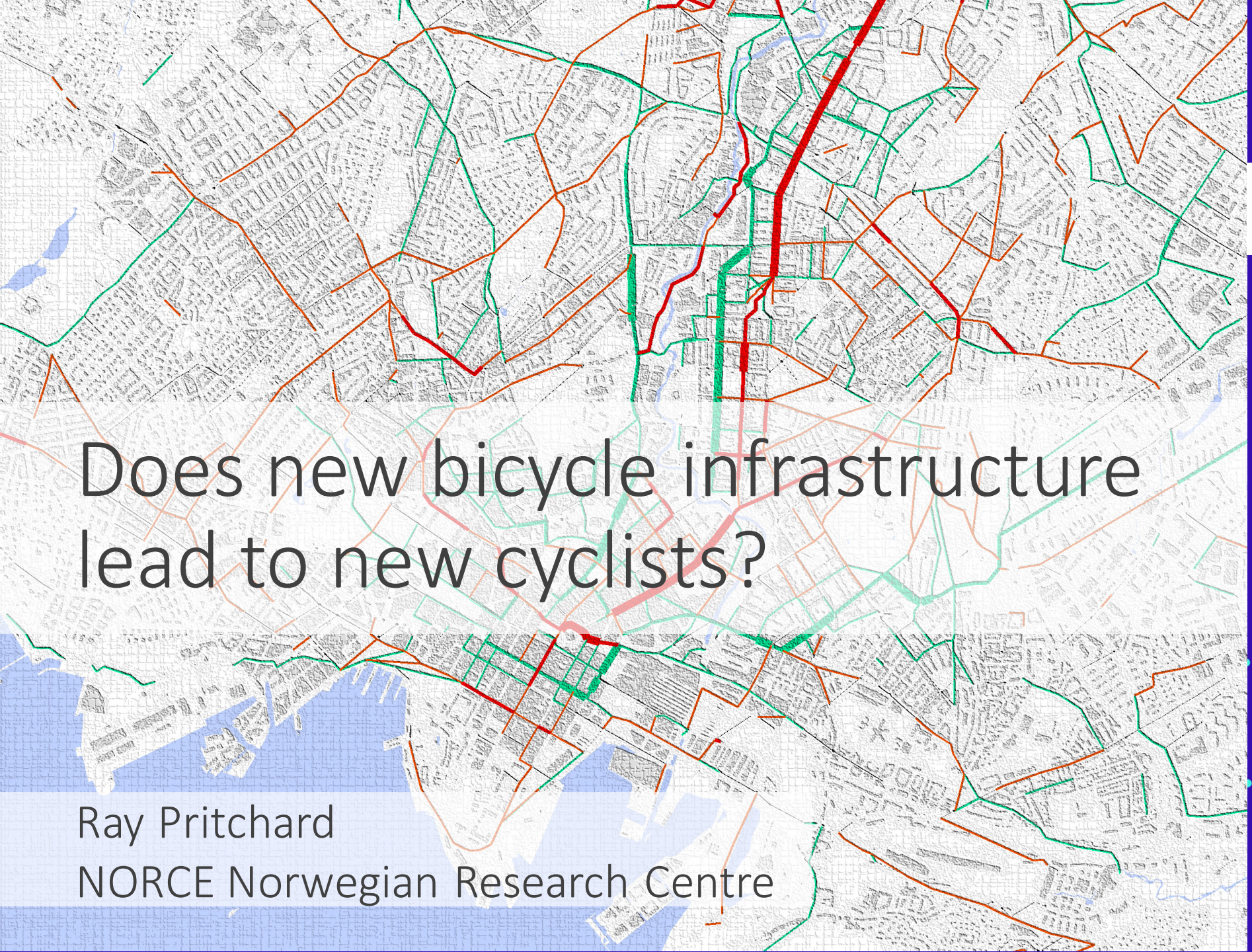


Does new bicycle infrastructure lead to new cyclists?

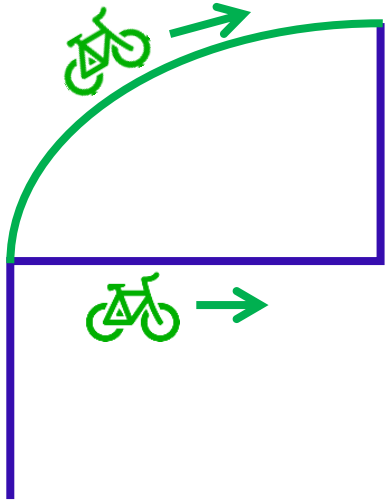
Ray Pritchard
NORCE Norwegian Research Centre

NORCE

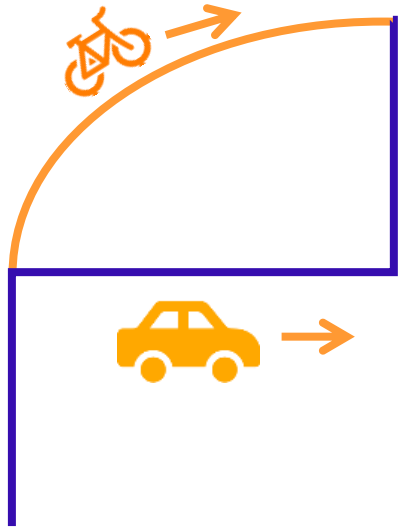
NTNU – Trondheim
Norwegian University of
Science and Technology

Main research question

What is the effect of bicycle network changes in terms of route and mode change?

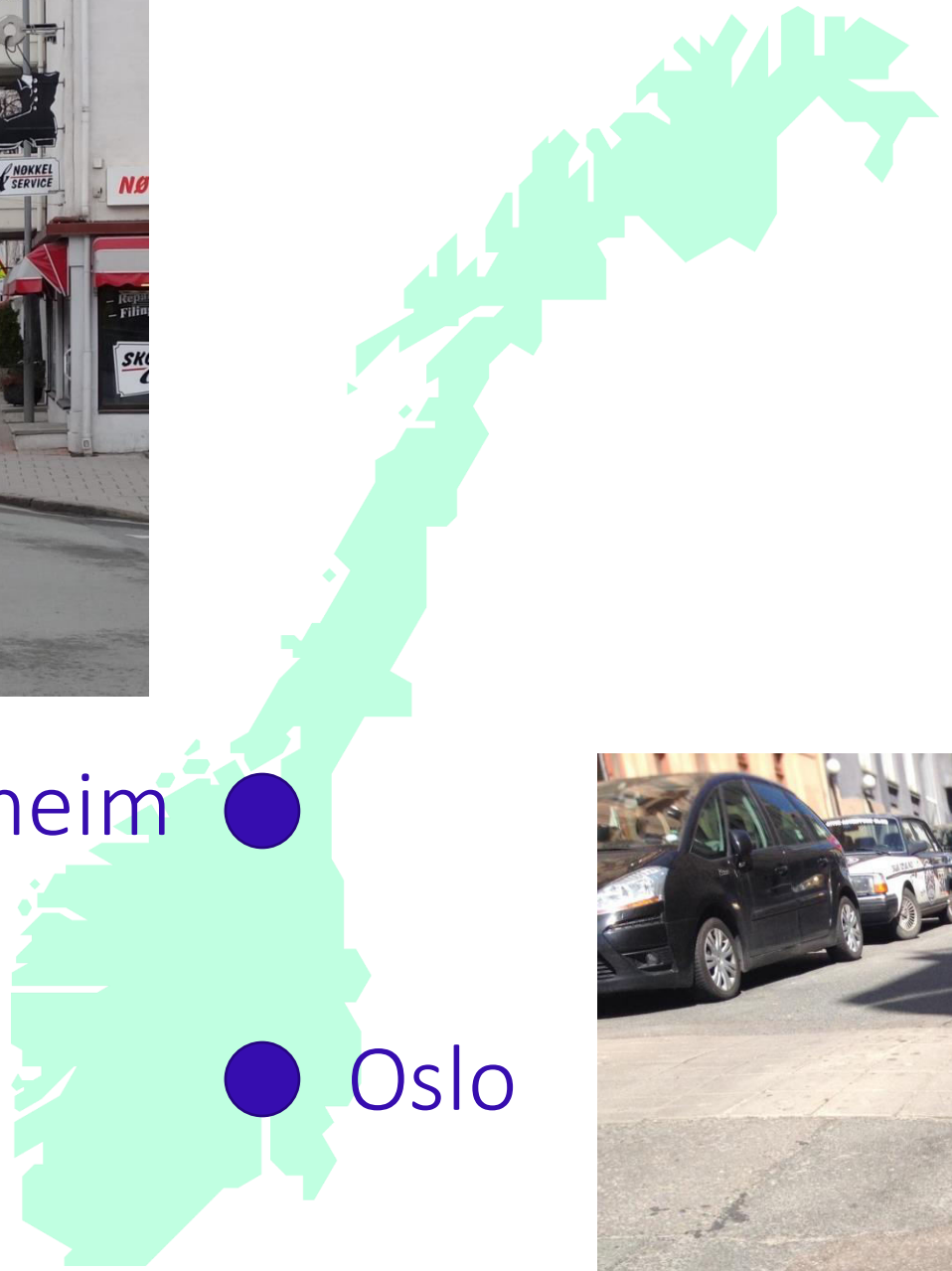


Route shift



Mode shift


SKO NØKKEL SERVICE


Trondheim
Oslo

PAPER 1 - TRONDHEIM

BEFORE

- 2 bus lanes and 2 car lanes

AFTER

- 2 lanes converted to separated bi-directional bike path

- Total length: 1.8km
- Midpoint of road closed to through-traffic

Knut Opeide, 2017

PAPER 2 - OSLO

BEFORE

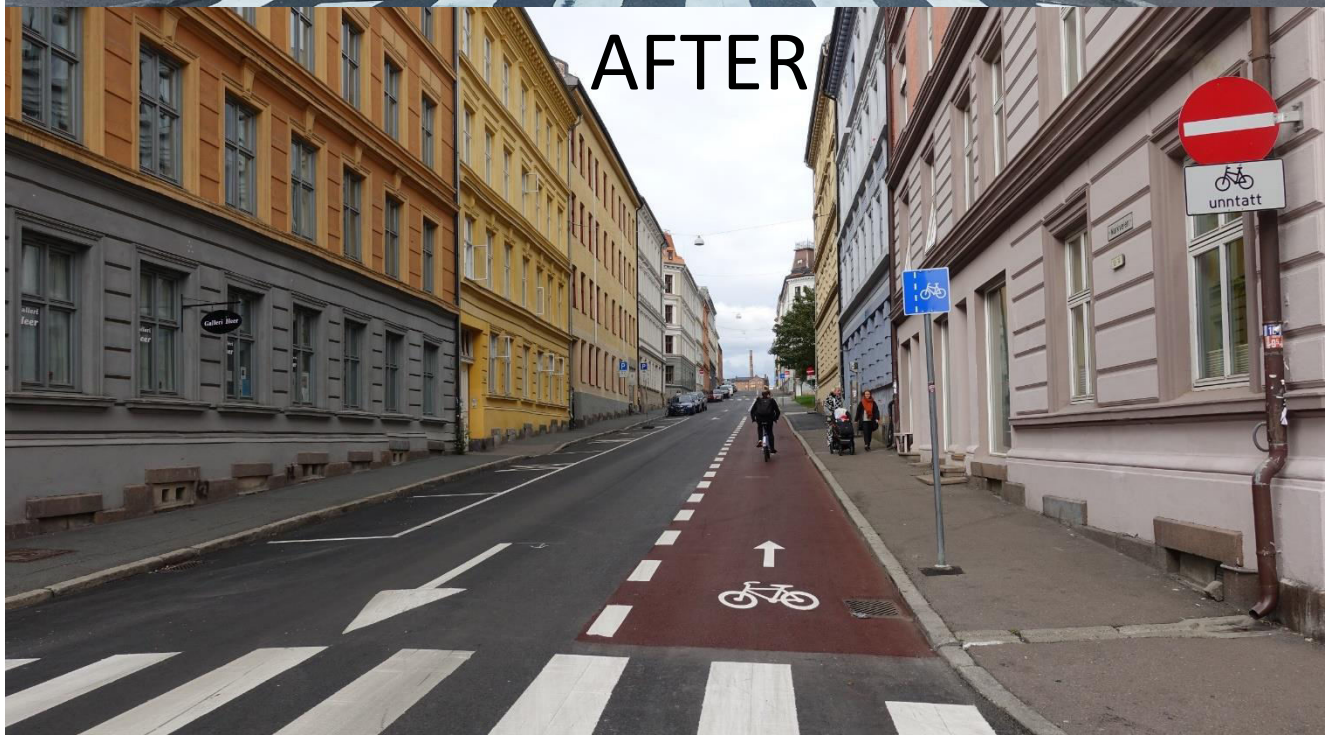
- One-way street with parallel parking on both sides

AFTER

- One parking lane replaced with contraflow bike lane

- Total length: 400m

City of Oslo

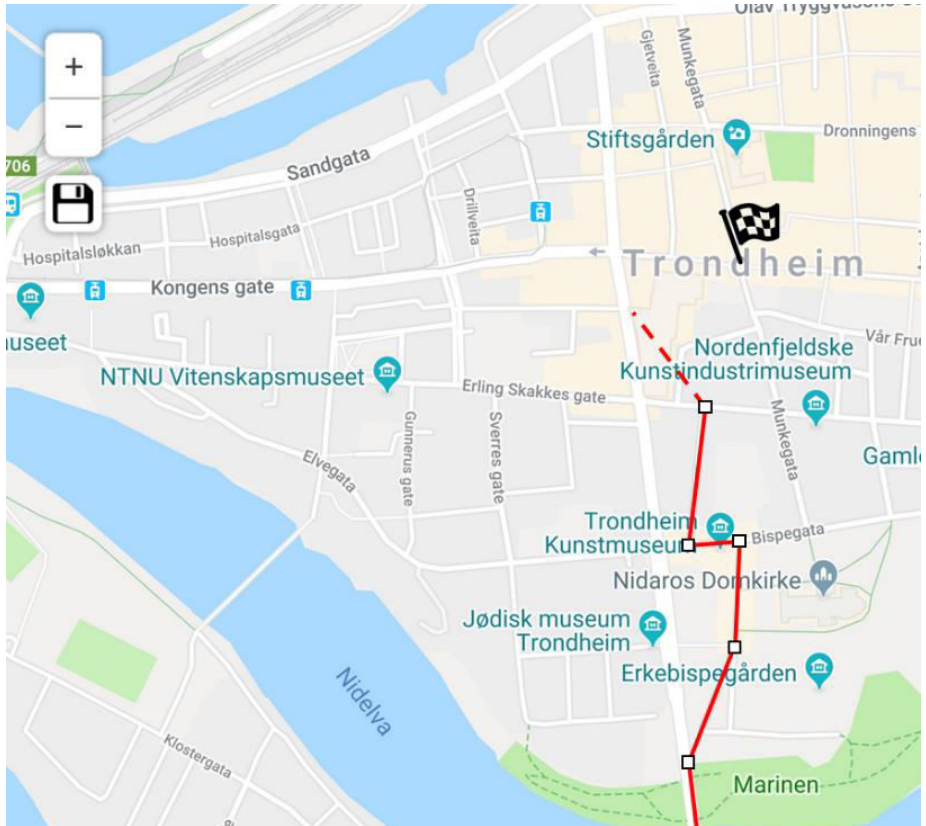


City of Oslo

Methods

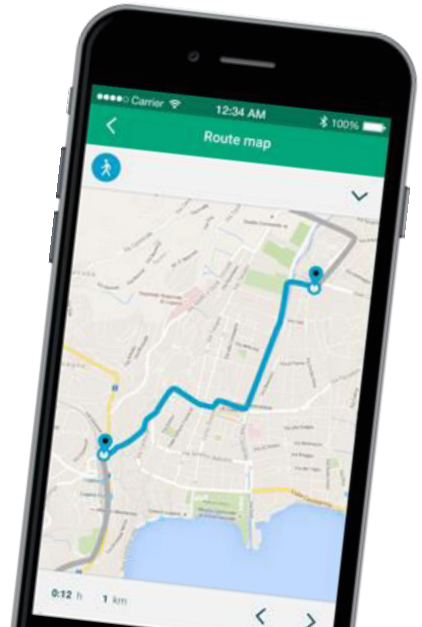
PAPER 1 - TRONDHEIM

- SoftGIS mapping survey (letter invite) after intervention

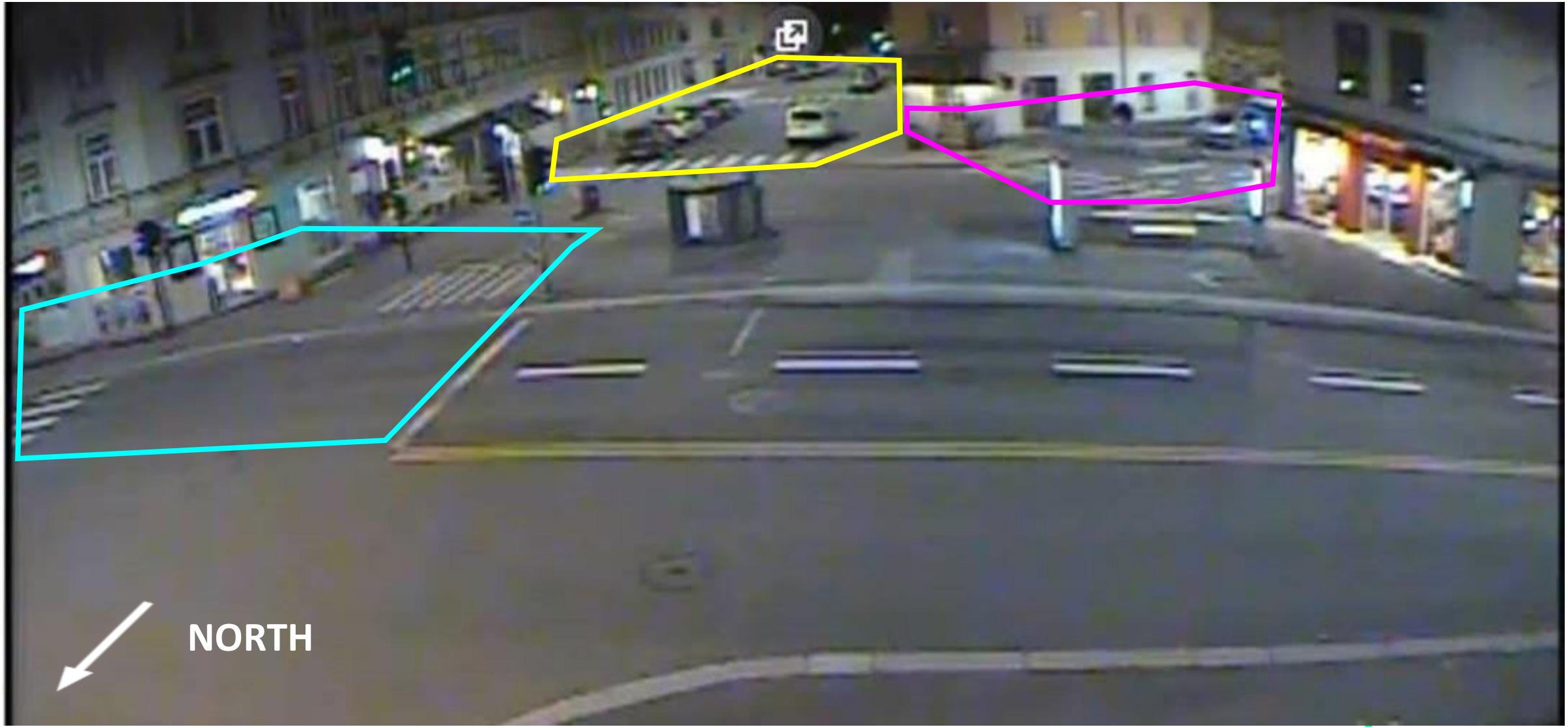


PAPER 2 - OSLO

- Local recruitment before (letters, social media, media, posters)
- Smartphone GPS before and after
- Passive tracking and mode-ID
- Video based counting

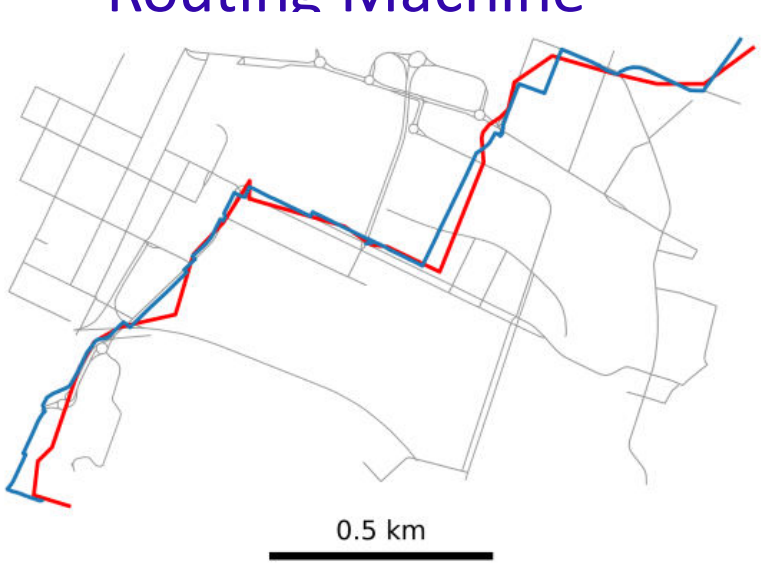


Video-based bicycle counts (Oslo)

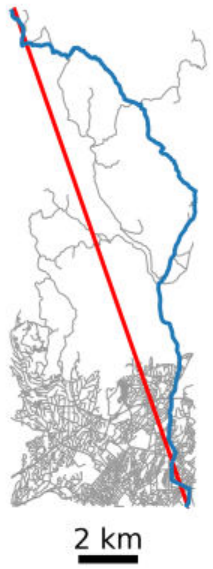


Map-matching of sparse and/or large GPS datasets

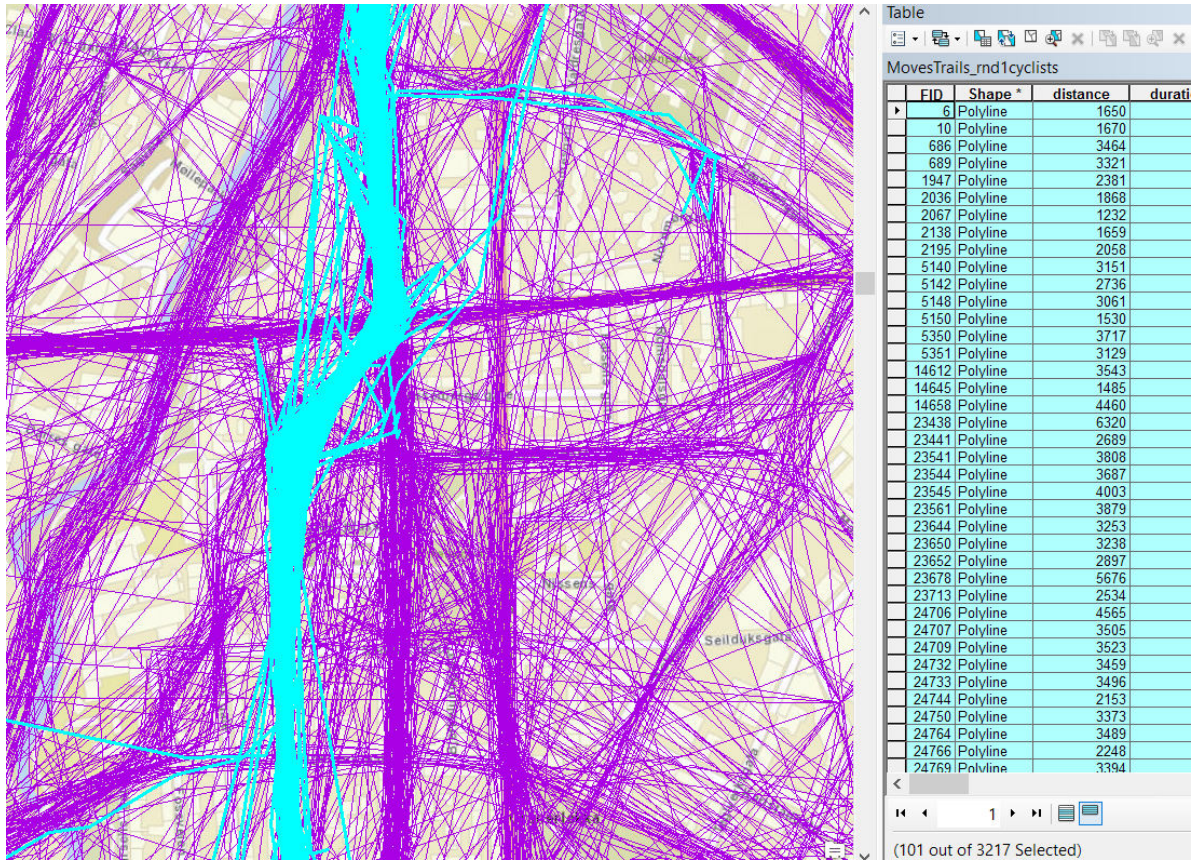
- 36000 trips to be matched (all modes)
- Project OSRM - Open Source Routing Machine



A) Default matching



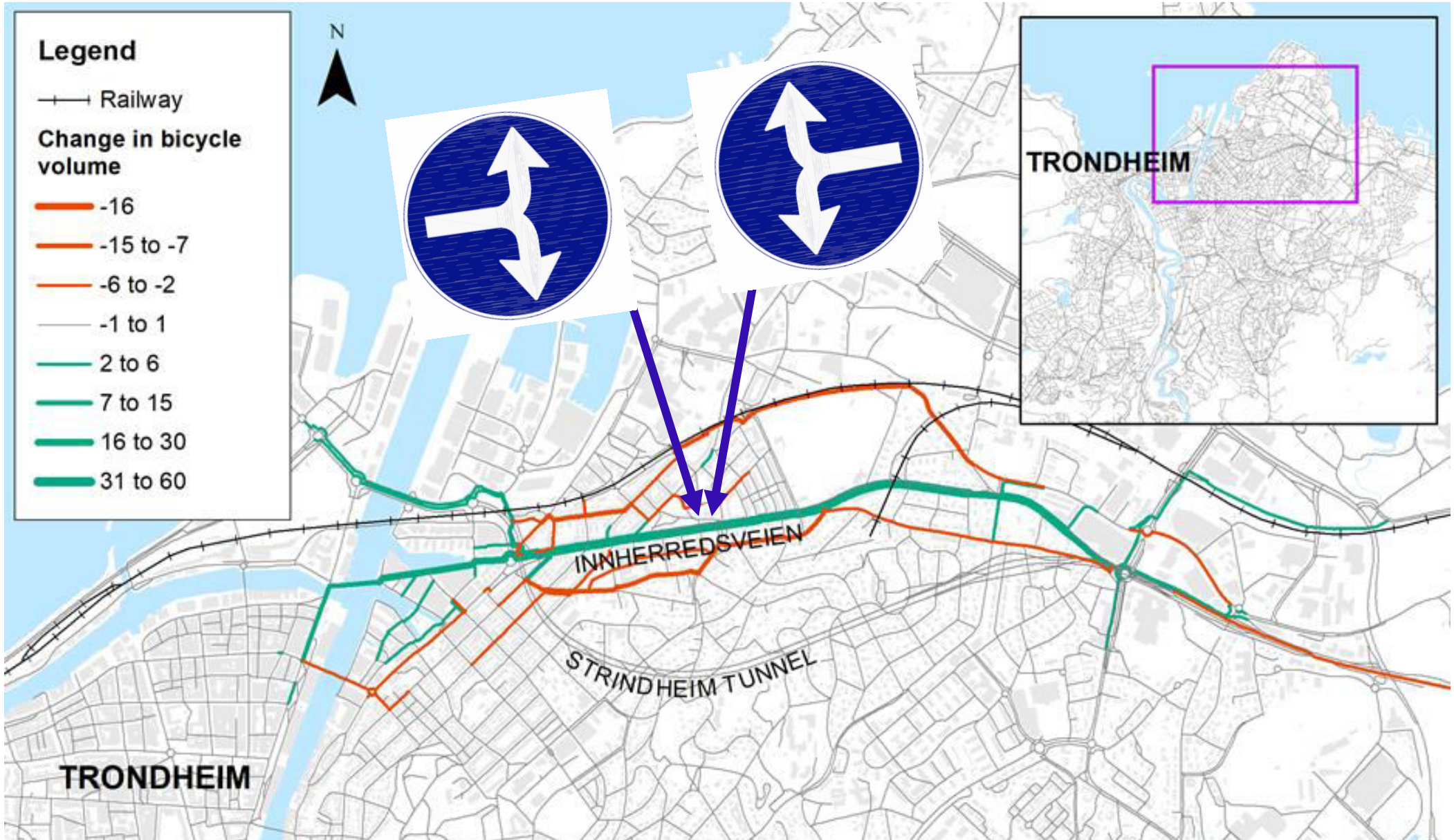
B) Routing



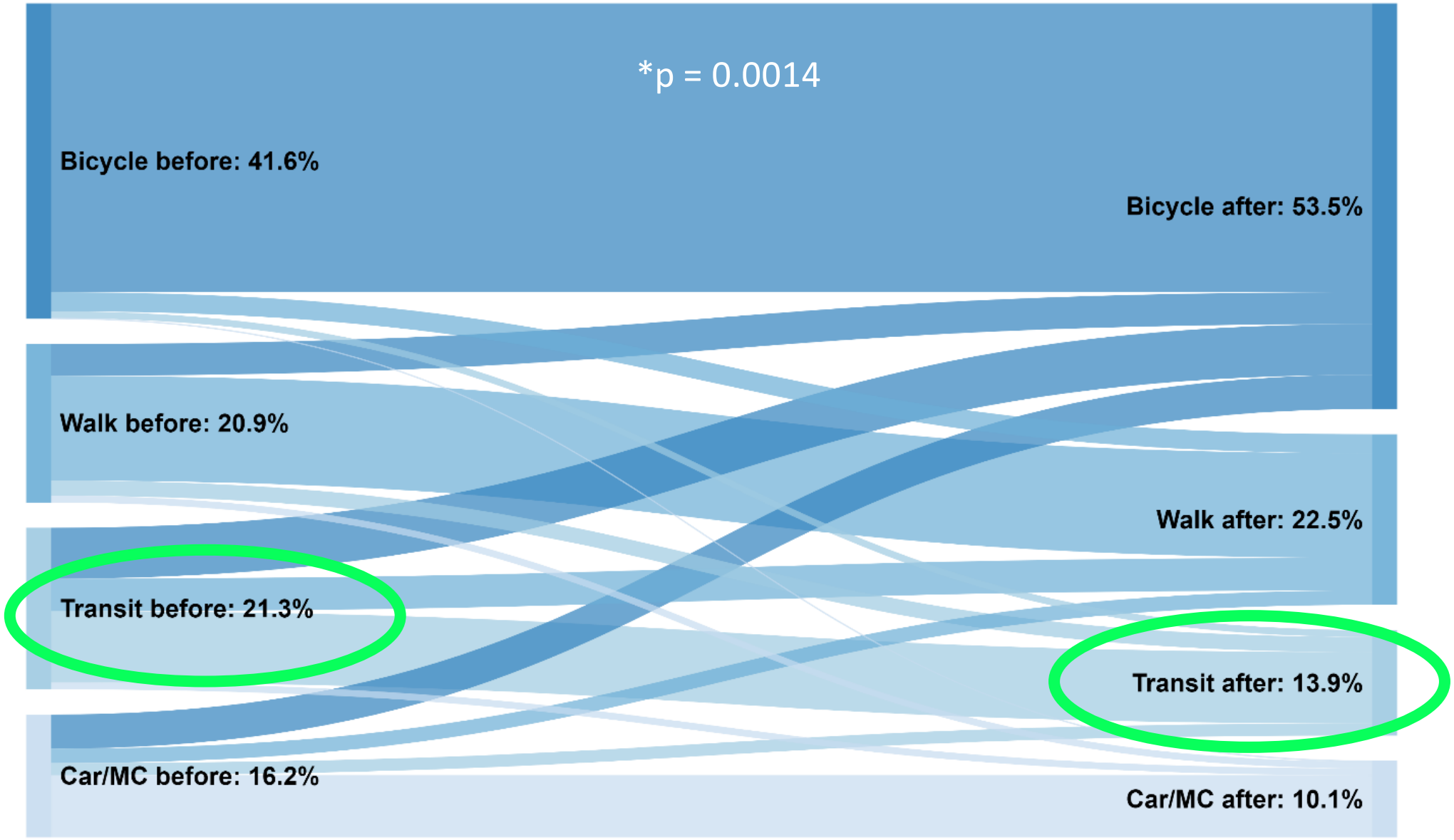
Findings Paper 1 Trondheim

Knut Opeide, 2017

Change in bicycle route choice (n=211)



Significant change in mode of transport (n=690)*

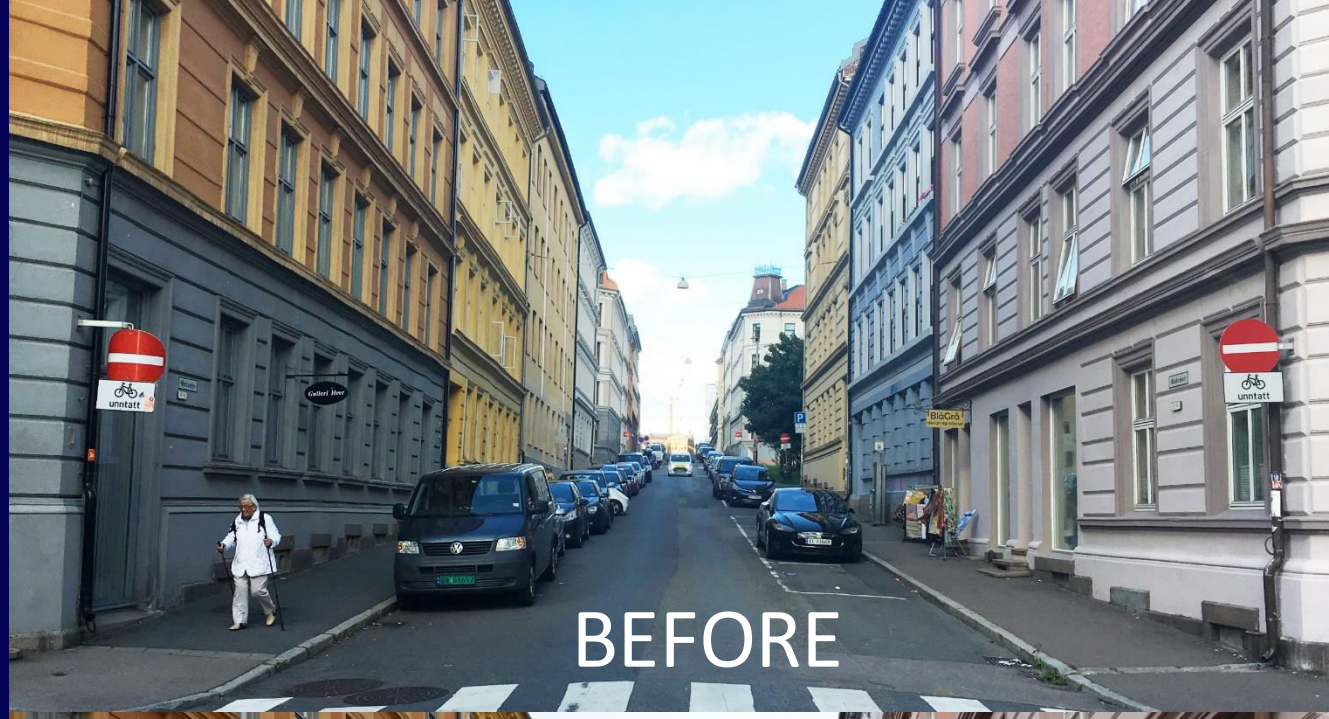


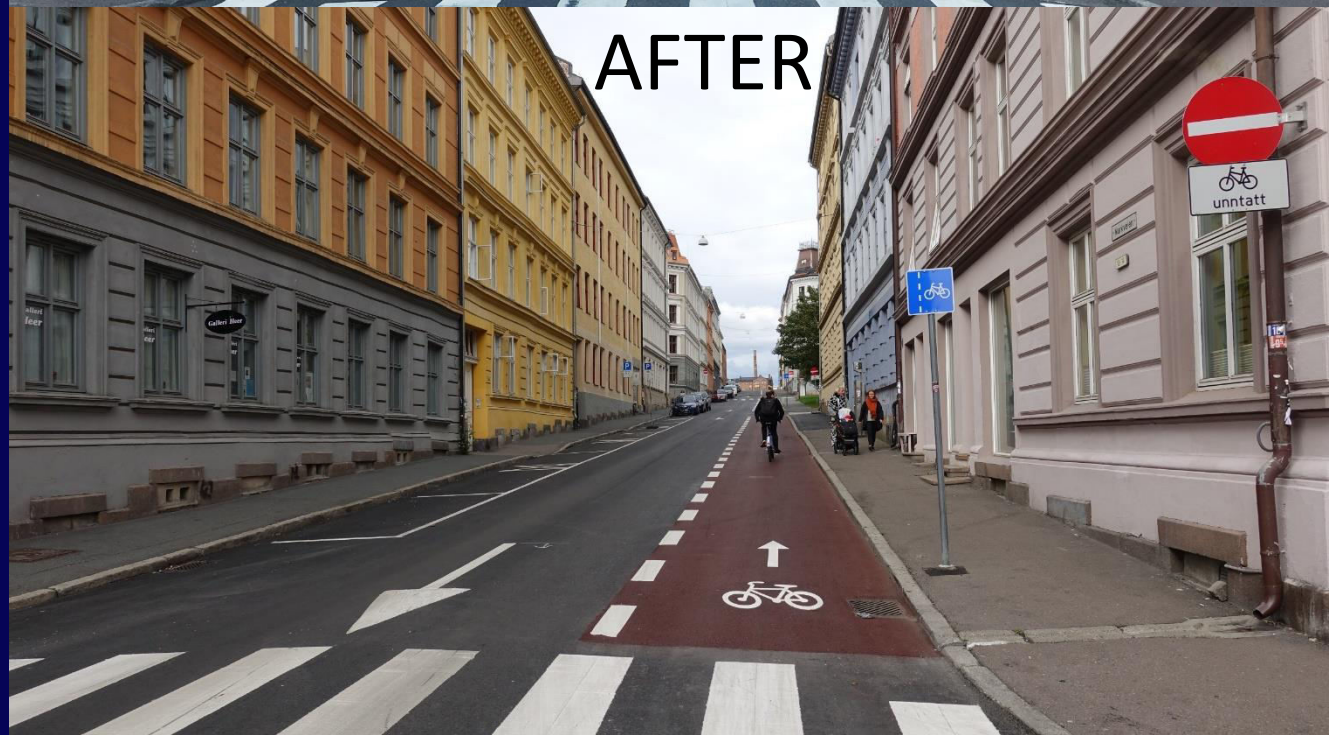
Summary Paper I: Trondheim

Purpose: Intervention study – before and after bike path

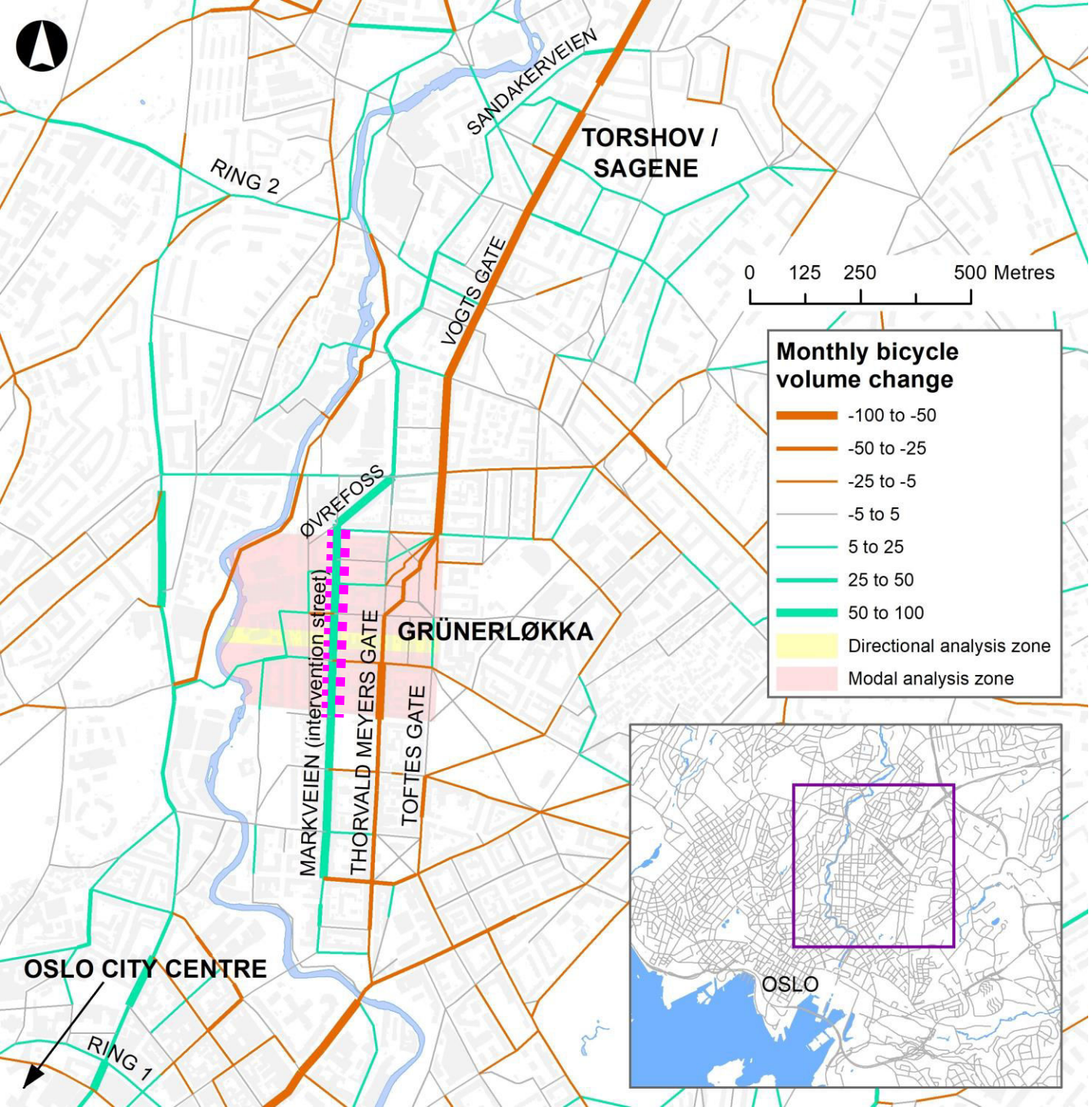
1. Route and mode choice in online survey
2. n=211 of 719 drew satisfactory routes for both time intervals (recalled prior behaviour and present)
3. Results – change of route and change of mode

Findings Paper 2 Oslo





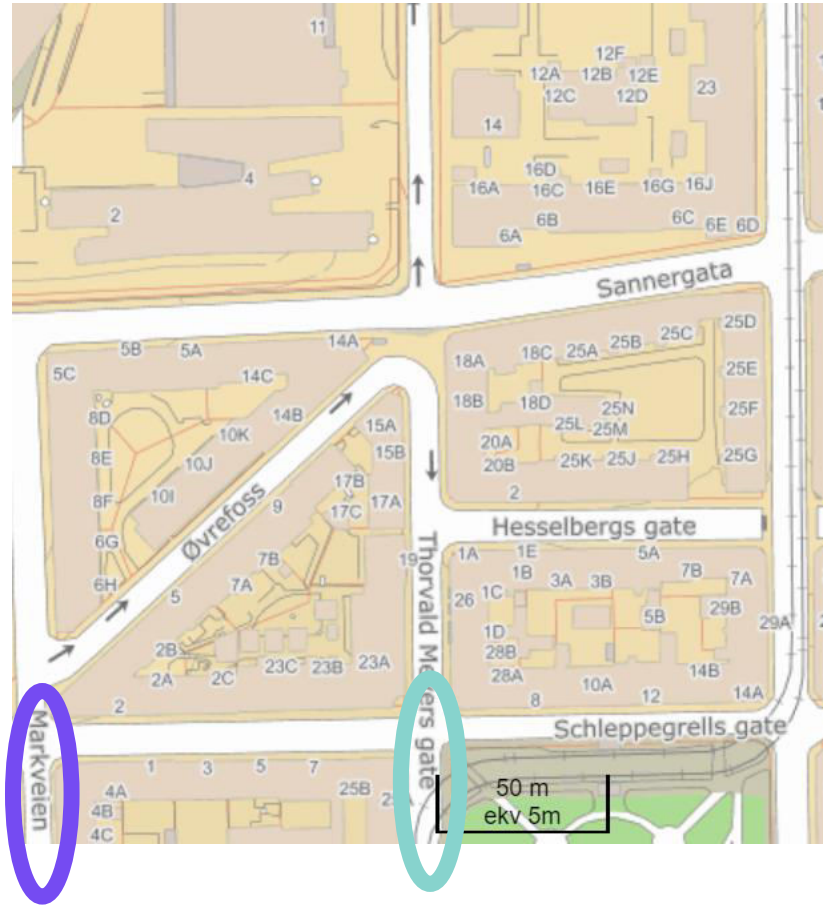
Route choice



- Average deviation from shortest path increased from 171m to 221m (p=0.032)
- i.e. More attractive for existing cyclists

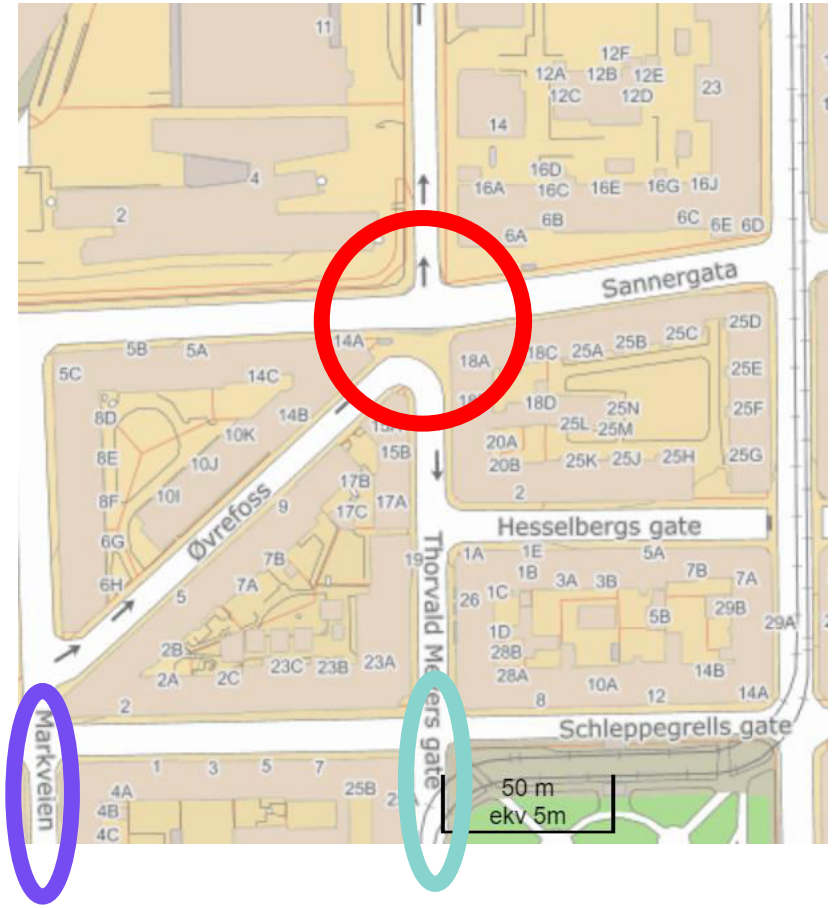
Paired comparison bicycle volumes

GPS



Intervention street:
43% - 70% (4-5 trips per day)

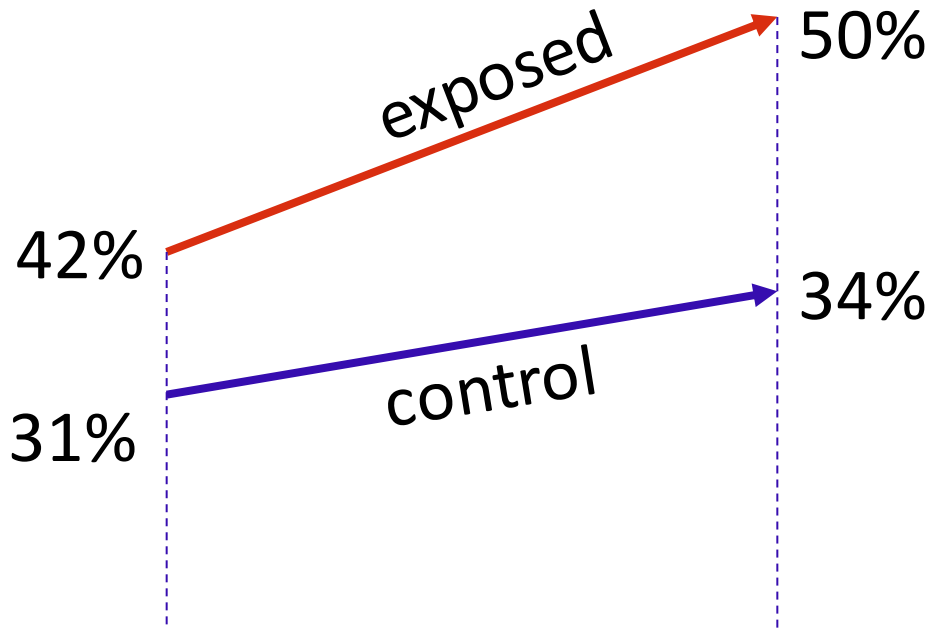
CAMERA



46% - 50% (400-500 trips per day)

Mode shift to cycling

- Consideration of an exposed group (those who had travelled along the intervention street) n=39
- Control group n=47 (have travelled nearby but not on the intervention)
- Non-significant increase (DiD = 4.7%)



Summary Paper 2: Oslo contraflow bike lane

Route and mode choice using smartphone app (GPS)

1. n = 113
2. Result – route change, no significant mode change
3. Conclusion – new infrastructure has increased cycling on intervention street but marginal net effect in short term (2 months)

Take-home points

1. The ‘grass IS greener on the other side’
2. Route shift occurs very quickly
3. Mode shift may require more adjustment time
4. Car-restrictions or more substantial interventions are likely to assist generating mode shift

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Does new bicycle infrastructure result in new or rerouted bicyclists? A longitudinal GPS study in Oslo

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ARTICLE INFO

ABSTRACT

sustainability

Article

Trialing a Road Lane to Bicycle Path Redesign—Changes in Travel Behavior with a Focus on Users’ Route and Mode Choice

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Abstract: Redistribution of space from private motorized vehicles to sustainable modes of transport is gaining popularity as an approach to alleviate transport problems in many cities around the world. This article investigates the impact of a trial Complete Streets

Thanks for listening!

NORCE

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Norwegian University of Science and Technology

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Discussion

- Hidden purpose in Oslo vs. known purpose in Trondheim
  (recalled travel behaviour for before situation)
- Car-restrictions
- Scale of change – how much better for cyclists is the initiative?