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REPORT FROM THE EXCURSION

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VISITING CITIES (NORWAY): Oslo, Jessheim, Lillehammer, Hamar

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toi Transportøkonomisk institutt
Stiftelsen Norsk senter for samferdselsforskning

UNIVERZITA J. E. PURKYNĚ V ÚSTÍ NAD LABEM

DOPRAVA A MOBILITA
výzkumný tým

1. INTRODUCTION

Urban transport planning in the Czech Republic is still largely focused on the coordination and promotion of public transport and investment in road infrastructure. The integration of different transport modes and mobility services and other aspects such as spatial planning, architectural quality of transport solutions and the promotion of identity and sustainable development of local communities are still marginalised. The need for a holistic approach to transport, transport planning and mobility issues arises particularly in the post-COVID-19 era of energy and price uncertainty and climate change.

For this reason, the EMPIRIC initiative was created, which aims, among other things, to bring inspiration from Norway to Czech cities. In Norway, the Zero-growth goal has been developed in the largest urban areas since 2012. This is an innovative concept in transport planning that represents an integrated approach to spatial and transport policy. This goal is part of national transport strategies and is gradually being integrated into strategic planning in smaller cities as well. It aims to absorb the growth in passenger transport in favour of sustainable modes of transport, i.e. public transport, cycling and walking, which should ensure a long-term decline in car traffic and the associated positive environmental impact.

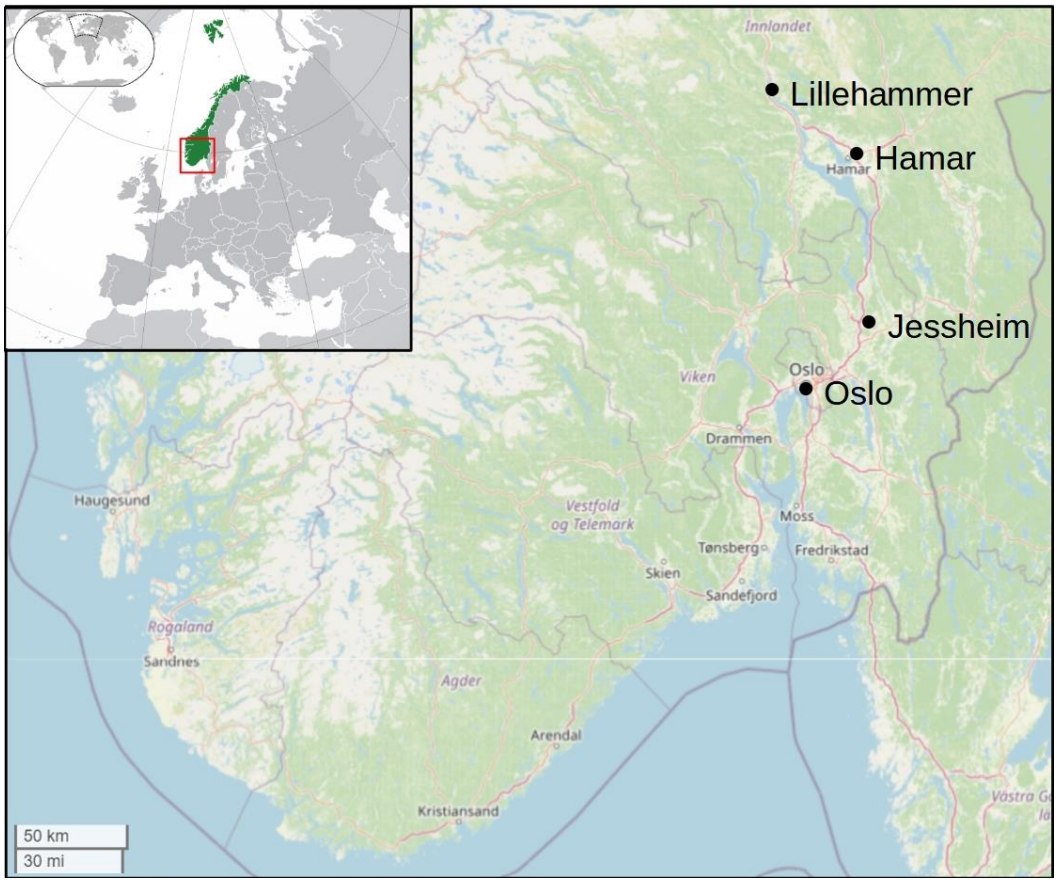
To achieve this objective, measures aimed at reallocating road space for non-transport purposes are implemented, among others. These measures aim to improve accessibility and promote the use of alternative means of transport to the car. Strategies include densification and transformation of urban centres, improvement of conditions for walking and cycling, expansion of public transport services and regulation of car traffic.

Examples of successful initiatives are the high-quality cycle path between Stavanger and Sandnes, the restrictive parking policy or the establishment of an internal toll ring in Oslo. Local, regional and national governments are all involved in achieving the Zero-growth goal, working together across sectors and acting for the benefit of citizens.

Funding of measures is provided by toll revenue and the budgets of local, regional and state authorities. The state budget covers most of the capital costs of public transport infrastructure, which supports the implementation of zero growth in the largest urban areas. This approach has enabled the allocation of approximately €8 billion in funding for urban areas under the National Transport Plan 2022-2033[1].

Smaller cities are also implementing similar measures, as we witnessed during our site visit to Norwegian cities. In addition to the capital Oslo, these were the smaller and medium-sized cities of Jessheim, Lillehamer and Hamar. During this excursion we gained a comprehensive view of the Norwegian model of transport and public space planning and gathered inspiring knowledge that can be applied in the Czech environment.

[1] See https://www.regjeringen.no/en/dokumenter/national-transport-plan-2022-2033/id2863430/?ch=7



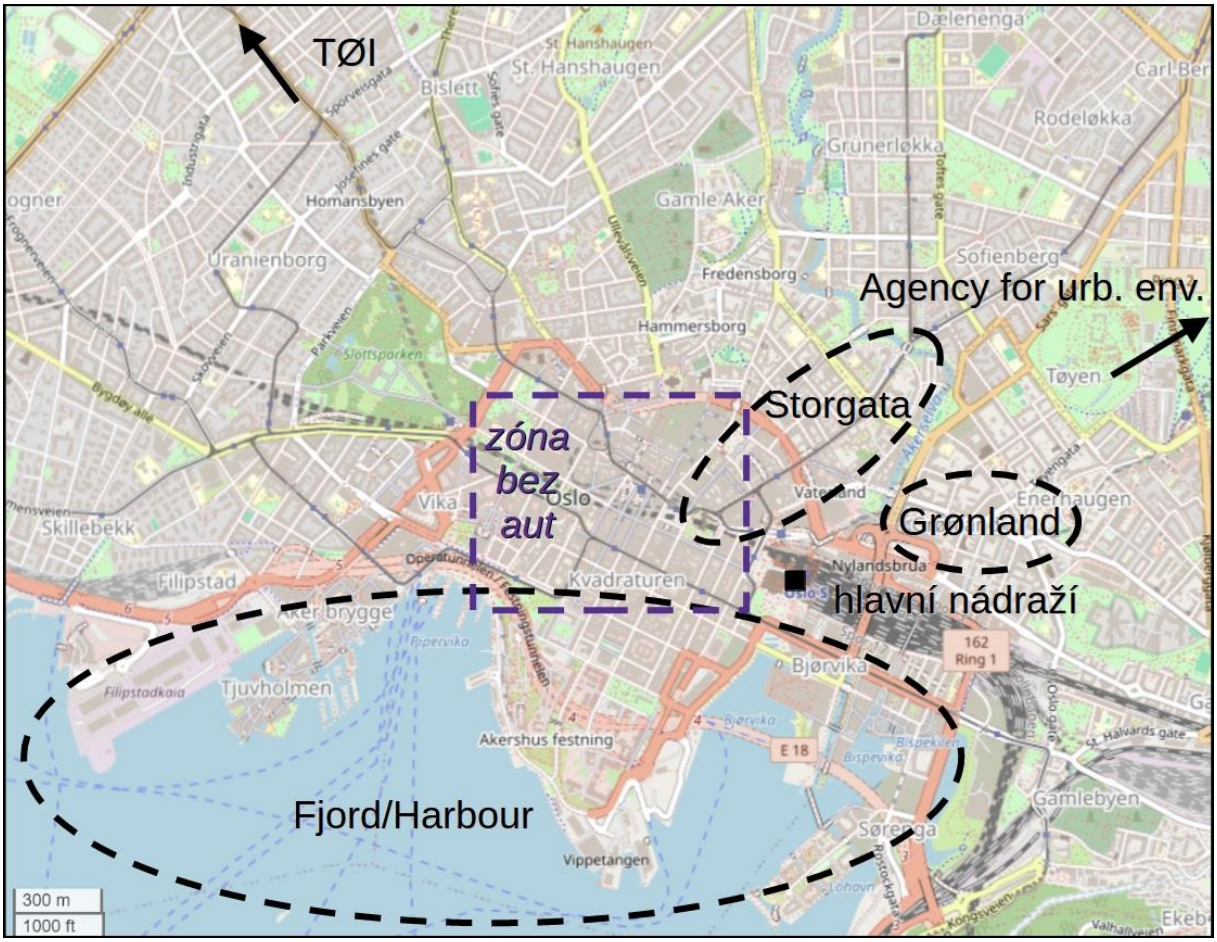
Picture 1: Visited cities. Source: © OpenStreetMap

1. OSLO- 'Car-free city life' project in Oslo

Local guides: Urban Environment Agency, Oslo: Victoria Fara and Vigdis Hobøl

Basic information:

- Population: 709 000, entire metropolitan area up to 1 500 000
- Area: 480 km²
- The capital of Norway



Picture 2: Central area of Oslo. Source: © OpenStreetMap

Note: Zóna bez aut = Car-free zone; hlavní nádraží = main train station

"Oslo without cars" - presentations and excursions

The goal of the "Car Free Oslo" programme: to create a better urban environment that is greener, safer and more pleasant to live in.

- One of the main objectives is to strengthen the city centre - a greater concentration of residents, business, cultural and other activities - including enabling efficient and quality public transport operations.

Schedule of activities:

2012-2014: survey - urban quality of life; it was found that:

- most of the activities are concentrated in a smaller banana-shaped area in the fjord area
- public spaces and their network are not connected and not very family-friendly
- greenery is not systematically incorporated into the urban space and does not enliven the urban environment as it could
- little space for children in urban space!
- not enough furniture to meet basic needs in public space (toilets, benches and chairs, drinking fountains)
- spaces must be: safe, green, inclusive and fun

2017: six small-scale pilot solutions implemented

2018: Action Plan created

2019: Zone Plan created

2020: the area in which major public space improvements have been made has been expanded, includes the most densely populated neighbourhood (1,600 residents, more commuters)

2021: The Action Plan has been completed

A paradigm shift in urban planning:

- Downtown enhancement, densification, zoning and transportation planning - for calming and more functional street space

Strategic Objective:

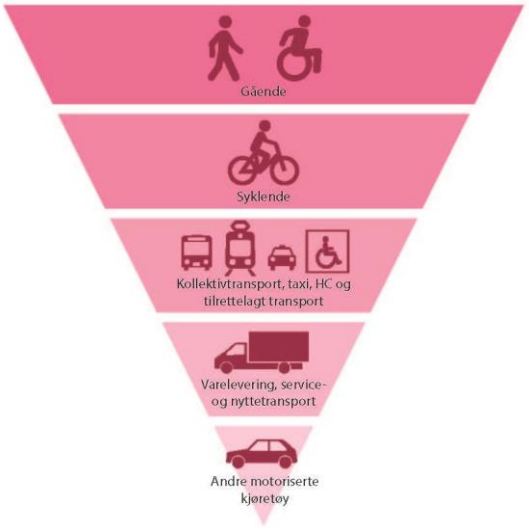
- Modal split: by 2025: 25% share of bicycles in the modal split, now (2023) only 12%
- 20% reduction in car share
- Zero growth transport policy
- Implementation of the Cycling Strategy and Pedestrian Transport Development Strategy

Vision "People first, private cars last!"

- The focus is on accessibility and mobility, not on moving and parking cars (see pyramid)
- Physical measures in favour of sustainable modes of transport have become the basis
    - The new traffic pattern

  Designed to reduce traffic in the city centre, eliminate through-traffic and to prioritise certain streets where through-traffic will be diverted and directed. The two-way streets have been unidirectional with bike lanes marked and bicycle traffic

allowed in both directions. Selected streets with motor traffic have been transformed into pedestrian zones and signage has been added prohibiting motor vehicle access.



- Removing almost all on-street parking (720 on-street parking spaces for cars and 70 for motorbikes)
    - 125 parking spaces for service vehicles

The number of parking spaces for people with reduced mobility has increased from 70 to 130. Sensors for these parking spaces were tested in pilot projects. The sensors were later removed based on user feedback - it is more important for them to know the location of the parking space.

Parking now costs NOK 100/hour; flat rate for parking, changes every 4 years; resident parking is cheaper.

2019 and 2022 - a vehicle census and qualitative study on residents' experiences of changes in parking policy (sociological studies often focus on negative experiences, but hard data on traffic and public space use show the opposite - adaptation to new measures, reduced congestion and improved quality of public space - see the next point)

<u>Impact of implemented measures</u>:

Less than 10% of commuters to the city centre drive, and this has been the situation for a few decades.
Traffic counts: downtown traffic volume down by 23% between 2016 and 2019, bus delays reduced, bus frequency slightly higher
Census of people on the streets: a 10% increase in pedestrians on weekdays and a 40% increase on weekends

Pilot projects 2022: Kirkegata + Gata Grønland

In order to give priority to pedestrian traffic and to get a greener, safer public space for meeting people and more leisure activities, a new concept was created and implemented in the summer of 2022. As its architects state, "Where *there used to be cars and asphalt, forest trees, urban life, people and biodiversity have moved in. The aim is to reclaim our streets, to connect nature and the city more closely and to showcase a whole new way of how Oslo should look and feel*."[2] Specifically, the following has been implemented:

- New street layout (redistribution/restriction of traffic) to "revive the streets" without car traffic, the aim was to introduce temporary measures as a demonstration of alternative use of street space
- Design of "urban forest" (living in quiet zones with lots of greenery) - Kirkegata
- Temporary installations (July-October 2022) - inspired by the Danish architect Jan Gehl, calming the space - greenery, play areas and elements for children, meeting places, public toilets, seating, lighting (for safety and aesthetics), electricity connections for users of public spaces, especially for street events (festivals, leisure activities, etc.)
- New traffic regime

Evaluation of Grønland:

The design of the street Grønland is inspired by the Norwegian lowlands and has a distinctive leafy look and lush flower meadows along with 5m high birch trees and cranes. The meadow is planted with edible and fragrant herbs and berry plants such as oregano, mint, sage and blueberries. Pedestrians and cyclists are prioritized by maximizing public green space and creating space for urban furniture, outdoor seating, and new urban nature.

Figure 3: Gata Grønland, Source: https://www.sla.dk/cases/gata-gronland-and-kirkegata/

[2] See https://www.sla.dk/cases/gata-gronland-and-kirkegata/

Positive:

- Very good responses from residents and visitors through online and on-street surveys
- Women and children spend more time on the streets
- Traffic on the streets reduced by almost 80%

Negative:

- There has been criticism that there is a lack of non-commercial activities
- In residential zones, traffic (car movement) has increased
- Guerrilla street closures

Evaluation of Kirkegate:

A temporary 'urban forest' has been created in Kirkegate with cranesbill, ferns, blueberries, mulberry and heather. Pines, spruces, hazel and deciduous trees 4 metres high have also been planted, with a continuous green cover of Nordic meadow plants. The aim of the experiment in Kirkegata is to explore how a completely new type of urban nature can be added in one of the most central areas of Oslo's historic core, creating new experiences, better public life, and enhancing the overall biodiversity in Oslo.

Figure 4: Kirkegate, source: https://www.sla.dk/cases/gata-gronland-and-kirkegata/

Positive:

- Street traffic down by 22%
- Very good responses through the online and on the street survey

Negative:

- Narrow streets with functional use for the emergency system or for large festivals have limited opportunities for temporary physical measures
- Conflict situations have occurred near construction sites where truck access must be provided

Photo Gallery - Oslo city centre, car-free city life project

Figure 5: Intersection of bus, tram, train and shared cycling in Oslo

Figure 6: Street closure and transformation of former road space into front gardens

Figure 7: Cyclo-corridor

2. OSLO – harbour area

Local guide: TØI: Aud Tennøy

Transforming a port brownfield into a mixed-use area. Massive development - mainly flats, partly offices, public spaces (including temporary installations on sites for future development), frequent restaurants along the seafront promenade, extremely popular floating saunas, plenty of free seating everywhere.

New buildings and improvements to public spaces:

- new residential blocks
- architecturally interesting library is free to use, no registration, open until late in the evening, plenty of room reservations (free of charge), lending or use of musical instruments, spaces for families; gallery; opera etc.
- use of the area immediately by the sea (modern art gallery, saunas, beach, ...)
- playgrounds for children, but also workout areas for adults
- urban furniture play elements or greenery in containers instead of parking spaces
- the area in front of the town hall

Transport measures:

- new street layout - one-way streets, extension of bicycle lanes
- tram line at street level in the middle of a large pedestrian/cycle area in front of the Town-hall
- tram - green belt, on-street stops (no bays)
- cyclist counters
- at a busy street, cycle path off the road, height separation from the pavement
- cycle crossings together with pedestrian crossings
- pedestrian zones, cycle routes
- reduction of the maximum speed limit to 40 km/h in the vicinity of the library

Some solutions facilitating active mobility have (quickly) become obsolete - e.g. a narrow cycle lane must be introduced behind the shelter of a public transport stop.

Photo Gallery - Oslo, port:

Figure 8: Cyclist crossing and pedestrian crossing

Figure 9: Tram lane as a shared space

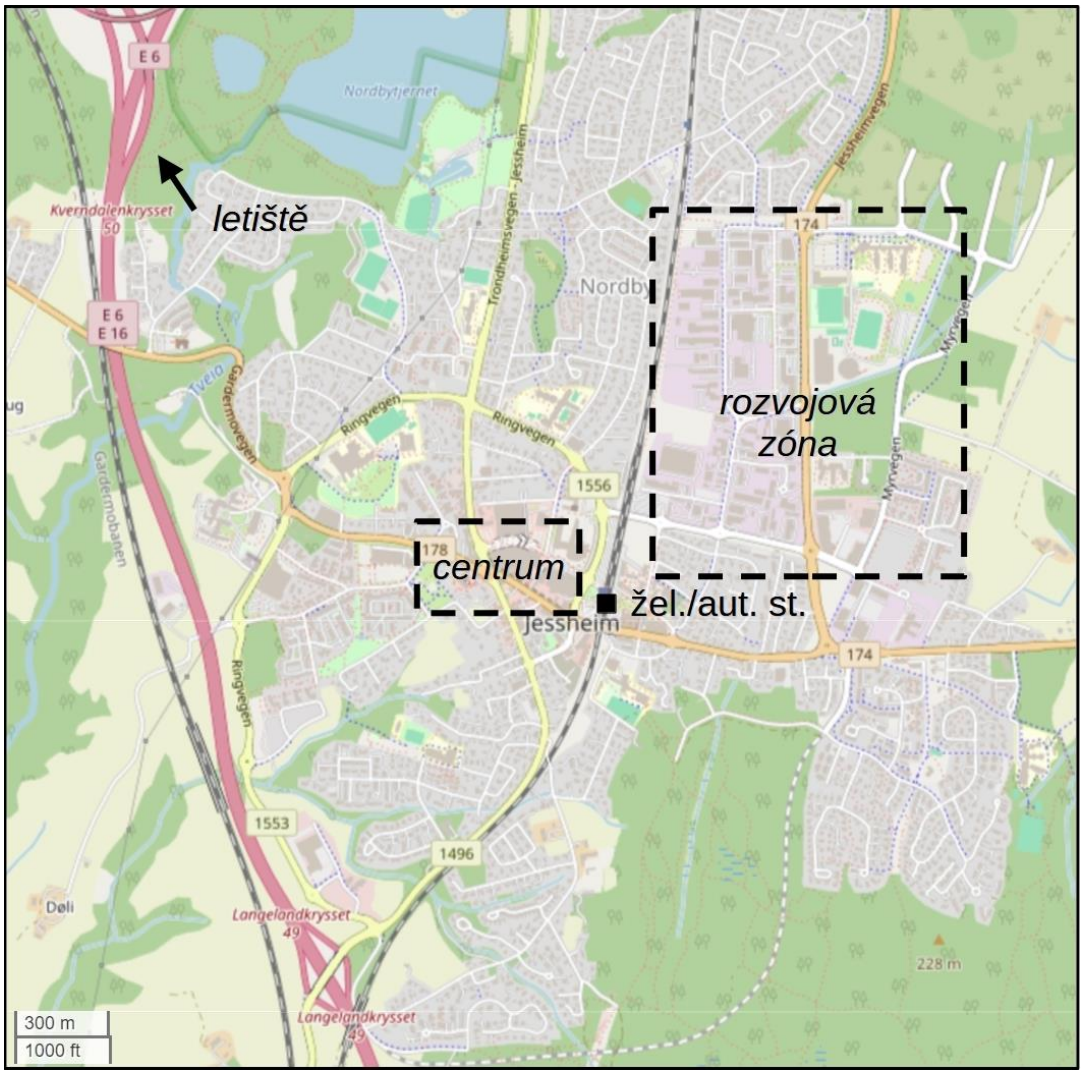
Figure 10: The cycle lane in front of the Oslo library and the reduction of the maximum speed to 40 km/h

3. ULLENSAKER / JESSHEIM

Local guides: Department of Planning and Business Development - Terje Brudal, Maria Rasmussen

Basic information:

- Population: 41 000 (municipality of Ullensaker); 23 000 (town of Jessheim)
- Area: 252 km² (municipality of Ullensaker); 7,52 km² (Jessheim)
- Part of the Oslo region
- Jessheim is defined in the regional plan as a development area - regional centre



Picture 11: Jessheim. Source: © OpenStreetMap

Note: letiště = airport; rozvojová zóna = developing area; žel./aut. st. = train/bus station

The surrounding area is used for agriculture and military:

- Business park
- Airport

High population mobility: every year 4,000 people move into the city, 3,000 move out

- young families from Oslo are moving to the city
- high pressure on social infrastructure (schools, kindergartens, health care facilities)
- large development construction - they do not contribute to the municipal budget, but participate in the construction of roads (bypass)

Mobility strategy (from a city for cars to "urban living"):

1) Attractive centre - 3 access streets to the centre
2) Reduction of car traffic - creation of a bypass, pedestrian zone in the centre
3) Greater use of public transport (buses), sustainable last mile solutions
4) Cycling

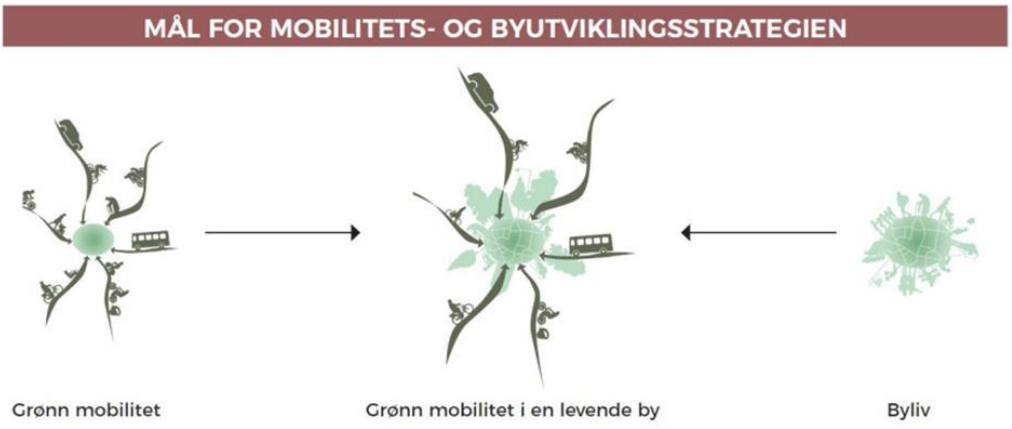
A large number of studies:

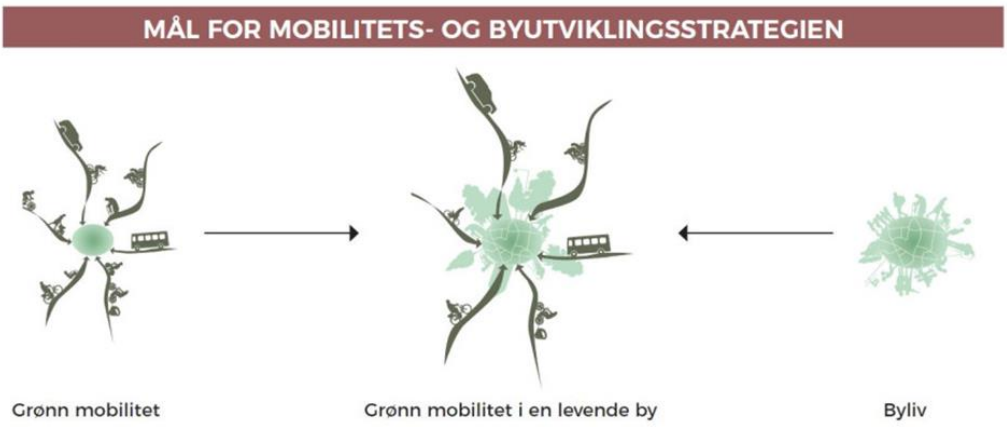
- Flood risk map, communication with individual neighbourhoods - what they want to build, what needs to be done
- Transport analysis
- Noise map
- Trade analysis
- Cultural Heritage Study
- Mapping rural heritage

Master plan for 2050 (Byplan):

Byplan Jessheim 2050 looks at the development of Jessheim in a holistic perspective up to 2050. It targets long-term development elements that will strengthen and bring the city together. It makes suggestions for repurposing or transforming certain areas.

- BY concept - who we are, how we live, "*who we want to be as a city*", building local identity
- Consultation process
- Public participation - seminars, workshops, open doors
- Setting a vision for the city
- Building the city from within and without
- Prioritising quality over quantity - creating standards for the built environment
- Thinking about the vulnerability of road users
- City zoning plan - 3 city sub-plans
- Sports activities, children's activities





Zoning plan of the inner-city area

- accessible, attractive and full of opportunities

Current situation in the city:

- good rail connection with Oslo
- bus connection to the airport
- P+R system at the train station and bus terminal
- enough covered bike racks at the station
- covered bike racks and bike boxes in front of the new town hall, office and cinema building
- emphasis on car parking in underground garages in development projects
- plans for the improvement of public spaces
- plan for the reconstruction of the square in front of the town hall with an emphasis on sustainable mobility
- transfer of transit traffic out of the city centre
- transforming grey public spaces into playgrounds and meeting areas

Photo Gallery - Ullensaker / Jessheim:

Figure 12: Jessheim train station and covered bike racks

Figure 13: Children's area

Figure 14: Traffic calming measures

4. LILLEHAMMER

Local guides: City Planning Department: Lieneke Bekkema, Wenche Hang Almestrand

Basic information:

- Population: 28 500 (municipality); 21 000 (city)
- Area: 478 km² (municipality); 11.52 km² (city)
- Another approx. 50,000 second homes within 1 h of the city; site of the 1994 Winter Olympic Games
- Press release: https://www.lillehammer.kommune.no/tsjekkia-ser-til-lillehammer.6624230-172351.html

Picture 15: Lillehammer. Source: © OpenStreetMap

Note: pěší zóna = pedestrian zone; žel./aut.st.=train/bus station; olymp. sportoviště = Olympic venues

Historical context:

- Lillehammer founded 1827, city rights 1842

- planned town on a rectangular street network along the old royal road from Oslo to Trondheim, originally for up to 5,000 inhabitants; smaller part of the town on the opposite shore (now connected by bridges); considerable slope towards the lake shore

- the centre developed along the steep Mesna River - probably a combination of the possibility of industrial development along the river (hydroelectric power; only one working business survives today) and the existence of a less steep path from the lakeshore in these locations; the original centre was planned further south (in the area of the church and the present park)

- 1894: railway from Oslo - economic development, increased population, but at the same time created a barrier separating the city from the lake shore

- 1994: Winter Olympic Games - projects originally planned in the long term accelerated and financed from national resources - transport infrastructure (new E6 track outside the centre with a feeder to the city centre) - now listed and restricting changes in the centre; new bus station building by the railway station. (recently added connecting building from the old station building to the new bus station building), large space for bus boarding and movement at the station, sports fields, administrative and residential buildings

City structure:

- Linear town with changing historical buildings
- Landscape and climatic factors affect mobility - high slope towards the lake, 5-6 months of the year frost and snow cover.

Problematic provision of mobility of second home users in the area (low density, inefficiency of providing mobility needs by public transport), but these users are important for maintaining commercial activities in the city itself.

City Plan 2020-2030 - Principles:

- growth from the centre
- the structure of the main centre and functional local centres in outlying districts
- development with high quality
- emphasis on preserving the character and heritage of the area

Planning, infrastructure:

- preparing areas for housing and business, attractive centre
- zones for business, mixed with residential function and in the centre itself
- ensuring a vibrant centre and maintaining a zero-growth strategy
- scenarios for future developments
- changes in mobility planning

Densification in the centre around the "hub" of public transport (railway and bus station) - modification of the space - reduction of handling and parking areas for buses, new commercial spaces, possible relocation of the university to the close vicinity (currently separated outside the city itself).

Five principles for changing the distribution of traffic:

1. Suitable environment for pedestrians:

Goal: Create a pedestrian-friendly network to facilitate pedestrian movement in urban space

Measure: Developed network to make pedestrian movement as easy as possible

2. Attractive and safe cycling routes:

Goal: Provide attractive and safe bicycle routes leading to and through the city centre

Measure: Network of safe cycle paths and promotion of cycling as a sustainable form of transport

3. Public transport within walking distance:

Goal: Ensure that public transport is accessible within walking distance for as many residents as possible

Measure: Developing an efficient public transport network and placing bus stops within walking distance

4. A parking offer that will limit private cars in the city centre:

Goal: Create a parking offer that will attract fewer private cars to the city centre

Measure: Restriction of parking for private cars and promotion of alternative modes of transport

5. Adapted traffic regime in the city centre to reduce transit traffic:

Goal: Change the traffic regime in the city centre to reduce the passage of cars

Measure: Modifications to traffic rules and regime in the city centre in order to reduce car passages

Strategies for Development:

- stakeholder involvement, cooperation and participation
- public, private and academic sector involvement

- the city as a link and creative actor
- shared space for different user groups - shared zones in the city centre
- new "green" connections along the Mesna River, especially for pedestrians, making the area more attractive, also focusing on heritage and life in the old industrial buildings along the river

Photo Gallery - Lillehammer:

Figure 16: The old train station building in Lillehammer

Figure 17: Lillehammer Shared Zone

Figure 18: Bicycle parking in Lillehammer

5. HAMAR

Basic information:

- Population: 32 000 (municipality); 29 000 (city)
- Area: 350.9 km² (municipality); 14.04 km² (town)

Hamar is a medium-sized town outside driving distance to Oslo (or any other large city). The town is located on Norway's largest lake, Lake Mjosa, and is a rail and road hub. Near the town we can find medieval monuments (a cathedral with a glass roof), buildings from the 19th and 20th centuries, as well as modern architecture.

Picture 19: Hamar. Source: © OpenStreetMap

Mobility strategy:

City planning with emphasis on public transport - development and change of organisation of city, regional bus lines; currently there are extensive construction works on the railway line

(double-tracking, numerous relocations) from Oslo (or from the end of the line from Oslo to the airport) to Hamar, which is a smaller railway junction. The aim is to significantly increase capacity and travel speed.

Restricting parking and creating conditions suitable for pedestrians and cyclists - massive reduction of street parking in the city centre - more underground garages. Outside the inner centre still large surface car parks in places. Smaller pedestrian zone with shops, restaurants in the inner city. In a few places "fun" elements designed to bring life back to the streets. The intersections in the inner centre are designed as a sort of equivalent of small shared zones - raising the roadway to sidewalk level, unifying the surface with the sidewalks. The north-western part of the lake shore is designed as a recreation zone with a "promenade" for pedestrians and cyclists, with numerous benches and other amenities. Still reserves in places (e.g. the connection between the railway station and the rest of the centre from a pedestrian perspective is still partly problematic with barriers in the form of railings or busy roads).

Parking

- smart system, variable displays
- parking zones: parking for residents, short-term and long-term parking
- free parking and paid parking garages
- even in the centre of the parking area near the main road
- parking for people in wheelchairs
- smart Hamar - smart data
- information about closures etc. on the website

Photo Gallery - Hamar:

Figure 20: Digital directional signs for the underground car park in Hamar

Figure 21: Shared space in Hamar

Figure 22: Promenade at Lake Mjoso, Hamar

6. CONCLUSION AND RECOMMENDATIONS

The implementation of the Zero-traffic growth goal has led to a significant reduction in traffic growth in major Norwegian cities over several years, and in the Oslo region the traffic growth is almost zero, despite a strong population growth. This, together with a strong growth in the percentage of EVs, have contributed to a reduction in greenhouse gas emissions from road traffic. Despite some persistent seasonal problems, there has also been a noticeable decrease in air pollution in all major cities[3] . The new approach has also contributed to promoting more sustainable and healthier lifestyles for residents. For example, significant parts of Oslo's city centre are dedicated to pedestrians and cyclists, especially around locations such as schools and parks.

The implementation of the zero-traffic growth goal has also strengthened cooperation between different levels of government and improved strategic long-term transport planning. Although some measures, such as the introduction of tolls or parking regulations, initially met with resistance from the population, social acceptance of transport measures has gradually increased as the population has come to perceive the benefits of these measures and the positive impact of better integrated and sustainable transport systems on quality of life.

The linking of architectural and urban design approaches to transport solutions and the close integration of spatial and transport planning can also be inspiring for Czech cities. Norwegian cities use various studies in transport planning, such as considering the history of a place and building local identity, the possibilities of developing commercial activities and related transport solutions regarding the needs of traders, analyses of the quality of public spaces and their use by different groups of inhabitants, etc. Norwegian cities also place emphasis on functional and architecturally interesting details in the public space and the quality of urban furniture.

[3] See https://www.oecd.org/climate-action/ipac/practices/norway-s-zero-growth-goal-for-major-urban-areas-3cc592d3/

Sources:

Presentations by representatives of the visited cities:

Oslo:

Fara, V., Hobøl, V.: Car-free livability program in Oslo. Agency for Urban Environment, City of Oslo, Norway, presented on 2 October 2023

Lillehammer:

Bekkema, L., Almestrand, W.H.: Planning development in Lillehammer. Municipality of Lillehammer, Planning department, presented on 3 October 2023

Jessheim:

Brudal, T., Rasmussen, M.: Urban planning in Jessheim. Plan- and business department, Ullensaker municipality, presented on 4 October 2023

Bykonsept: 200915_rapport_jessheim_rev.pdf (ullensaker.kommune.no)

Mobility and urban strategy: ullensaker.kommune.no/siteassets/10-tekstbibliotek/planer/plan-og-naring/mobilitetesstrategi/mob_byutviklingsstrategi_jessheim_nov19.pdf

Facts about ullensaker and statistics: Fakta om Ullensaker

Hamar:

Municipality of Hamar: https://www.hamar.kommune.no/sprak/#

Other sources:

Rydningen, U., Høynes, R.C., Kolltveit, L.W. (2017): OSLO 2019: A CAR-FREE CITY CENTRE. WIT Transactions on Ecology and The Environment, Vol. 226, WIT Press. doi:10.2495/SDP170011

Car-Free Livability Program in Oslo: https://pedestrianspace.org/car-free-livability-program-in-oslo/

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