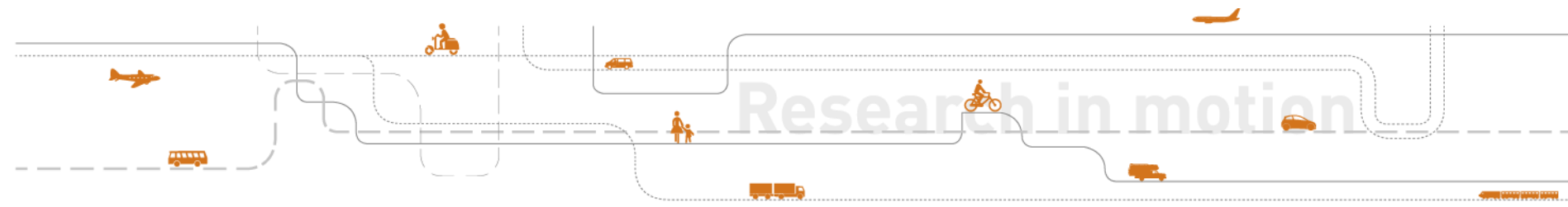


CARING Cities...beyond the current understandings

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Institute of Transport Economics. Oslo. Norway



STRATEGIC AMBIGUITY

STRATEGIC AMBIGUITY

Let's tak about FRAMING cities

A **growing ecosystem of “urban models” or “city paradigms”** that planners, policymakers, and researchers use. Some are overlapping, some are branding, and some are genuinely different frameworks.

Sustainability & Environment-focusedcurrently most dominant

- **Circular city**
Focuses on reuse, recycling, closed-loop systems (materials, water, energy).
- **Net-zero / Carbon-neutral city**
Designed to produce no net greenhouse gas emissions.
- **Climate-resilient city**
Built to withstand climate shocks (floods, heatwaves, etc.).
- **Nature-based / Biophilic city**
Integrates nature into urban design (green roofs, urban forests).
- **Sponge city** (popular in China)
Absorbs and manages rainwater naturally.
- **Regenerative city**
Goes beyond sustainability → actively restores ecosystems.

Accessibility & Proximity models.....trendy in planning discourse

- **15-minute city**

Daily needs accessible within a 15-minute walk or bike ride.

- **20-minute neighbourhood** (Australia, UK variant)

Same idea, slightly more flexible.

- **Complete city / Complete communities**

All services (housing, jobs, schools) locally available.

- **Walkable city**

Prioritizes pedestrians over cars.

- **Transit-oriented development (TOD) city**

Dense, mixed-use areas built around public transport hubs.

Technology & Data-driven.... Often hyped, sometimes controversial.

- **Smart city**

Uses sensors, data, and digital infrastructure to optimize services.

- **AI city / Autonomous city**

Integrates AI in governance, mobility, infrastructure.

- **Digital twin city**

Virtual replica of the city for planning and simulation.

- **Platform city**

Urban services mediated through digital platforms (Uber, etc.).

Form & Urban Structure..... describe physical layout and density.

- **Compact city**
High density, mixed use, limits urban sprawl.
- **Polycentric city**
Multiple centers instead of one CBD.
- **Vertical city**
High-rise, dense, often tied to megacities.
- **Linear city** (e.g., NEOM “The Line”)
Development along a single corridor.
- **Mega city / Mega-region**
Massive urban agglomerations.

Mobility & Transport-centered

- **Car-free city**
Eliminates or drastically reduces private car use.
- **Low-traffic neighbourhood (LTN) city**
Restricts through-traffic in residential areas.
- **Cycling city**
Designed around bikes (e.g., Copenhagen model).
- **Multimodal / Mobility-as-a-Service (MaaS) city**
Integrated transport systems via one platform.

Social Equity & Inclusion-focused....

Increasingly important in research

- **Inclusive city**
Designed for all groups (gender, age, ability, income).
- **Just city**
Focus on fairness, redistribution, spatial justice.
- **Caring city**
Prioritizes care work, accessibility, and social infrastructure.
- **Child-friendly city**
Urban design centered on children's needs.
- **Age-friendly city**
Adapted for aging populations.
- **Gender-sensitive / Feminist city**
Addresses gendered mobility and safety issues.

Governance & Economy models

- **Creative city**
Driven by culture and creative industries.
- **Innovation city / Knowledge city**
Anchored in universities, R&D, tech ecosystems.
- **Entrepreneurial city**
Competes globally for investment and talent.
- **Sharing city**
Emphasizes sharing economy (tools, spaces, mobility).
- **Commons city**
Community ownership and management of resources.

Hybrid / Emerging concepts...newer or more niche but gaining traction.

- **Playable city**

Uses play and interaction in public space design.

- **Slow city (Cittaslow)**

Prioritizes quality of life over speed and growth.

- **Resilient city**

Broader than climate—includes economic and social resilience.

- **Adaptive city**

Flexible, responsive urban systems.

- **Post-carbon city**

Transition away from fossil fuels.

A quick recap

- A few **overlap heavily** (e.g., **15-minute city + compact city + TOD**)
- Some are **branding tools** rather than new models
- Reflect **shifting priorities**:
 - 2000s → **sustainability** - social sustainability
 - 2010s → **creative/smart cities/resilience**
 - 2020s → **proximity, care, justice**

Pushing the CARING narrative and agenda

- **Caring city**

Prioritizes care work, accessibility, and social infrastructure ++++++

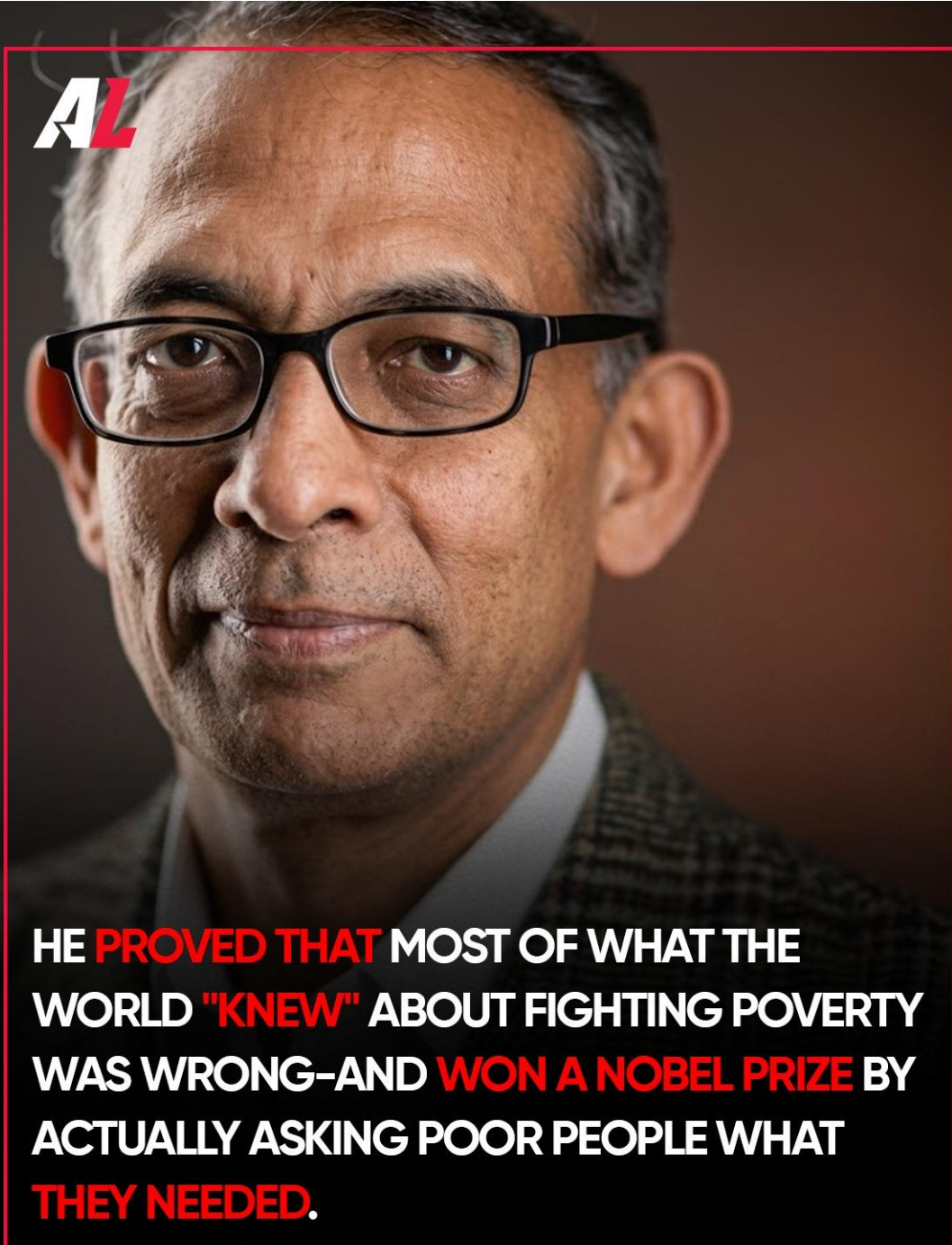
- Puts well-being and QOL at the center, however.....missing from the politics of planning

- **Changing the narrative – not only for research, BUT for the POLITICS of planning –**
Framing research design, analyses and the politics of planning to both derive from and feed into the Caring cities agenda

[political necessity – care action – expertise – future of development]



Scotland installs **refill taps that reduce plastic bottle waste — helping walkers and cyclists stay hydrated without **buying new bottles**.**

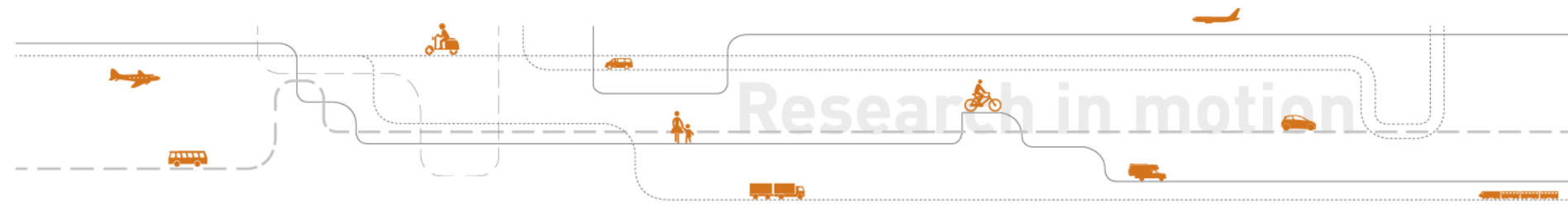
A close-up portrait of a middle-aged man with dark hair, wearing black-rimmed glasses and a dark suit jacket over a light-colored shirt. He is looking directly at the camera with a slight smile. The background is a solid dark brown color. The entire image is framed by a thin red border.

AL

**HE PROVED THAT MOST OF WHAT THE
WORLD "KNEW" ABOUT FIGHTING POVERTY
WAS WRONG-AND WON A NOBEL PRIZE BY
ACTUALLY ASKING POOR PEOPLE WHAT
THEY NEEDED.**

Gendered Mobilities

.....an ingress to CARING Cities



The ingenious cyclewear Victorian women invented to navigate social mores

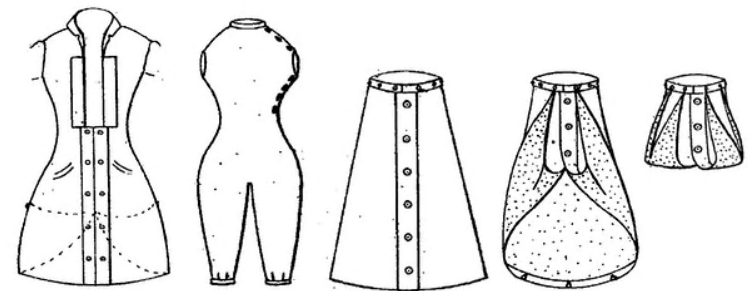
Patents by female inventors from the 1890s reveal the creative ways women made their body mobile through clothing

Cycling's “dress problem”

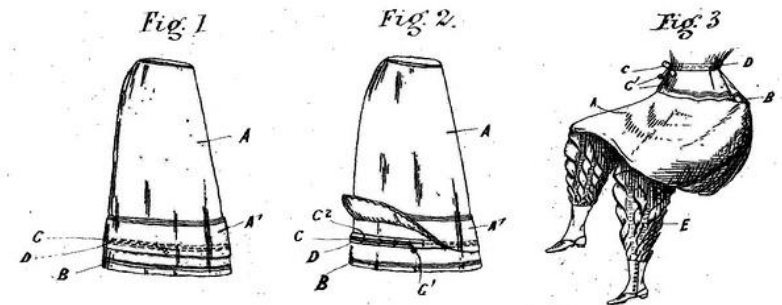
primary vehicle for women's entry into the world of patenting.



▲ An advertisement for Stower's Lime Juice Cordial from around 1898 showing a fashionable Victorian woman relaxing while having a refreshing drink. Photograph: Alamy



▲ Henrietta Müller's 1896 patented convertible cycling suit. Photograph: Handout



▲ Julia Gill's 1895 patented convertible cycling semi-skirt. Photograph: Handout

What are the **knowledge gaps**?

How can we look for other needs/ attitudes/perceptions/

inventions/interventions/designs/programmes **hidden in plain sight**?



Clearly divided gendered travel patterns

■ Trip purposes

- Women - fewer job and business trips, more shopping and escort trips
- Women - more varied/complex activity patterns

■ Trip chains

- More complex trip-chaining - varied activity patterns

■ Daytime distribution of trips

- Women - go out by night less often
- Women - travel less often in rush hour

Clearly divided gendered travel patterns

■ Licencing and car availability

- Higher for men

■ Mode choice

- Women - passengers, men - drive
- Women- use public transport; walk more often
- Women - more multimodal / variable
- Vehicle choice - Women drive smaller cars
- Where cycling is a part of the travel culture, women bicycle longer distances.

■ Trip distances and trip duration

- Shorter for women; especially for job trips, but also other purposes
- Women participate less in long distance travel (commuting, business)

How things **should** have been
done?

Development, Gender and Transport

- What kind of (daily) **mobility needs** do women have?
- What are the **limitations** they face wrt **time constraints, financial constraints, safety constraints** etc.
- Can we **minimize these constraints**? For ex. (i) through spending less time and money on their daily travelling, (ii) can they use their time differently?
- What **ratio of women** are in the **different employment / services**— manufacturing services, care services etc.?

MAPPING...PLOTING...INTERLINKAGES

How things **have been** done?

Hegemony of trips planned for **peak hour, commute, fixed employment, fixed areas, Transport modelling exercises.....**

The 'desired' Target groups

- Commuters
- Men
- 9-5 jobs

Flexible trips, trip-chaining, travelling
with **children**, linking multiple, geographically
spread **low-end / flexible jobs**.....???

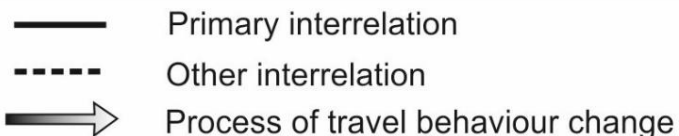
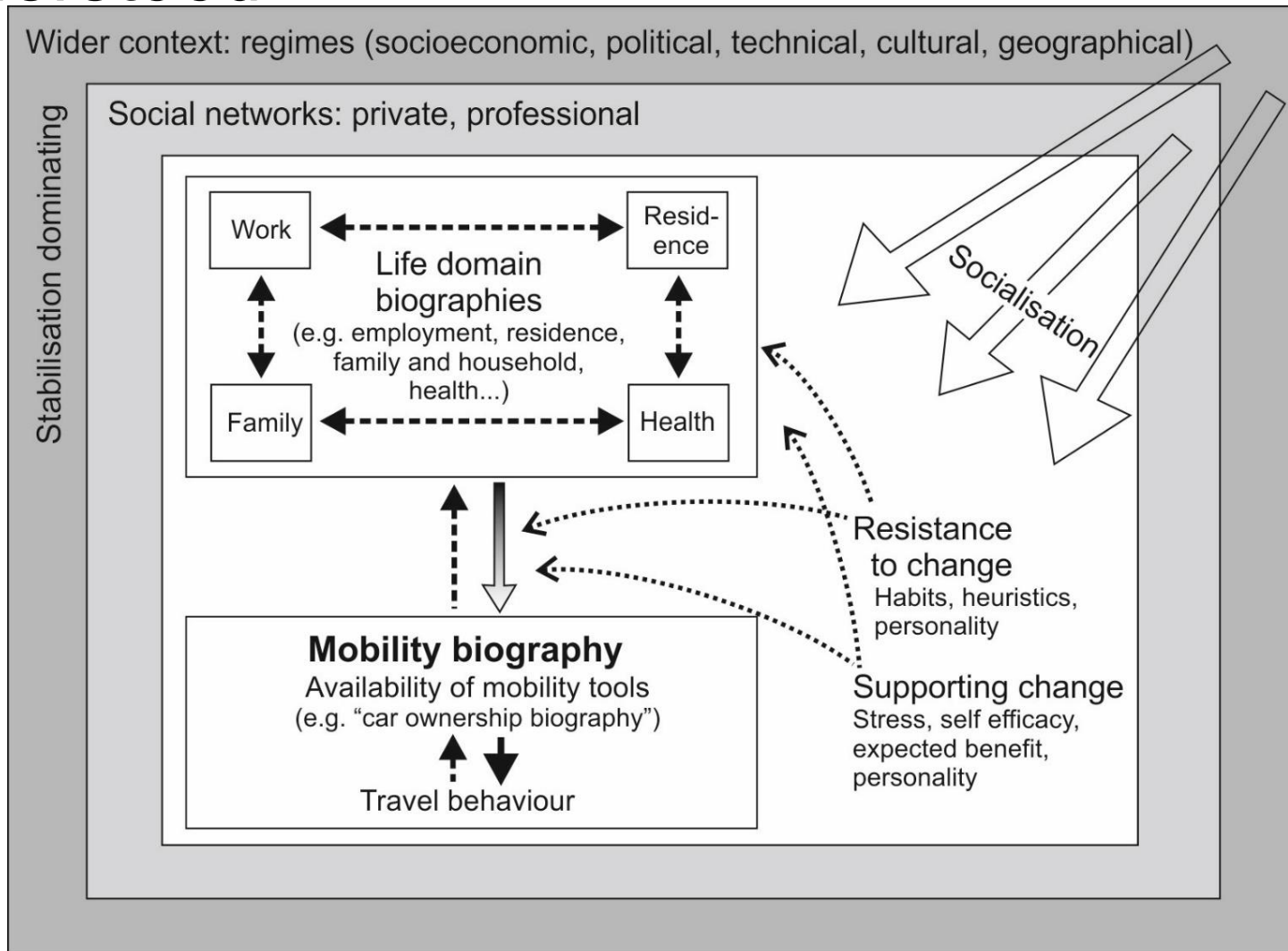
The 'undesired' Target groups

- Women
- Family with young children
- Shift / Part-time workers
- -----

Biggest issues. based on **literature reviews, surveys, interviews.**

1. **Public transport, walking and bicycling infrastructure** – inadequate attention.
2. **Gendered nature of infrastructure** – poorly understood
3. **Daily Mobilities** – not integrated with other developmental policies like health, employment generation, education, welfare services etc.
4. The relationship between **gender equality and sustainability** is poorly understood, or NOT understood at all.

Gender – life stages – transport : poorly understood



Source: Scheiner (2018)

What has this **lead** to?

(-) Convergence

Direction of this convergence. Why (-)?

1. While men are still driving more than women, BUT the gap is decreasing over time for all life-cycle stages
2. Trip purposes *Convergence*
3. Licence holding *Convergence*
4. Car availability *Convergence*
5. Mode choice *Convergence*
6. Trip distances and trip duration *Convergence*

How to move FORWARD?

Transport vs. networked mobility

- **Transport** classified as **‘hard infrastructure’**
- BUT Transport vis-à-vis **Daily Mobilities** is a **dynamic element**– Multimodality, MaaS, Digitalisation, Transition, Intermediate means of Transport, bike sharing, Qualitative studies etc. as part of the entire travel chain with particular reference to women’s needs.

A real good chance of promoting sustainable travel behaviour IF women’s travel preferences are made the unit of analysis– Walking, bicycling and PT

Understanding the links between gender and transportation

Revealed, preferred and digital mobilities

- Given the **current system, roles, jobs, gendered divisions** – what are the current mobility needs?
- **Division of labour** in different sectors. What are the current and future mobility needs of future?
- What kind of transportation policies and investment will ensure that the **accessibility of women** increase?
- Are there **systemic and systematic flaws** responsible for gender-blind transport policies?
- How do **land use regulations** or the lack of it affect the mobilities in urban and peri-urban areas?
- Which kinds of mobilities (both urban and rural) are being **supplemented / complimented** or substituted by mobile phones?

Example 1: Gender-disaggregated data and gender budgeting

Gender budgeting vis-a-vis travel patterns

If women were to adopt the travel patterns of today's men...

...the modal share by car would increase by 17 %

...CO₂ emissions from car traffic would increase by **31%**

...the additional demand for driving and parking space would add up to **190** Möllevångstorget (standard town square)



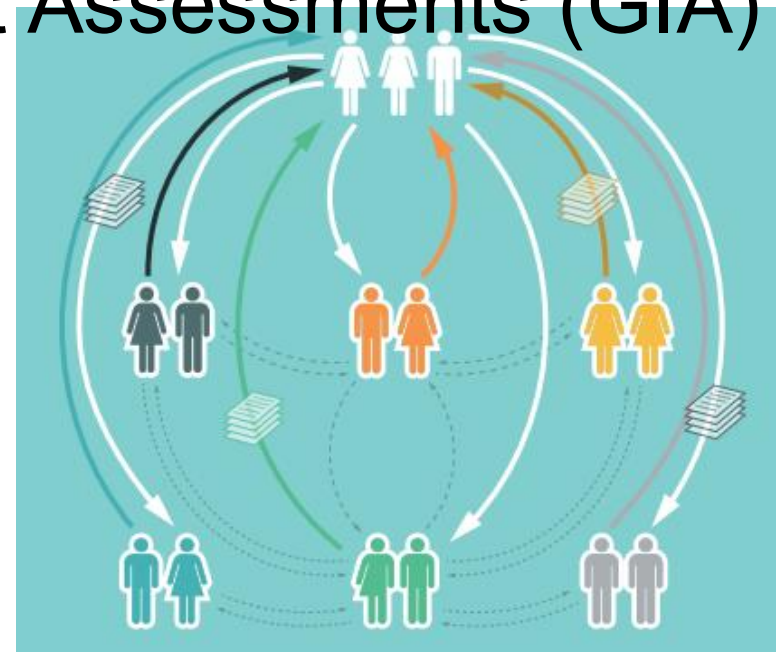
Source: City of Malmö Planning Office, Daniel Svanfelt | Strategy Officer

Example 2: Merging **STATIC + DYNAMIC** =



Example 3: Gender Impact Assessments (GIA)

- Assessment procedure-
 - **Integrate gender equality in planning**
 - **Assess the impacts**
 - **Mitigate impacts**
 - **Give guidance for subsequent stages**



- Clear steps / stages
 1. Start-up
 2. Scoping (identify field of work)
 3. Baseline
 4. Identify and involve relevant groups
 5. GIA's impact on the plan or on the content of the project
 6. Investigate the impacts of proposed measures
 7. Mitigate the impacts of the proposed action
 8. Assess the impacts of the final design
 9. Write GIA-report
 10. Give suggestions on integration of gender measures in the subsequent planning
 11. Follow-up

Example 4: Smart Mobility – station-based and flexible carsharing. Case- Germany



Users of

..... station-based carsharing

40% women – 60% men

..... free-floating carsharing

30% women – 70% men

age group up to 35y

living in 1-2 person households

above average formal education

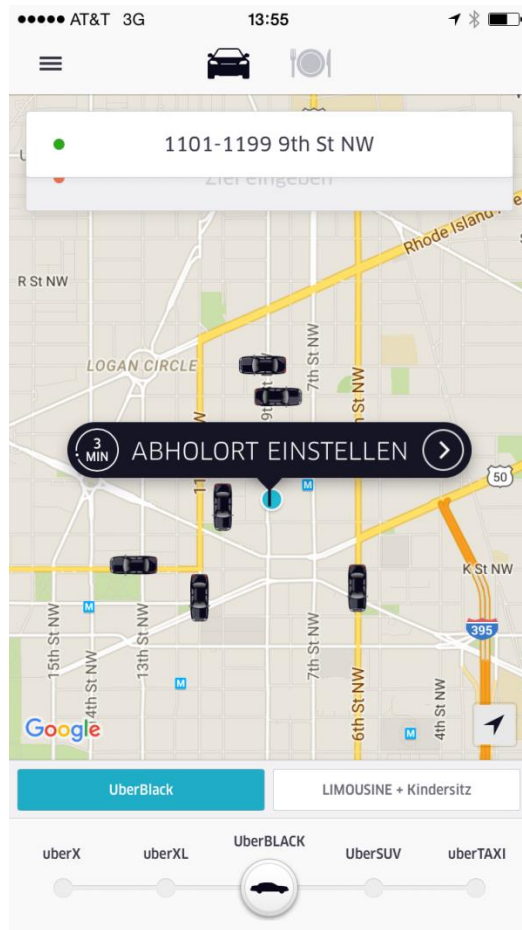
above average income

Loose 2010, Riegler et al. 2016

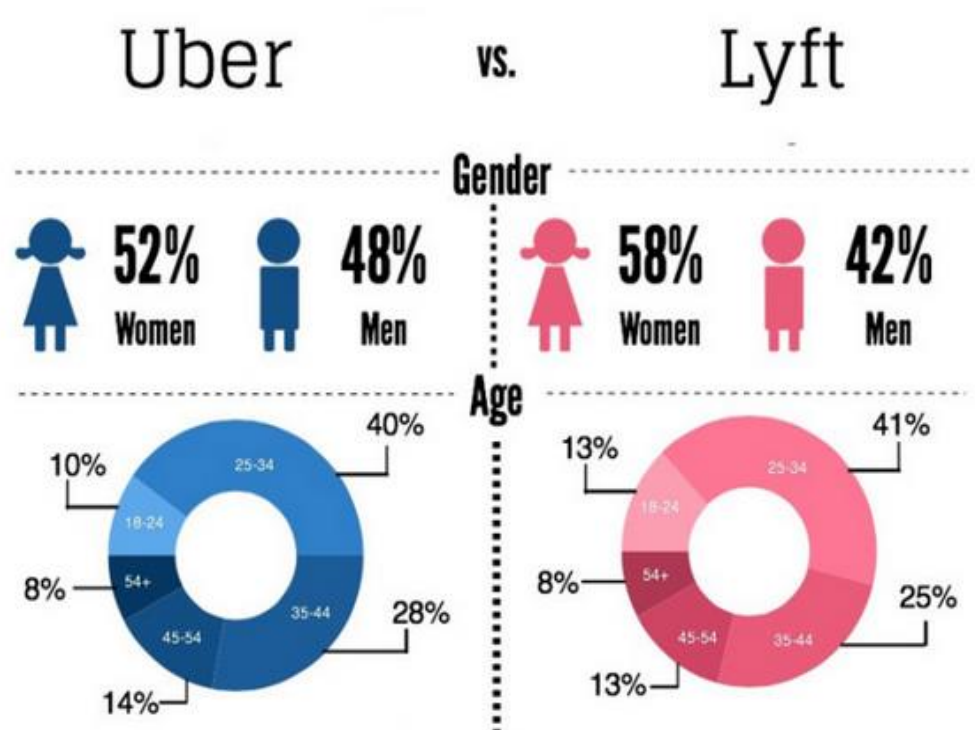
Source: Lenz 2017

Smart Mobility – ridesharing / ridehailing.

Case- Germany



Source: Lenz 2017

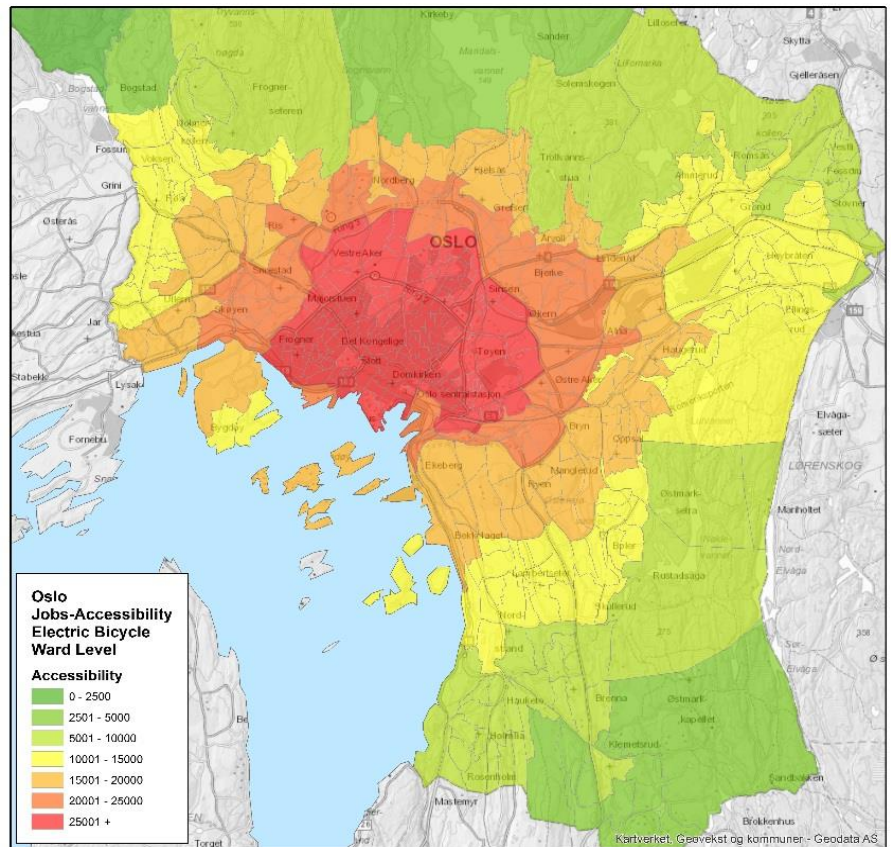
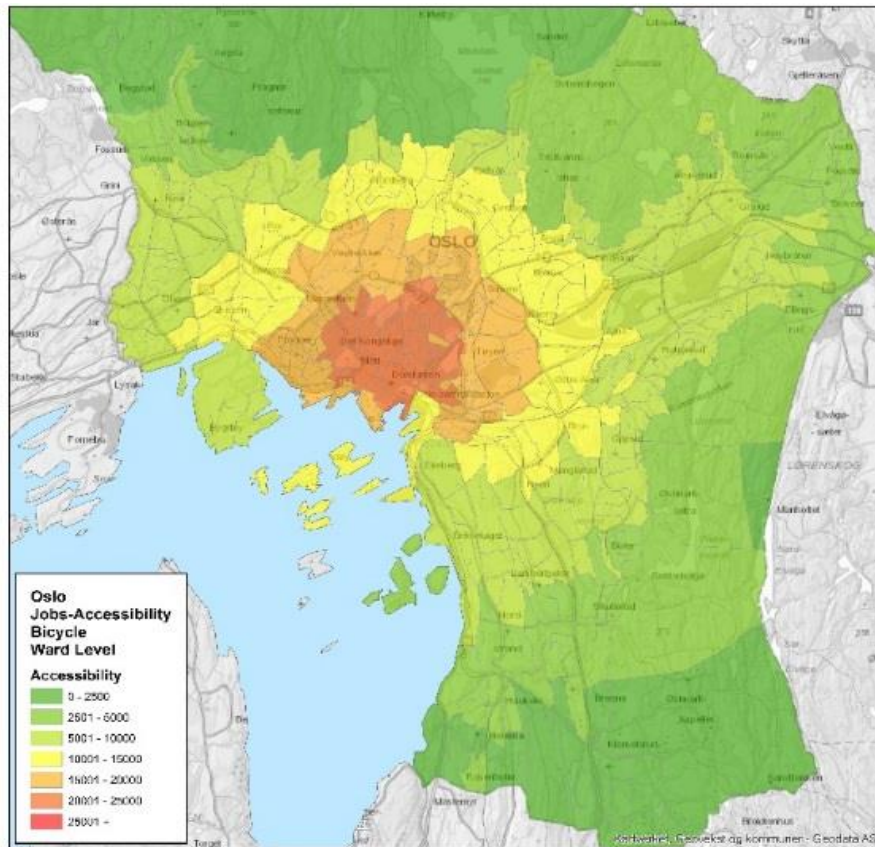


Source: ciscosolutions.com

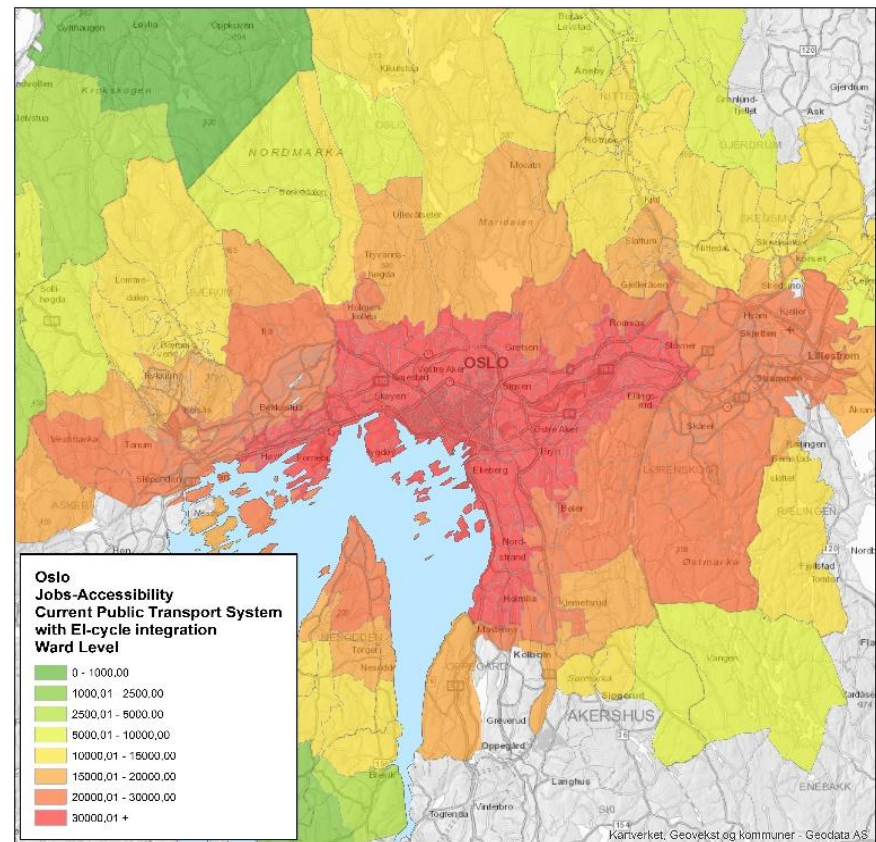
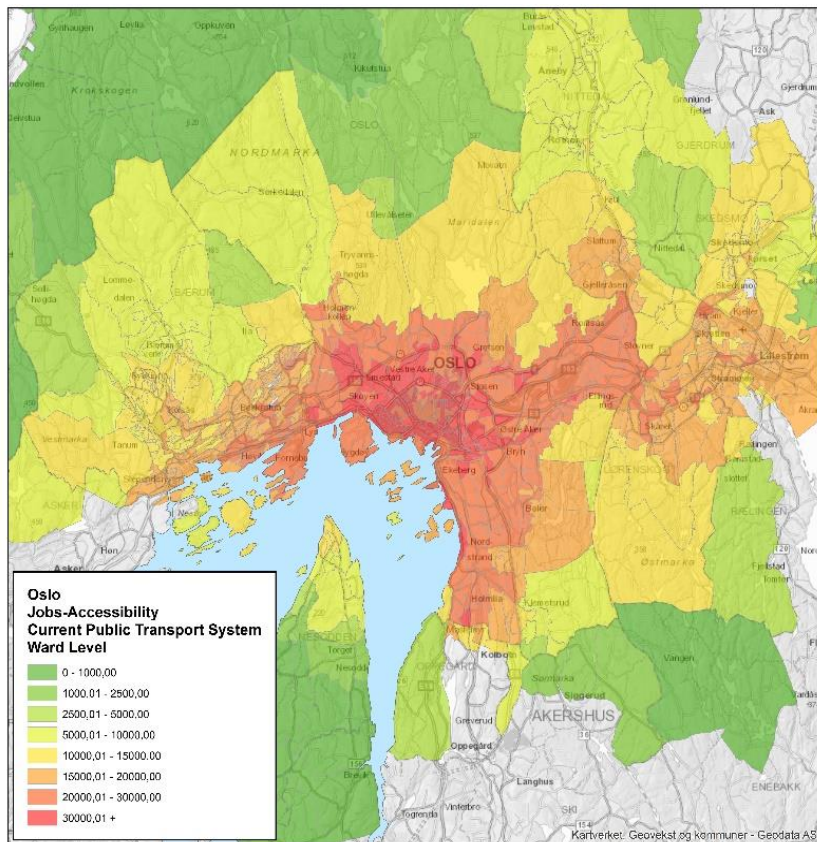
Example 5: Analysing Accessibility. OSLO

- **Accessibility** estimates - to assess the **potential effects** from **different el-cycle developments/policies** on the public transport usage on commuting trips.
- **Case - wide-spread usage (ACCESS)** of el-cycle, combined with implementation of **el-cycle parking and rental (EGRESS)** at the metro and rail stations.
- Accessibility measurements - using **Regional Transportation Model (RTM)** for the Oslo region, and they reflect the accessibility in the **number of reachable jobs in each area**.
- The accessibility for **cycle** is estimated using an average speed of **15km/h**, and the **el-cycle** accessibility using an average speed of **21 km/h**.

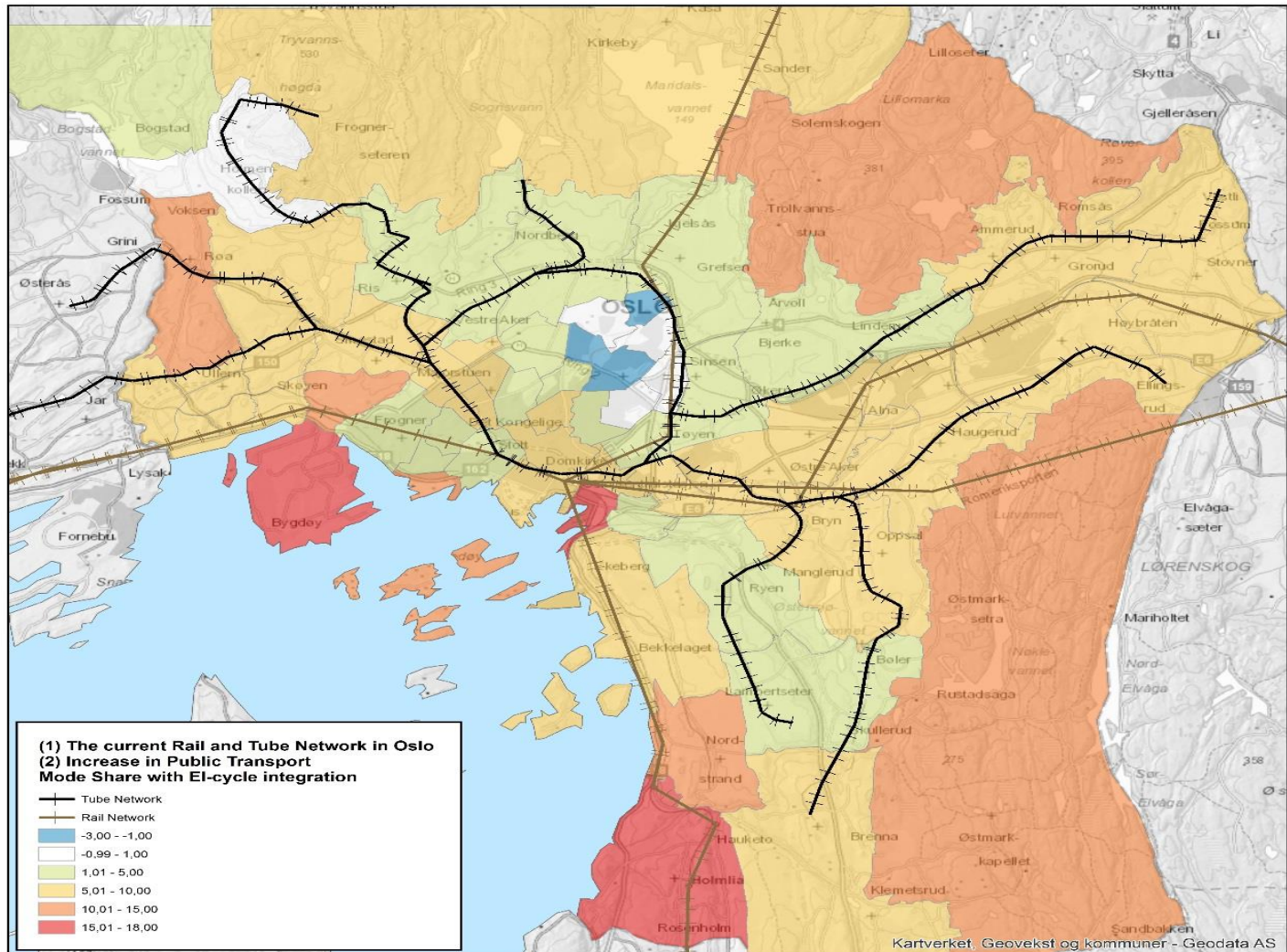
Accessibility with Bicycle and E-bikes



Metro/rail accessibility without and with e-cycle parking and rental



Estimated increase in PT usage

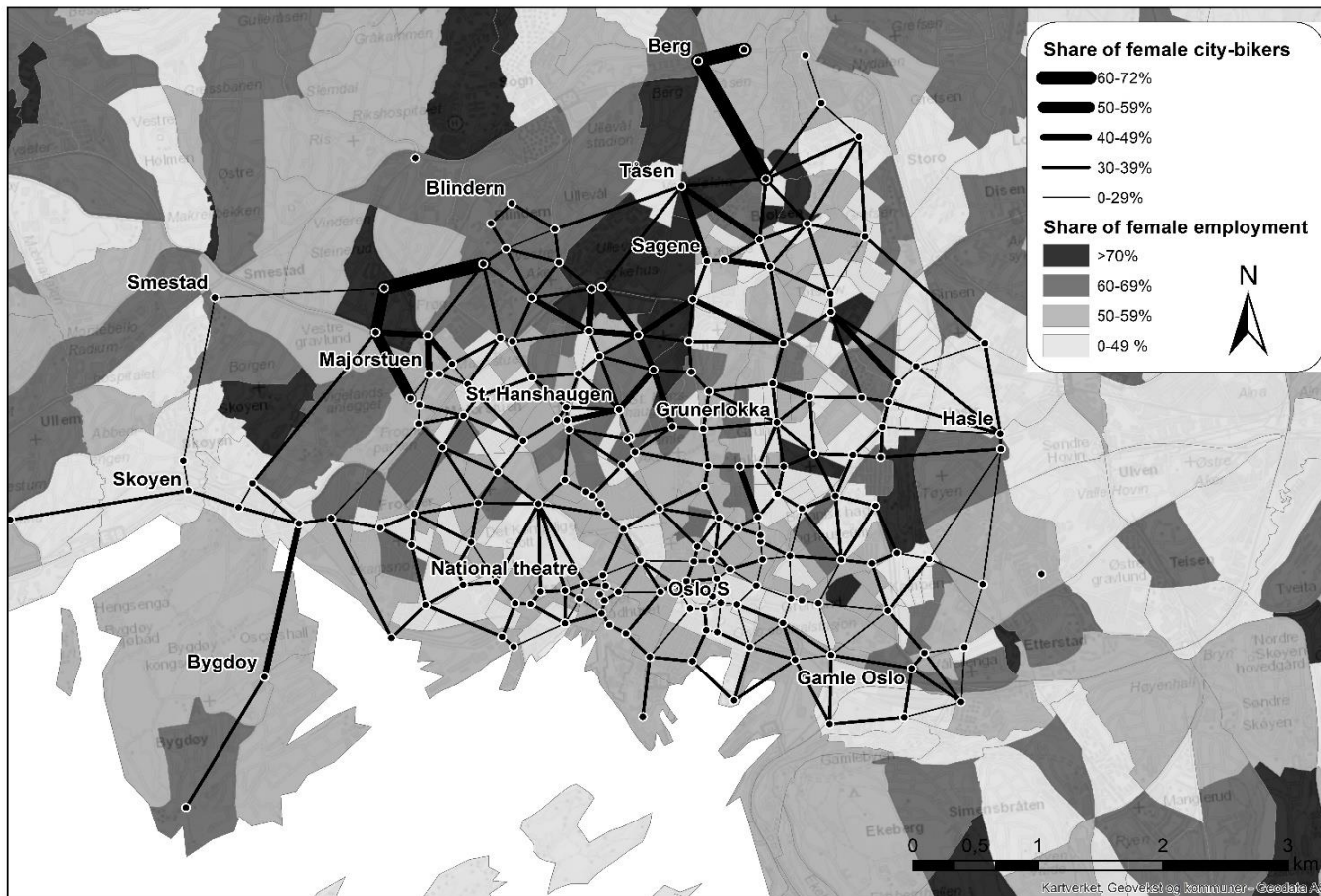


To bolster Public Transport -

- The **combination of E-bike usage and E-bike integration** into the PT system has a potential to shift commuting patterns and be particularly useful for women.

Incidentally....

- A majority of **women both live and work on the peripheries** of Oslo and not in the center of Oslo.



Example 6: The Pandemic.....

COVID-19 brought severe disruption and demand suppression to mobility, especially to public transport (PT).

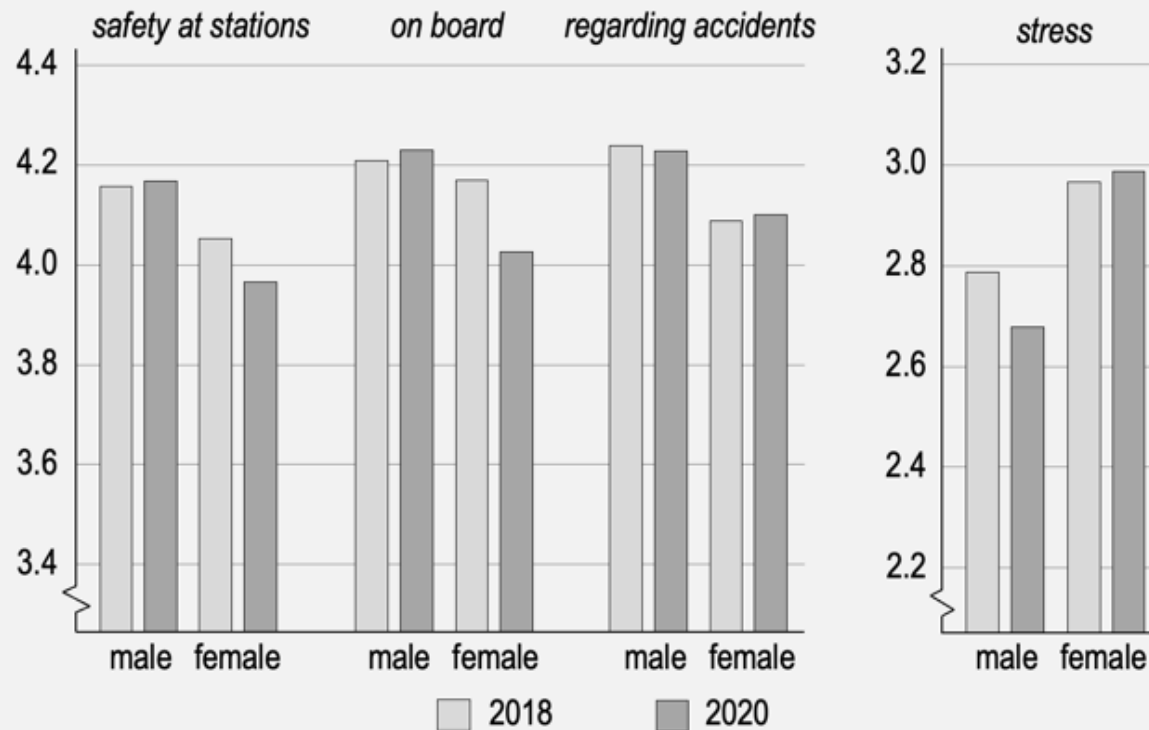
From studies across the world, we find that, on an average:

- flexibility to work from home – did not apply to women
- reduced commute burden – did not apply to women
- regained work-life balance – did not apply to women
- slower pace of life – did not apply to women

Even in societies like Sweden and Norway where there is a consistent focus on **gender equality and strategic policy framing on Active Ageing**, women and older adults suffered from an **interlocking of forced mobility** (physical presence required at workplaces, mandatory care responsibilities etc.), **restricted mobility** (ageism narratives and anxiety in being in public spaces, including public transport) or **fear-based mobility**.

A Nordic study based on Perceived Accessibility (PAC). based on BEST survey data

c) Perceived safety and stress by year and gender



Results show striking intersectionality with gender

Unfolding of a double taxation for women. Literature review: i) being **more impeded in their mobility than men** because of unemployment or reduced employment; and ii) **having fewer opportunities than men to transfer to home office and/or away from PT** (González-Sánchez et al., 2021). Also, the earlier observed **drop in average levels of perceived safety/security on board PT vehicles and at stations, appears to borne in its entirety by women**, whilst men perceive if anything slightly higher levels of security. Episodes of empty PT due to reduced seating capacities and a general drop in PT usage was perceived as being determinants of perceived insecurity around the world (Godhamgaonkar et al., 2021).

@Moving «smartly» forward: Macro-Meso-Micro mapping

- **MACRO** – build focus on PT, WALKING, BICYCLING through National Transport Policies
- **MESO** – Regional planning, urban planning policies-
Ex: locational decisions - training centers, high schools, health centers etc. accessible by PT, walking, cycling.
- **MICRO** – Road design, Apps, PT routes / timings / accessibility mapping.

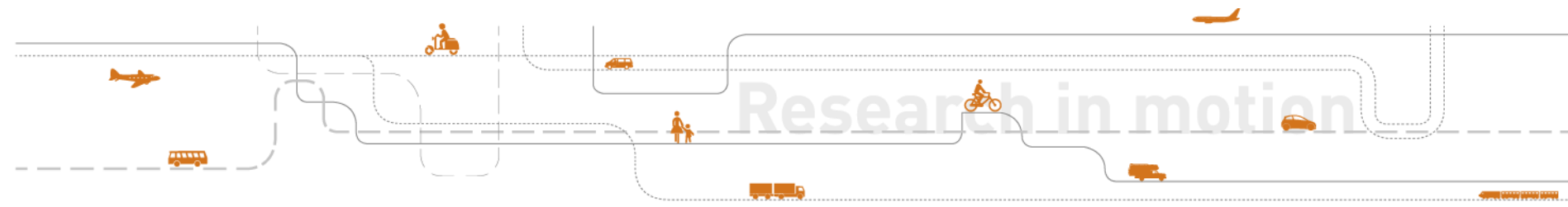
Gender Mainstreaming @

– Macro-Meso-Micro

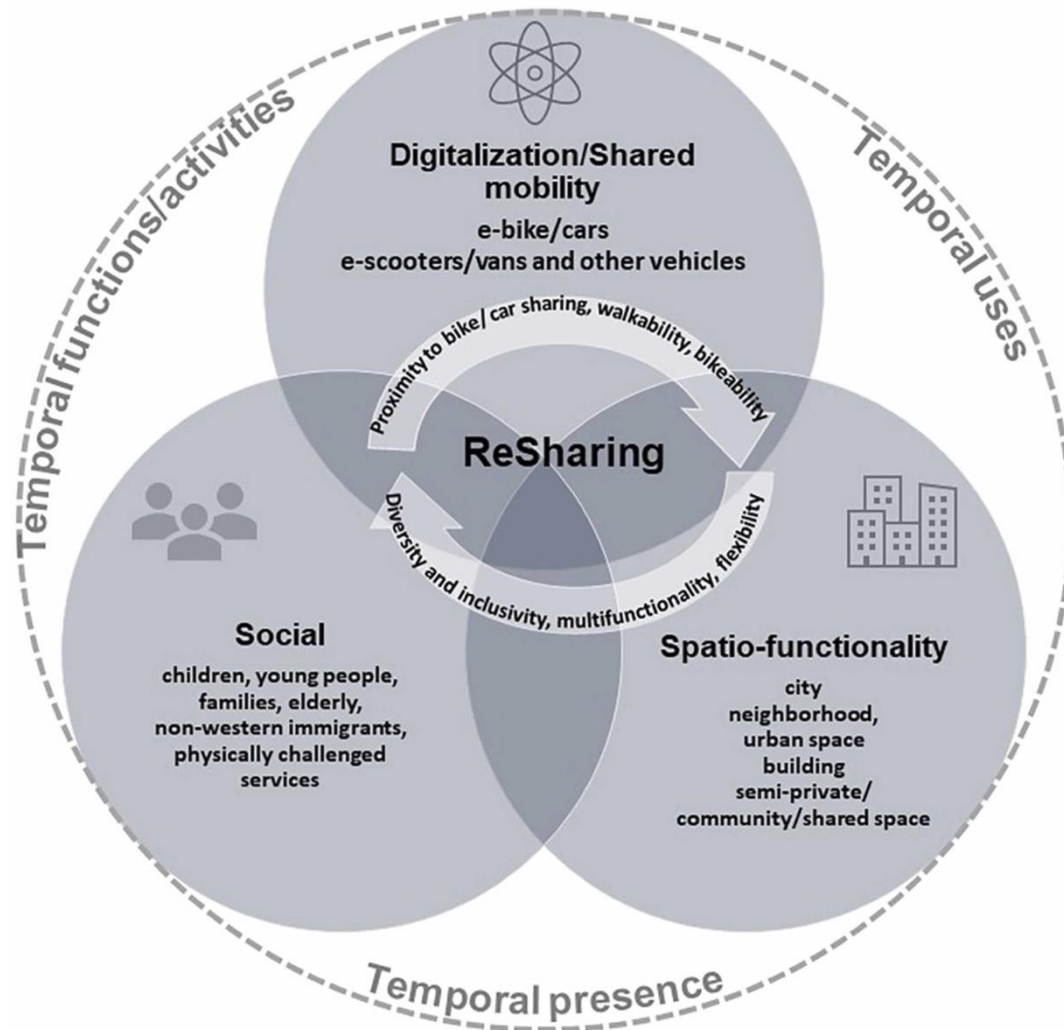
- Gendered **needs, power structures, negotiation processes**
- **TRANSITIONS – Digitalisation -Smart Cities- Smart mobilities** – What do they mean for women (and different demographic groups)?
- What are the systematic / financial benefits of framing these discussions? etc. – CARING cities framework can demand further consideration.

Operationalising SHARING

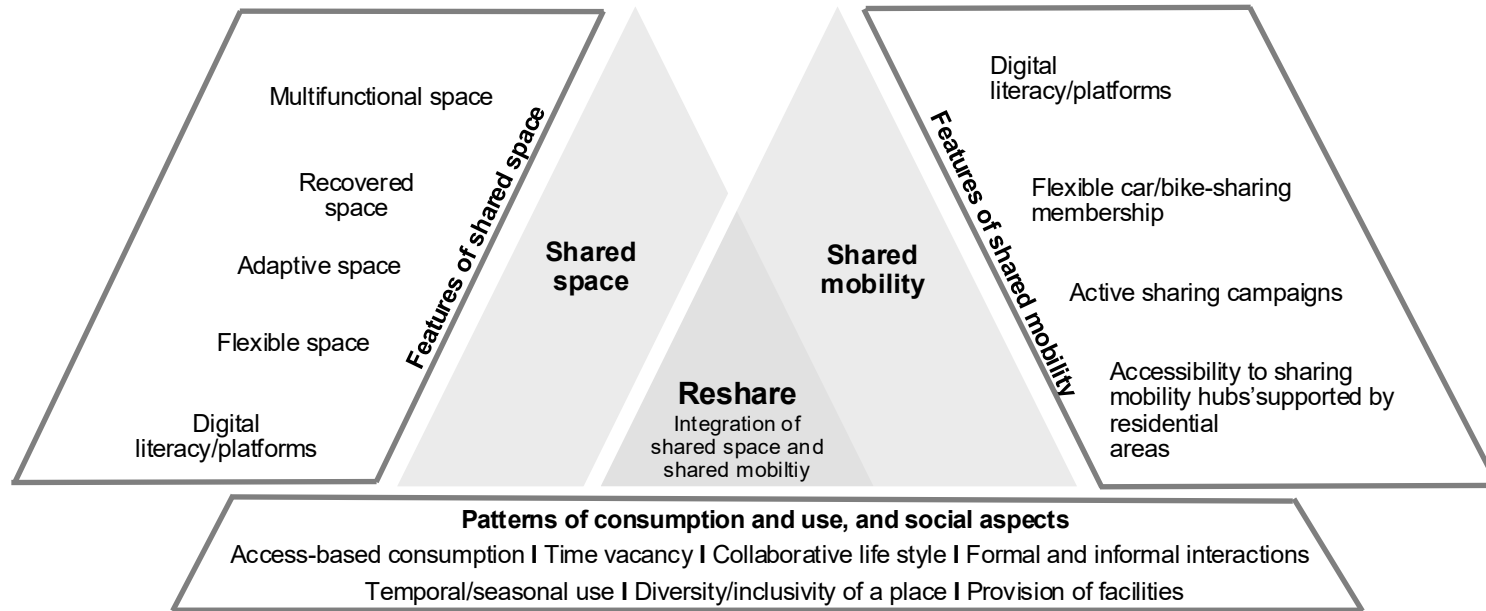
.....another ingress to CARING Cities



ReShare Resource sharing in residential buildings: Innovative approaches to shared, circular mobility & space solutions for sustainable consumption



CONCEPTUAL FRAMEWORK OF RESHARE



Inside shared spaces

Common room

- Meeting room
- Office
- Library room
- Music room
- Craft/art room
- PC room
- Shared workspace
- Small art gallery
- Playroom
- Table tennis
- Kids area
- Cafeteria

Room for utilities

- Communal workshop
- Tool room/reuse
- Swapping space
- Storage
- Post/parcel
- Garbage
- Kitchen/dining room
- Food sharing facility
- Laundry
- Bathroom/sauna

Room for utilities

- Gym
- Yoga/aerobic
- Dancing
- Pool
- Indoor jogging tracks
- Indoor playground
- Theater
- Small auditorium
- Garage

Outside shared spaces

Common room

- Parking area
- Playground
- Setting/waiting area for all
- Residential pet area
- BBQ
- Garden/greenhouse/planting box
- Garden house
- Green/open-shared space
- Architecture/facade/art
- Hytte/cabin (offsite)

Shared mobility

To park in outdoor spaces

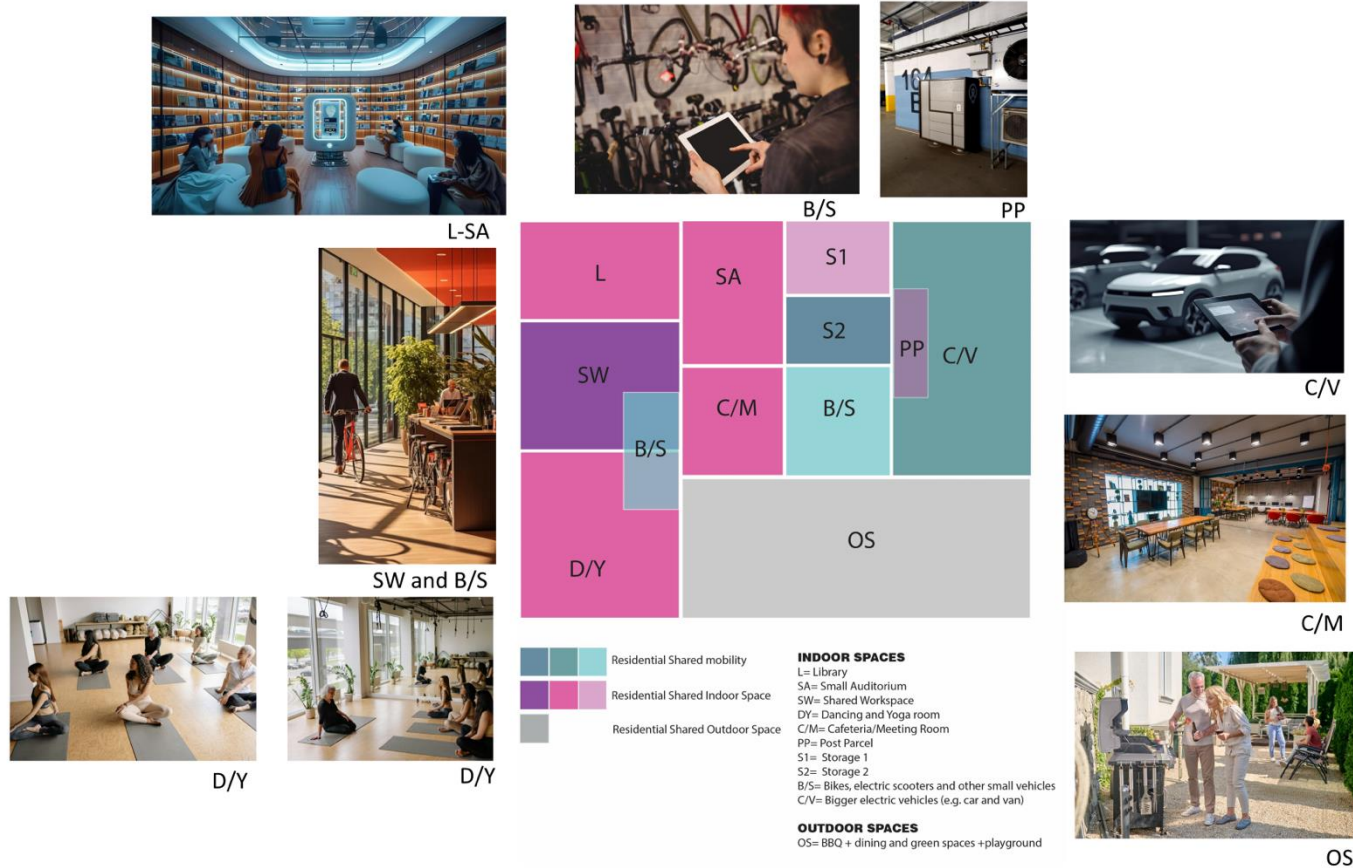
- Automobile
 - Automobile trailer
 - Van and other recreational vehicles
 - E-scooter
 - Bicycle (e-bike, cargo bike, etc.)
- parking

Shared mobility

To park in indoor spaces

- Bike trailer
- City bike/ parking
- Bike trailers/parking
- Automobile
- Automobile trailer
- Van and other recreational vehicles
- E-scooter
- Bicycle (e-bike, cargobike, etc.)
- City bike
- Bike trailers
- Trolley/hand truck

Re-shared neighborhoods: the key to bringing circular principles to the urban neighborhoods? The case of Oslo



Prototyping reshared first floor (source images: pexel.com and other free AI sources)

Di Marino M., Priya Uteng T. & Chavoshi H., Standal A. K. 'Reshared' neighborhoods: the key to bringing circular principles to urban neighborhoods? The case of Oslo.



Fig. 14 Outcomes from spatial observations - Vekslerveien, Oslo Vekslerveien gate



Fig. 15 Outcomes from spatial observations - Leyrins gate 2

52

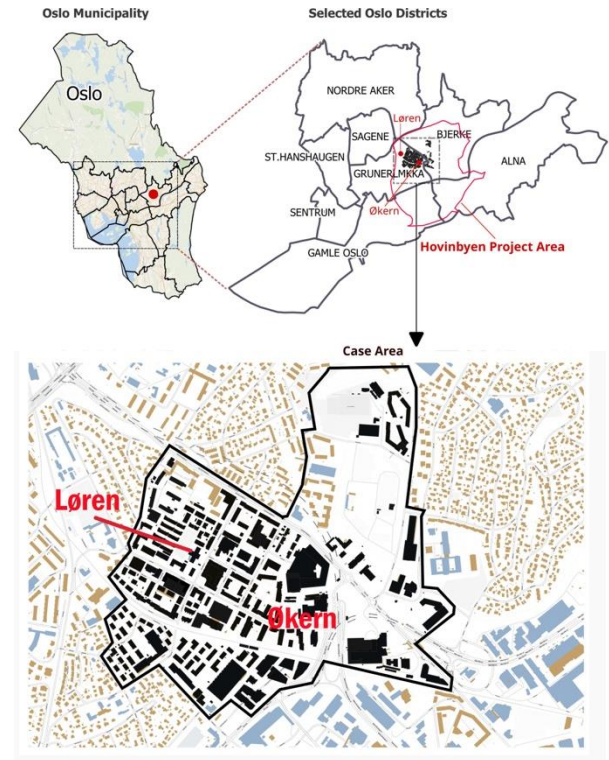


Fig. 16 Case study area. Di Marino M., Chavoshi H & Priya Uteng T. (2024). Resharing spaces, services and mobility: Developing a reshareability index for sustainable planning in Oslo, *Land Use Policy*, 142, 107196, <https://doi.org/10.1016/j.landusepol.2024.107196>

SPATIAL ANALYSES

Outcomes from Reshare Project

Accessibility to Car Sharing



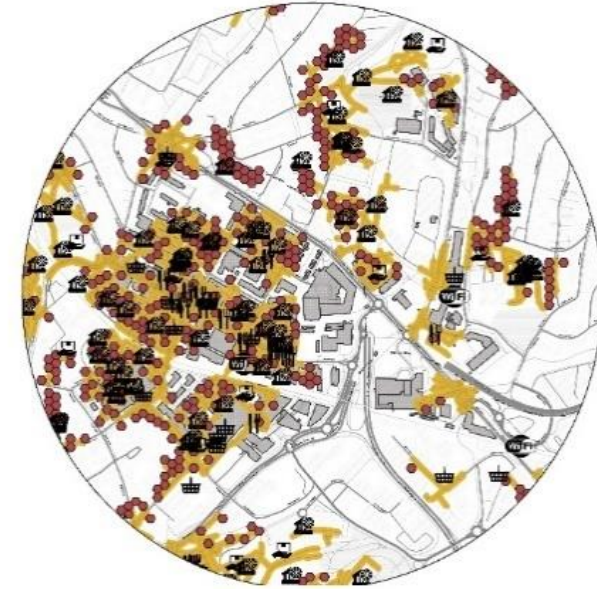
- Car Sharing Locations
- Buildings within 200m from the nearest car sharing locations
- 200m buffer from car sharing locations
- Case Area

Accessibility to Bike-Sharing Network



- Bike Station
 - Buildings within 200m of the Nearest Bike Stations
 - 200m Buffer From Nearest Bike Stations
 - Case Area
- Road Types
- Footway
 - Cycleway
 - Residential
 - Secondary
 - Tertiary

Accessibility to Multi Functional Area



- Retail trade
 - Buildings Accessible to the High Functional Service Areas
 - 50m Service Area from the POIs
 - Case Area
- POIs
- Entertainment, arts and culture
 - Food and beverages services
 - Nature, leisure and sports
 - Public and private services

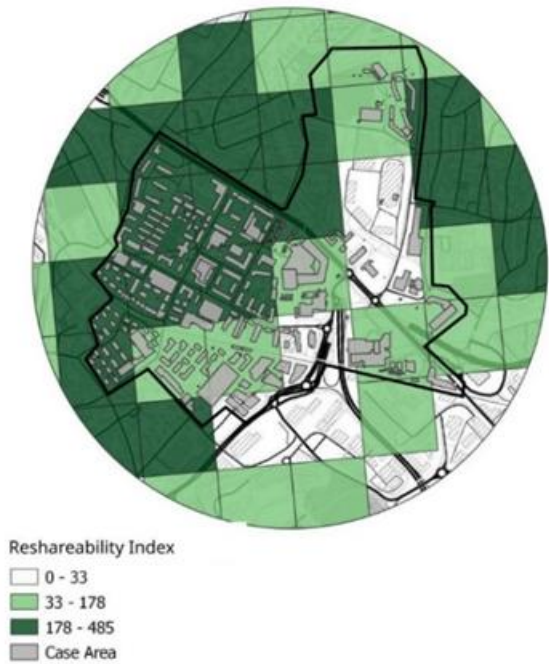
Di Marino M., Chavoshi H & Priya Uteng T. (2024). Resharing spaces, services and mobility: Developing a reshareability index for sustainable planning in Oslo, *Land Use Policy*, 142, 107196, <https://doi.org/10.1016/j.landusepol.2024.107196>

SPATIAL
ANALYSES

‘Resharing spaces,
services and
mobility:
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reshareability
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planning in Oslo.
Mina Di Marino,
Hossein Seyed
Chavoshi and Tanu
Priya Uteng
Land Use Policy



Reshareability Index (250m Grid Level)



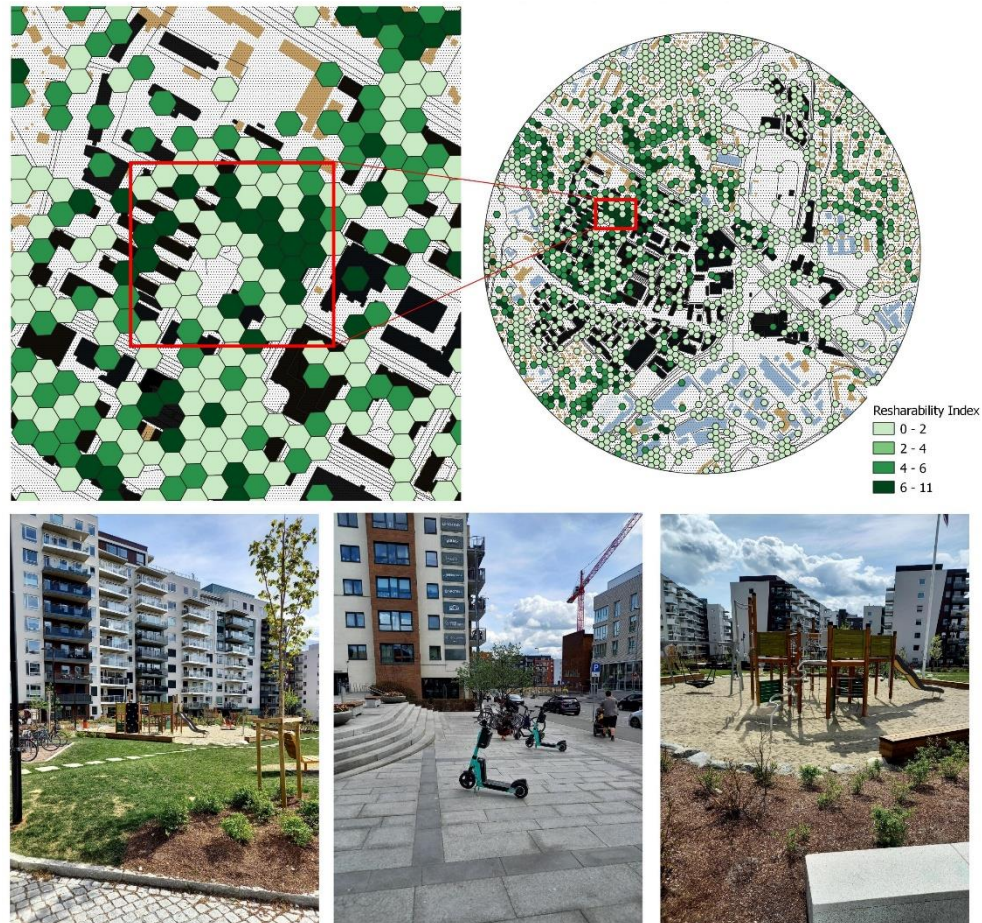
Reshareability Index (Building Level)



The reshareability index at the grid and building levels, in Løren, Økern and surrounding areas

SPATIAL
ANALYSES

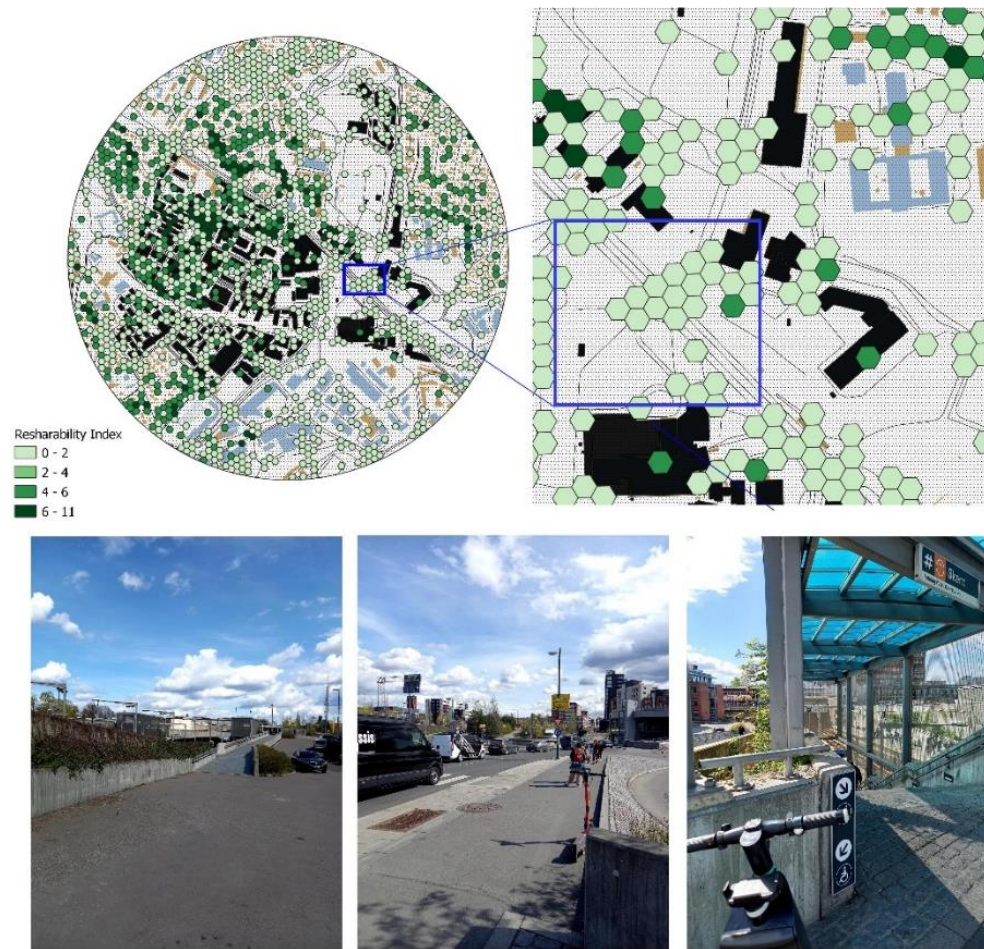
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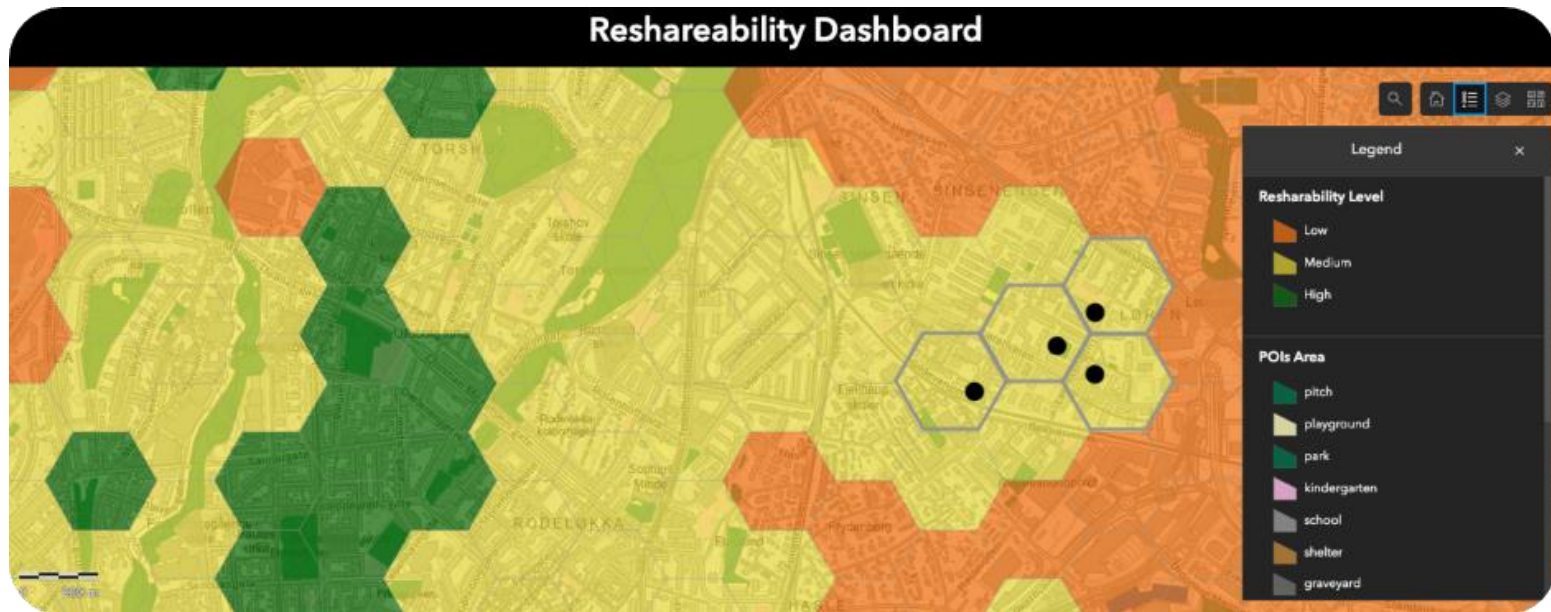
Aligning the reshareability index with empirical evidence: high reshareability index (building level), Løren district

SPATIAL
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Land Use Policy



Aligning the reshareability index with empirical evidence: high reshareability index (building level), Økern distric



Visualization of the dashboard reshareability index in Løren

Reshareability index is an indicator that assists in analyzing conditions for resharing.

The index is based on the following factors

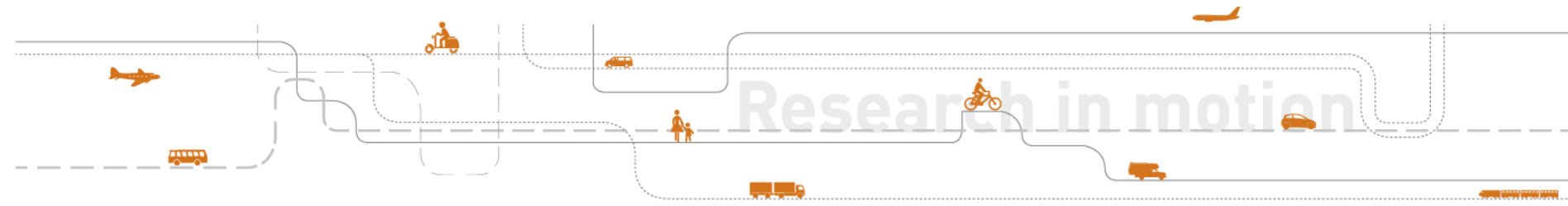
- Access to sharing public transportation
- Building type and size
- Demographic and socioeconomic factors
- Multifunctionality
- Street openness and closeness:
- Street characteristics:
- Walkability and bikeability:.
- Access to green areas:

Di Marino M., Priya Uteng T. & Chavoshi H., Standal A. K. 'Reshared' neighborhoods: the key to bringing circular principles to urban neighborhoods? The case of Oslo.

DASHBOARD - video

The Policy Clashes

.....another ingress to CARING Cities

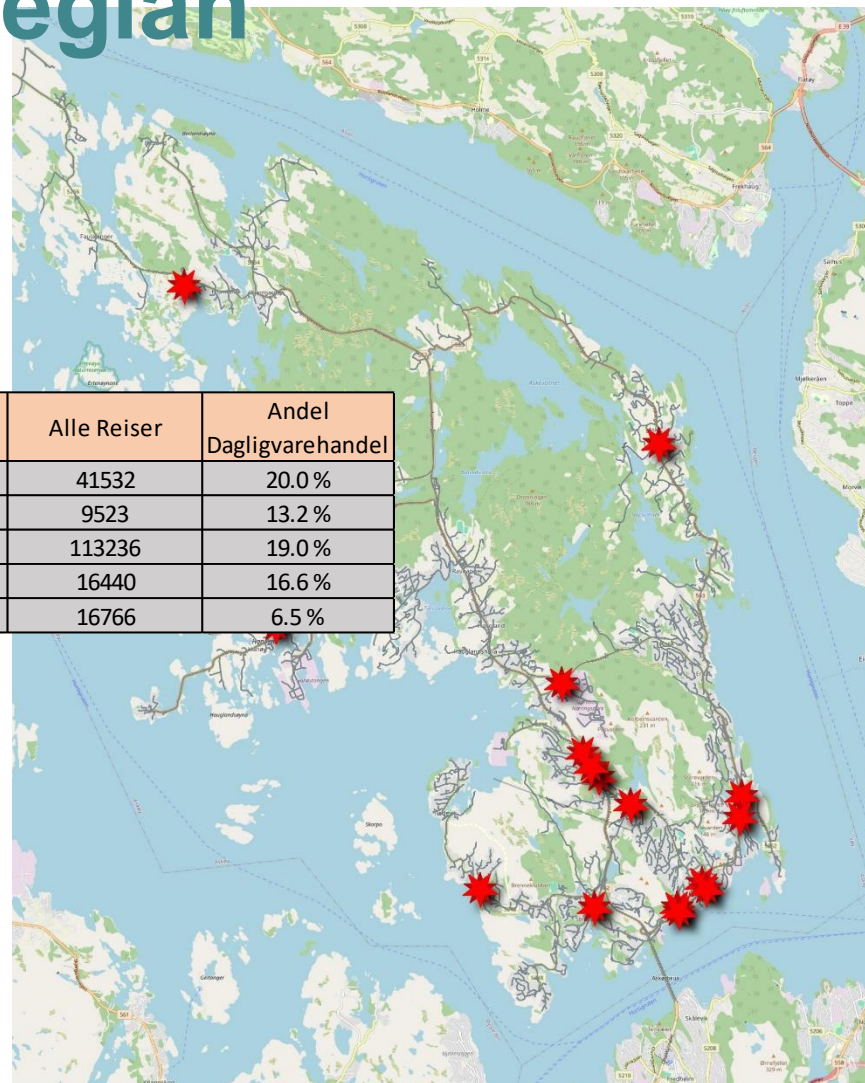


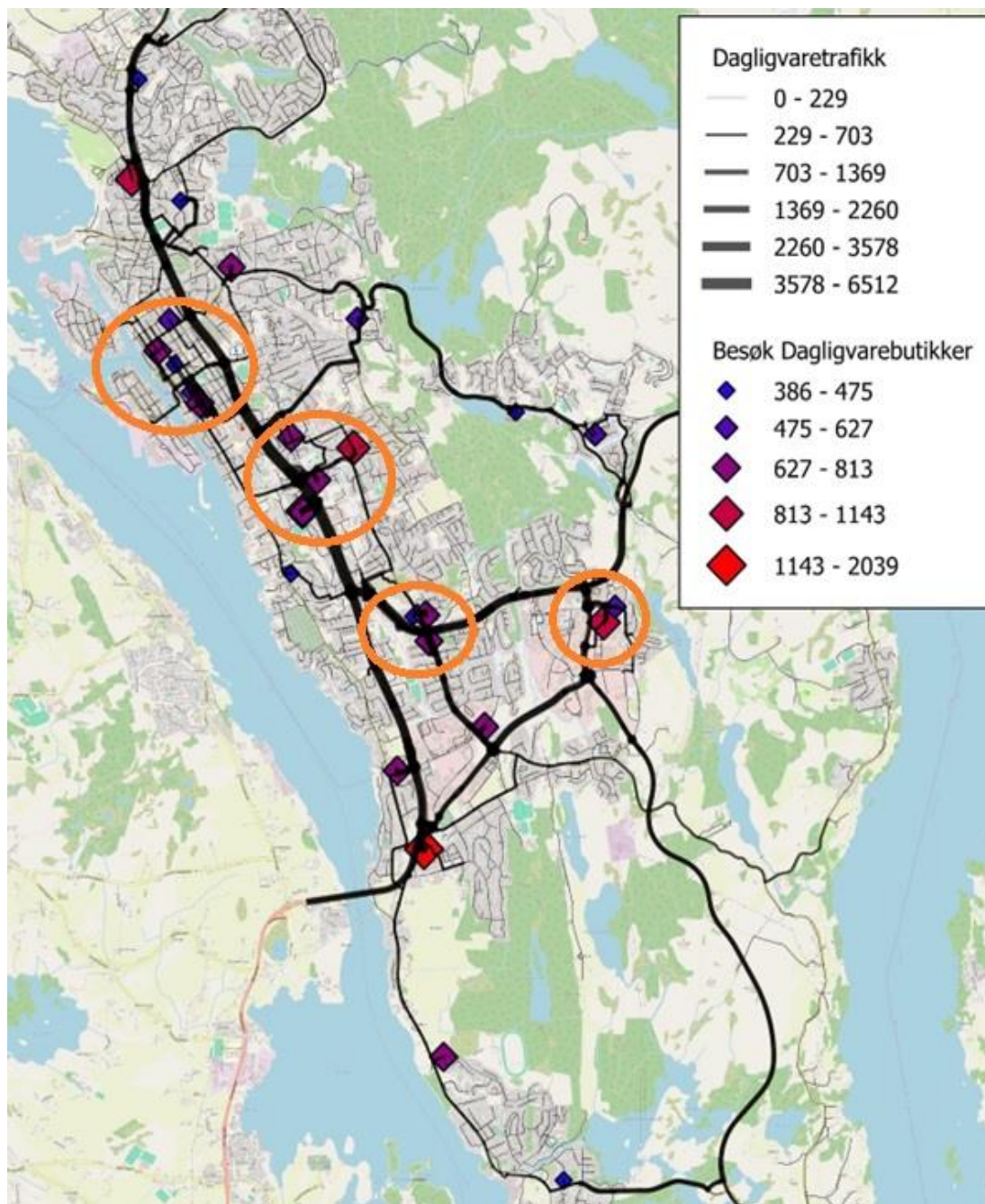
City Packages – Norwegian policy approach

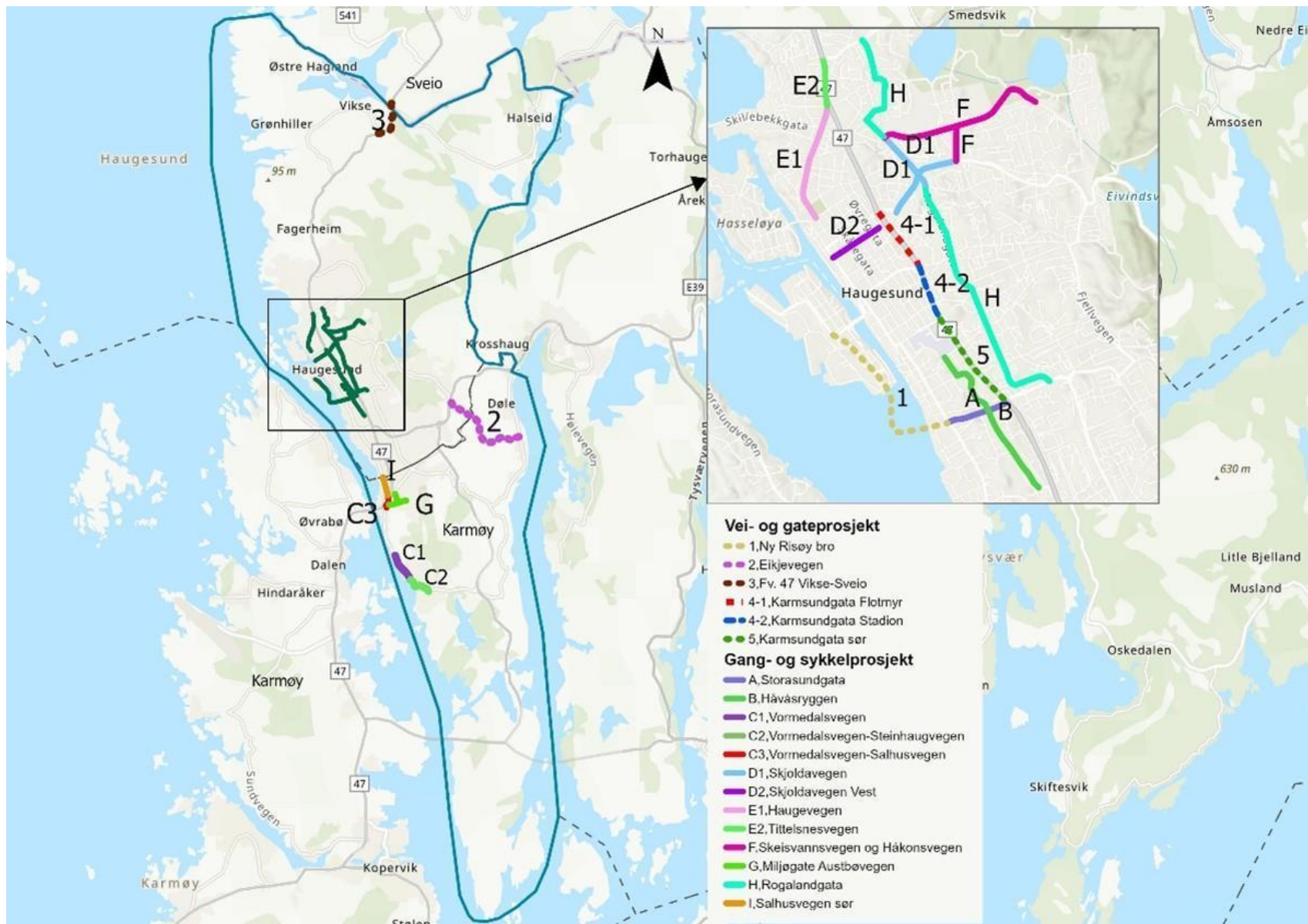
- Hva inngår i en Bypakke?
- Bilrestriktive tiltak
 - Bomkostander
 - Parkeringskostnader
 - Kollektiv
 - Veipricing?
- Gange og sykkelstrategier
 - Overføring av bilturer til gange og sykkel
 - Store investeringer i sykkelnettverk
- Tenke nytt?
 - Dagens senterstruktur er stort sett bilbasert
 - Nullvekstvisjonen krever ny tilnærming?
 - Dagligvarehandel kan være sentral i oppnåelsen av nullvekst!

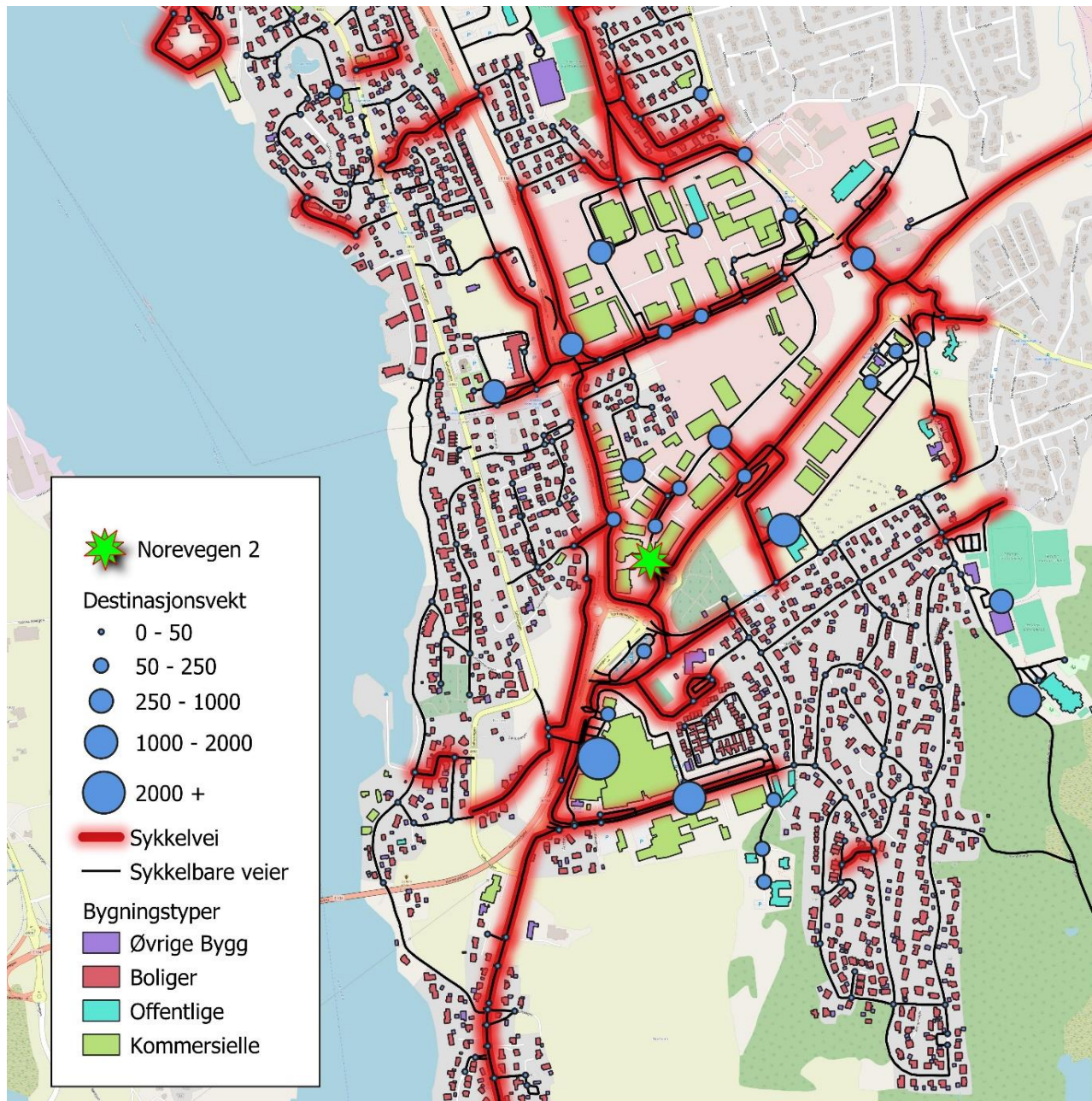
Siste case askøy

Reisemiddel	Reiseformål-Dagligvarehandel	Alle Reiser	Andel Dagligvarehandel
Gange	8290	41532	20.0 %
Sykkel	1254	9523	13.2 %
Bilfører	21516	113236	19.0 %
Bilpassasjer	2727	16440	16.6 %
Kollektiv	1091	16766	6.5 %









Thank you!!