

# Urban Climate Adaptation in the Nordics

Climate adaptation, fossil-free  
mobility and citizen engagement  
in Nordic and Baltic cities



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This catalogue is created based on project examples submitted by Nordic and Baltic cities as part of the Urban Climate Adaptation in the Nordics (UCAN) project. The collection of case studies, which vary in style and length, showcases examples of public space and street transformation projects in Nordic and Baltic cities that have also contributed to climate adaptation. The graphics were created as part of the "Transform your street!" youth contest, while the policy recommendations are based on a workshop held in Copenhagen on 22 March 2023.

The UCAN project has been co-funded by the Nordic Working Group for Climate and Air (NKL) under the auspices of the Nordic Council of Ministers. The Nordic Vision is to become the most sustainable and integrated region in the world by 2030. The co-operation with the Nordic Council of Ministers must support this purpose. This project supports the vision of green transition and Nordic solutions within the areas of climate neutrality and climate adaptation.

The work was delivered by [EIT Urban Mobility](#), an initiative of the European Institute of Innovation and Technology (EIT), a body of the European Union, and Europe's largest innovation community for urban mobility. Our mission is to accelerate change towards a sustainable model of urban mobility and liveable urban spaces. We connect public and private actors and provide them with access to markets, talent, finance and knowledge.

This catalogue was edited by Piret Liv Stern Dahl, Thomas Delrive, Oscar Jessen and Gustav Magnusson



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# INTRODUCTION

With climate change accelerating, climate adaptation is becoming an increasingly important topic for the world's cities, which continue to grow and [contribute immensely to global emissions](#).

While transport-related public space in cities is too often neither sustainable nor effective, Nordic and Baltic cities have pioneered world-leading solutions for transforming public space which – apart from helping reduce transport emissions, improve air quality and create more inclusive spaces – have also brought clear benefits in terms of climate adaptation.

This catalogue highlights 12 inspirational examples from cities across the region that have taken concrete steps – some small, some bigger – as part of an urban transformation process that could eventually prompt larger shifts in how public space is planned, designed and utilised by the various stakeholders of the city, while adapting to the changing climate.

## Holistic approaches to encourage big thinking

The case from Copenhagen demonstrates how an urgent need to improve [cloudburst](#) management led to the comprehensive redesign of an important square and street in the neighbourhood of Østerbro. The solution not only ensured proper stormwater infrastructure, but also reallocated road space to pedestrians and greenery, reducing car traffic and significantly increasing the opportunities for locals to use the neighbourhood for socialising and recreation, an example that other cities can use to help visualise what their own neighbourhoods could look like in the future.

## Sustainable solutions for managing rapid urbanisation

Two cases from Nacka, a growing municipality in greater Stockholm, show how a city can integrate sustainable solutions to manage rapid urbanisation and the changing needs for public space – such as those of a large thoroughfare and a natural recreation area. The solutions chosen are helping reduce air, water and noise pollution, increase quality of life and contribute to climate adaptation, serving as a reminder of the importance of long-term thinking in shaping the cities of tomorrow.

## **Small shifts to ignite bigger transformations**

Cases from Helsinki, Riga and Vilnius show that repurposing car parking spaces can serve to create new social meeting places, small shelters for biodiversity and outdoor terraces for enjoying meals and drinks, giving new meaning to these urban spots while helping reduce car traffic and encourage active mobility. Such small, agile interventions can help politicians and city officials get a foot in the door and gain public approval for further transformations of public space in their city.

## **Anchoring change in citizen engagement and bringing youth voices forward**

Several of the examples in this catalogue also show the benefits of engaging proactively with local community. But while citizen engagement is often well-integrated in urban transformation processes, it can remain a challenge to hear and bring forward the perspectives of young people.

To address this, EIT Urban Mobility conducted its own small-scale youth engagement initiative entitled "Transform your street!" to bring real-life challenges into the classroom, something that fell on fertile ground with educators. This initiative, which can easily be scaled up, resonates well with the Nordic Council of Ministers' Vision 2030 that aims to "strengthen co-operation with civil society and plan and implement more projects in co-operation with children and young people."

## **11 policy recommendations for city governments**

Finally, EIT Urban Mobility convened city officials, practitioners and youth representatives for a half-day workshop on 22 March 2023 to co-create recommendations on how city governments can transform public space in ways that enable climate adaptation, fossil-free mobility and engagement with younger citizens. The recommendations, which range from crafting a powerful communications narrative to incorporating principles of rewilding and natural ecosystems, will be a useful tool for city planners everywhere as they grapple with the complex challenge of future-proofing their cities.

EIT Urban Mobility's mission is to accelerate change towards a sustainable model of urban mobility and liveable urban spaces, and we hope this Nordic catalogue can serve to inspire, educate and spark fruitful discussions about how cities in Europe and around the world can go about making this essential transformation happen.

# CASE STUDIES



Copenhagen: Urban climate adaptation and neighbourhood transformation



Nacka: Screen basins and sun decks to manage stormwater and rapid urbanisation



Helsinki: Summer Streets pave the way towards permanent change



Riga: Transforming a parking lot back into a theatre square



Helsingborg: Portable parks as a flexible solution to green the city



Vilnius: From car focus to society focus



Aarhus: Mobility Points for better multimodality and active travel



Riga: Standardised parklets to create green street oases



Nacka: Transforming a large road to meet a new urbanisation context



Tartu: Reaching climate goals through sustainable mobility planning



Vilnius: Traffic loops as steps towards low-pollution zones



Riga: Transforming a parking lot into the neighbourhood heart

## Copenhagen: Urban climate adaptation and neighbourhood transformation

*Keywords: climate adaptation, public space, recreation, biodiversity, cloudburst management, green areas, stormwater infrastructure*



### The Challenge: Addressing heavy rainfall and vulnerability to climate change

Copenhagen faces climate challenges from increased precipitation and rising sea levels. In 2011, a cloudburst caused extensive damages in Copenhagen with over 150 mm rainfall in under 2 hours and insurance claims of over €800 million. The cloudburst highlighted the need for action and the city's vulnerability to future climate events, which was causing massive traffic disruption, closed roads and power cuts at hospitals.

The cloudburst management plan involves adding new stormwater infrastructure to the city, creating green and blue recreational areas and a more diverse city, mainly through surface solutions. The surface solutions create a challenge as they take up room in the city that is also needed for bicycles, parking and cars. Over the next years, as the implementation will start, there will be a continuous discussion on how to prioritise the use of urban space in the city.

Adaptation measures in Copenhagen must not compromise the city's environmental standards. The aim of climate adaptation measures in Copenhagen is to further reduce sewer overflows during heavy rainfall by separating rainwater from the sewers and preventing discharge into streams, lakes and the sea. In the future, Copenhagen residents would be able to swim in the harbour.



*Sankt Kjelds Square roundabout, photo by Copenhagen Municipality*

### **The Solution: Managing rainwater runoff while creating a green heart for the neighbourhood**

In the neighbourhood of Østerbro, Sankt Kjelds Square and the street of Bryggervangen have been climate-adapted to Copenhagen's climate-adaptation standards. During 2017-2019, the area was transformed to protect it from future precipitation and cloudbursts and can now handle both everyday rain and cloudbursts in multiple ways.

Rainwater from the road is directed to a separate pipe and then to a nearby cloudburst pipe, since this water contains harmful xenobiotics and can cause issues for blue-green solutions. The "first flush method" is used on the southern section of Bryggervangen to handle polluted road water from rainfalls. The first flush of water is treated at the local wastewater treatment plant, while the relatively clean second flush water is managed locally in the green areas.

The vision of the project was to transform Sankt Kjelds Square and Bryggervangen into the green heart of the Climate-Resilient Neighbourhood and to create an urban space that balances nature and traffic, allowing for both to co-exist.



With around 15,300 m<sup>2</sup> of road area, the area previously had no nearby places for residents to meet or walk. The road area has now been optimised to 5,600 m<sup>2</sup>, ensuring mobility efficiency while transforming the rest of the area into green space for locals to stroll and enjoy the sound of birds.



*Tåsinge Plads, photo by David Buchmann*

### **The Bonus Info: Two-phased citizen engagement**

The efforts to involve local citizens can be divided into two main phases.

The **first phase** from 2011 to 2014: During this phase, meetings with local residents collected information using question sheets. This was later analysed during several workshops by competing project groups. Suggestions from residents included:

- More traffic safety and less heavy traffic
- More green areas and breathing zones
- Room for both play and relaxation
- Keep the parking spaces

The **second phase** from 2015 to 2018: The phase began with a public presentation of the winning project and team. Then a follow-up group was set up to provide feedback on the drawings and project description. Citizens were involved in planting trees and vegetation in the final stage of the project, an initiative called "earth under your nails."

## Nacka: Screen basins and sun decks to manage stormwater and rapid urbanisation

*Keywords: Stormwater management, pollution reduction, accessibility & inclusivity, public space, people-centred design, ecosystem services*



### **The Challenge: Rapid urbanisation puts pressure on stormwater management and disturbs the natural environment**

The municipality of Nacka is located between central Stockholm and the Stockholm archipelago, providing not only urban life, but also a beautiful natural landscape attracting a lot of people. The municipality consists of a group of islands connected by bridges and surrounded by lakes and waterways.

The existing developments in the municipality lack proper stormwater treatment, resulting in insufficient water quality in the receiving lake, Järlasjön, which is in violation of the European Water Framework Directive.

As Nacka's rapid urbanisation puts even higher pressure on the stormwater management, increased pollution is expected in Järlasjön. The lake also lacks space on land for end-of-pipe stormwater solutions, and nearby roads cause noise and an unpleasant environment, despite the lake's scenic beauty.

Additionally, the inaccessibility of the lake, the overgrown shoreline and the lack of local urban parks and bathing places contribute to making the environment unpleasant, despite the fact that the natural landscape is one of the reasons that inhabitants choose to live in Nacka.



*Järlasjö sundeck, photo by Nacka Municipality*

## **The Solution: Enabling nature-based stormwater management in tune with people and planet**

To address the increasing water pollution and contamination in Järlasjön, a 3,000 m<sup>2</sup> screen basin was proposed, which treats polluted stormwater through controlled sedimentation, utilising nature-based solutions to improve water quality.

Meanwhile, the shoreline and contact with the water have been made more accessible for all citizens. New sun decks have been constructed, offering opportunities for bathing, and a new urban park environment was created, all of which enhance the area's natural beauty and recreational value. To increase accessibility and line of sight, the vegetation has been thinned.

The project also includes the connection of nearby pedestrian and bicycle paths, promoting sustainable travel and making the area more accessible. Furthermore, a nearby road is being redesigned and dimensioned for lower motor-vehicle speed to prioritise sustainable travel demands and reduce noise pollution. With these measures, the project aims to provide a sustainable and enjoyable environment for residents and visitors alike.

To achieve all of this, it was necessary to seek close and integrated collaboration between politicians, consultants, municipal technicians and operation and maintenance personnel during the planning and design process. Close collaboration between different infrastructure projects helped meet various needs and achieve common goals, resulting in a better overall outcome. The early inclusion of future travel patterns and stormwater management needs in the overall urban planning process will have a significant impact on the local environment.

## The Bonus Info: Combining different infrastructure projects for common goals

This case study shows that even a water treatment project can be used to create a public space that is widely used by citizens and brings them happiness through better access to the water. Overall, the project will ensure a more sustainable and enjoyable environment for residents and visitors.

The project also shows the benefits of collaboration between different infrastructure projects for common goals that may give space for visitors and citizens to use their environment more efficiently and ensure a better quality of life. The synergy between life quality and function shows an attitude that can be applied everywhere. Citizens demand life quality everywhere and, if taking that demand seriously, even a technicality such as water treatment can be used to improve the urban environment.



*Access to Järlasjö sundeck, photo by Nacka Municipality*

## Helsinki: Summer Streets pave the way towards permanent change

*Keywords: Living streets, walkable streets, resting areas, summer streets, placemaking, temporary activities, temporary urbanism, pilot project*



### The Solution: Temporary slow streets promote a sustainable and vibrant urban environment

In the summer of 2021, a pilot programme was launched in Helsinki to turn two streets, Kasarmikatu and Pohjoinen Makasiinikatu, into temporary slow streets in [woonerf](#) style. These “summer streets” included street furniture, wooden islets, lush greenery, parklet terraces set up by local restaurants and other traffic-calming measures. The two streets were connected to the Esplanadi park and the city centre, and an additional “summer terrace” was set up on the Kasarmitori square with 12 restaurants and 560 seats, helping create a vibrant atmosphere in the city.



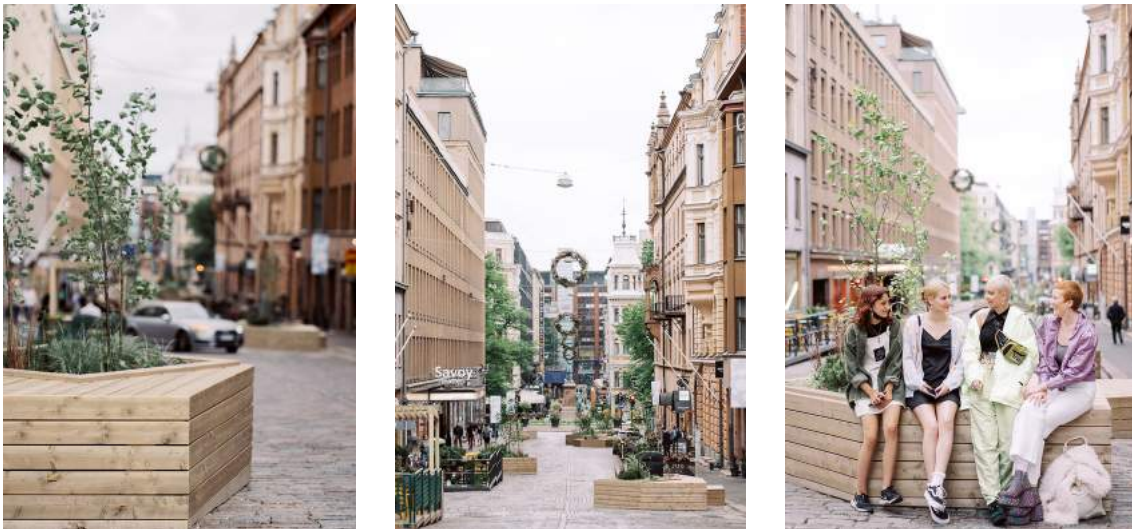
*A map over Helsinki summer streets, graphic by Helsinki Municipality*

The aim of this “summer streets” project was to make Helsinki’s streets a more attractive place for people to spend time and take part in urban life during the summer season, while encouraging walking and cycling in the city. In 2022, the popular programme was expanded to four more streets near the city centre. Since then, the city has decided to evaluate whether each successful summer street can become a permanent fixture.

Introducing several new features to create a more sustainable, comfortable and enjoyable urban environment for everyone, the programme put a strong emphasis on urban greenery such as plants and trees, which not only enhance the profile of a street, but also provide cool places to rest during a hot summer day. Inspiration was taken from Finnish nature, especially the archipelago of Helsinki, whose islets provide a relaxing space for people to gather, unwind and take in the summer atmosphere.

To ensure the safety and comfort of pedestrians and cyclists, car traffic was calmed by placing the street furniture in a non-linear sequence, narrowing the space for cars and creating curves, which encourages lower speeds and reduces the streets’ attractiveness for through traffic. The street furniture was built from high-quality Finnish wood, connecting materiality to the local heritage, the local wood industry, and giving a sense of place-specific identity.

The process included open online events for citizens and local business owners as a way for interaction and engagement processes during the COVID-19 pandemic.



*Helsinki summer street, photo by Camilla Bloom*

## **The Bonus Info: Positive public response demonstrate support for improving walkability**

The "summer streets" programme provided pedestrian-friendly space to residents, local businesses, restaurant owners, museum owners and children and was positively received by the public, with many businesses reporting positive effects on their sales and people expressing a desire for similar projects in the future.

In 2021, the number of pedestrians on Kasarmikatu rose by 45% compared to before the pilot programme, notably thanks to the summer terrace on the Kasarmitori square, which attracted a lot of people to the area. That year, almost all the business owners were satisfied with both the summer streets and the summer terrace on Kasarmitori.

In 2022, when there was no summer terrace on the square, only the summer streets, a little over half of the businesses were pleased, while the rest were concerned about reduced on-street parking and planning details. However, many businesses reported that the summer streets had a positive effect on their sales.

In 2022, the City of Helsinki made an open survey that attracted about 950 respondents from different age groups, genders and neighbourhoods in Helsinki, with a car ownership rate in line with the overall statistics. According to the survey, 85% of the respondents wished that the city would realise walkability pilots like the summer streets again, while 61% of the respondents would be ready to replace space for parking cars with permanent elements that improve walkability. 65% said they would be ready to limit through traffic permanently if it improves the walkability of the urban space.

## Riga: Transforming a parking lot back into a theatre square

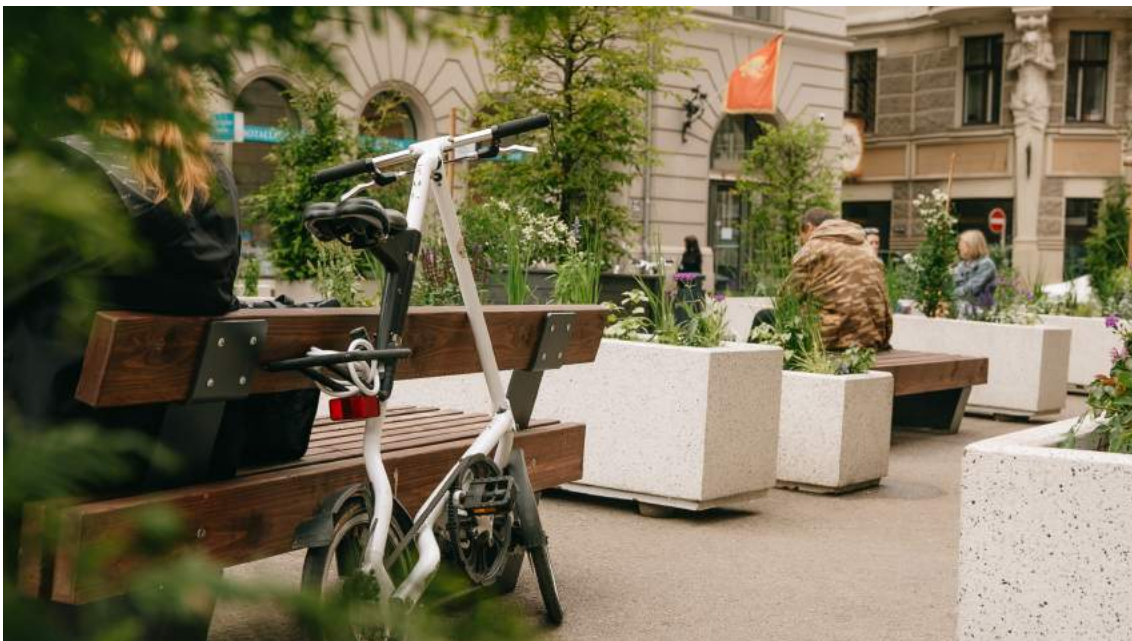
*Keywords: creating public realm, urban greenery, pollution reduction, incremental change*



### The Challenge: Addressing a lack of green spaces in Riga

The lack of green spaces in Riga's city centre and the quality of public space is often mentioned by residents as one of the main things they would want to improve in the city. However, planting new trees and greenery in Riga is challenging, especially in the city centre, where creating new green spaces can take a lot of time and demand a lot of resources.

Meanwhile, until 2021, Riga's Theatre Square had become an illegal parking lot and a dead space next to the Latvian National Opera on the edge of Old Town.



*A parking lot transformation in Riga, photo by Riga Municipality*



## **The Solution: Transforming Theatre Square into a green oasis in the heart of the city**

Theatre Square has been transformed into a peaceful and green meeting spot where residents and visitors of the city can enjoy a peaceful moment in the middle of the city.

In 2021, the parking lot became a pop-up green space for the summer, which proved to be a massive improvement to the city centre. To transform the square quickly and at lower costs, the Municipality chose to deploy mobile benches and potted plants.

In summer 2022, the square became a fixed green space in the city, and more benches and potted plants were added. With residents seeing the transformation as a positive change, the square is set to be rebuilt into a fixed green public space, no longer functioning as an illegal parking lot.



*A parking lot transformation in Riga, photo by Riga Municipality*

### **The Bonus Info: Quick and cost-efficient solutions prompt demands for more changes**

The initiative proved how the city can reclaim public space from cars with cost-effective and relatively quick solutions. It also shows that, in order to make change, large solutions are not always as efficient as small, incremental changes. These may give citizens the real experience of improved quality of life, eventually leading to demands for the changes to become permanent or to spread to more places across the city.

In this case, the citizens' right to use Theatre Square as a place for public life has been successfully reinstated.

## Helsingborg: Portable parks as a flexible solution to green the city

*Keywords: public environment, urban planning, portable park, climate, trees*



### The Challenge: A flexible approach for building the sustainable city

Helsingborg has ambitious plans to transform into a more sustainable city that is also both a liveable and an attractive place for its residents. To do so quickly and cost-efficiently, Helsingborg has been testing flexible solutions to create resilience for the sometimes unknown needs of the citizens. By integrating "new learning as we go," the city gathers citizen input at an early stage before (expensive) permanent decisions are made.



*Helsingborg Portable Park, photo by Helsingborg Municipality*

## The Solution: Enhancing urban greenery by nurturing trees in a portable park

One of these flexible solutions has been to create a temporary urban park by building a plant nursery in the middle of the city. Since autumn 2021, three hundred trees have been placed in red wooden stands in eighteen different locations in the centre of Helsingborg, most of them in squares and central avenues to fill in the gaps left by horse chestnuts previously removed due to chestnut haemophilia.

The city took an innovative approach by purchasing trees that were around 10 years old and already five to seven metres tall, and letting them continue their growth in the urban environment instead of a nursery. The varieties of hardy trees include berry elm, mountain cherry, ornamental cherry, pagoda tree and freeman maple, all of which are well-suited for urban environments.

This "Portable Park" project added greenery in public spaces in the city centre that otherwise would have no trees. In addition to promoting a better climate and richer biodiversity, the people of Helsingborg enjoyed the greenery and the beautiful seasonal variations.



*Helsingborg Portable Park, photo by Helsingborg Municipality*

## The Bonus Info: The project continues

By spring 2023, all of the trees in the portable park have been planted permanently in more than sixty different locations in Helsingborg. It was crucial at an early stage to involve residents as well as relevant companies and organisations to help set the objectives of the project and locate suitable areas for the trees.

## Vilnius: From car focus to society focus

*Keywords: pedestrianised street, pay on the way, heritage, public space, open air art gallery*



### The Challenge: Car dominance hindering the potential of a natural gathering place

Known for its natural springs, the site of Vingriu square and Pylimo street is located in the heart of Vilnius and served as a community well and gathering place for centuries. But rapid urban development and vehicular dominance in the early 1900s led to the springs being buried and the space transformed into a monofunctional street for vehicular circulation and parking.

The challenge of car dominance hindering quality street life, outdoor activities and safe pedestrian experiences in Vilnius needed to be addressed.



*A car street opened up for pedestrians and micro mobility in Vilnius, photo by Saulius Žiūra, Vilnius City Municipality*

## **The Solution: Transforming a neglected street into a vibrant and artful public space**

In 2018, the Modern Art Museum (MO muziejus) was opened on the adjacent site, and the municipality wished to decrease motorised traffic and cars entering the town's central area. These events catalysed a transformation of the streetscape to promote more vibrant public spaces as meeting places for the neighbourhood.

A design concept was created to reveal the buried natural springs, bringing the meandering water stream back to the surface to offer play opportunities, a tranquil atmosphere and historical significance. The site was pedestrianised, and vehicular access remains for services and emergencies only.

Designed by architects Paulius Jonys and Lolita Vileikienė, the project serves as a showcase for future streetscape regeneration projects, attracting families with kids for play and passive recreation and offering contemplative enjoyment of greenery, water and outdoor art.

Collaboration with the museum led to the extensive display of existing and newly designed sculptural pieces introduced to the wider setting as an open-air gallery. Artists found their unique ways of integrating their pieces into the streetscape and new pedestrian circulation patterns.



*A car street opened up for pedestrians and micro mobility in Vilnius, photo by Saulius Žiūra, Vilnius City Municipality*

### **The Bonus Info: Art as a reflection of society**

While the project was driven by the need to create a natural gathering space for the neighbourhood, the collaboration with the nearby Modern Art Museum enabled the extensive display of existing and newly designed sculptural pieces as an open-air gallery.

The power of art as a reflection of society, ideas and people gave room for a new kind of involvement and mirroring in public space. The project attracted families with children for play and passive recreation and set a higher standard for future streetscape regeneration projects in the city.

# Aarhus: Mobility Points for better multimodality and active travel

*Keywords: urban planning, micro mobility, mobility points, bicycle Urbanism*



## The Challenge: Supporting those who travel by bicycle or public transport

After years of efforts to transform its mobility system, Aarhus has experienced a significant increase in cycling due to improved infrastructure and car-traffic restrictions. However, limited parking for cargo bikes and special bicycles remains an issue in the city.



*Aarhus Mobility Spot, plan sketch by City of Aarhus*



## **The Solution: Mobility Points with trees and racks to enable better multimodality**

To benefit those choosing to travel by bicycle or public transport, two Mobility Points were created near car-sharing, e-scooter-sharing and bike-sharing facilities. The aim was to encourage use of bikes and public transport by making sharing services more accessible.

The two Mobility Points include cargo bike racks and bicycle air pumps and have been highly popular since the opening in November 2019, prompting considerations for additional Mobility Points throughout the city. Trees were planted in both locations in accordance with the city's policy to plant 10,000 trees by 2025.



*Aarhus Mobility Spot, photo by City of Aarhus*

## **The Bonus Info: Engaging citizens to identify needs and locations**

An essential component for the project's success was to involve stakeholders and citizens from the beginning through workshops and mappings that helped identify challenges and solutions.

Citizen participation was crucial in identifying the need for this type of measure in the pilot area of Øgaderne and determining the exact location of the future Mobility Points, and the idea of focusing on cargo bike parking came from the citizens themselves. The success of the pilot will lead to the expansion of Mobility Points throughout the city.

## Riga: Standardised parklets to create green street oases

*Keywords: Creating public realm, pollution reduction, urban greenery, parklets*



### The Challenge: Limiting cars and supporting local businesses during COVID-19

The city centre of Riga lacked greenery and appealing public space, causing streets to be deserted places used only for parked cars, which provided very few opportunities for people to stop and enjoy city life. Breaking the habit of drivers occupying public space with private cars was a difficult challenge in Riga.

Meanwhile, the COVID-19 pandemic hit the food service industry hard, as government restrictions only allowed outdoor seating. One solution adopted in many cities was to allow the installation of temporary restaurant terraces, but narrow sidewalks and bureaucratic approval still made it hard for restaurants and cafés in Riga to survive.



*A wooden construction to replace a parking space with greenery and resting places in Riga, photo by Riga Municipality*

## **The Solution: Designing standardised parklets to help businesses reclaim public space**

As a step in a new direction, Riga Municipality created a catalogue with standardised parklet designs to support local businesses during and after the COVID-19 pandemic in reclaiming public space from cars and to simplify the approval process for their installation.

In summer 2022, parklets were set up in several streets in the city centre to create green oases for residents to stop and enjoy a peaceful moment in their busy city lives, and over one third of all the outside cafés set up that summer used a standardised design from the catalogue. New designs continue to be added to the catalogue, which the municipality itself uses to reclaim public space from cars.



*A wooden construction to replace a parking space with greenery and resting places in Riga, photo by Riga Municipality*

Providing small green public spaces between parking spots and evening out the space for pedestrians and cars, the parklets proved themselves to be a cost-efficient alternative for local businesses to provide space for customers, while helping communicate the wishes of citizens for a different streetscape.

## Nacka: Transforming a large road to meet a new urbanisation context

*Keywords: Stormwater management, cloudburst adaptation, pollution reduction, mobility infrastructure, accessibility & inclusivity*



### The Challenge: A growing municipality in need of sustainable infrastructure

With 110,000 inhabitants just east of Stockholm, the city of Nacka is experiencing a wave of population growth, a typical pattern of how many sub-central municipalities of larger urban areas around the world are urbanising today.

A new subway line is being built with three new underground stations as an extension of the Stockholm metro network. As Nacka is becoming a more integrated part of Stockholm, its identity is changing. The future Nacka is not merely a fragmented urban landscape next to Stockholm, but an integrated neighbourhood with a connected street network and multifunctional public spaces.

This new context puts new demands on Värmdövägen, one of the large thoroughfares going through the municipality. The road will need a more urban character, worthy of a street in the central parts of a European capital, responding to a new context of challenges including:

- increased population
- densifying the city with new developments
- insufficient space in the road section for pedestrians, cyclists and buses
- increased travel demand
- increased traffic intensity
- high-speed motorised vehicles as a result of existing mobility solutions
- under dimensioned stormwater sewage system

- lack of cloudburst adaptation
- lack of blue-green infrastructure
- lack of stormwater treatment
- the water quality in the receiving water body is insufficient according to the European Water Framework Directive
- lack of capacity in all underground technical infrastructure.

### **The Solution: Democratising mobility options and improving stormwater management**

Integrating mobility, travel patterns, stormwater management and cloudburst adaptation early in the urban planning process has already had a significant impact, and collaboration between technicians, consultants and contractors was crucial throughout the design process.

The large thoroughfare has gone from a dividing and segregating road into a public space in the new urban landscape, creating ease of movement for a greater number of target groups and modes of transportation.



*Värmdövägen street transformation, photo by Nacka Municipality*

The project is still ongoing, but the planned solutions to completely transform Värmdövägen include:

- new road width to secure all needed functions and standards
- road section dimensioned and designed (redistribution of space) for lower motor-vehicle speed in order to prioritise sustainable travel demands
- new road elevation to secure cloudburst run-off from existing and future developments
- sidewalks and bike paths on each side of the road to promote sustainable mobility in a regional perspective
- separating sidewalks and bike paths from road traffic by integrating a green vegetation zone in the road section
- reintroducing greenery by implementing blue-green infrastructure and creating good growing conditions for urban trees and vegetation
- local stormwater treatment by using nature-based solutions to improve water quality and reduce flow and volume loads downstream
- new scaled-up stormwater sewage system that will manage increased rain falls.



*Värmdövägen street transformation, photo by Nacka Municipality*

### **The Bonus Info: A multidisciplinary approach for a complex challenge**

The project shows the benefits of a multidisciplinary approach in a mobility project related to rapid and complex urbanisation. Such an approach helps provide end users with better, more holistic solutions, access to their environment and better quality of life.

## Tartu: Reaching climate goals through sustainable mobility planning

*Keywords: Sustainable transport, clean transport, 15-minute city, strategic urban planning, governance, action plan, urban vision*



### **The Challenge: Implementing the city's action plan for sustainable transportation**

Tartu is an academic centre and the second-largest city in Estonia. From 2003 to 2018, trips done by foot have been steadily decreasing while the use of cars has increased. While the use of bicycles has increased slowly, bus usage has fluctuated dramatically – from 25% in 2003 to 31% in 2009 and down to 21.5% in 2018.

The Climate and Energy Action Plan of the city aims to cut carbon emissions by 40% by 2030 and achieve climate neutrality by 2050, focusing on government, energy management, power consumption, housing and renewable energy production. The plan encourages more pedestrian and bicycle traffic and less private transport, with a main cycling network, mobility centres and expanded public transport services.

The Urban Master Plan complements this by upgrading neighbourhoods, making public transport carbon neutral, addressing public green space and shortening travel distances within the city. It prioritises the city centre and reduces reliance on private cars through pedestrian-friendly street redesigns, a revamped bus network and bike-sharing scheme.



*Car-Free Avenue, photo by Mana Kaasik*

### **The Solution: Enabling active mobility and carbon-neutral public transport while ensuring climate adaptation**

A key focus for Tartu was to enhance cycling infrastructure to make active mobility more appealing. Taking concrete steps, the city rolled out a bikeshare scheme featuring electric bicycles with well-located stations determined by already existent mobility patterns, while implementing cycle and pedestrian paths throughout the city.

Another focus area was to promote public transport as a more sustainable alternative to private vehicles. With the Baltic BioGas Bus project and EU funding, the city found a way to create a new public transport system with a fleet of low-floor buses powered by locally produced biogas. After introducing 64 buses and new lines in July 2019, Tartu saw a 10.3% increase in ridership, with around 100,000 more passengers. In January 2021, the city's public transport became carbon-neutral with biogas buses connecting to the natural carbon cycle.

While further steps are needed in the building sector to turn Tartu into a walkable, 15-minute city with mixed-use neighbourhoods, ongoing experimental efforts with car-free zones and outdoor activity areas have provided insights into the public's future reception of such concepts. A reoccurring summer street project, for example, opens a wide street in the centre of Tartu to pedestrians and micromobility while redirecting car traffic, allowing for a variety of cultural activities and new uses to take place on the street.



By involving local residents in the decision-making process, officials are ensuring not only that changes to urban planning measures are well-received, but also that the expanded mobility options are taken up by locals.

The city has also taken several innovative initiatives such as redesigning parking lots to minimise heat islands, managing stormwater and promoting active school yards to encourage students to be more active.

By mimicking natural plant communities, Tartu's "Curated Biodiversity" project will help green public space and make the greenery more resilient to the harsh urban environment. The Green Index evaluation method also requires private land developers to improve greenery. Since 2022, Tartu started a collaboration with the cities of Aarhus (Denmark) and Riga (Latvia) in a five-year [UrbanLIFECircles](#) project to improve liveability in locations across the city.



*Car-Free Avenue, photo by Evelin Lumi*

### **The Bonus Info: Budgets for community engagement**

Participatory budgeting and active community engagement have been key success factors in Tartu's sustainable mobility planning. First approved in 2013, the city has a policy annually to set aside 1% of the city budget for projects suggested by residents that provide solutions to practical problems.

Active community engagement projects have involved replacing an inner ring road with a 3 km linear park for pedestrians and cyclists, closing car traffic on the main arterial road during the COVID-19 pandemic to create gathering spaces, and providing temporary recreation spaces during the winter to showcase the possibilities in innovative planning.

## Vilnius: Traffic loops as steps towards low-pollution zones

Keywords: car transit, intelligent traffic systems, pollution (noise & carbon) reduction, greening



### The Challenge: Preserving, protecting and promoting cultural heritage

Despite the significant cultural heritage value of Vilnius's Old Town and its archaeological area, inscribed as a UNESCO World Heritage site in 1994, the neighbourhood had long been suffering from heavy car traffic causing air and noise pollution and affecting road safety.

In 2019, transit traffic in Vilnius accounted for 49% of trips in the morning and 42% in the evening, which had a negative impact on quality of life, leisure, greenery and the condition of heritage buildings.



*Citizens exploring the new loop traffic map in Vilnius, photo by Saulius Žiūra*

## The Solution: A traffic loop as a first step towards a low-emission zone

Approved in December 2018, the city's Sustainable Mobility Plan establishes the need for a "traffic loop" to reduce transit car traffic through the Old Town streets of Vilnius, as a first step towards the city introducing a low-emission zone.

The traffic loop regulation was implemented by introducing one-way traffic, regulatory road signs, intelligent traffic systems, a 20 km/h speed limit and physical barriers such as flower beds, temporary trees and bushes. In total, four one-way loops were established to organise the traffic of cars entering and leaving the Old Town, each zone having only one main entrance and one or two exits.

Only public transport vehicles can use the loops in both directions, with convenient passenger pick-up/drop-off points installed and relevant bus stops provided for tourism.

Driving in the Old Town is allowed only to homes, workplaces and attractions within the same loop. Access is available via smaller streets belonging to one of the four main loops. Information is provided at each entrance and online, and an app provides traffic data.



*Old town streets were opened up for pedestrians and micro-mobility, while car and heavy traffic was limited, photo by Saulius Žiūra*

Catering establishments benefit from increased visitors, and couriers use bicycles, scooters and cargo bikes, with special areas set up for cycle logistics.

Prior to approving the final loop plan, numerous consultations were held with residents, businesses and other stakeholders, and specialised personnel responded to residents' inquiries in writing and via social media.

The traffic loop regulation has decreased car traffic, reduced noise and air pollution and improved the quality of life for residents and visitors of the Old Town:

- In 2020, transit traffic accounted for 10% of trips in the morning and 8% in the evening (in violation of the new traffic rules).
- Weekend attraction to Old Town increased by 12%
- Traffic noise decreased by 20%
- Traffic accidents decreased by 40%, with no pedestrian injuries.

## Riga: Transforming a parking lot into the neighbourhood heart

*Keywords: public realm, community involvement, congestion*



### The Challenge: Reversing car-centric urban development in a historic neighbourhood

The historic Āgenskalns Market has always been the heart of the Āgenskalns neighbourhood in Riga. The nearby school, shops, banks and post office provide a rather large flow of people and traffic through the centre of the neighbourhood. The market is located next to a busy traffic intersection where public transportation, bicycles, pedestrians and cars meet.

Over the years, the square in front of the main entrance of the market had transformed to primarily accommodate cars. It was a parking lot and worked as a shortcut for drivers who wanted to skip waiting for the green light at the intersection. This meant that entering the market was challenging and unsafe for pedestrians.



*A parking lot transformation in Riga, photo by Riga Municipality*

## The Solution: Empowering citizens to design a more accessible and safer urban public space

The residents of Āgenskalns took up the challenge themselves to transform the car park into a safe, appealing and accessible public space for all visitors of the marketplace.

In 2019, a group called "The Society of Āgenskalns Neighbourhood Residents" submitted a proposal in the very first participatory budgeting call organised by Riga Municipality to transform the parking lot into a pedestrian zone and an appealing public space with benches and greenery. Representatives of the society were active participants in the project, and in spring 2022, the transformed Āgenskalns Square opened to the public.

The square has become more accessible for parents with baby carriages and people in wheelchairs and separated from the street and car traffic by placing flower boxes around the perimeter, therefore making it safer for pedestrians. It is used as a meeting place and a space for public events, and during Christmas time, the neighbourhood's central Christmas tree is placed in the centre of the square, with residents taking part in decorating it.



*A parking lot transformation in Riga, photo by Riga Municipality*

## **The Bonus Info: The importance of community**

Comment by Roberts Kārklīņš, a representative of the Āgenskalns neighbourhood residents:

"Āgenskalns Market is the symbol of the neighbourhood, the centre both geographically and emotionally, and the most important place in Āgenskalns. Around 10 years ago, a proposal for the transformation of not only the square, but also the intersection next to it, was developed. That was, in a way, an impulse for our project. It is important to note that the transformation of the square coincided with the renovation of the marketplace. The managers of the market were supportive of the project from the very beginning and are happy with the result. This is the first step towards bigger improvements in the centre of the neighbourhood that we want to see in the future."

# ENGAGING YOUNG PEOPLE IN TRANSFORMING OUR CITIES

Citizen engagement is vital to the successful urban transformations of Nordic and Baltic cities. However, it can remain a challenge to hear and bring forward the perspectives of young people, who can be a major source of inspiration and ideas for how we can reimagine mobility patterns, public space and even entire cities. Their involvement is critical for bringing about long-term behavioural change, for creating inclusive urban spaces that also benefit climate adaptation and, ultimately, for shaping a sustainable and liveable future for all.

Moreover, the multiple crises facing the world can make it challenging for young people to view their future with optimism. Climate anxiety and dissatisfaction with governments' response to the climate crisis are widespread in children and young people, according to a [2022 study](#) by UNICEF, so it's important that cities engage with the youth and help bring their voices forward too.

To experiment with ways to engage young people in urban transformation, EIT Urban Mobility developed and conducted a small-scale youth engagement initiative entitled "[Transform your street!](#)" Working with educators, school students were invited to reflect upon, reimagine and create their own ideal version of a street in their neighbourhood as a physical or digital collage or drawing.

We also encouraged the educators to connect with local city hall or community engagement centres to have them inform and engage with the students about how to get involved in their own local context.

The six graphics below are a selection of the submissions, which can be viewed on [Flickr](#).





# POLICY RECOMMEN- DATIONS FOR CITY GOVERNMENTS

All over the world, as weather patterns shift and become increasingly disruptive due to climate change, city governments and planners must increasingly turn their focus not only to climate mitigation, but to climate adaptation too.

From greening our cities to building rainwater reservoirs, a lot can be done to make cities more resilient to climate change. Meanwhile, as they accelerate their efforts to become climate-neutral, cities must also drastically reduce emissions from mobility and transportation, for example by transforming traffic-heavy streets and public space into healthier, more liveable, human-friendly places – and involving their citizens in the process.

On 22 March 2023, EIT Urban Mobility hosted a workshop in Copenhagen where city officials, practitioners and youth representatives were invited to co-create a set of recommendations on how cities can transform public space so that it enables climate adaptation, fossil-free mobility and engagement with younger citizens.

After the workshop, the draft recommendations were reviewed, consolidated and refined by EIT Urban Mobility in consultations with external experts, resulting in the following 11 policy recommendations for city governments, grouped under three main headings: Strategy and processes; climate adaptation and fossil-free mobility; and citizen engagement.

## Strategy and processes

1. **Strategy and political buy-in.** Develop a multi-year strategy and secure political buy-in by setting specific and ambitious targets backed by a powerful communications narrative. Foster a brave institutional mindset and link the strategy to existing processes, such as European SUMP guidelines.
2. **Holistic thinking and collaboration.** Encourage holistic and inclusive thinking in your city by enabling wide collaboration among experts and practitioners, incorporating a diversity of perspectives and continuously upskilling your city's human resources.
3. **Data and measurement.** Data should be a key tool to transform your city, but carefully decide what data to collect, allocate sufficient resources to measure progress, set standards for data governance and be aware of data biases, such as the lack of data on certain demographics or modes of transport.
4. **Existing policies and legislation.** Map the existing policies, legislation and political declarations that your city can use as a lever to make change, such as local climate declarations, the EU Mission of 100 Climate-Neutral and Smart Cities by 2030 or the UN Convention on the Rights of the Child for implementing youth engagement programmes.

## Climate adaptation and fossil-free mobility

5. **New urban planning guidelines.** Ensure that climate mitigation, climate adaptation, air quality, public health, safety and liveability considerations are included in all future public space projects in your city.
6. **Prioritise nature.** Prioritise nature in your city by incorporating principles of rewilding, regenerative and circular thinking, urban mining and natural ecosystems, while respecting and cultivating the place-specific identities of your city and neighbourhoods.
7. **Prioritise sustainable and safe mobility.** Rethink mobility and transport to make it safer and more sustainable, accessible and efficient, with particular focus on walking, cycling and public transport. Use every public space renovation and transformation project as an opportunity to gradually transform your city's mobility system.
8. **Do not forget about urban logistics:** Prioritise sustainable urban logistics and freight, including zero-emission vehicles, micromobility for last-mile deliveries, low-emission zones, consolidation hubs and micro-distribution centres.

## Citizen engagement

9. **Prioritise citizen engagement.** Allocate proper funding and resources to foster wide, continuous strategic engagement with people and stakeholders, make the engagement efforts understandable and relatable to citizens, understand and try to meet the needs of all elements of society, and measure the progress of your engagement efforts.
10. **Engage the youth.** Develop specific youth engagement programmes to engage them in the development of your city and make it mandatory to involve young people's perspectives in important urban planning and street transformation projects.
11. **Test solutions with people.** Make agile and cost-efficient interventions to experiment and test new ideas and solutions for public space together with citizens, to avoid that your city's transformation efforts rely only on large-scale, expensive urban renewal projects.

The policy recommendations are aligned with the European Commission's [recommendation](#) for Sustainable Urban Mobility Plans (SUMP) adopted in March 2023 and echo the priorities of the new [European Urban Mobility Framework](#) launched in December 2021, which set out European guidance on how cities can cut emissions and improve mobility with a particular focus on public transport and active mobility. The European Commission is also working on providing cities with a set of common indicators that would help them collect data, monitor progress towards sustainable mobility and help evaluate interventions.

# About this publication

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