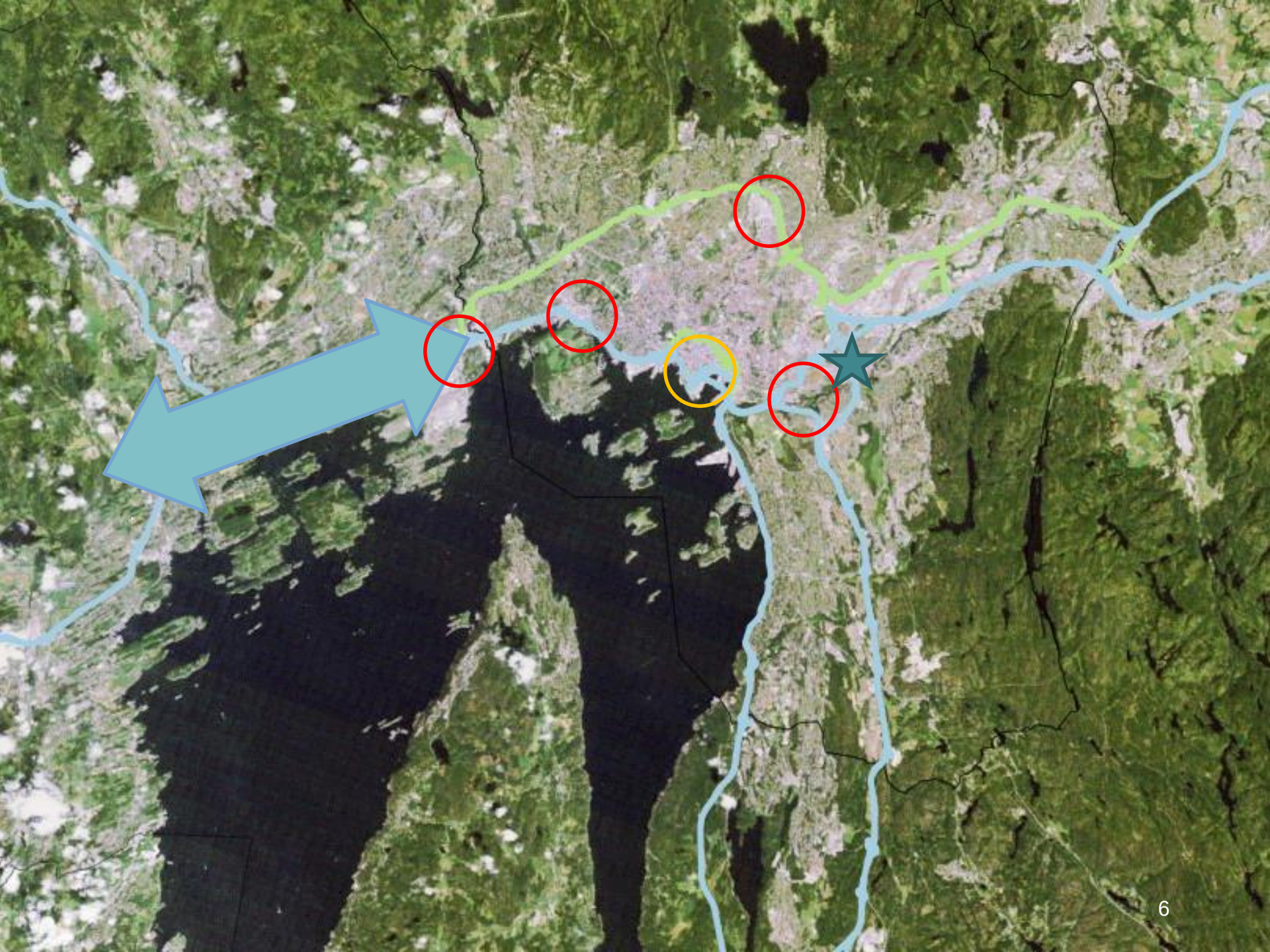
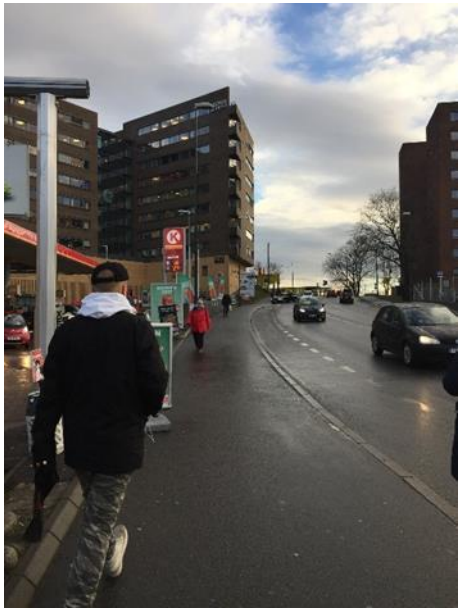
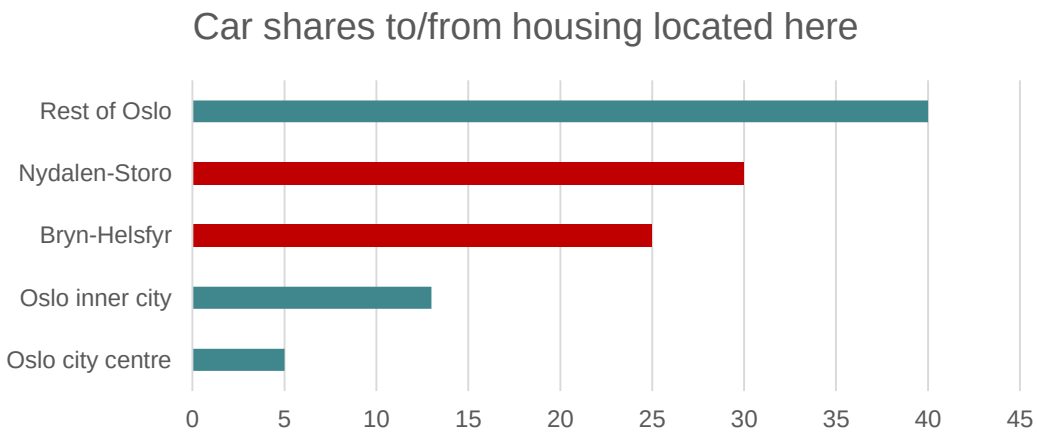
Frogner
Sørumsand
OSLO
LILLESTRØM
Fetsund
Fjerdingby
Bjørkelan
Lørenskog
Fornebu
SANDVIKA
ASKER
Nesoddtangen
Kolbotn
Flateby
Heggedal
SKI
Ytre Enebakk
ÅS
Drøbak
Vestby



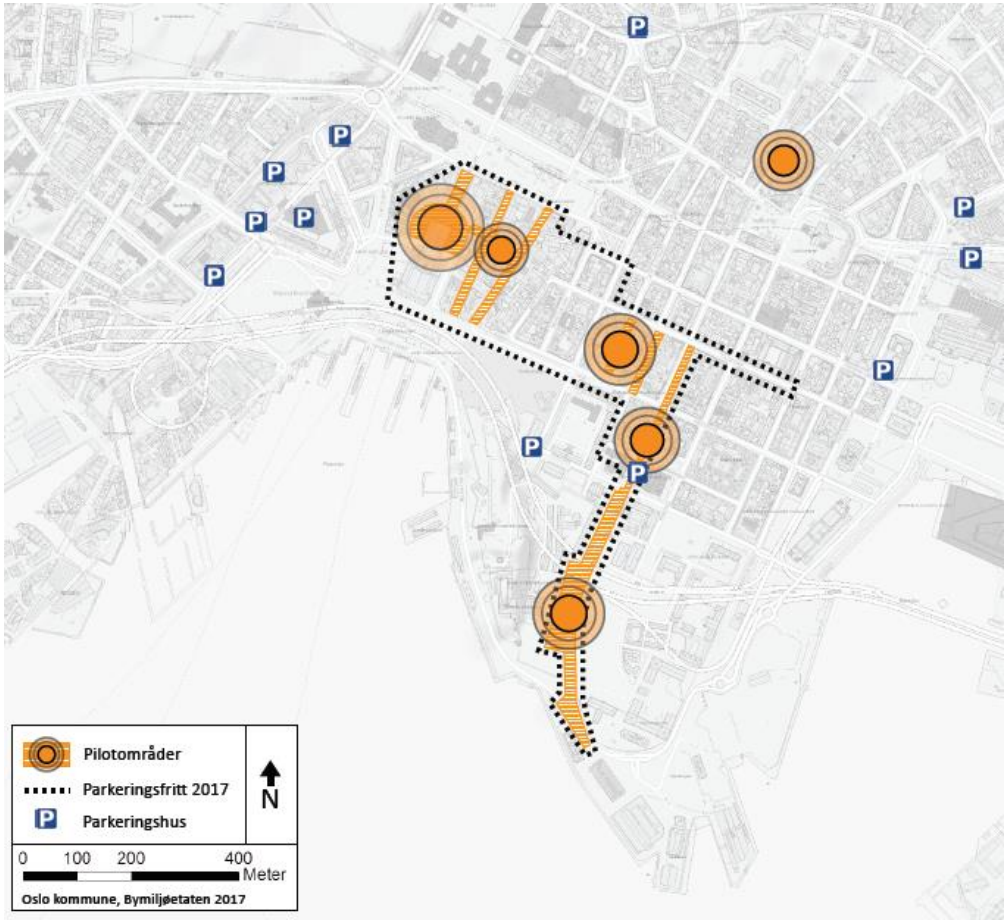
Densification in nodal points



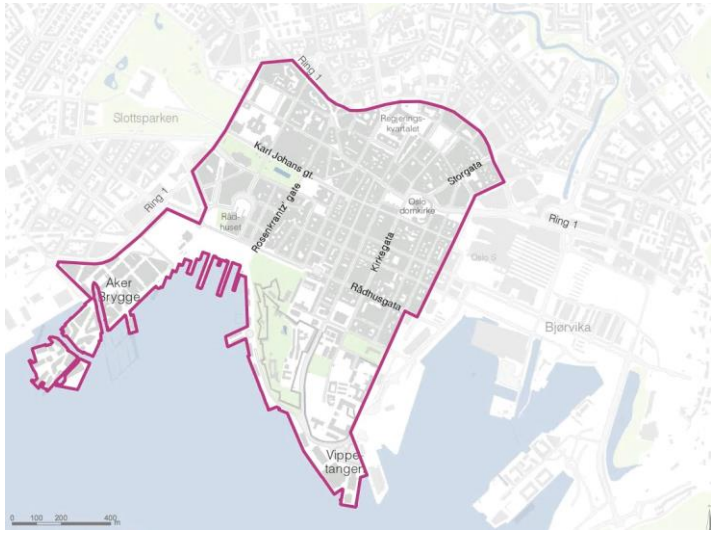
Effects of location in nodal points



Car free city centre Oslo



Car free city centre



- ‘Car free city centre’ in Oslo:
  - Remove on street parking
  - Strong restrictions on through-fare
  - Designated spaces for goods deliveries and utility cars
  - Various measures for improving ‘urban life’
- To achieve:
  - More enjoyable and lively city centre
  - Improved accessibility by other modes than car
  - Reduced car-usage to, from an in city centre – and elsewhere
  - Improve conditions for deliveries
  - Reduce local pollution and CO2 emissions
- Car shares to/from city centre are currently 7- 10 %

High expectations!

- Our research – ex ante data (May 2017)
- Commuters in Oslo (N=5400):
  - 43 percent believe more people will use the city centre, it will become more vibrant, 17 percent believe the opposite
  - 22 percent believe they will visit the city centre more often, 12 percent *less* often
- Truck drivers
  - 45 of 65 truck drivers are dissatisfied with the current goods delivery situation in the city centre
  - 35 of 64 truck drivers believe it will become better, 11 believe worse

Urban road capacity

- Plans for massively increasing urban motorway capacity

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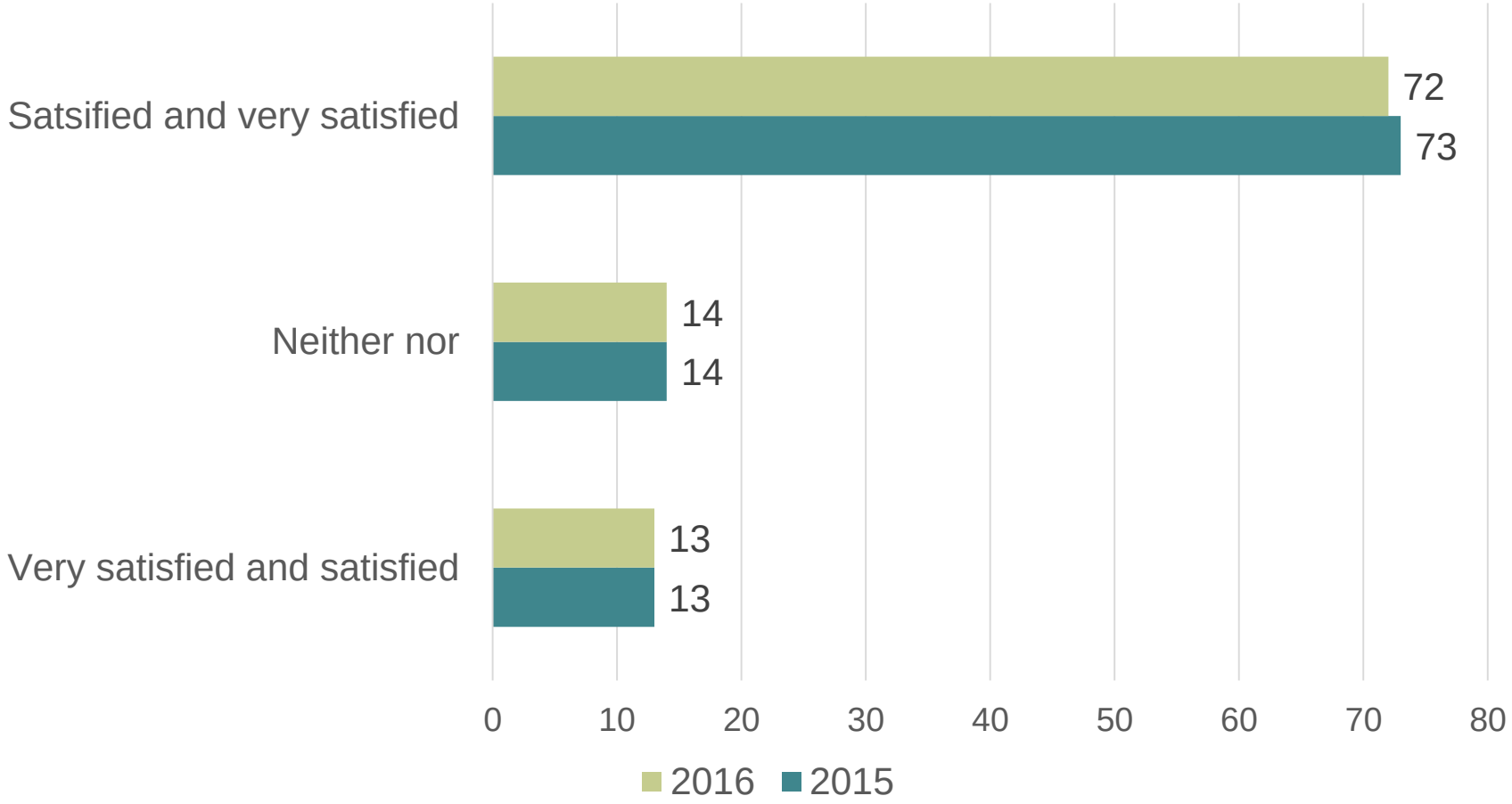
Experiences – capacity reduction

- Reduced capacity in 10 tunnels on urban main roads due to maintenance
- Bryns tunnel: AADT 70 000, capacity reduced from four to two lanes for six months

Capacity reduction: Effects on commute satisfaction



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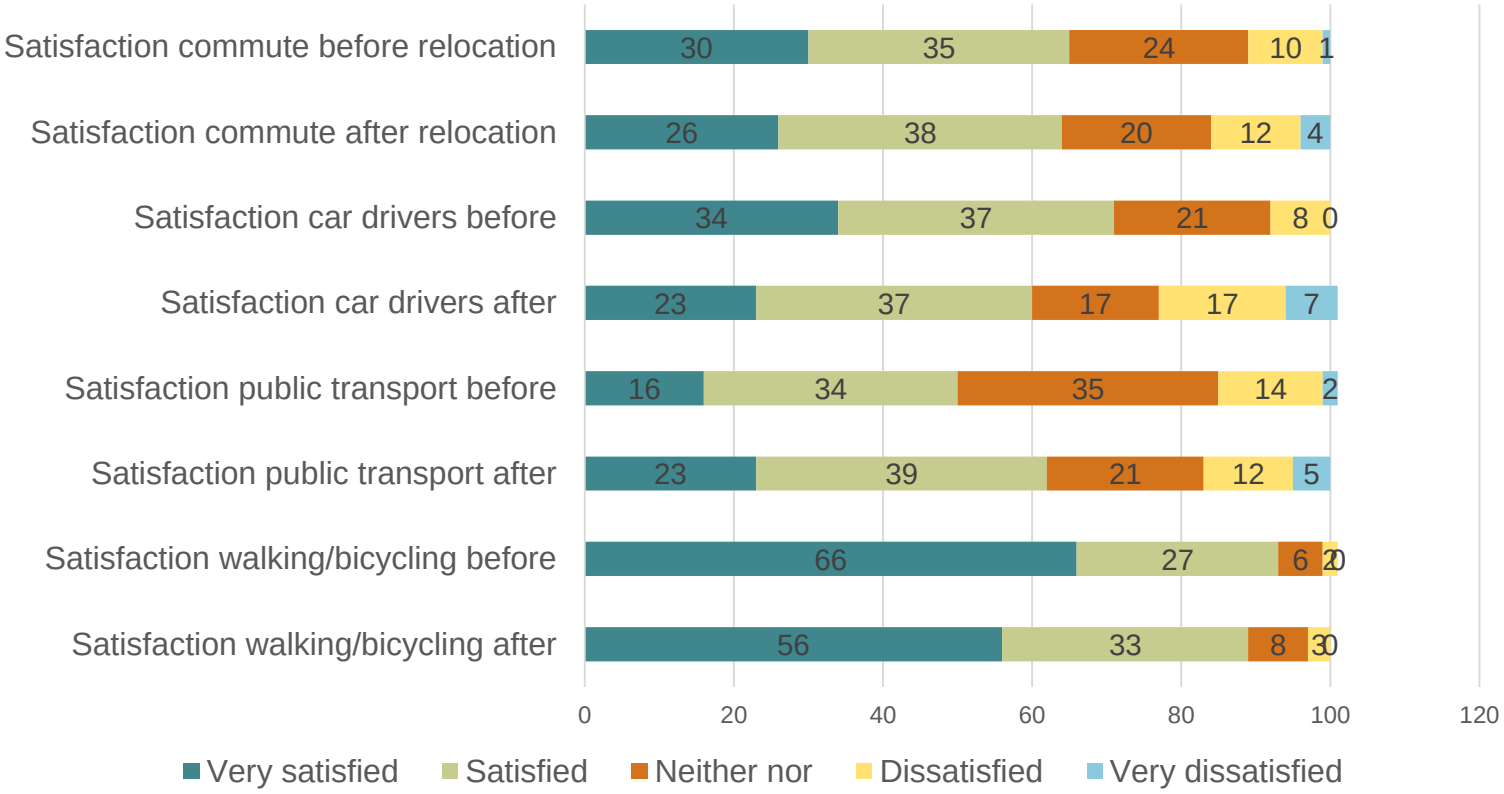
Transport quality

Insurance company relocated from nodal point to city centre
- modal shares of car reduced from 48 to 9 per cent



Christiansen and Julsrud (2014)

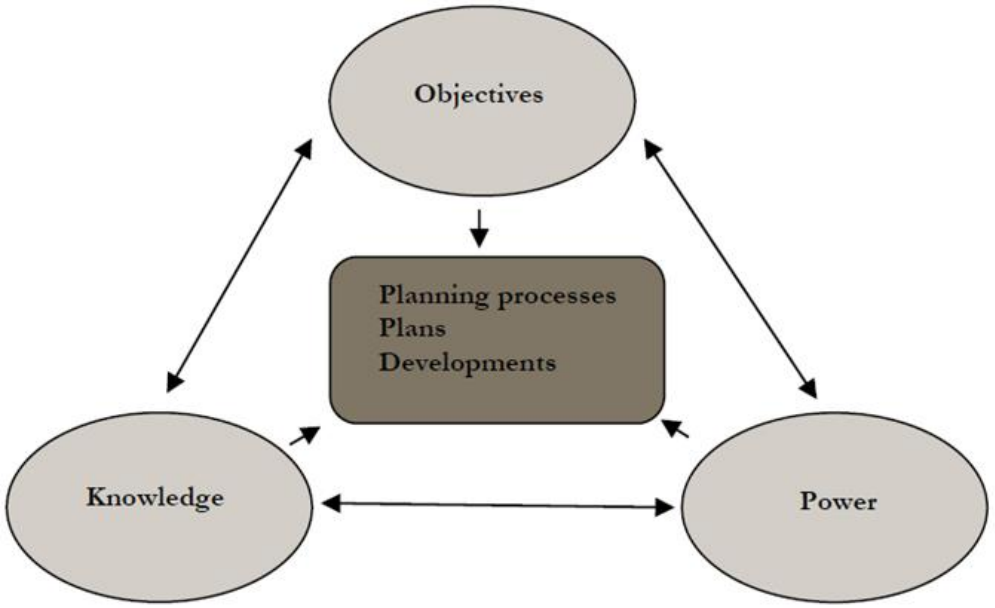
Urban road capacity

- 2018: Reallocating one of three car lanes to a public transport lane (trial)

Planning for less car-dependent cities

- How and why do we still plan and develop car-dependent cities?
- What needs to *change* if we instead are to plan and develop less car-dependent cities?

- Planners (and others)
- Expert knowledge
  - *Including methods*
- Plan-making processes

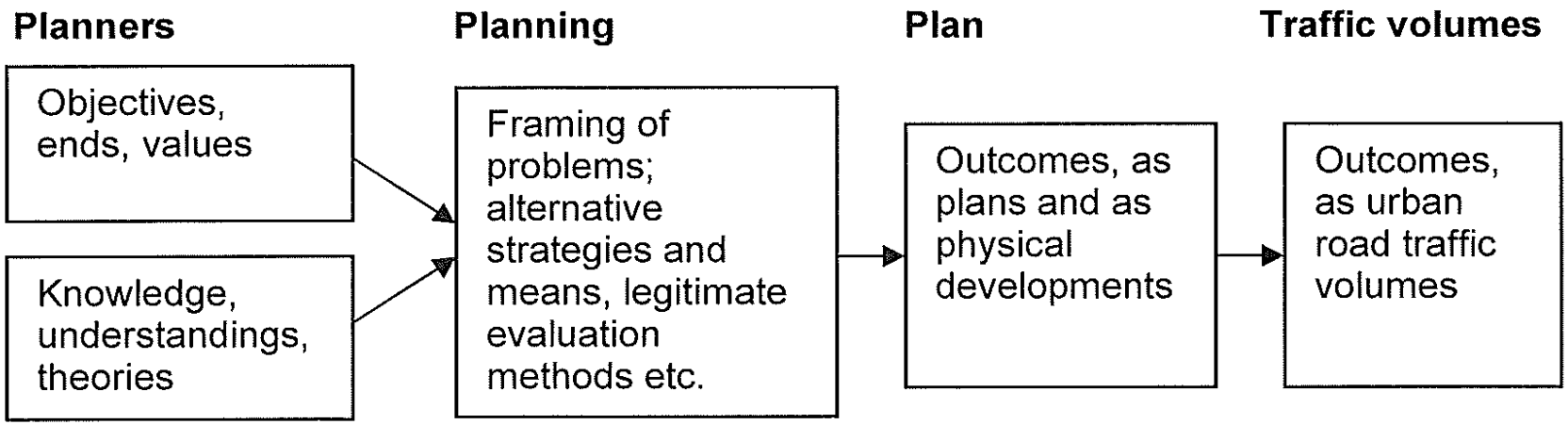


In cases resulting in plans for increased road capacity:

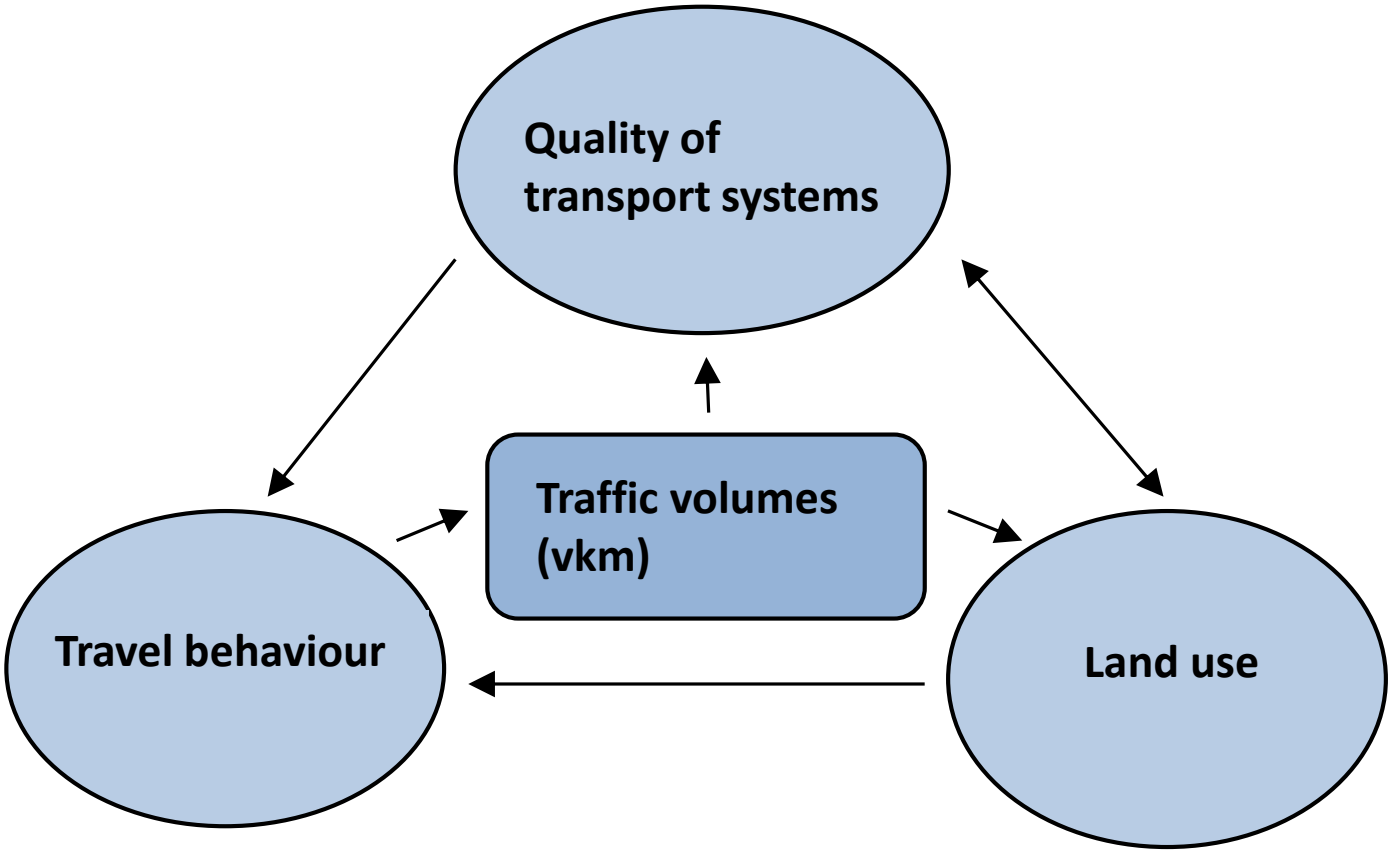
- Other objectives were seen as competing to ‘reducing traffic volumes’, and prioritised
- Realistic ‘traffic reducing alternatives’ were never introduced or assessed – growth understood as inevitable
- Methods applied (transport models) could not handle traffic reducing measures
- In assessments, ‘time savings’ strongly affected the cost-benefit results
- Expanding road capacity was the *only possible* answer

IF planning for less car-dependent cities:

- We need to do things differently than before
- We need to reframe the problem - and potential solutions



Tennøy (2010)


Quality of transport systems
Traffic volumes (vkm)
Travel behaviour
Land use

Tennøy (2015)

IF planning for less car-dependent cities:

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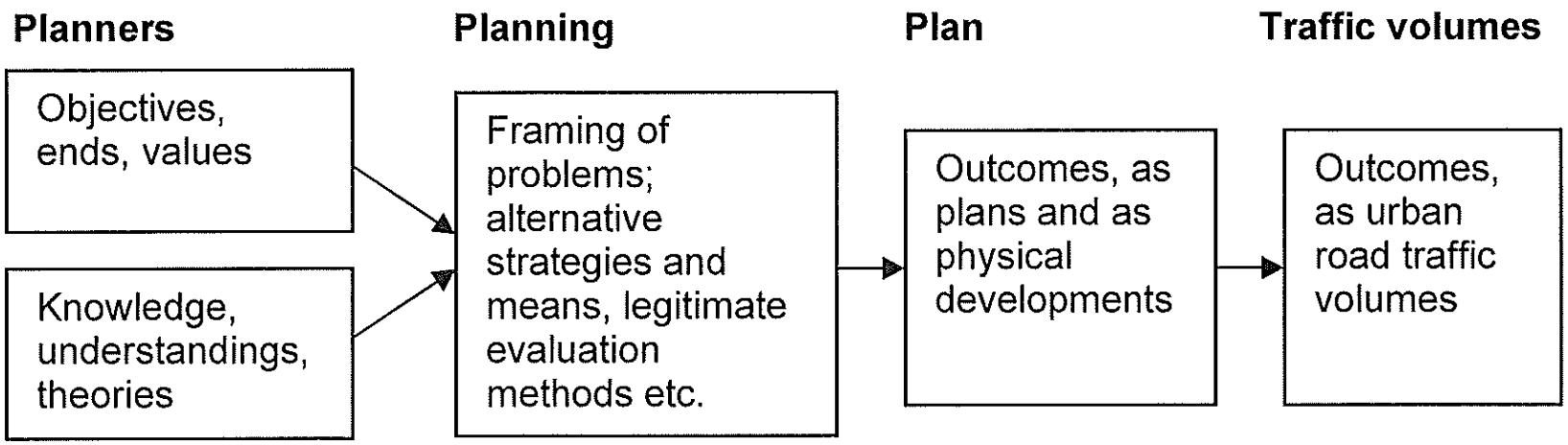

Tennøy (2010)

- We need to change how we think and act

Thank you!

References

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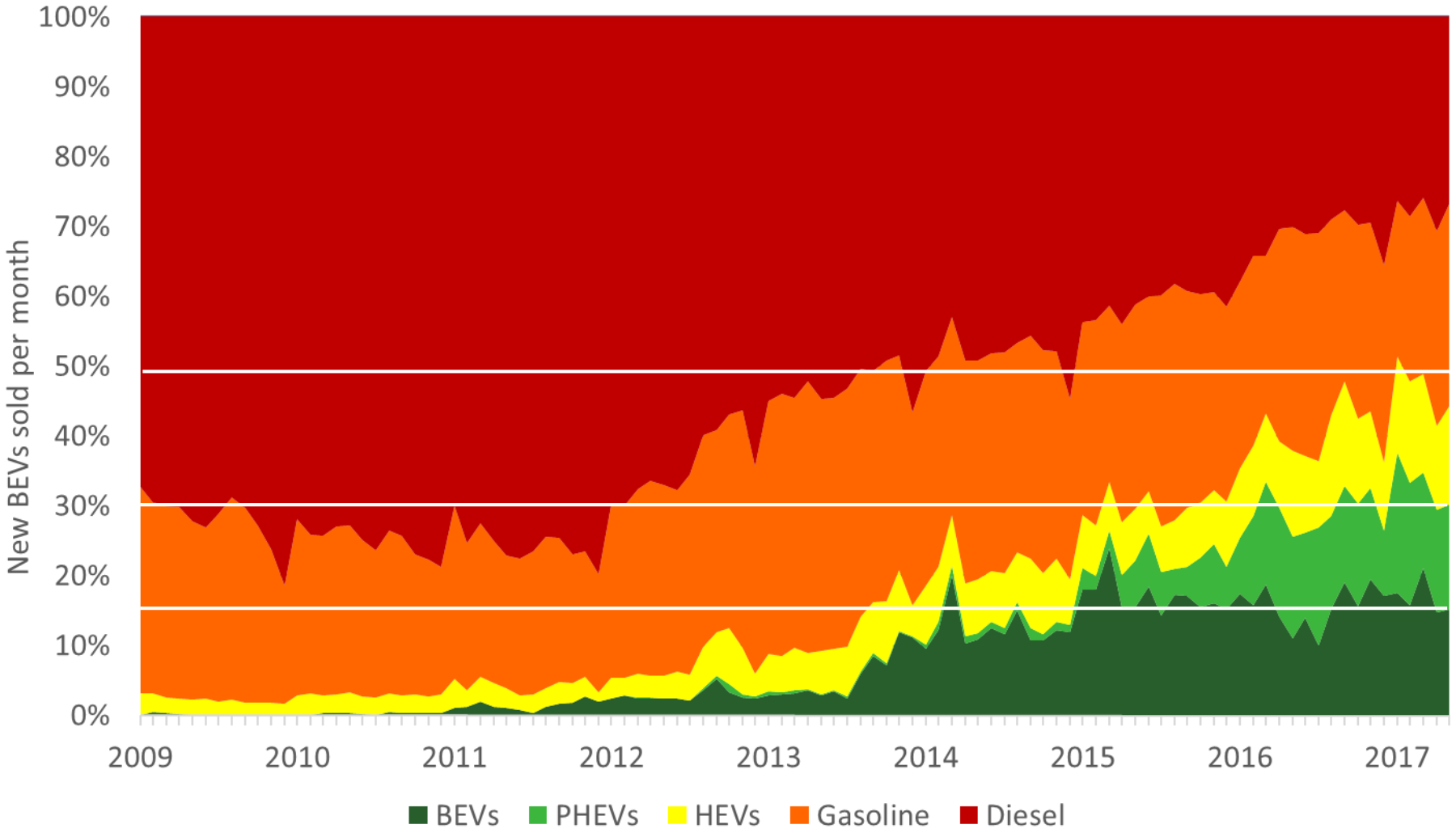
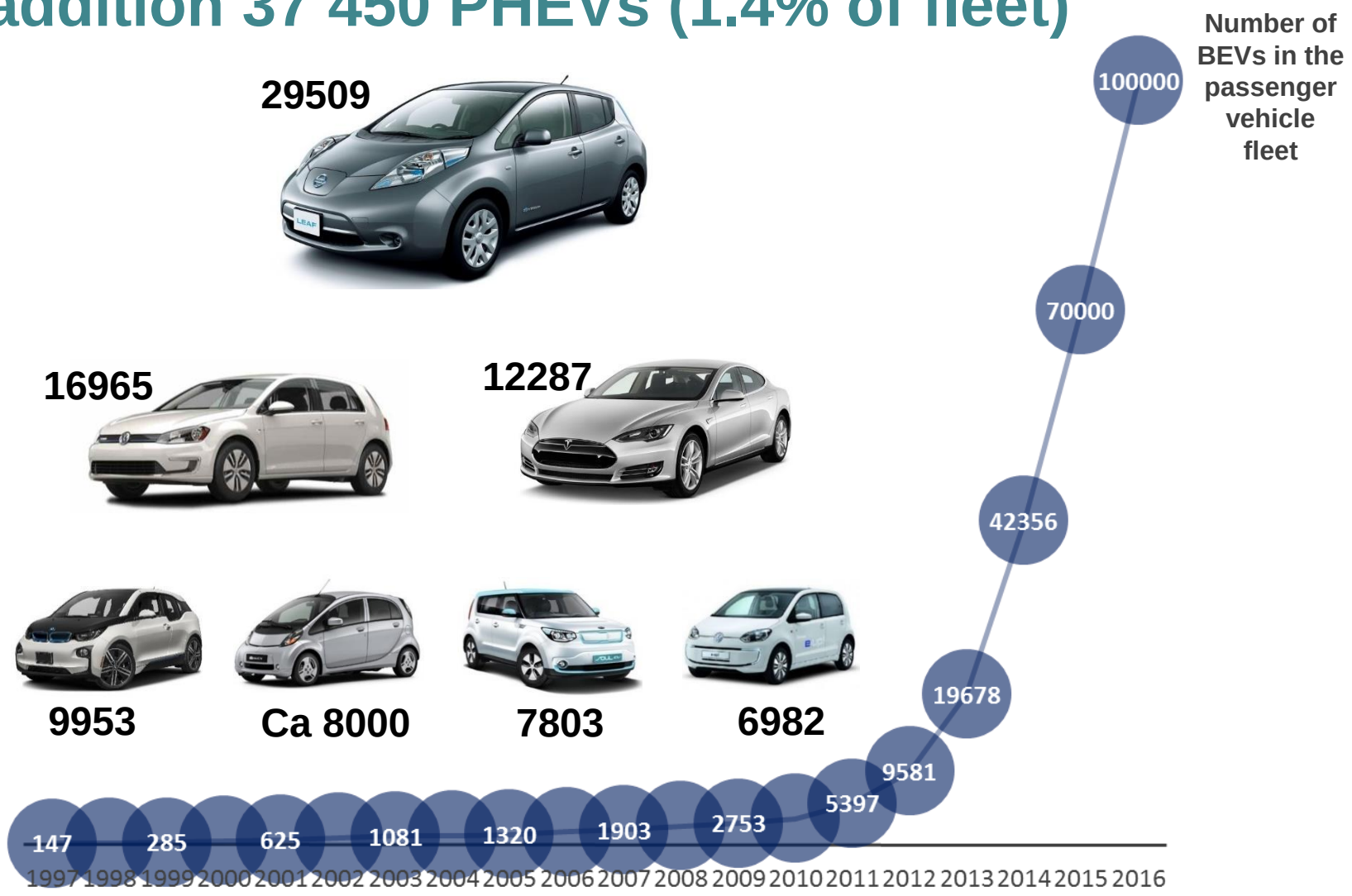
Incentives electric vehicles

- Exemption, registration tax 1996
- Free toll roads 1997
- Free parking 1998
- Exemption, value added tax 2001
- Access to bus lanes 2003
- Reduced annual tax 2005
- Reduced company car tax
- Reduced rate ferries 2009

Market shares sales new cars



105 800 BEVs (March-2017), 4% of total fleet, on Norwegian roads (passenger vehicles, M1) In addition 37 450 PHEVs (1.4% of fleet)



*Source: Norwegian PEV survey. 3111 BEV owners, 2065 PHEV owners, 3080 ICEV owners. March 2016,TOI report 1492/2016. 2014 survey: TOI report 1329/2014

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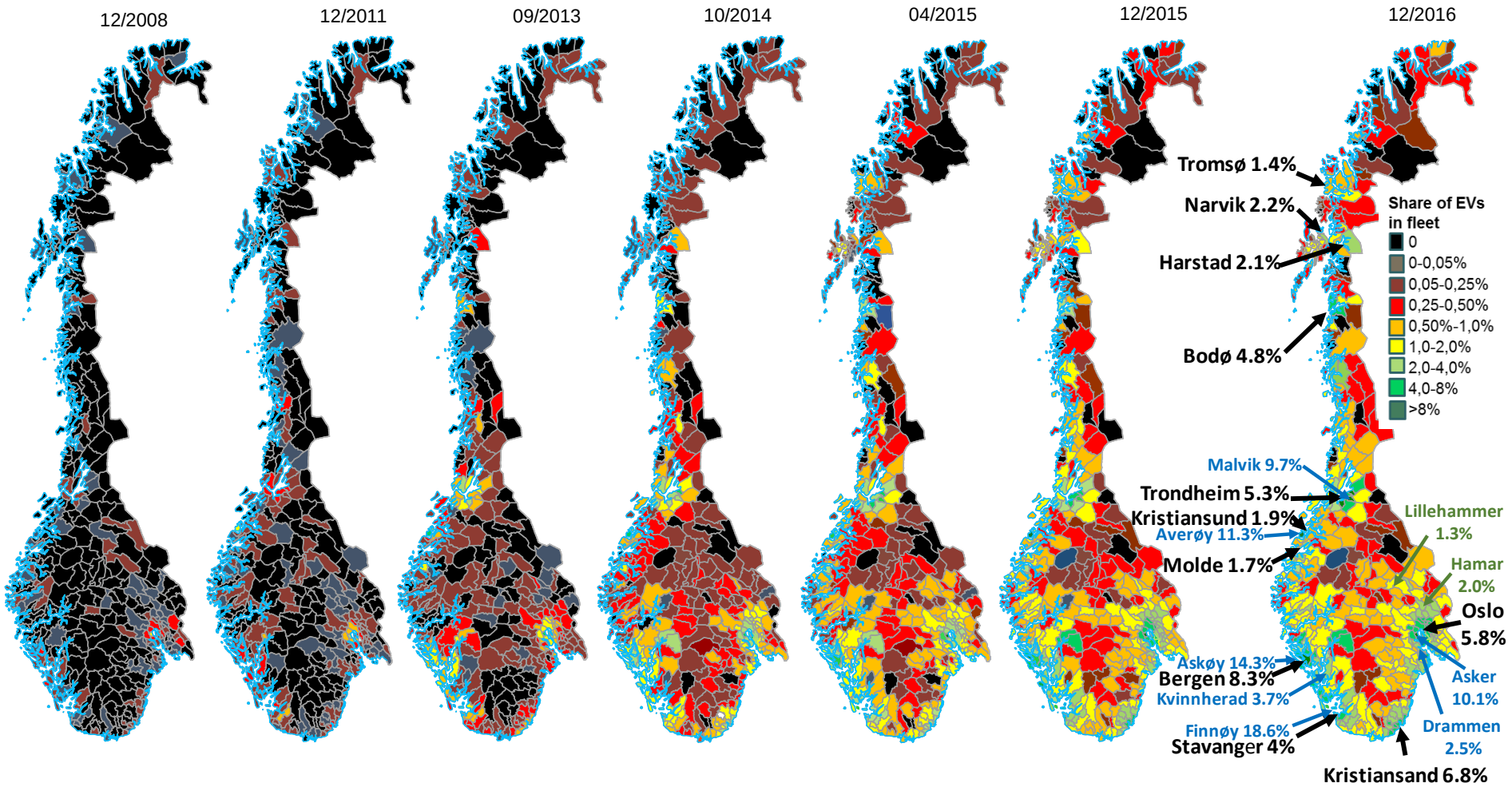
BEV adoption areas: Started in cities and surrounding areas, and where free toll roads an advantage, now everywhere



Experiences – capacity reduction

- Reduced capacity in 10 tunnels on urban main roads due to maintenance
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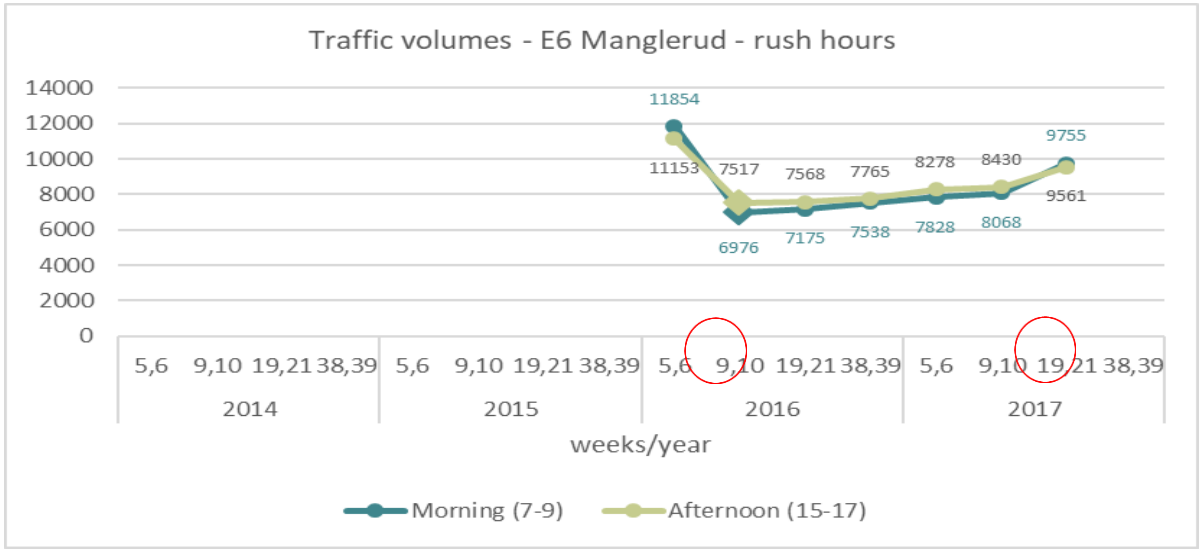
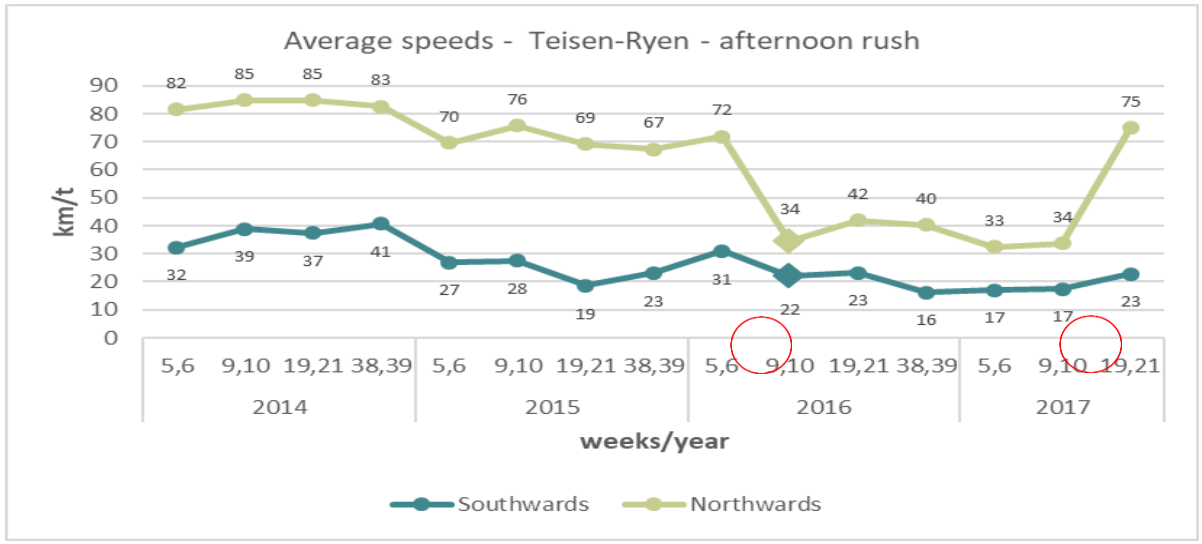
Findings – traffic and speed





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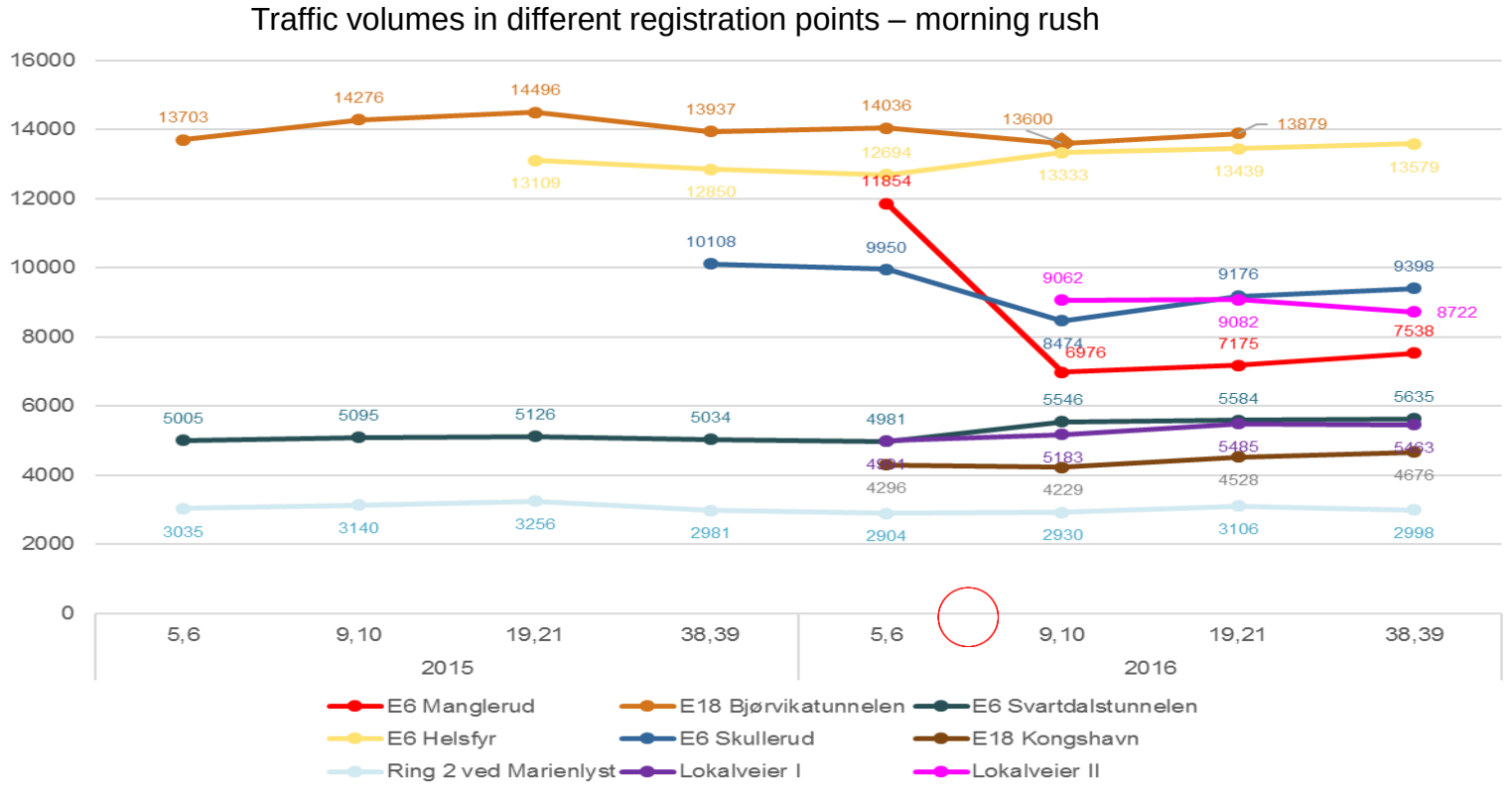
Rerouting as adaptation?



Lost about 3000 vehicles in morning rush and about 6000 in afternoon rush

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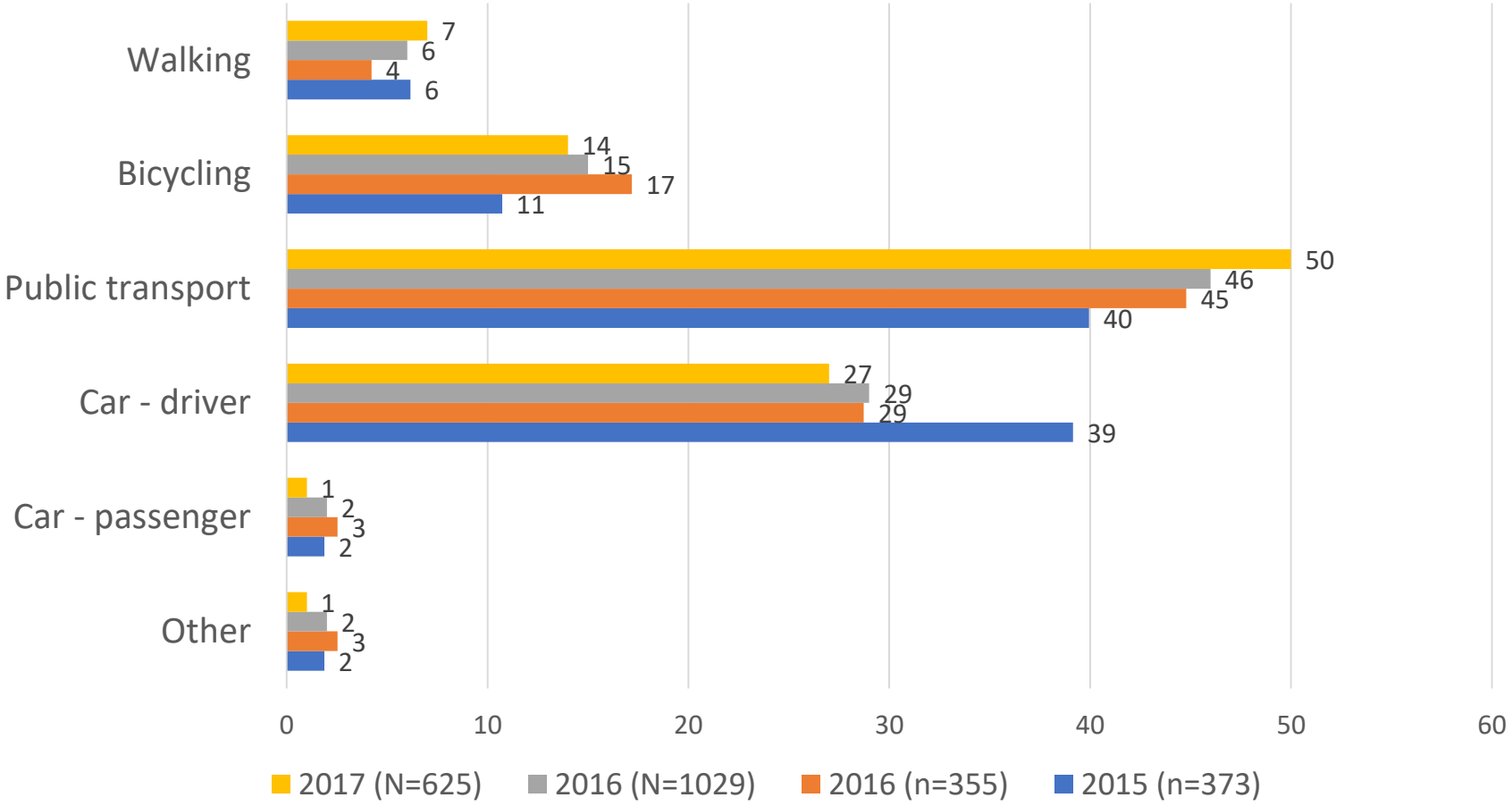
Modal change?



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