CYCLING REFERENCES
RAMBOLL
2024

Ramboll Transport

FI: Maria’s cycling tunnel – a tunnel segment on a western bicycle highway

- Description: Preliminary design and construction planning detailed design of tunnel segment of Western bicycle highway in Helsinki
- Client: City of Helsinki
- Scope: Western bicycle highway starts in an old railway corridor in a city center of Helsinki. A segment around old Maria's hospital area has been a challenge in terms of space and flow speed in the intersection of Mechelininkatu. Helsinki's comprehensive plan for bicycles has an early stage idea to pass under the old hospital area. Underpass would save time and would keep bicycle path segregated from busy car traffic. The plan is challenging passing under the historical buildings. The tunnel should be built as low incline as possible balancing with the ground thickness between the tunnel roof and the building base. The Exit in the west is between two historical graveyards, which will leave little room for exit ramp. Task is a challenge, but it serves the biggest bicycle flow in Helsinki and would make level of service better for bikes in many ways such as time savings.
- Delivery period: 11/2023-9/2024
- Ramboll Business Units: RFI

Ramboll Transport

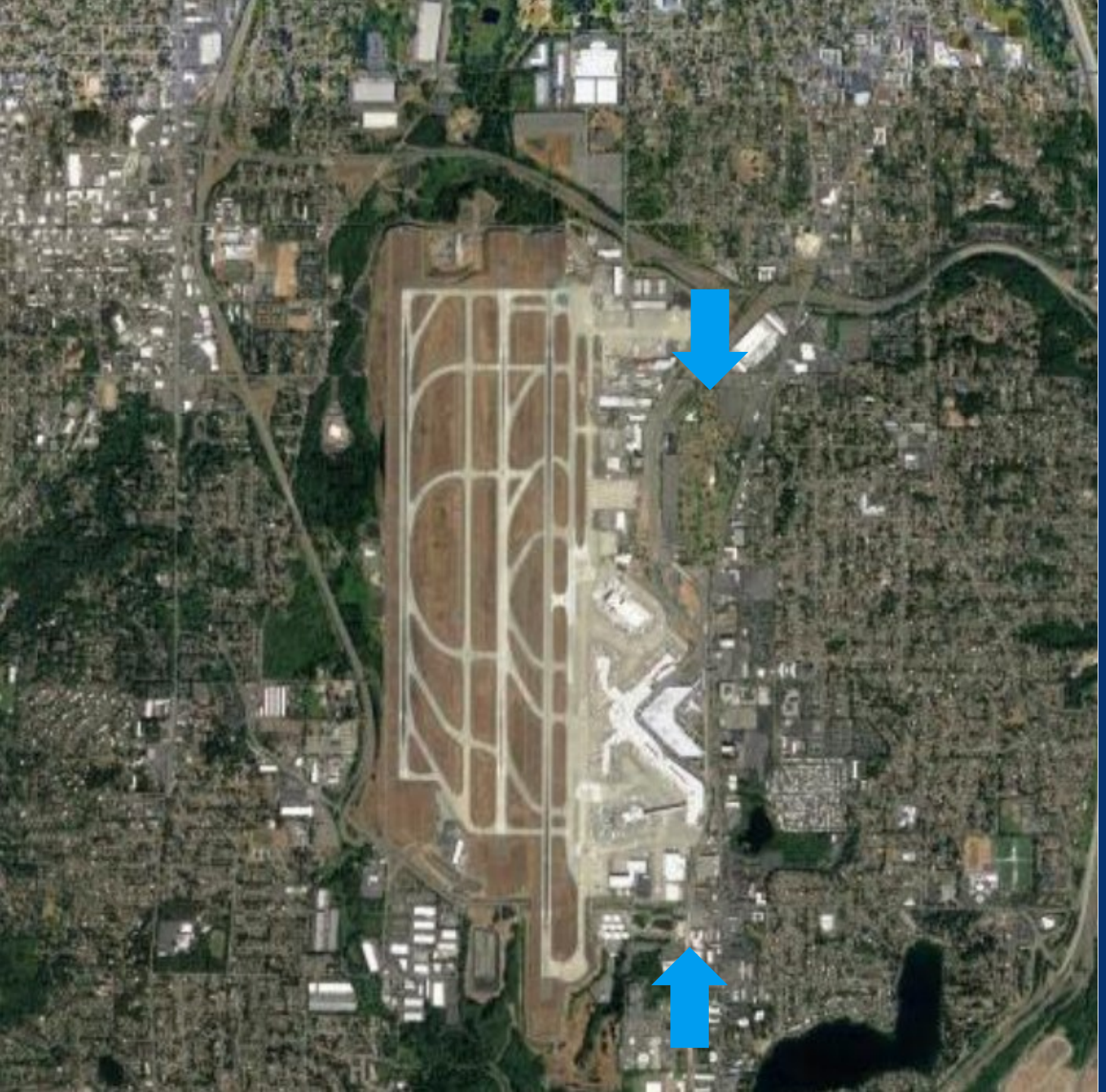
Bicycle highway of Munkkiniemi - preliminary design

- Description: Preliminary design of bicycle highway of Munkkiniemi (in Helsinki)
- Client: City Of Helsinki
- Scope: The project contained the preliminary design of Munkkiniemi bicycle highway in Helsinki. The project contained multidisciplinary collaboration within Ramboll. The length of planned route is approx. 4,5 km’s
- Delivery period: 06/2023-05/2024
- Ramboll Business Units: RFI

Ramboll Transport

Wayfinding for cycling in western part of Helsinki

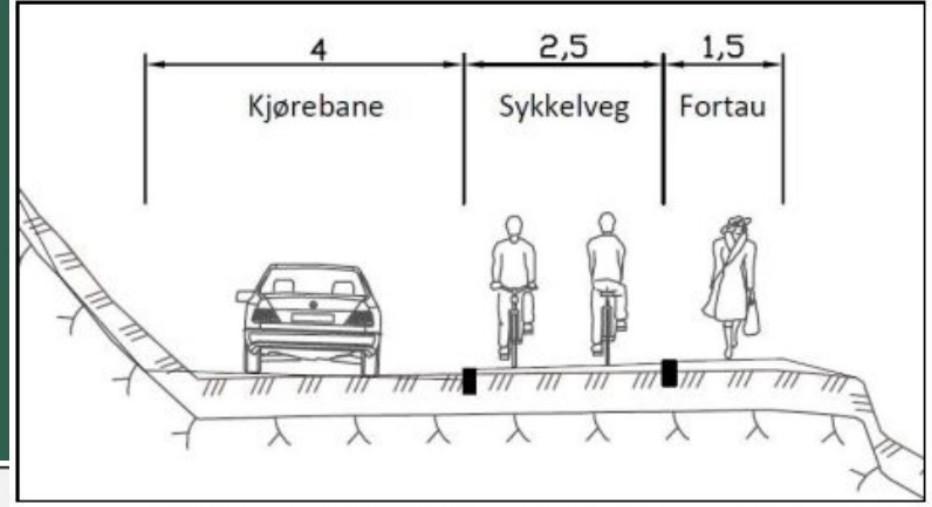
- Description: Traffic sign plans of wayfinding in Helsinki (Part 2)
- Client: City Of Helsinki
- Scope: Establishing wayfinding for bicycle traffic will improve navigating in Helsinki. Improving infrastructure will take decades to reach the set targets. A quality wayfinding can be implemented in relatively short period and with relatively low costs and thus it is a low hanging fruit in promoting cycling for a lot of cities as well as an essential part of the modern cycling infrastructure. The plans are basing on the masterplan of wayfinding which is delivered prior by RFI.
- Delivery period: 06/2023-12/2024
- Ramboll Business Units: RFI

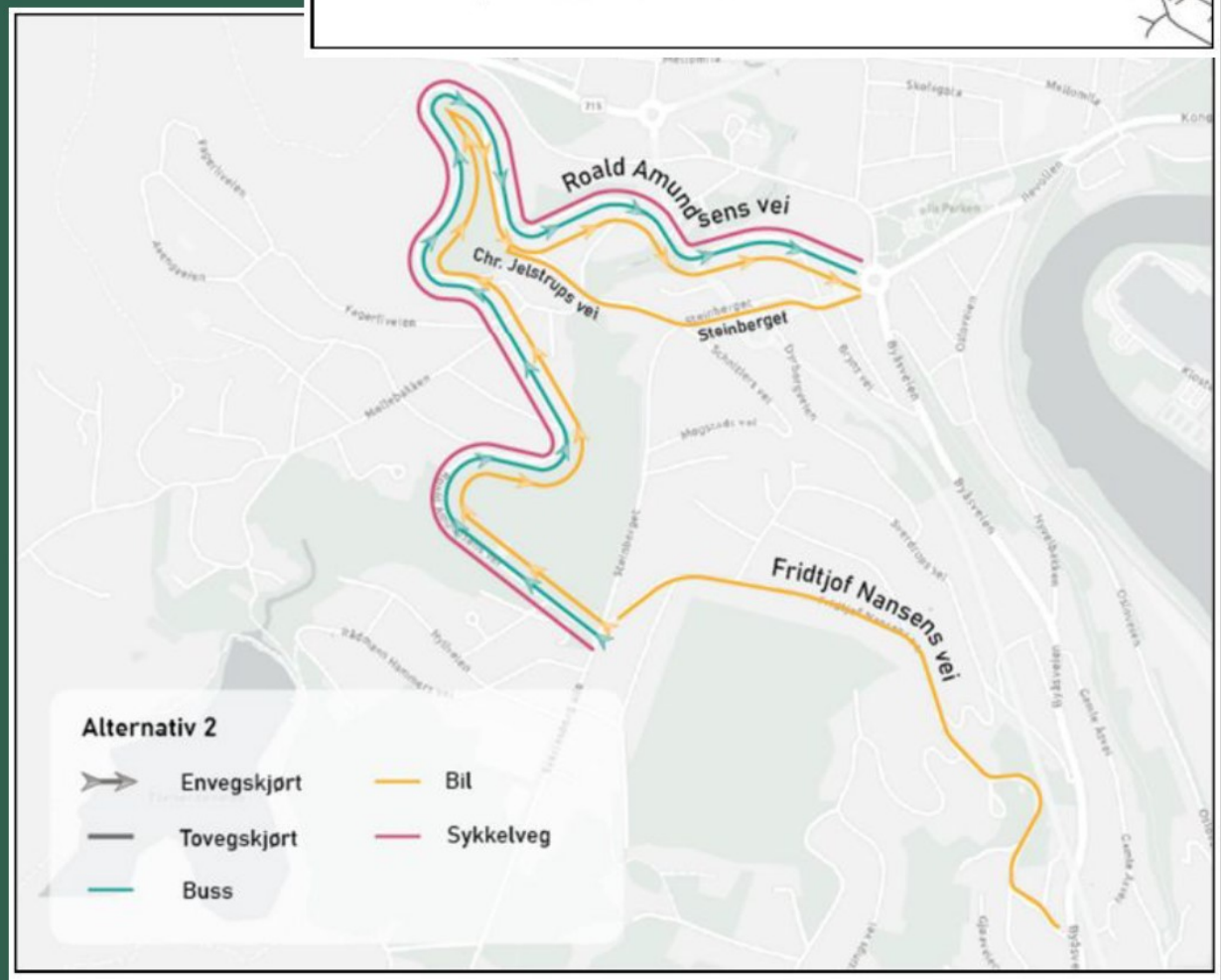


Ramboll Transport

Active Transportation Opportunity Assessment

- Description: Active Transportation Opportunity Assessment
- Project Manager: Amy Malick/Niko Palo
- Client: Port of Seattle
- Scope: to support the Port of Seattle (the Port), including Seattle-Tacoma International Airport (SEA) and the Port's Maritime Division in developing a strategy to make walking and biking to Port facilities safer, easier, and more convenient for employees and passengers.
- Delivery period: 1/2023-6/2023
- Ramboll Business Units: Ramboll US, RFI, RDK, RAUS





Ramboll Transport

Preliminary study for cycling facilitation along Roald Amundsen's vei, Trondheim

- Description: A preliminary study for a new bicycle solution along an urban street in Trondheim
- Project manager: Randi Trøan
- Client: Trondheim municipality
- Scope: The road is not safe for pedestrians and cyclists today, due to poor visibility, poor lighting, inclines and frequent bus departures. Rambøll designs a more safe and accessible solution and will deliver a technical plan, traffic assessment and cost estimate.
- Delivery period: 2/2023-6/2023
- Ramboll Business Units: Ramboll NO

Eastern bicycle highway - preliminary design

- Description: Preliminary design of Eastern bicycle highway Between Herttoniemi and Itäkeskus
- Client: City Of Helsinki
- Scope: The project contained the preliminary design of bicycle highway. The project contained multidisciplinary collaboration within Ramboll. The length of planned route is approx. 3 km’s
- Delivery period: 02/2022-05/2023
- Ramboll Business Units: RFI, RSE
- Budget: 125 000 €

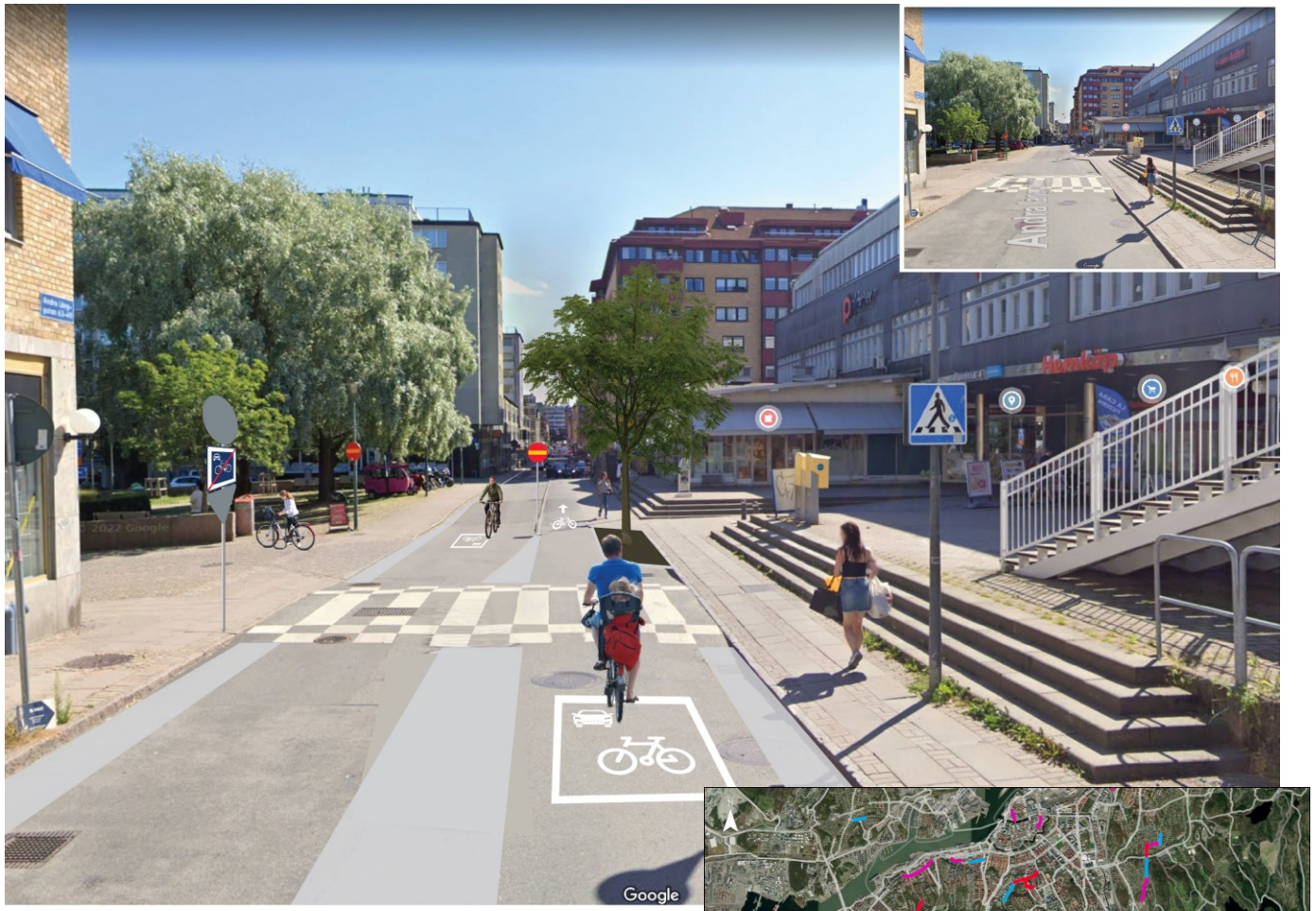
Ramboll Transport

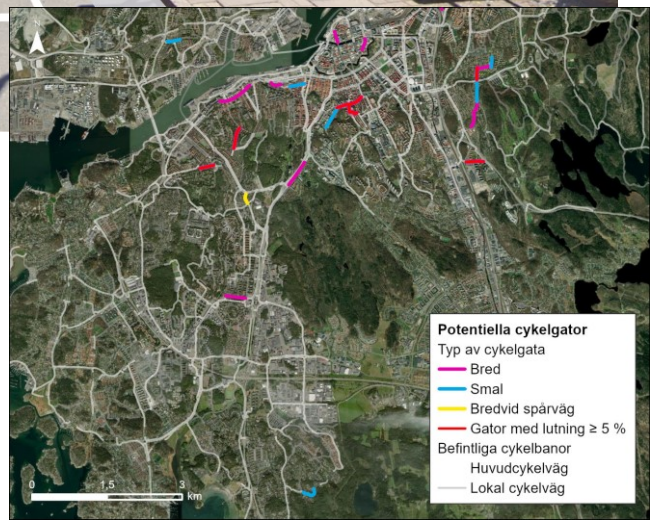
Kallio-Sörnäinen traffic calming, Helsinki

- Description: Improving cycling conditions and city experience for pedestrians by calming traffic on residential streetsof Kallio and Sörnäinen.
- Client: City of Helsinki
- Scope: The project will determine the methods for car traffic calming and re-routing in order to gain better feeling of safety for cycling and city life for the pedestrians. The project will mostly look into street hierarchy, car traffic's routes, speeds and allocated space in the two districts in Helsinki.
- Delivery period: 3/2023-12/2023
- Ramboll Business Units: Ramboll FI, Ramboll DK

Ramboll Transport

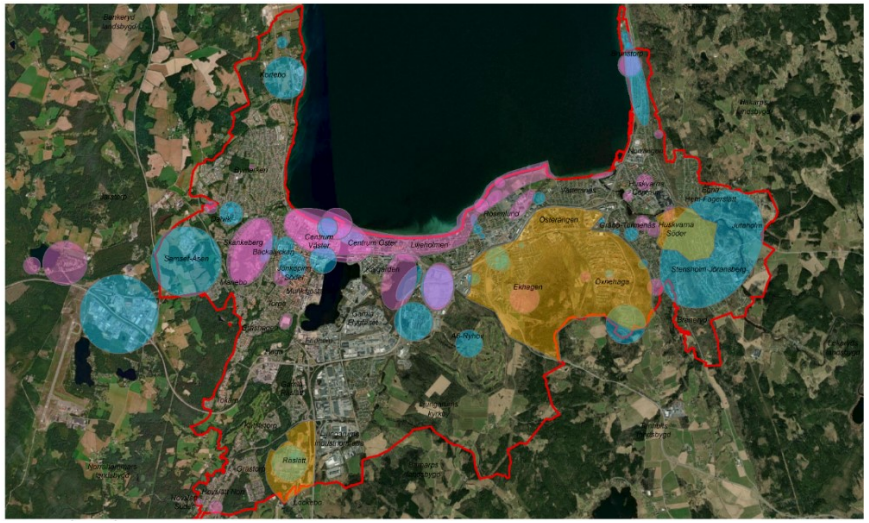
Cycling streets in Gothenburg





- Description: Identifying potential cycling streets in Gothenburg. Project Manager: Sara Nilsson
- Client: Gothenburg city
- Scope: Creating a concept for designing cycling streets in Gothenburg. Project includes identifying suitable streets in the network. Creating conceptual images over how the streets could look when designed as the concept is used.
- Delivery period: 2/2022-4/2023
- Ramboll Business Units: Ramboll SE

Potentials (from a technical standpoint)



Important areas (from a functional stadpoint)

Ramboll Transport

Bike-share system in Jönköping

- Description: Design of bike share system in Jönköping municipality
- Project Manager: Robin van der Grind/Julia Nyberg
- Client: Jönköping municipality
- Scope: Investigate and give recommendations to design an inclusive bike share system in an early planning stage. The focus has been on the inclusivity of the bike share system over the more traditional focus on technical function.
- Delivery period: 1/2023-6/2023
- Ramboll Business Units: Ramboll SE, DK, NO

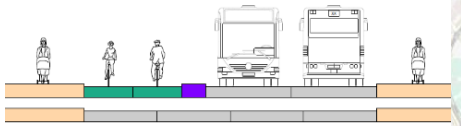
Ramboll Transport

Cycle Super Highway Mainz-Wiesbaden

- Description: Feasibility study for a Cycle Super Highway between the both capitals of federal states (together 0.5 Mio inhabitants)
- Project Manager: Torsten Perner
- Client: Wiesbaden and Mainz municipalities
- Scope:
  - Identification and assessment of possible routes
  - Preliminary design for selected routes
  - Cost-best analysis
  - Recommendation and realisation plan
  - (Optional draft/detailed design – to be awarded in 2023)
- Delivery period: 01/2021-10/2022 (Feasibility study)
- Ramboll Business Units: Ramboll DE, DK, SE

Proposed street design at Wiesbaden main station

New bridge for cyclists and pedestrians (phase 2)



Proposed cross-section on existing road bridge (phase 1)

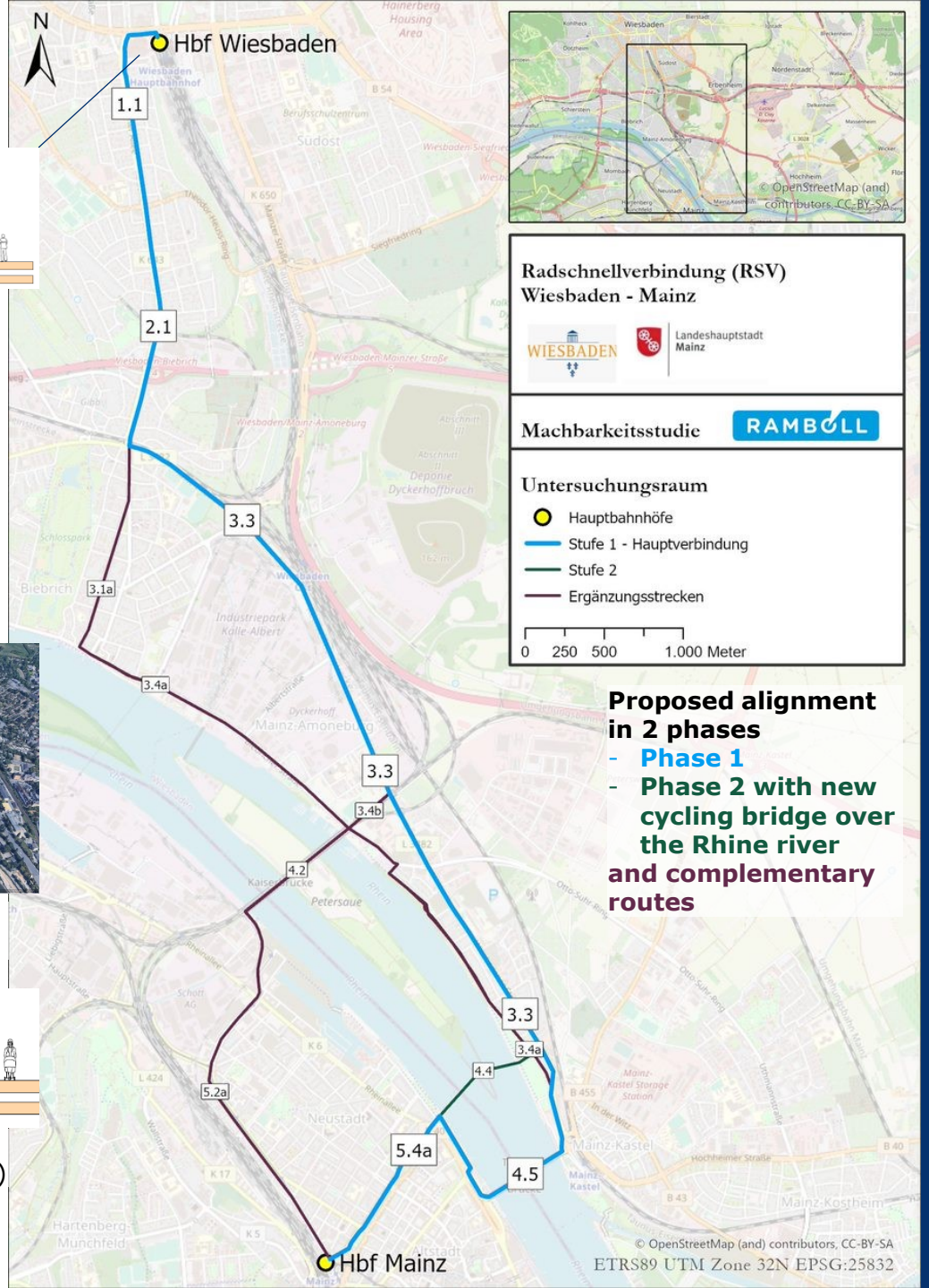
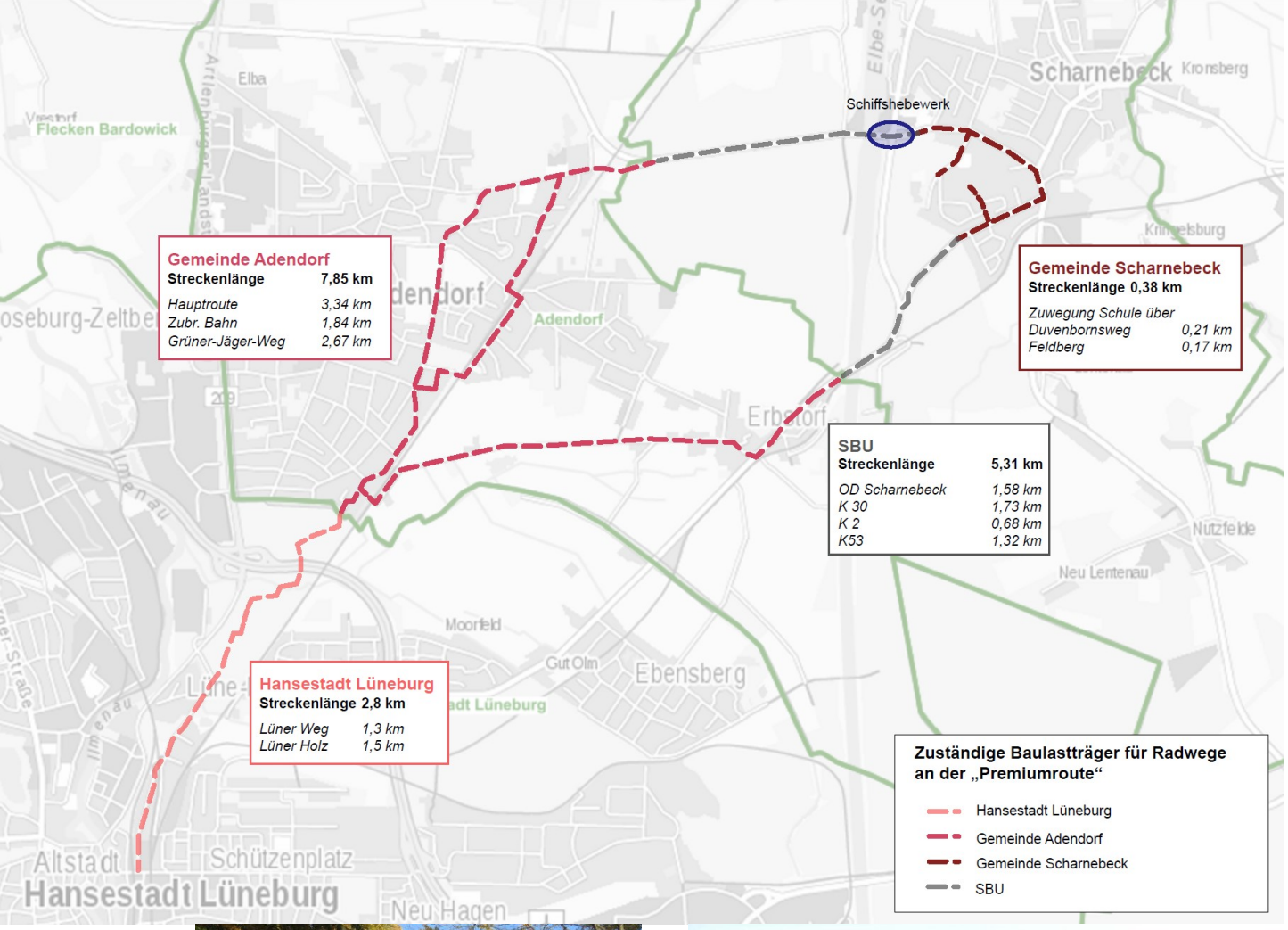


Image credit: CyclingUK.org

Ramboll Transport

UK/Ireland Frameworks

- Description: Number of Framework Wins on Active Travel Lots
- Clients:
  - Transport for Wales, UK
  - Hertfordshire County Council, UK
  - Land Development Agency, Republic of Ireland
  - Homes England, UK
  - Watford & Three Rivers Council, UK
- Scope: TBC but generally active travel projects, covering strategic advice, option appraisal, scheme assessment and design.
- Delivery period: Est. Q1 2024 for these Frameworks to start awarding tender calls.
- Ramboll Business Units: Smart Mobility, Ramboll UK.



Ramboll Transport

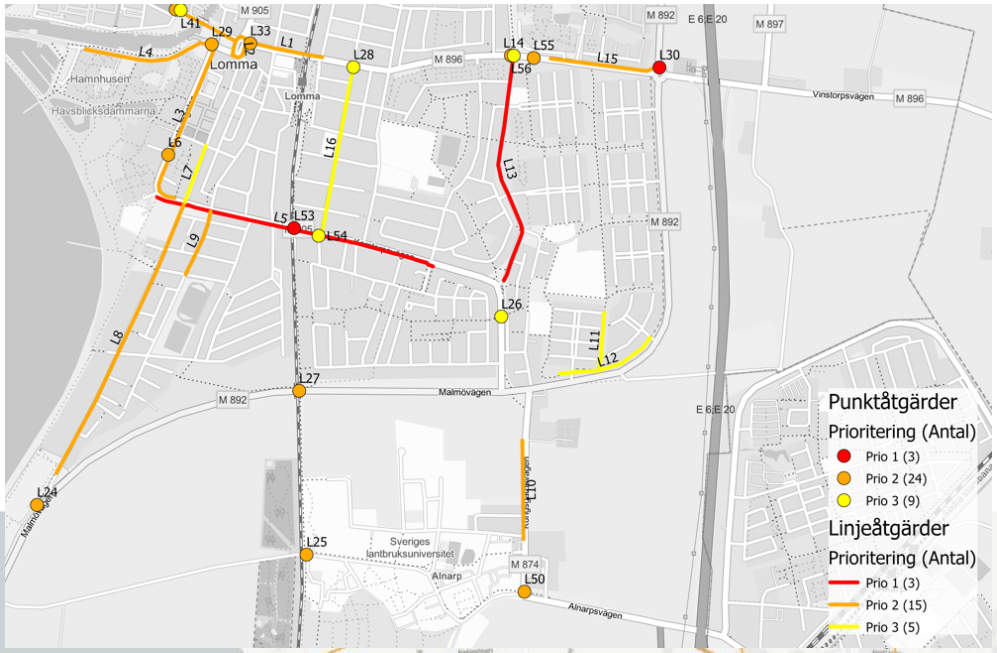
DE: Design of Bicycle Super Highway Lüneburg – Scharnebeck

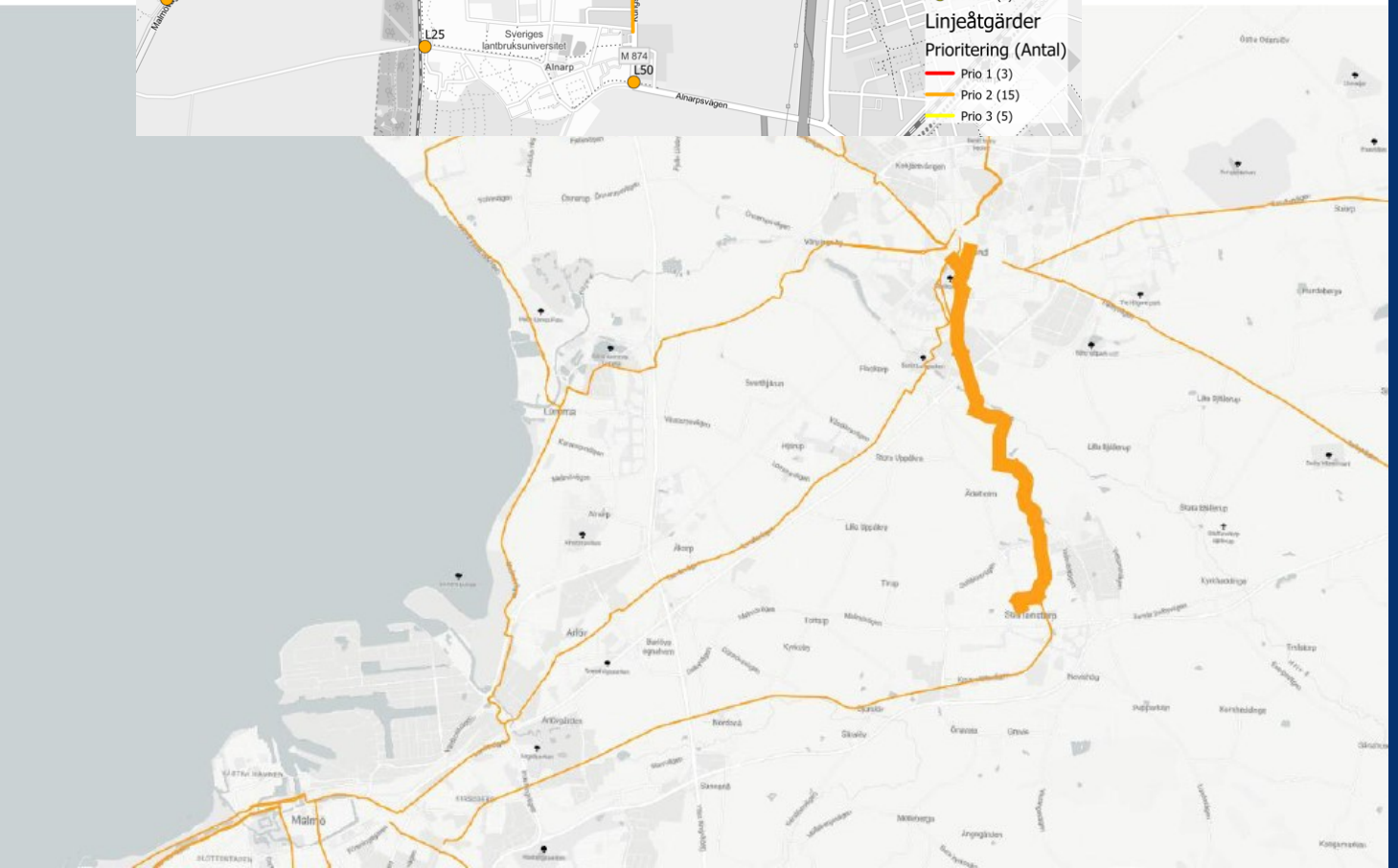
- Description: Preliminary – detailed design (HOAI phases 1-5) of bicycle super highway (Premiumroute) Lüneburg – Adendorf - Scharnebeck
- Client: Adendorf municipality (on behalf of 3 municipalities + county)
- Scope: Design of 13 km bicycle route of high standard (total length: 18 km, other sections already designed) between Lüneburg and Scharnebeck. The design is entirely carried out by Ramboll including multidisciplinary collaboration (i.a. MCE Hamburg and Smart Mobility Copenhagen). MCE is currently designing the sluice (Schiffshebewerk) on the route.
- Delivery period: 09/2023-12/2025
- Ramboll Business Units:
  Lead: Mobility&Rail/Smart Mobility Berlin
  (MCE Hamburg and Smart Mobility Copenhagen involved)

Ramboll Transport

Pre-feasibility study for redesign of Weichselstraße in Berlin

- Description: Improving conditions for active mobility and climate resilience.
- Client: District Berlin-Neukölln
- Scope: Weichselstraße has changed its character significantly in recent years. From a rather calm residential street to a lively spot – especially at night with numerous bars and restaurants. At the same time conditions for active mobility as wells as green/blue infrastructure are bad with poor surface and limited space. The project will determine the redesign in three options at a pre-feasibility level.
- Delivery period: 5/2023-09/2023
- Ramboll Business Units: Transport DE, Henning Larsen DE





Ramboll Transport

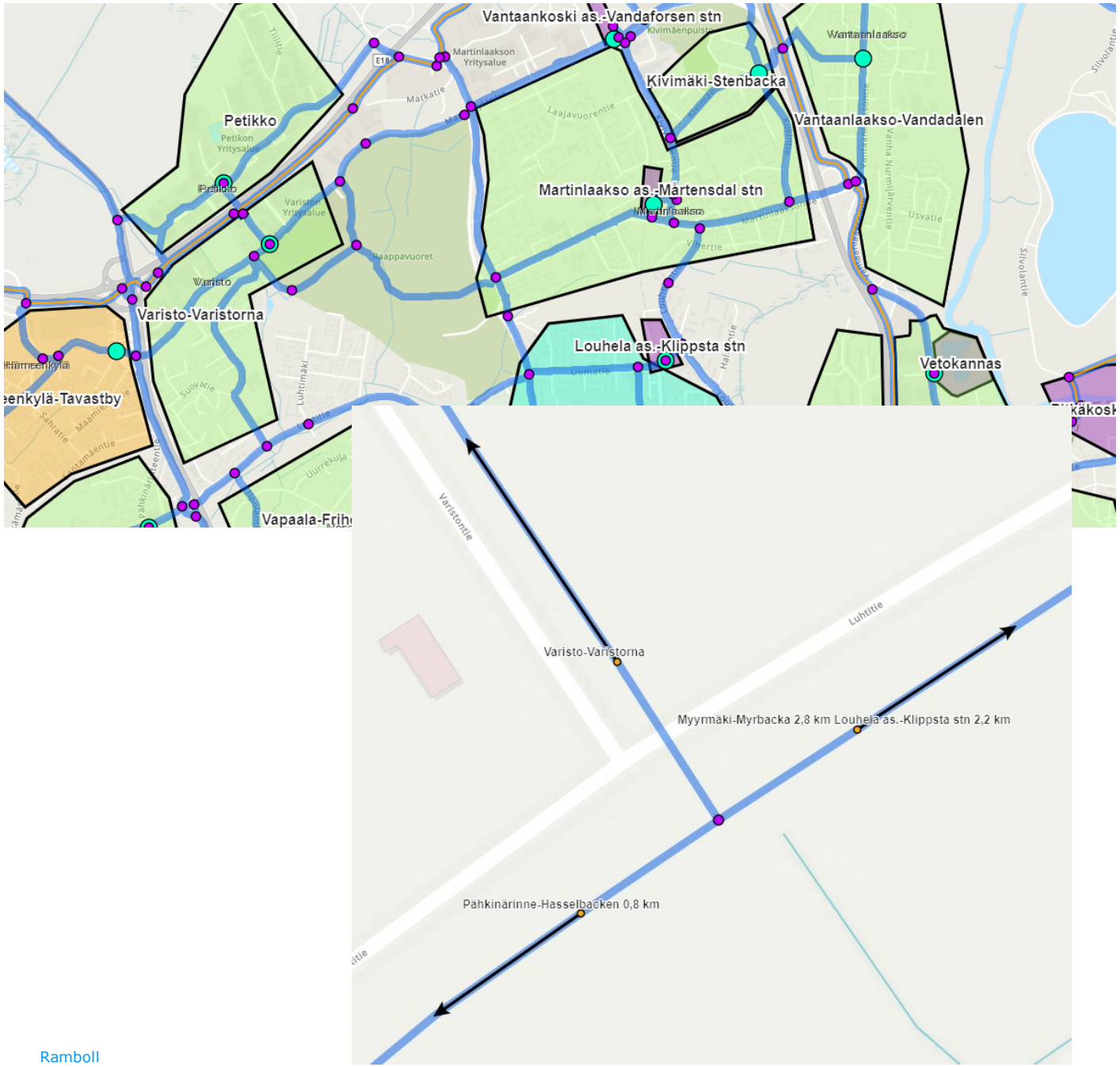
Super cycling highway in Staffanstorp

- Description: Advising on how Staffanstorp municipality should work with intersections and sections of road to meet the criteria of the region's Super cycling highway standard.
- Client: Municipality of Staffanstorp
- Scope: The project will assess the work needed withing the cycling network to meet the criteria of super cycling highways in the Region of Skåne. Intersections will be designed to meet the criteria and costs will be calculated.
- Delivery period: 4/2023-12/2023
- Ramboll Business Units: Ramboll SE

Ramboll Transport

Traffic signaling for cycling – planning manual for the city of Helsinki

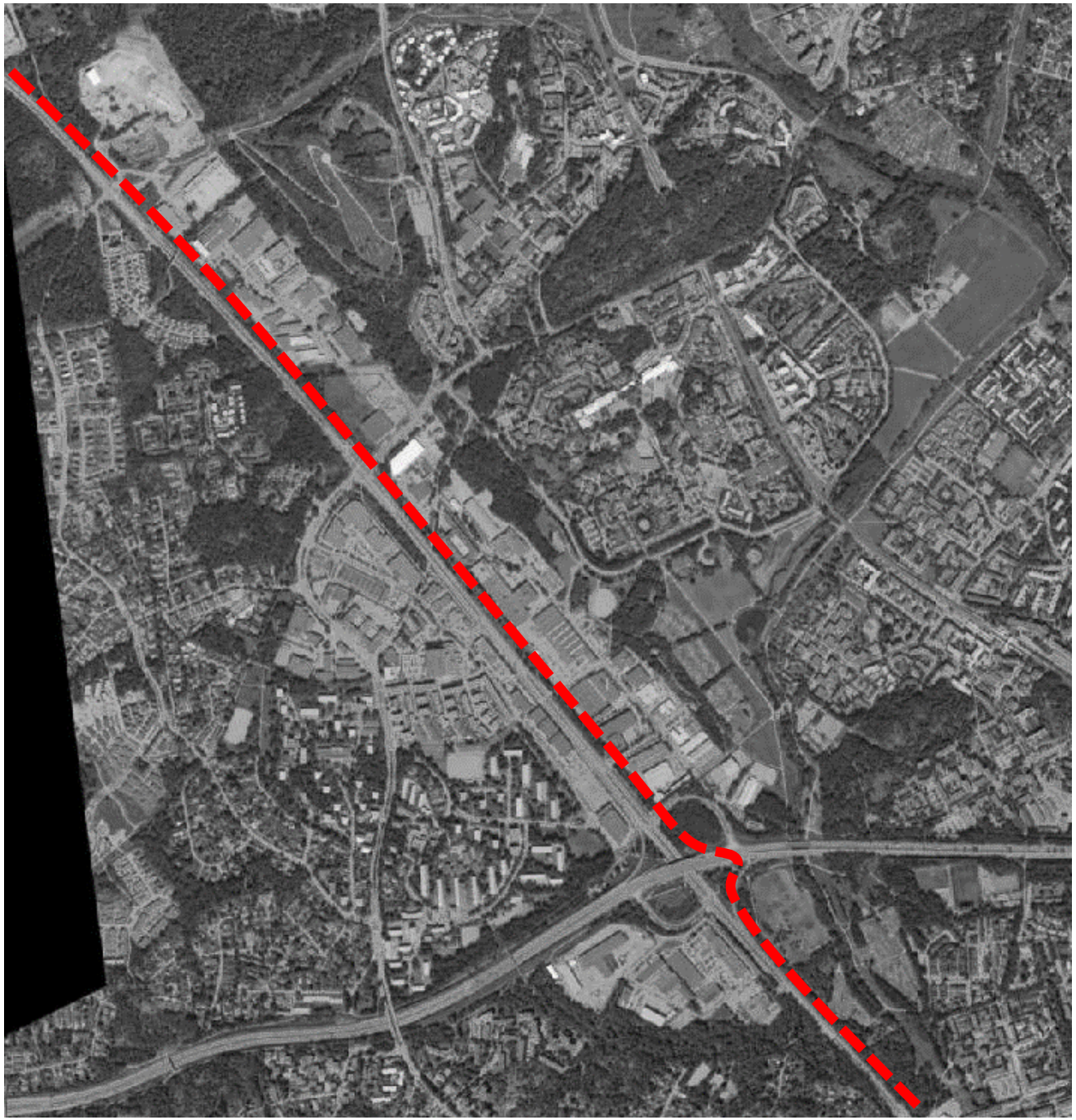
- Description: Planning principles of traffic lights for cycling
- Project Manager: Niko Palo
- Client: City of Helsinki
- Scope: Creating the new era planning principles / guidelines for traffic lights planning, regarding cycling specific planning questions. Project contains international benchmarking of Danish best practices.
- Ramboll Business Units: SM Finland, SM Denmark, Others
- Delivery period: 12/2022-12/2023
- Fee budget: 49 000 €



Ramboll Transport

Cycling wayfinding master plan, city of Espoo

- Description: General plan for cycling wayfinding
- Project Manager: Niko Palo
- Client: City of Espoo, ELY, City of Kauniainen
- Scope: A general plan for wayfinding for cycling. The general plan will determine the content for way finding signs (to be planned in the next phase). The general plan is also a living archive for the further modifications in the wayfinding network.
- Ramboll Business Units: Smart Mobility Finland
- Delivery period: 12/2022-12/2023
- Fee budget: 70 000 €



Ramboll Transport

Vihdintie cycleway improvements

- Description: Vihdintie cycleway improvements
- Project Manager: Aapeli Turunen
- Client: Helsinki & National Road Autohority (ELY)
- Scope: The existing bicycle path was built with low and cheap standards making cycling hard and even dangerous to ride on. The project will determine how the bicycle path will be improved.
- Ramboll Business Units: Smart Mobility Finland
- Delivery period: 12/2022-6/2023
- Fee budget: 60 000 €

Ramboll

Ramboll Transport

Bicycle tourism in Germany

- Description: Cycling tourism has been booming in Germany over the past 10 years. The Road Directorate in Denmark wanted to learn more about what is being done in Germany and look into what could potentially be implemented in Denmark and asked us to map cycling tourism in Germany – how is cycling tourism organized, which stakeholders are involved, who are the cycling tourists and what do they want.
- Project Manager: Marianne Weinreich (DK)
- Client: The Road Directorate
- Scope:
  - Desk research
  - Interviews
  - Report
- Delivery period: 10/2022-12/2022
- Ramboll Business Units: Ramboll DK & DE
- Budget: 26.500 EUR

Walking and cycling data - Practice, challenges, needs and gaps

The challenge

Unlike cars, public transport, and new mobility solutions data on pedestrians and cyclists is not systematically collected, has limitations and can be difficult to compare and benchmark. But data on walking and cycling is important for cities in order to set goals and targets, create the policies needed to reach these goals, to track progress and make decisions about investments in infrastructure and planning measures that support walking and cycling. Lack of data also means that walking and cycling is often missing or overlooked in the transport and mobility ecosystem – because what is not measured does not count. Often pedestrians and cyclists only become visible in data when they get hurt or die in accidents. Lack of data also means lack of knowledge about why different people are not walking and cycling – at all or in specific streets or areas. Data is put simply a way of creating awareness and making the invisible visible.

Our approach

Through surveys and interview se investigated how 18 public authorities practise, needs and challenges in relation to walking and cycling data and benchmarked the available data sources against the most common indicators.

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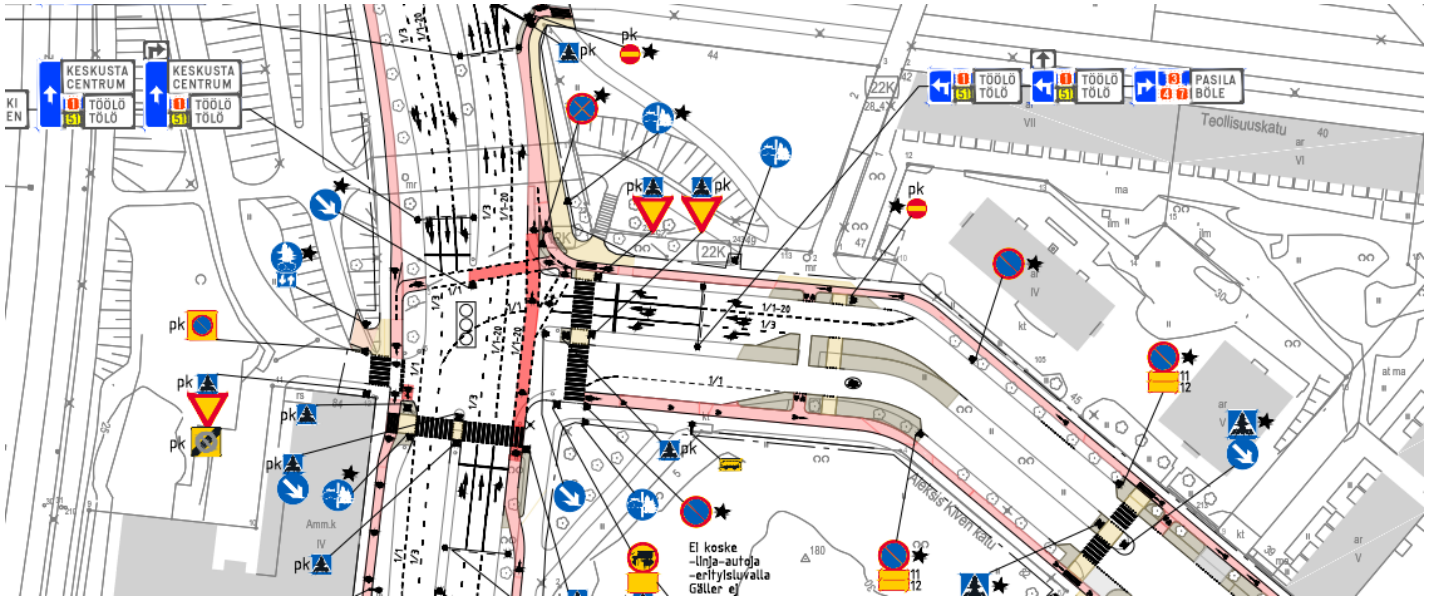

Bicycle paths with lightened and fastened design process

The challenge

Helsinki is in the middle of a transition from bidirectional network for cycling to unidirectional network. The transition will take a long time, and there are serious gaps in the network.

Our approach

Our team suggested for the city of Helsinki that on the selected existing bicycle paths there could decent arrangements found with lightened planning process in order to fasten the transition and make new unidirectional network cohesive. The general method was to change existing bicycle paths to unidirectional on the line segment using road markings and traffic signs while make constructural changes only in the intersections.

The result

The cycling target network was extended with approx. 5 km of new bicycle paths serving much better cohesion for cyclists.

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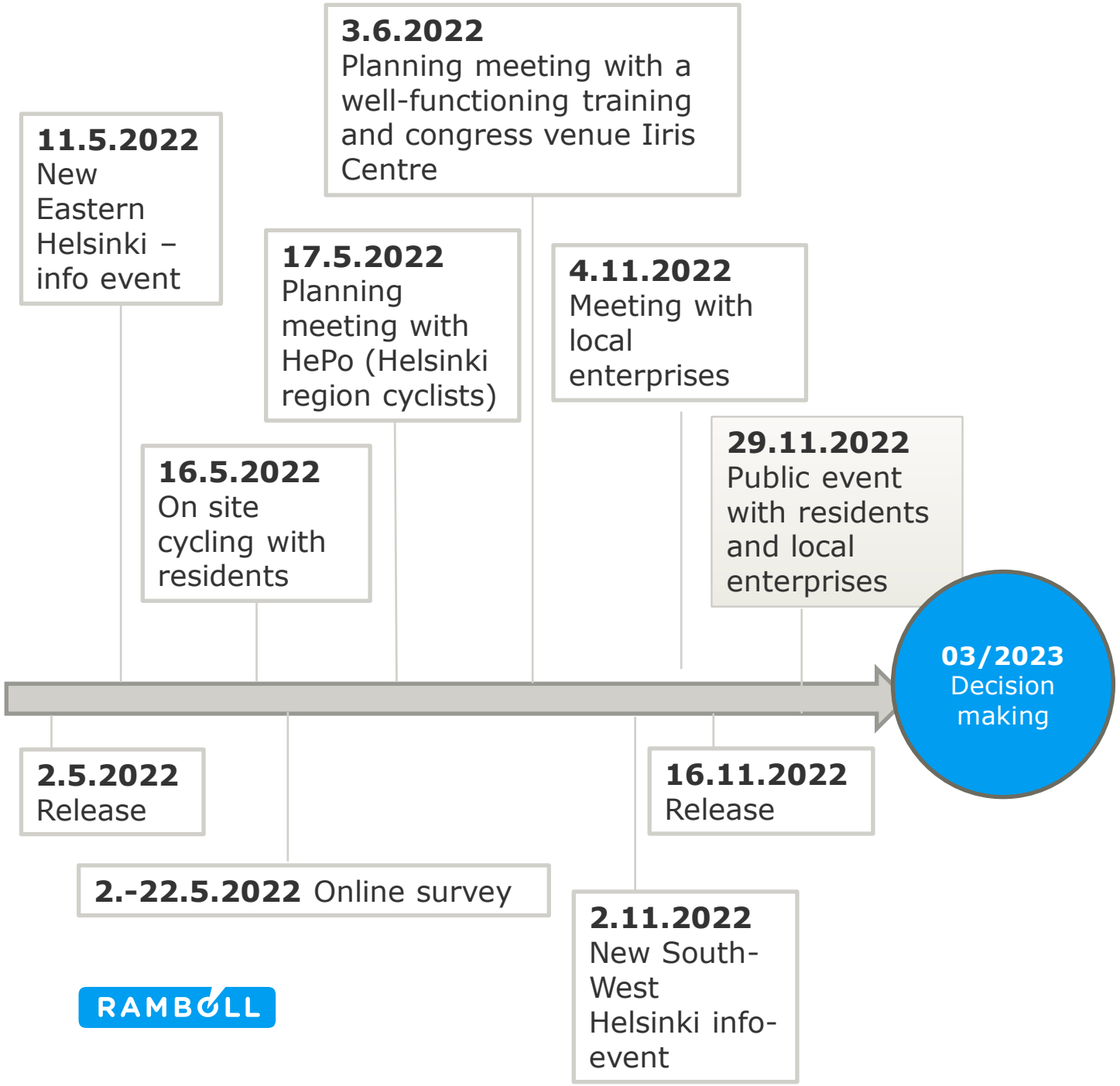


Communication plan of Eastern bicycle highway in Helsinki

The Challenge

Bicycle highway will require space re-allocation and the public acceptance can be a challenge

Our approach

Together with the city of Helsinki, we planned the communication throughout the planning process. Acceptance can be improved with careful communication with all the relevant stakeholders, residents, NGO's, shop owners etc.

The result

The city of Helsinki and Ramboll carried out a relatively large set of communication. The communication resulted in a way that the plan was improved. The whole route was changed from the initial corridor to a new one.

International benchmark of knowledge and innovation in cycling for City of Copenhagen

The challenge

Cycling is decreasing in Denmark. City of Copenhagen wanted us to do an international benchmark of knowledge and innovation in cycling area. The benchmark cover 4 areas:

1. Cycle data
2. Academic research
3. Europeans knowledge centres for cycling
4. Innovative cycling solutions
   - Infrastructure solutions
   - Mobility services with a focus on cycling
   - Tools and methods for planning for cycling

Our approach

Our international team interviewed planners, academic researchers and collected over 300 innovative solutions from our international network.

The result

Benchmark report with results and a inspiration catalogue with 100 cycling innovations.

RAMBØLL

Cycle path prioritization program for City of Lahti

The challenge

Lahti is aiming for carbon neutrality by the year 2025. In terms of emission reductions, transport is the most challenging sector in Lahti. One of the targets is to increase the share of cycling from 11 % (2016) to 16 % by 2030. Systematic promotion of better bicycle traffic conditions requires a prioritized investment program for the cycle network.

Our approach

We divided the bicycle traffic network into approximately 200 separate “projects”. The projects were then prioritized with the help of multi-criteria analysis. Based on an analysis of development needs, the most urgent projects were distributed into two baskets and preliminary investment costs were estimated.

The result

The prioritization programme ensures that bicycle traffic investments can proceed systematically. The prioritization allocates funding to the most urgent projects, based on their effectiveness in increasing the modal share of cycling. The project also facilitates the coordination of urban development projects and street renovations.

RAMBØLL

Active travel to work

Oslo, Norway

The Challenge

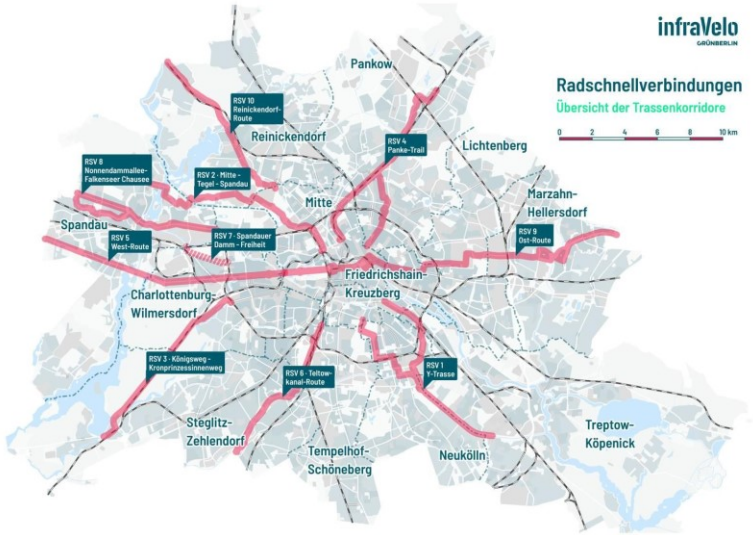
An increase in bicycle share during the pandemic and a new everyday life back in the office has led to more people being active to and from their workplaces. Cycling has become the new normal where more people cycle all year round. The pressure on each employer to facilitate and make it easy for their employees to continue being active has therefore increased.

Our approach

Rambøll carried out a large survey of how well many of the municipality's workplaces are adapted for active work travel. The survey includes a travel habits survey of the employees as well as a physical inspection of the workplaces.

The result

Based on the survey, Rambøll has subsequently recommended measures. The insight from this survey and the measures proposed will help workplaces to prioritize and implement measures so that more people can choose to be active to and from work.



Ramboll Transport

Cycle Super Highways Berlin

- Description: Feasibility Study and design for 6 of 10 Cycle Super Highways in Berlin (80 km corridor length); draft and detailed design
- Project Manager: Torsten Perner (DE)
- Client: GB infraVelo GmbH (owned by Berlin Senate)
- Scope:
  - Identification and assessment of possible routes
  - Preliminary design and cost-best analysis
  - Draft and detailed design
- Delivery period: 01/2019-12/2020 (Feasibility study)
  Since 01/2021 (Design)
- Ramboll Business Units: Ramboll DE, DK, SE
- Budget: 640 000 EUR (Feasibility study)
  > 1.0 Mio EUR (Design)

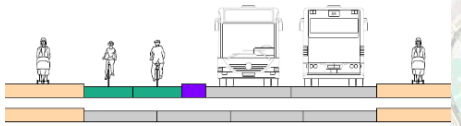
Ramboll Transport

Cycle Super Highway Mainz-Wiesbaden

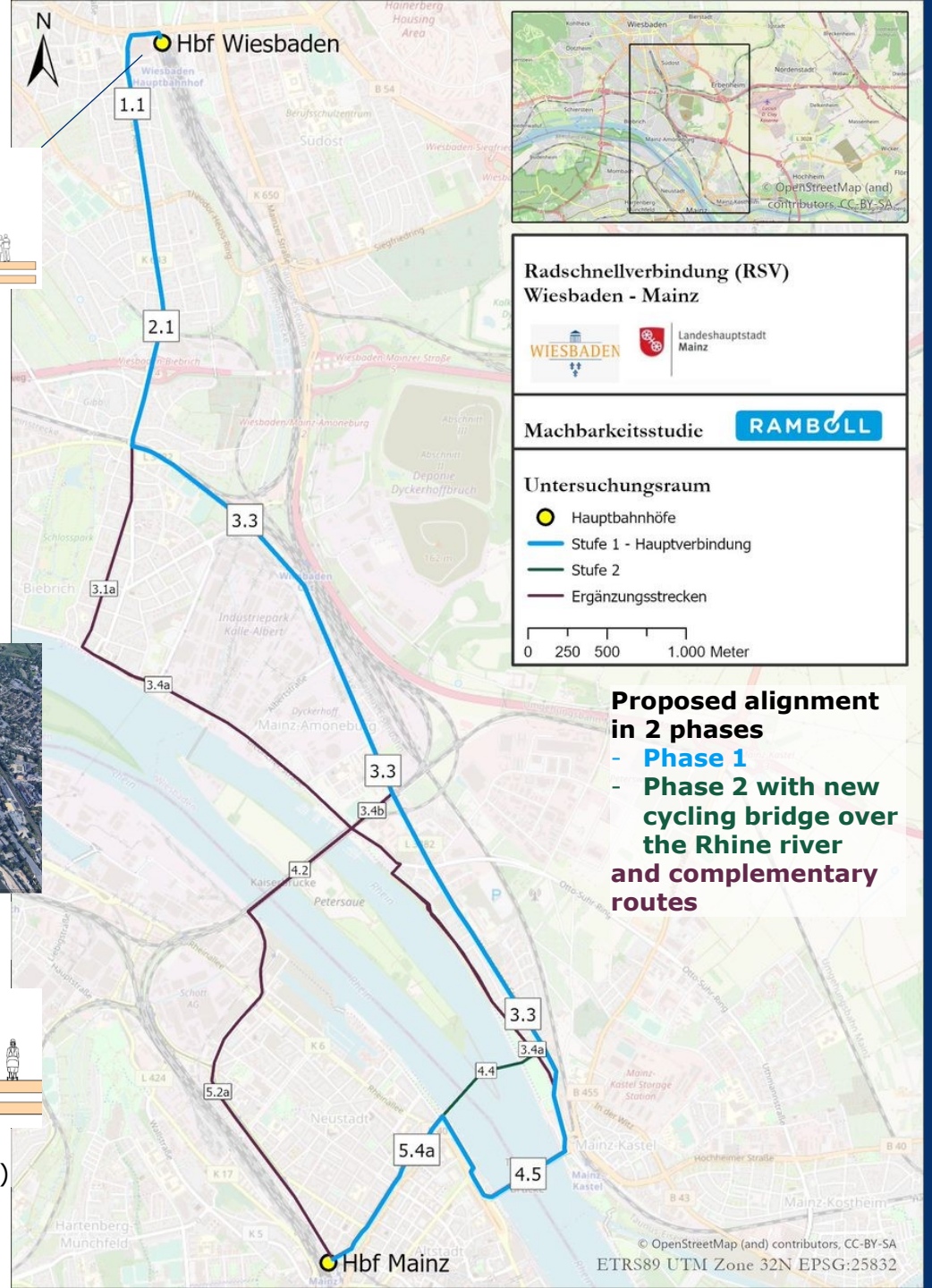
- Description: Feasibility study for a Cycle Super Highway between the both capitals of federal states (together 0.5 Mio inhabitants)
- Project Manager: Torsten Perner (DE)
- Client: Wiesbaden and Mainz municipalities
- Scope:
  - Identification and assessment of possible routes
  - Preliminary design for selected routes
  - Cost-best analysis
  - Recommendation and realisation plan
  - (Optional draft/detailed design – to be awarded in 2023)
- Delivery period: 01/2021-10/2022 (Feasibility study)
- Ramboll Business Units: Ramboll DE, DK, SE
- Budget: 182 000 EUR (Feasibility study)

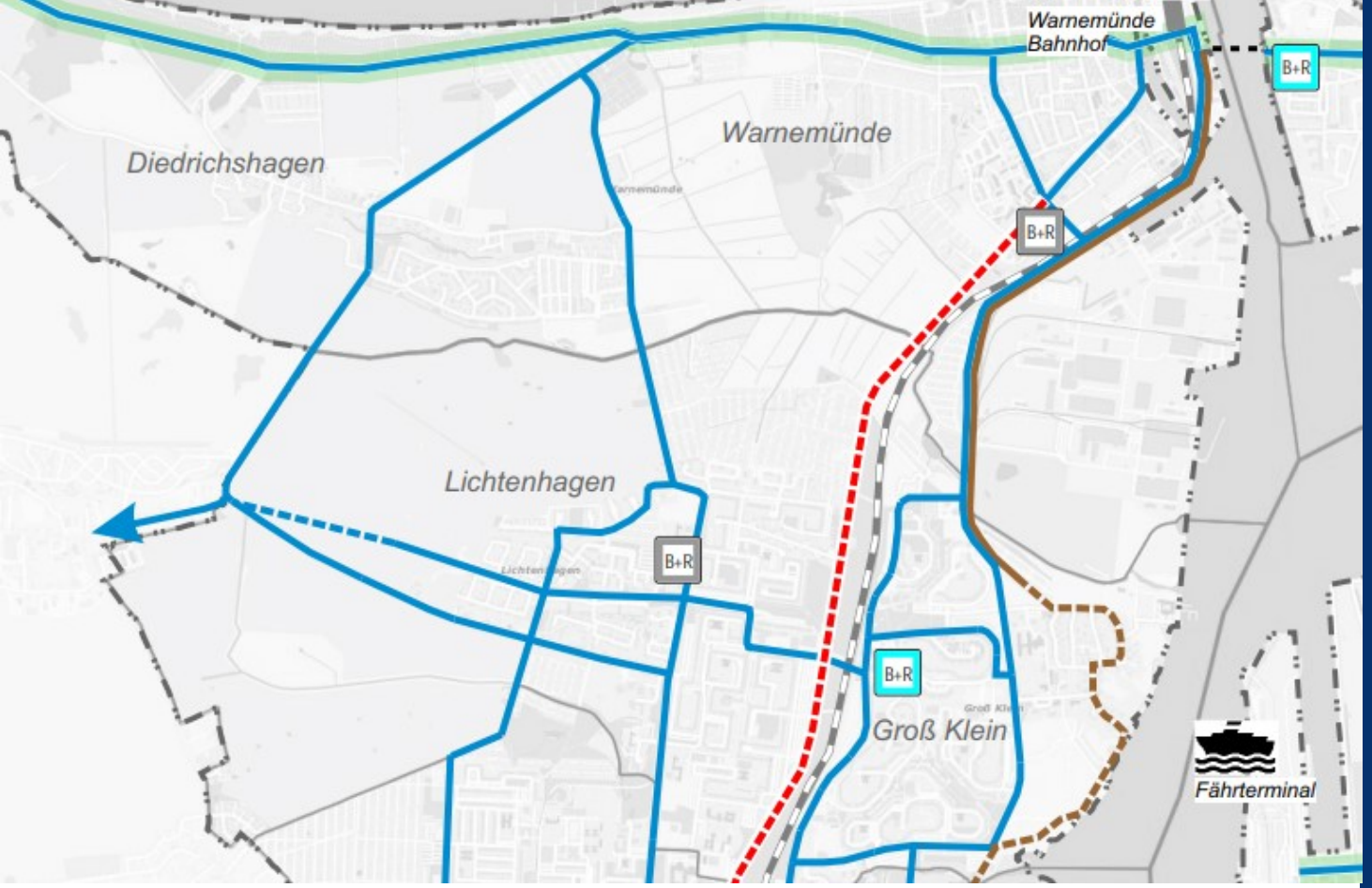
Proposed street design at Wiesbaden main station

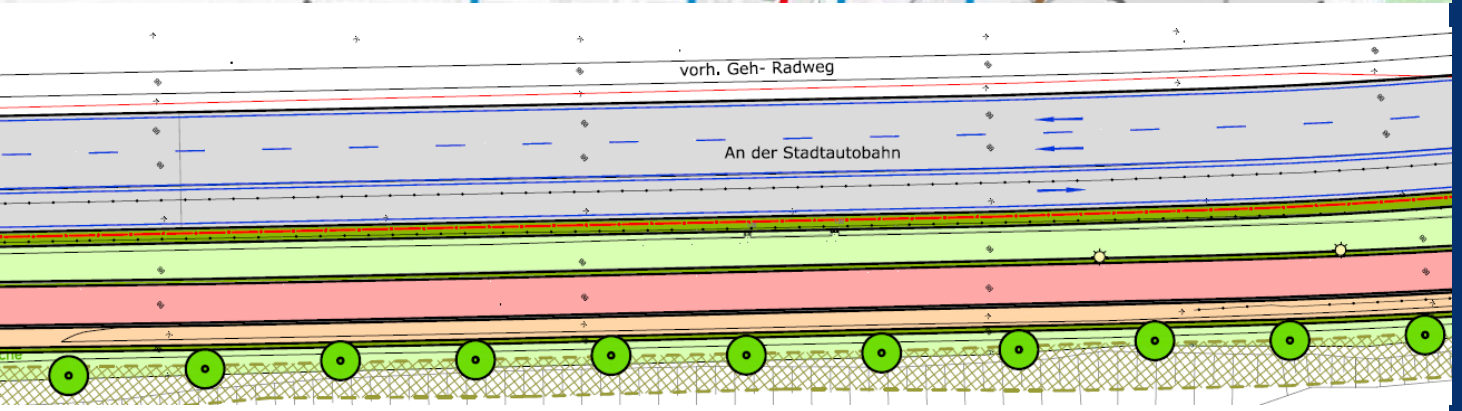
New bridge for cyclists and pedestrians (phase 2)



Proposed cross-section on existing road bridge (phase 1)





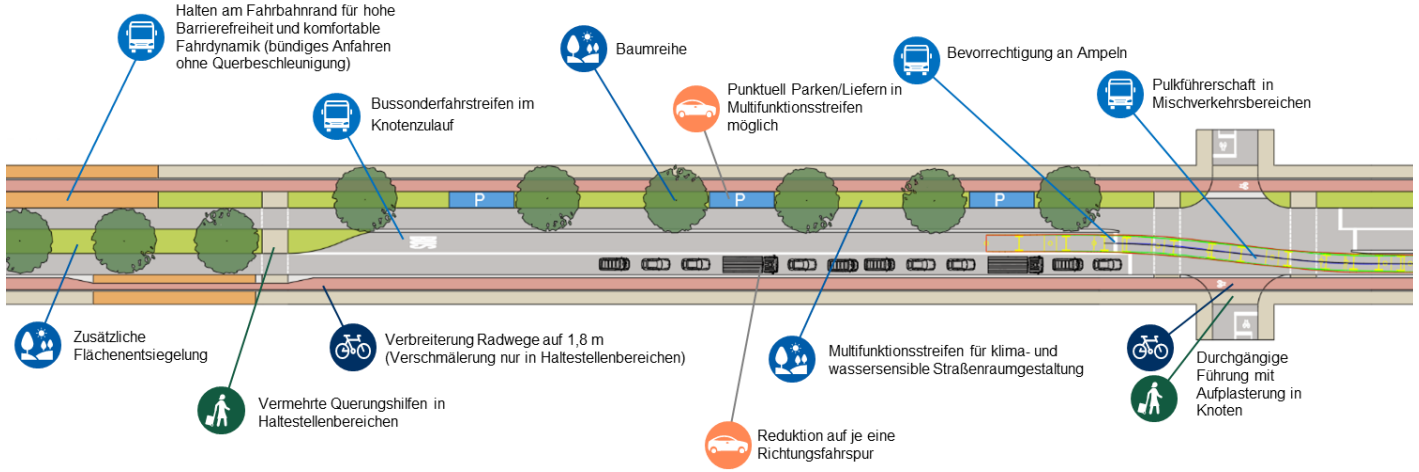


Ramboll Transport

Cycle Super Highway Rostock

- Description: Preliminary design for Cycle Super Highways Rostock-Lichtenhagen – Warnemünde by redesigning the existing urban motorway
- Project Manager: Torsten Perner (DE)
- Client: Rostock municipality
- Scope: Preliminary design
- Delivery period: 03/2021 - 07/2022
- Ramboll Business Units: Ramboll DE, DK, SE
- Budget: 66 000 EUR

New street design

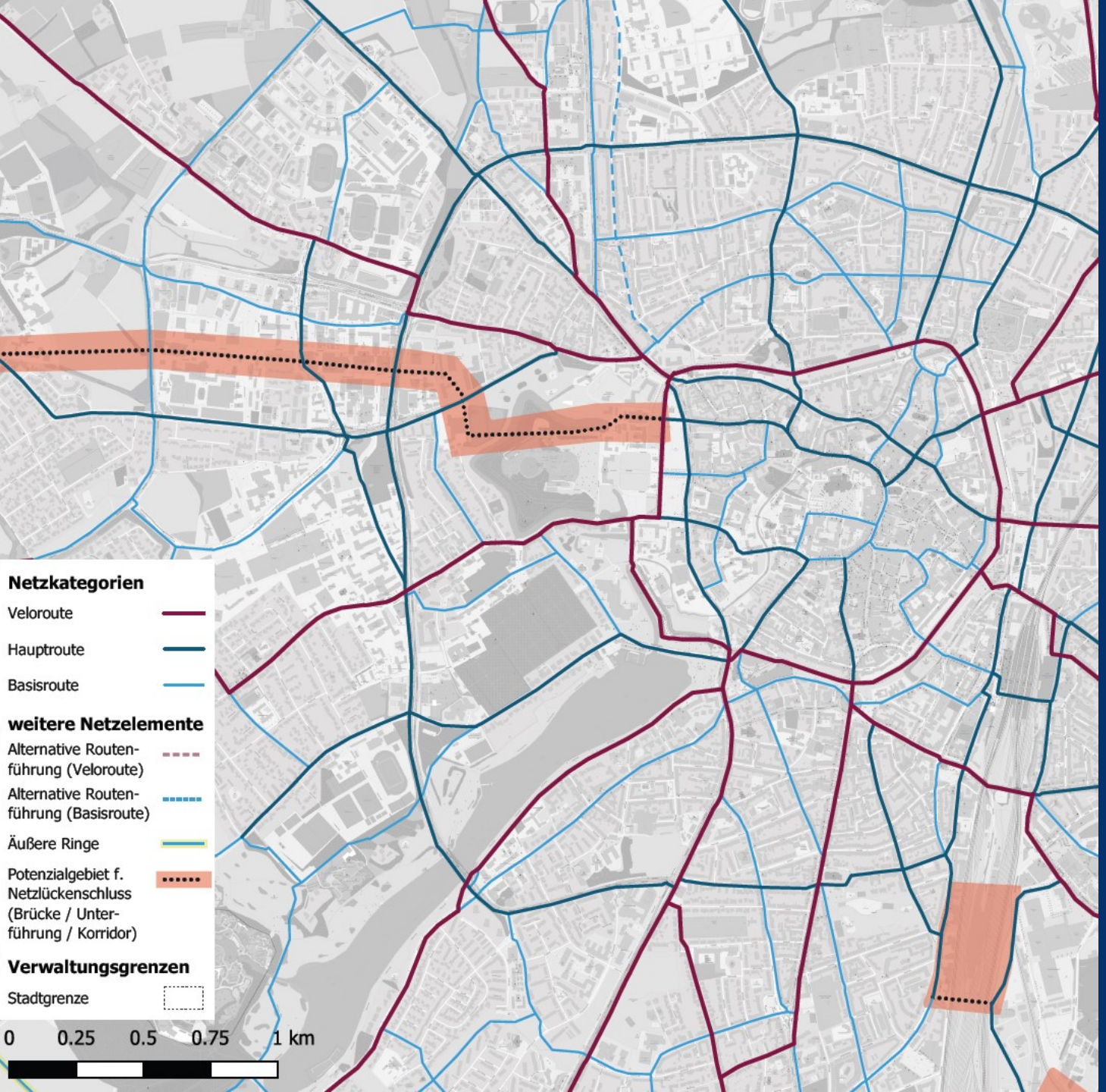


Online participation

Ramboll Transport

Mobilplan 2035 Luruper Hauptstraße

- Description: Feasibility study for a Cycle Super Highway between the both capitals of federal states (together 0.5 Mio inhabitants)
- Project Manager: Torsten Perner (DE)
- Client: Hamburg municipality
- Scope:
  - Preliminary designs for the road space
  - Macroscopic simulation with Visum
  - Microscopic traffic analysis with Lisa+
  - Blue/green infrastructure and environmental planning
  - Participation with 3 stakeholder workshops, online participation and costumer audits
- Delivery period: 12/2021-09/2022
- Ramboll Business Units: Ramboll DE, Henning Larsen, RMC
- Budget: 130 000 EUR



Ramboll Transport

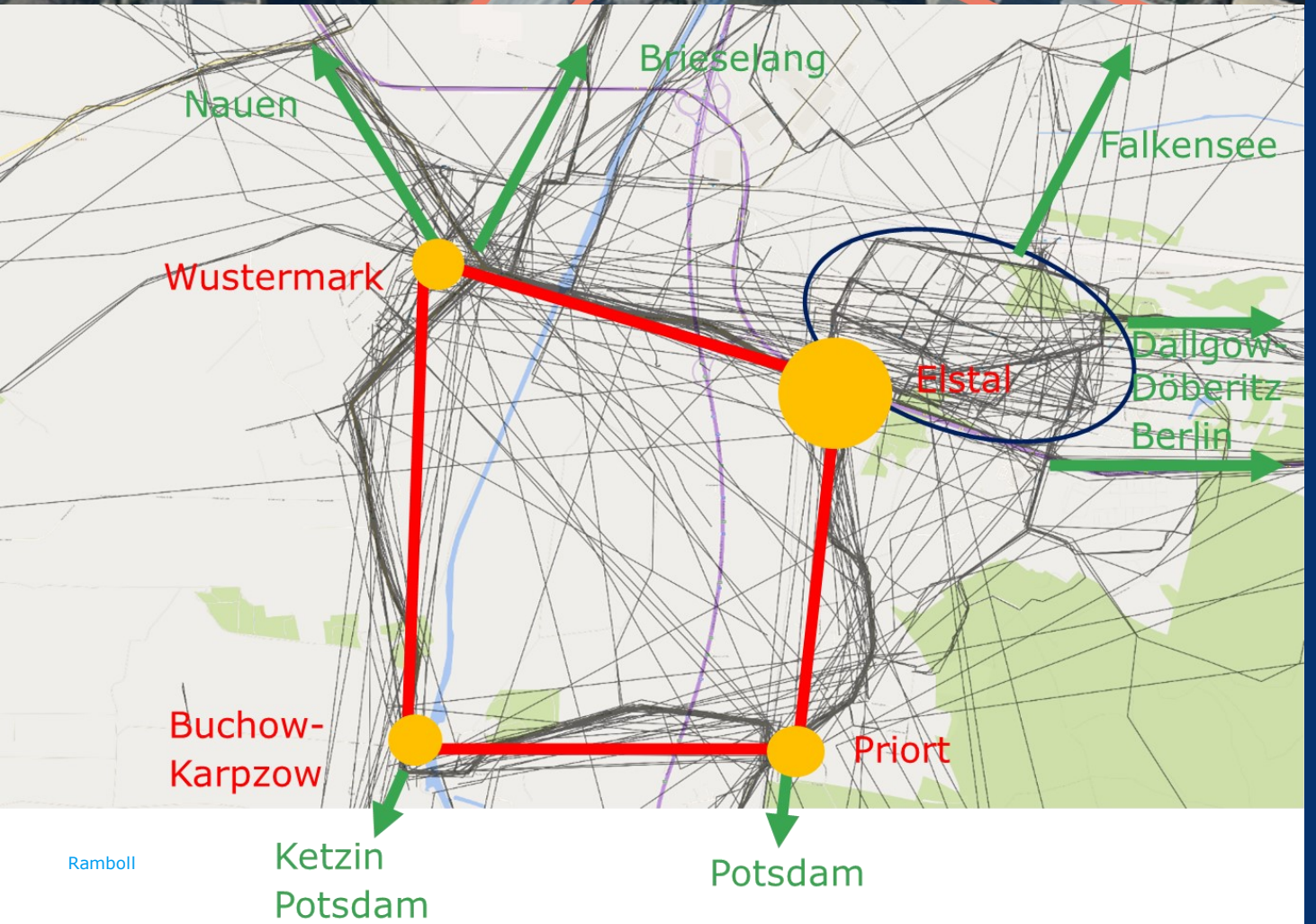
Bicycle Network 2.0 Münster

- Description: The City of Münster (315,000 inh) has on of the highest modal share of cycling in Germany (40% of all trips). To further increase this share and to improve conditions for cycling a coherent and hierarchic network of cycling infrastructure has been developed.
- Project Manager: Torsten Perner (DE)
- Client: Münster municipality
- Scope:
  - Macroscopic simulation of bicycle traffic with Brutus
  - Network planning
  - Communication, participation and stakeholder management including a tracking campaign
  - Redesign of selected streets and intersections
- Delivery period: 08/2020-06/2023
- Ramboll Business Units: Ramboll DE, DK, SE, FI
- Budget: 180 000 EUR

Ramboll Transport

Radbahn U1 Berlin

- Description: Radbahn aims to convert the underutilised space under and along the iconic metro viaduct into a high-quality, urban environment by means of a roofed cycleway. In the technical feasibility study Ramboll has analysed 2 variants to realise Radbahn.
- Project Manager: Torsten Perner (DE)
- Client: Berlin Senate Department for the Environment, Urban Mobility, Consumer Protection and Climate Action
- Scope:
  - Preliminary design
  - Cost estimation and cost-benefit-analysis
  - Microscopic simulation with Vissim
  - Communication, participation and stakeholder management including
- Delivery period: 04/2021-08/2023
- Ramboll Business Units: Ramboll DE, DK, SE, RMC
- Budget: 137 000 EUR



Ramboll Transport

Cycling Concept Wustermark

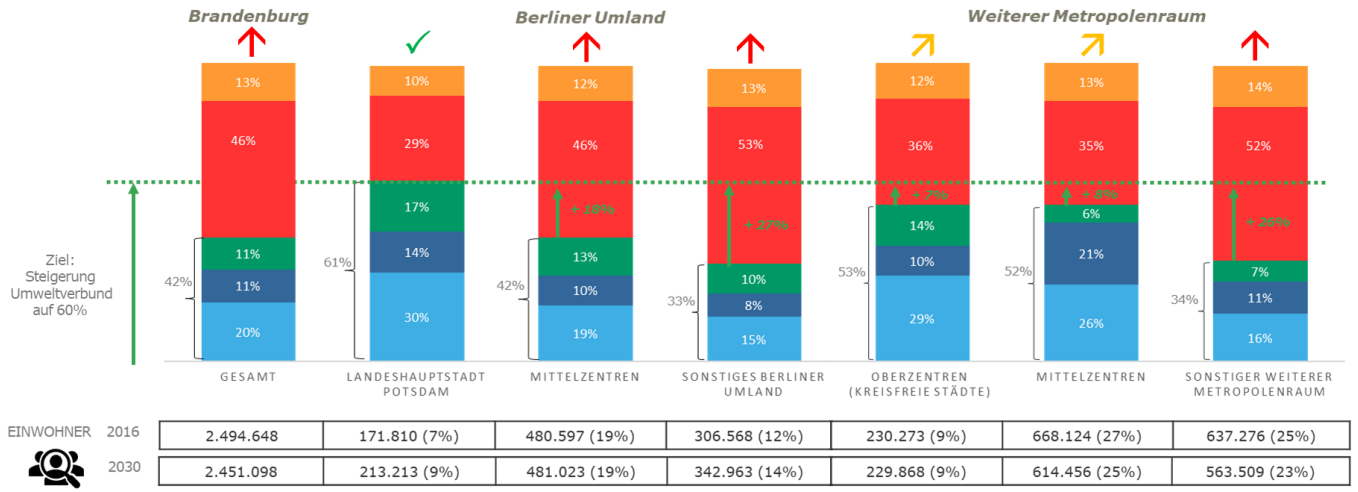
- Description: The municipality of Wustermark, 15 km west of Berlin, is growing significantly not least by several commercial locations. By now passenger traffic has mainly relied on car. In order to create an attractive alternative, Ramboll has developed a comprehensive cycling concept.
- Project Manager: Torsten Perner (DE)
- Client: Wustermark municipality
- Scope:
  - Communication, participation and stakeholder management including online-campaign with maptionnaire
  - Network planning improving not only the connections in the municipality as well as to Berlin, Potsdam and Nauen
  - Redesign of selected streets and intersections
- Delivery period: 01/2020-07/2021
- Ramboll Business Units: Ramboll DE, SE, RMC
- Budget: 54 000 EUR

Ramboll Transport

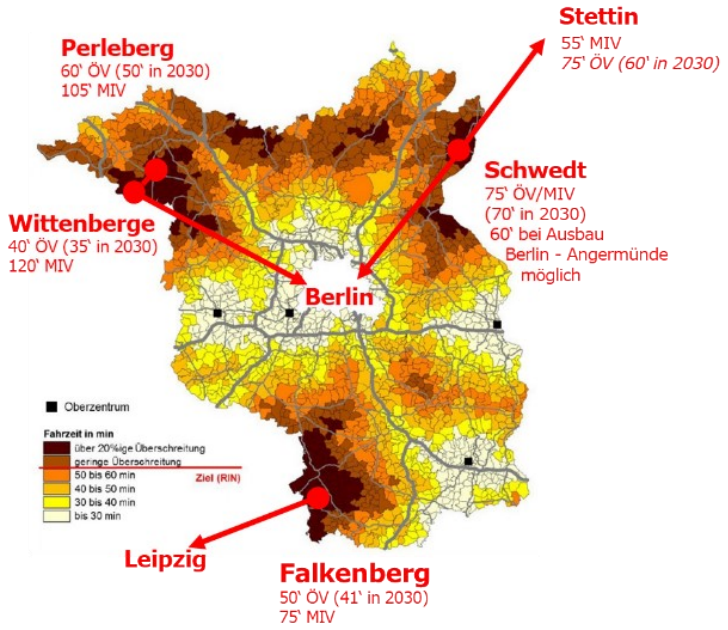
SUMP Lübeck

- Description: The Hanseatic city of Lübeck wants to improve sustainable modes of transportation. Ramboll develops a SUMP including detailed studies
- Project Manager: Gerald Hamöller, Torsten Perner (DE)
- Client: Lübeck municipality
- Scope:
  - SUMP (Sustainable Urban Mobility Plan) – main concept
  - Light Rail pre-feasibility study
  - Cycling concept
  - Parking
  - EV charging
- Delivery period: 09/2022-03/2024
- Ramboll Business Units: Ramboll DE
- Budget: 400 000 EUR

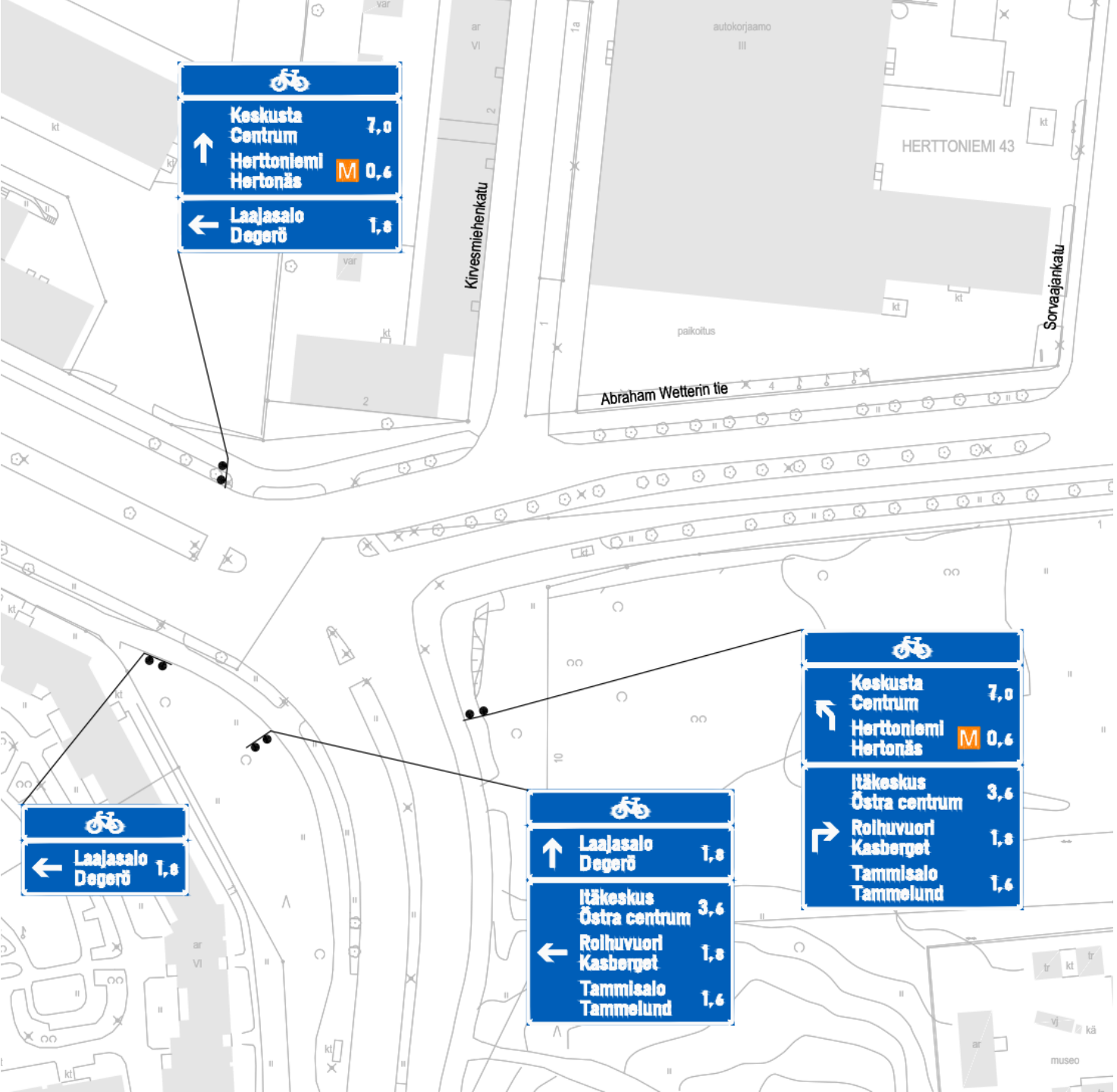
Mobility strategy Brandenburg



EINWOHNER	2016	2.494.648	171.810 (7%)	480.597 (19%)	306.568 (12%)	230.273 (9%)	668.124 (27%)	637.276 (25%)
	2030	2.451.098	213.213 (9%)	481.023 (19%)	342.963 (14%)	229.868 (9%)	614.456 (25%)	563.509 (23%)



- Description: The government of Brandenburg aims at increasing modal share of sustainable mobility from currently 42% to 60% in 2030. Active mobility and intermodal integration is a crucial part to achieve this goal.
- Project Manager: Torsten Perner (DE)
- Client: Federal State of Brandenburg
- Scope:
  - Developed of general policies in 9 subject areas customized for the 6 different regional types
  - Elaboration of the strategy paper
  - Participation process – Online commenting
- Delivery period: 08/2020 - 06/2023
- Ramboll Business Units: Ramboll DE, RMC
- Budget: 118 000 EUR



Cycling way finding sign plans in Helsinki

The Challenge

The bicycle path network is broken and routes are challenging to follow intuitively.

Our approach

City need a GIS-based general plan where the content for signposting is planned kept up to date. The traffic sign phase of process is an easy task as the content is firmly set in the general plan.

The result

Helsinki city will have ready-to-go plans of wayfinding for cycling. The plans are to cover the whole city. Eventually the citizens will have easily followable bicycle paths throughout the city. Quality wayfinding is very cost-effective way to improve cycling facilities.

RAMBØLL

Potentials and barriers for city logistics by bicycle

The Challenge

Business cases and benchmarking for delivering parcels by cargo bikes.

Our approach

Desktop research, stakeholder interviews and analysis of parcel delivery data from a parcel distributor company.

The result

Increased knowledge and public awareness of potentials and barriers for parcel distribution by cargo bike.

RAMBØLL

Quick-fix measurements for Stockholm main bicycle network

CHALLENGE

Identify critical passages in Stockholm's main bicycle network that can be remedied with the greatest possible benefit for the least possible cost without restricting parking and delivery traffic to an excessive extent.

WHAT WE DID

The project is on-going and one mapping of the entire main bicycle network has been made in order to identify adequate passages.

EFFECT

The measures will have a major effect and improve the conditions to cycle in Stockholm in the short term. Some sections will already be remedied before the local elections in September 2022.

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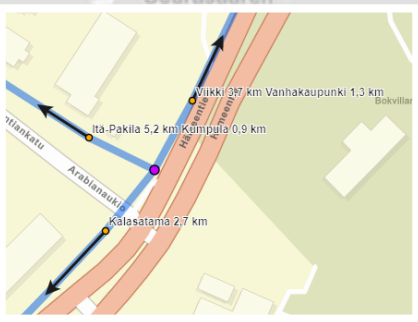

WAYFINDING GENERAL PLAN IN HELSINKI

CHALLENGE

Bicycle paths are not always intuitive and easy to follow from A to B. To make cycling an attractive alternative for everyone, people need to find their way in the cities.

WHAT WE DID

We created a GIS-based tool to determine the contents for wayfinding. The output is an error free and easily updateable general plan for wayfinding. The general plan is database for traffic sing contents.

EFFECT

We could deliver time saving wayfinding planning to our client. With new better signposting, more cycling can be expected as way finding get much easier for everyone.

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June 2021

BICYCLE NETWORK PLAN FOR TURKU CITY CENTER

CHALLENGE

In order to reach the set goals for bicycle traffic the bicycle network plan for city centrum needed an upgrade. The old plan has old standards of planning and it was mainly bidirectional. The city also has many addresses that are difficult to reach by bike.

WHAT WE DID

We planned new network plan based on latest bicycle traffic planning principles and best practises. The new network plan is mainly unidirectional. The project also included cross-sections of challenging parts of the network and we estimated the total cost of the change.

EFFECT

The new network plan helps to design and built a cohesive and logical set of bicycle routes. Eventually, the network will also make it easier to cycle in the city and increase bike traffic.

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BICYCLE TRAFFIC ACTION PLAN FOR CITY OF VANTAA

CHALLENGE

The goal of the city of Vantaa is to increase bicycle traffic. The development of bicycle traffic in Vantaa has made partial progress, but the city has lacked a more detailed plan and program for the systematic development of bicycle traffic, which is why the development has not been systematic.

WHAT WE DID

We made a bicycle traffic action plan for the city, which will enable systematic and systematic development. The program set out a vision, objectives, development guidelines and twenty actions to ensure the right direction of development. Residents' surveys, international best practices, heat calculation and information on the current state of the city were used in the preparation of the work.

EFFECT

The result of the work was a concrete program of actions that the various parties in the city can take towards implementation and monitor the progress of the work. When implemented, the program will facilitate cycling in Vantaa and enable the growth of bicycle traffic in line with the goal.

Cycle path prioritization program for City of Lahti

The challenge

Lahti is aiming for carbon neutrality by the year 2025. In terms of emission reductions, transport is the most challenging sector in Lahti. One of the targets is to increase the share of cycling from 11 % (2016) to 16 % by 2030. Systematic promotion of better bicycle traffic conditions requires a prioritized investment program for the cycle network.

Our approach

We divided the bicycle traffic network into approximately 200 separate “projects”. The projects were then prioritized with the help of multi-criteria analysis. Based on an analysis of development needs, the most urgent projects were distributed into two baskets and preliminary investment costs were estimated.

The result

The prioritization programme ensures that bicycle traffic investments can proceed systematically. The prioritization allocates funding to the most urgent projects, based on their effectiveness in increasing the modal share of cycling. The project also facilitates the coordination of urban development projects and street renovations.

RAMBØLL

TRAFFIC SAFETY STUDY ON TWO WAY CYCLING ON ONE WAY STREET

CHALLENGE

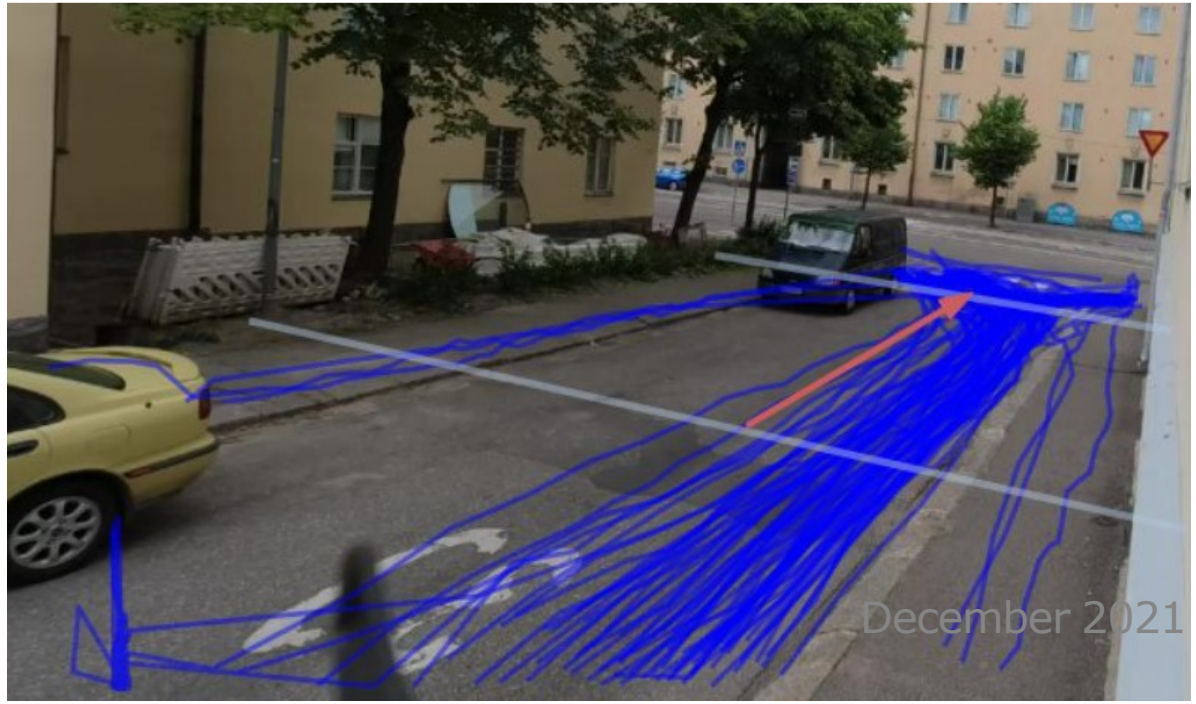
Allowing two way cycling on one way street has recently been added to Finnish legislation. There is very limited data and information available on this traffic solution. One of the key questions was; is the bicycle lane needed in the beginning and in the end of the segment?

WHAT WE DID

Ramboll used the machine vision to survey and visualize the use of the recently added traffic solution before and after marking the bicycle lane. We could determine the car drivers and cyclists driving and riding position, moving directions and possible safety problems.

EFFECT

The survey will help to understand people's behaviour on street and planning the safe solutions. The results will help to determine the right solutions in the street planning and design manuals.



NATIONAL DESIGN MANUAL FOR BICYCLE TRAFFIC IN FINLAND

CHALLENGE

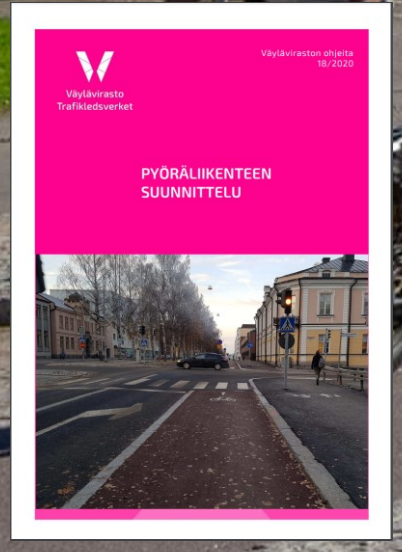
In order to reach the set goals for bicycle traffic, a significant improvement is required for bicycle infrastructure in Finland. The low standards of planning have limited the growth of cycling for decades.

WHAT WE DID

We wrote the manual form A to Z in order to set the necessary planning principles and introduce some new traffic arrangements. The manual content is following the best practices in the world and fit them in the local context.

EFFECT

The new national planning manual represents the new era of bicycle traffic planning in Finland. Building bike paths with the new standards will take time – but most importantly, the page has turned.



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PROJECT JÄGERSRO, MALMÖ

CHALLENGE

The old horse racing arena in Malmö will move and the intention is to create the most sustainable residential area in the Nordics with 5000 housing units on the grounds. Aside from the arena, the area today is dominated by large car parking areas, car dealers and a shopping center.

OUR DELIVERY

Three teams was selected to develop a structural plan for the area. Ramboll services in the competition team included mobility planning and sustainability coordination.

IMPACTS

Our team (Ramboll, Kanozi architects and Mareld landscape architects) delivered a proposal centered around the concept of a 'kind city for children' where mobility is focused on walking and cycling. This concept was implemented in everything from mobility to the design of front yards.

Kanozi arkitekter

Flytånet sykkelutredning, Fornebu Oslo

CHALLENGE

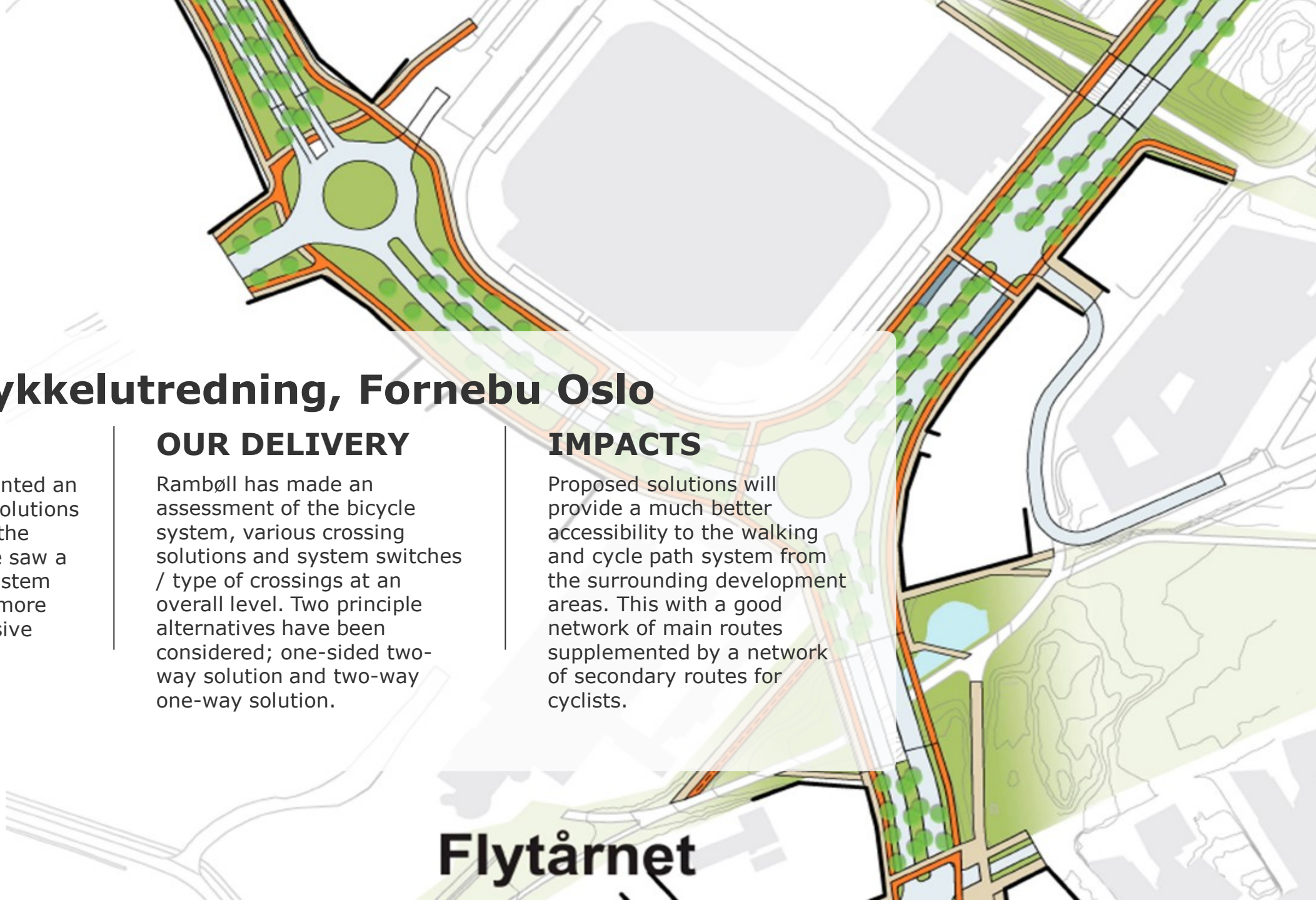
Bærum municipality wanted an assessment of bicycle solutions in the northern part of the Fornebu area. Here one saw a need to evaluate the system solutions for bicycle in more detail for a comprehensive system for the area.

OUR DELIVERY

Rambøll has made an assessment of the bicycle system, various crossing solutions and system switches / type of crossings at an overall level. Two principle alternatives have been considered; one-sided two-way solution and two-way one-way solution.

IMPACTS

Proposed solutions will provide a much better accessibility to the walking and cycle path system from the surrounding development areas. This with a good network of main routes supplemented by a network of secondary routes for cyclists.



Ytre Ringvei detailed zoning plan, Oslo

CHALLENGE

Oslo Municipality has requested assistance with a detailed zoning plan. Ytre Ringvei currently has bicycle facilities with varying and partly low standards. The low standard of existing facilities is perceived as unsafe and does not contribute to increasing bicycle use, especially not among groups who cycle little.

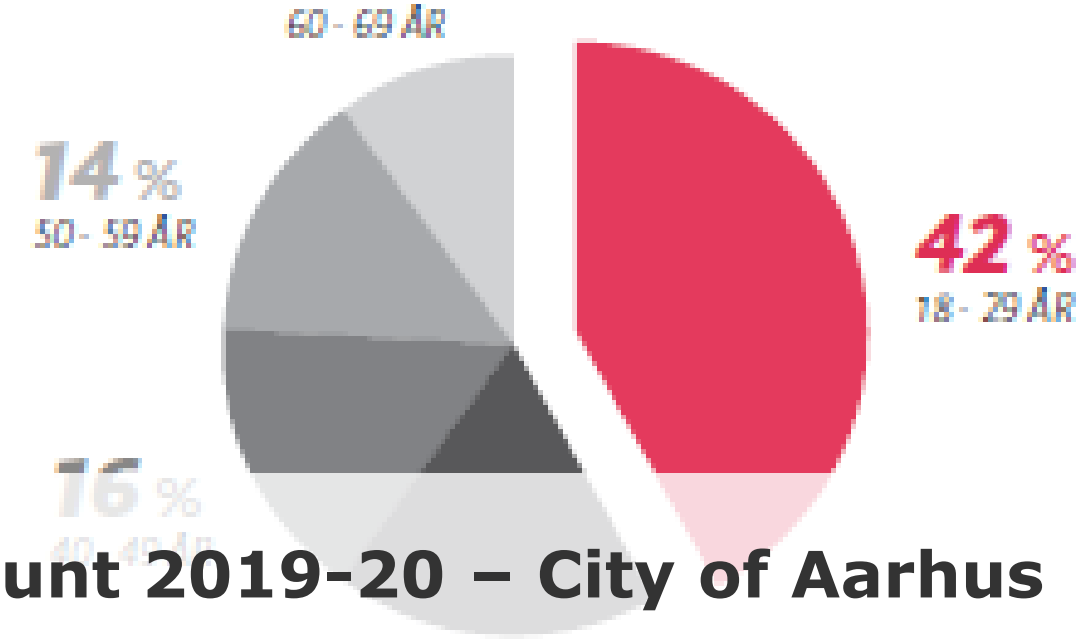
OUR DELIVERY

Rambøll has contributed with traffic assessments around solutions on the stretch and at intersections with a focus on increasing accessibility for cyclists. A technical detailed plan has been prepared with a new bicycle solution in the road, including sidewalks, elevated bicycle lanes and bus stops.

IMPACTS

The overall goal of the project is to create a safe, attractive offer with increased accessibility for cyclists and pedestrians on Ytre Ringvei. In particular, it is desirable to have more work trips by bicycle in order to be able to relieve the road and public transport system during rush hour.

RAMBØLL



Bicycle account 2019-20 – City of Aarhus

CHALLENGE

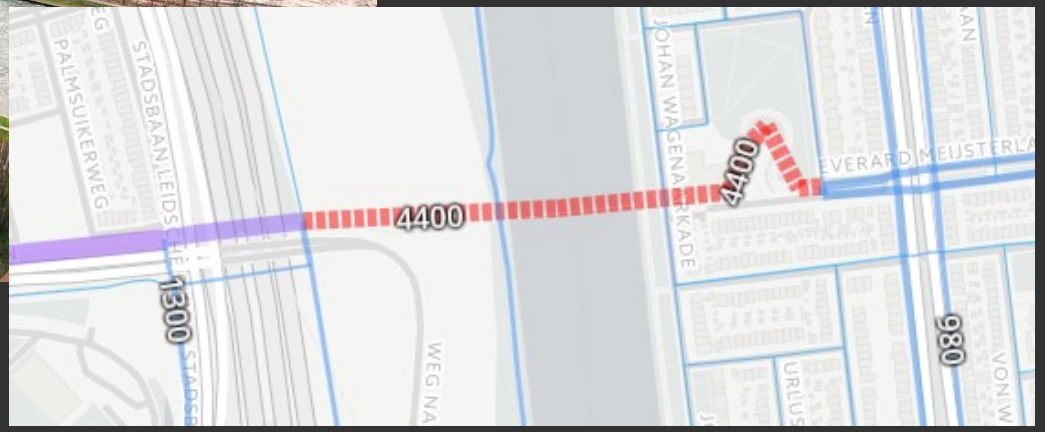
Since 2009 the City of Aarhus has biannually collected data on a broad range of cycling indicators to benchmark how they were doing – both in regards to their own goals and in relation to other cities. The are approaching the end of of their strategy periode.

WHAT WE DID

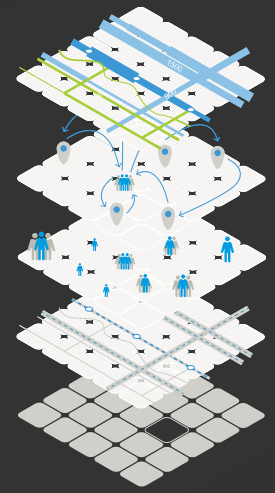
We collected and analysed cycling data on infrastructure, parking, accidents etc. and carried out survey of children's transport to school and citizen's survey on behaviour and satisfaction. All data was then disseminated graphically and benchmarked with the city's goals in a report.

EFFECT

The bicycle account was presented and accepted by the local politicians and will serve as starting point when the city set targets and develops new goals for cycling and mobility in the city.



The Dafne Schippersbrug connects Utrecht's new district of Leische Rijn with the historic city center. Brutus correctly estimated the user potential of the bridge. A fact that was revealed by the automatic counters after opening.



BRUTUS – CYCLING FLOW ANALYSIS

For modelling short trips like cycling and walking, one needs a high spatial resolution and detail in the description of urban structure and transport system, and it is important to take individual traveller characteristics into account.

Brutus is therefore very suitable for such scope with its high-density grid and individual-level approach. Therefore, there is a special class of Brutus models that focus on cycling and walking.

Travel demand is still modelled as multi-modal to get the modal shares to the correct level, but close attention is been paid to the bicycle network and route choices.

RAMBØLL

ANALYSIS OF POTENTIAL FOR MORE CYCLING IN GREATER COPENHAGEN

CHALLENGE

Greater Copenhagen Region (Capital Region and Region Sealand in Denmark and Skåne and Halland in Sweden) wanted to develop a cycling strategy and action plan and needed an analysis of the potentials for more cycling.

WHAT WE DID

We analysed the potential for car commuters to switch to bicycle or e-bike the whole trip or combining the bicycle and train for longer commutes as well as the potential for more recreational cycling and cycling tourism.

EFFECT

Data and numbers about the potential for model shift between cars and bicycles, reduction in cars on the roads, CO2 emissions and sick-days as well as cost-benefit for society.

3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

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April 2020

cyclingsolutions.info

Cycling Embassy of Denmark

FRONTPAGE THEMES ABOUT CONTACT LANGUAGE

Cycling – Danish Solutions

Digital Danish cycling portal www.cyclingsolutions.info

CHALLENGE

The Cycling Embassy of Denmark wanted to update the publication "Collection of cycle concepts" with new cases, knowledge and technologies and digitalize the format from a publication to a website.

WHAT WE DID

We managed the project from designing and building the online cycling portal to coordinating, providing and editing content from the different cycling experts. As well as developing and implementing the launch strategy.

EFFECT

When the site was launched in 2019 it had 97 articles under 22 different themes in Danish and English by Danish cycling experts. In the first 5 month it had almost 12.000 users, almost 9000 unique.

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

7 AFFORDABLE AND CLEAN ENERGY

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

Data

ITS

Recommendations

Bicycle account 2018 – City of Frederiksberg

CHALLENGE

Since 2004 the City of Frederiksberg has biannually collected data on a broad range of cycling indicators to benchmark how they were doing – both in regards to their goals and other cities. In 2018 their current strategy ended.

WHAT WE DID

We collected and analysed cycling data on infrastructure, parking, accidents etc. and carried out survey of children's transport to school and a citizen's survey on behaviour and satisfaction. All data was then disseminated graphically and benchmarked with the city's goals in a report.

EFFECT

The bicycle account was presented and accepted by the local politicians and will serve as starting point when the city of Frederiksberg set targets and develops new goals for cycling and mobility in the city.

POTENTIAL FOR SUSTAINALBLE MOBILITY IN VÄXJÖ

CHALLENGE

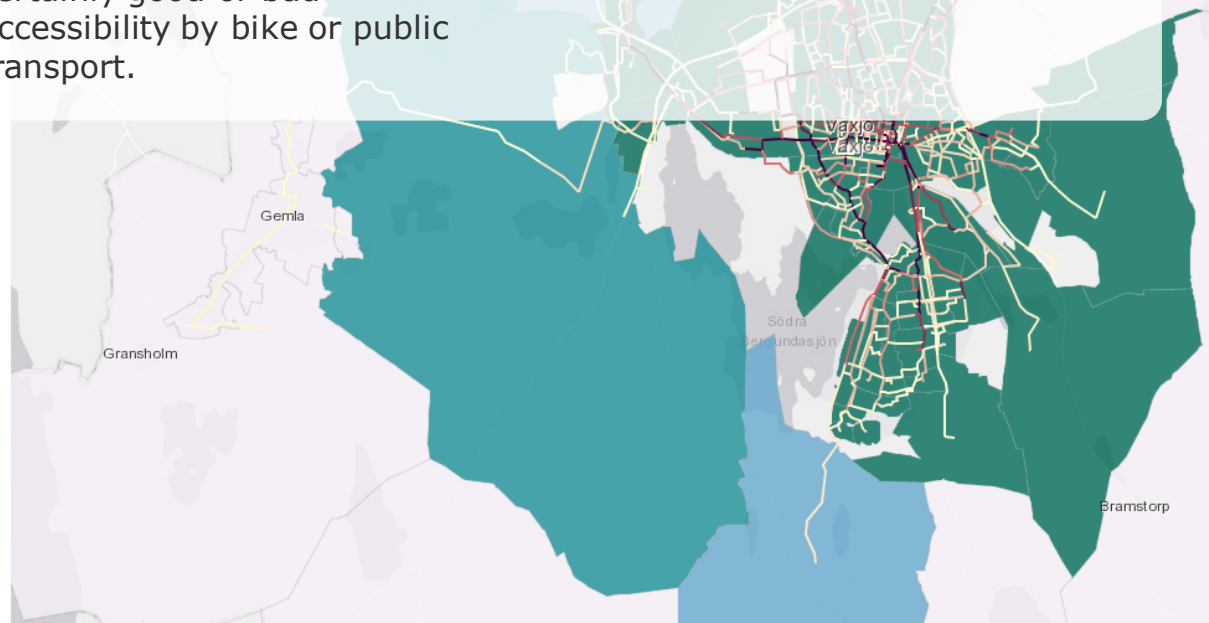
Calculate and visualize the potential for sustainable commuting to work and school in Växjö municipality.

WHAT WE DID

From demographic statistics and data on the road network and public transport supply we used GIS to calculate how many citizens that potentially can bike or travel by public transport to work and to school. This was visualized in an interactive web map that shows potential commuting routes as well as areas with certainly good or bad accessibility by bike or public transport.

EFFECT

The analysis and the results are, together with a transport model developed by Ramboll, used as a basis for traffic planning and planning of mobility management measures in the municipality. The client also plans to use the results in their communication and campaigns.



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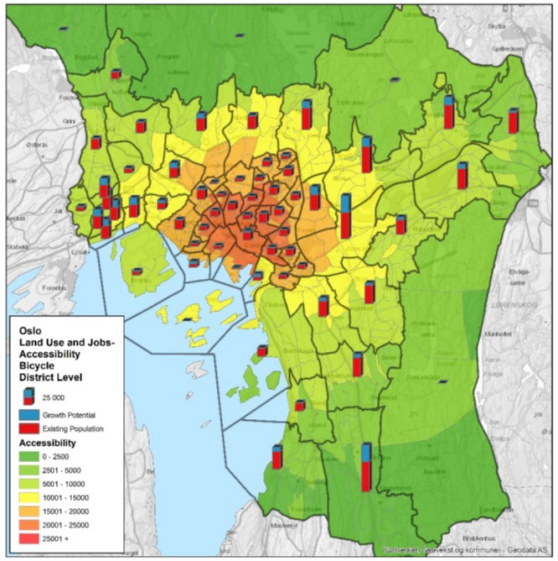
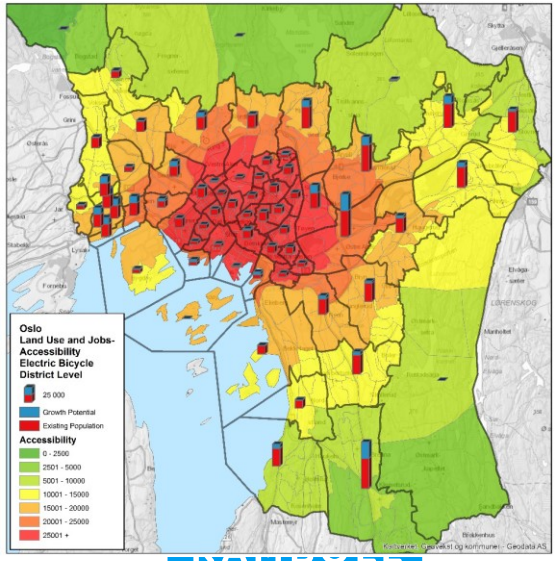
"CYCLE TO ZERO": ACCESSIBILITY WITH E-BIKES COMPARED WITH REGULAR BICYCLES NORWAY





- Increasing cycling shares is a part of the urban and transport planning mandate for the Norwegian urban regions. To help this mandate, the project "Cycle to Zero" has analyzed the extent to which planning can assist in increasing the bicycling usage.
- Based on the relationships between the growth potential and the accessibilities, the "Cycle to Zero" study strongly recommended integrating the impact of el-cycles with the land-use planning processes and decisions.
- Rambøll performed the analysis using "INMAP", a model developed by Rambøll on behalf of the Norwegian government, for the task of estimating the mutual effects of land use plans, infrastructure and transportation
- Benefits for the Norwegian Cites: Understanding the potential and the business case of the investment to E-Bikes, Identifying the areas that are most suitable for e-bikes, data for making the right decisions and possibility to map the impact to CO2 emissions and sustainability

OPTIMIZING STREET CAPACITY – CITY OF COPENHAGEN

NØRRE FARIMAGSGADE

Vejarealet på Nørre Farimagsgade består af to gennemgående kørespor, fortov i begge sider, cykelsti i nordsiden og blandet køre-, parkerings og cykelspor i sydsiden. Trafikken er i spidstimerne sammensat af 1.360 biler, 38 tunge køretøjer, 1.070 cyklister samt 11 busser i rutedrift.

Eksisterende kapacitet (antal personer per time):

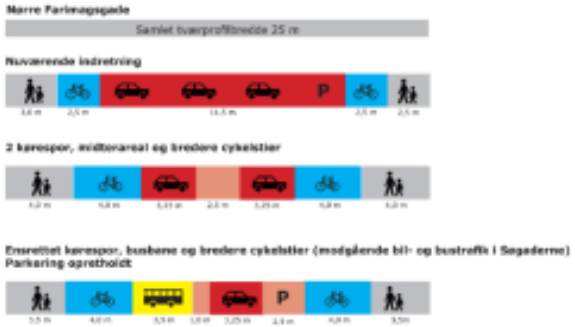
Køretøjer	1.660
Busser	770
Cykler	7.200
Fodgængere	1.960
I alt	11.590

Ved to kørespor samt bredere cykelstier og fortov:

Køretøjer	1.660
Busser	770
Cykler	11.520
Fodgængere	3.130
I alt	17.080

Ved ensrettet kørespor, busbane og bredere cykelstier og fortov (fx med modgående bil- og bustrafik i Søgade:

Køretøjer	830
Busser (ved 5 min frekvens)	840
Cykler	11.520
Fodgængere	3.130
I alt	16.320



Trafikken i dag	Mod Østerbro (kl. 7-8)	Mod Vesterbro (kl. 16-17)	Maks. Belastning per time
Køretøjer	661	750	1.411
Cykler	589	485	1.074

I dag udgør biltrafikken ca. 14 % af den samlede personkapacitet og cyklerne ca. 62 %.

I eksemplerne falder biltrafikkens kapacitet til hhv. ca. 10 % og ca. 5 %, mens cykeltrafikkens kapacitet stiger til 67-71 % af vejens samlede kapacitet.

RAMBØLL

SUPER BIKE ROUTES IN SKÅNE

CHALLENGE

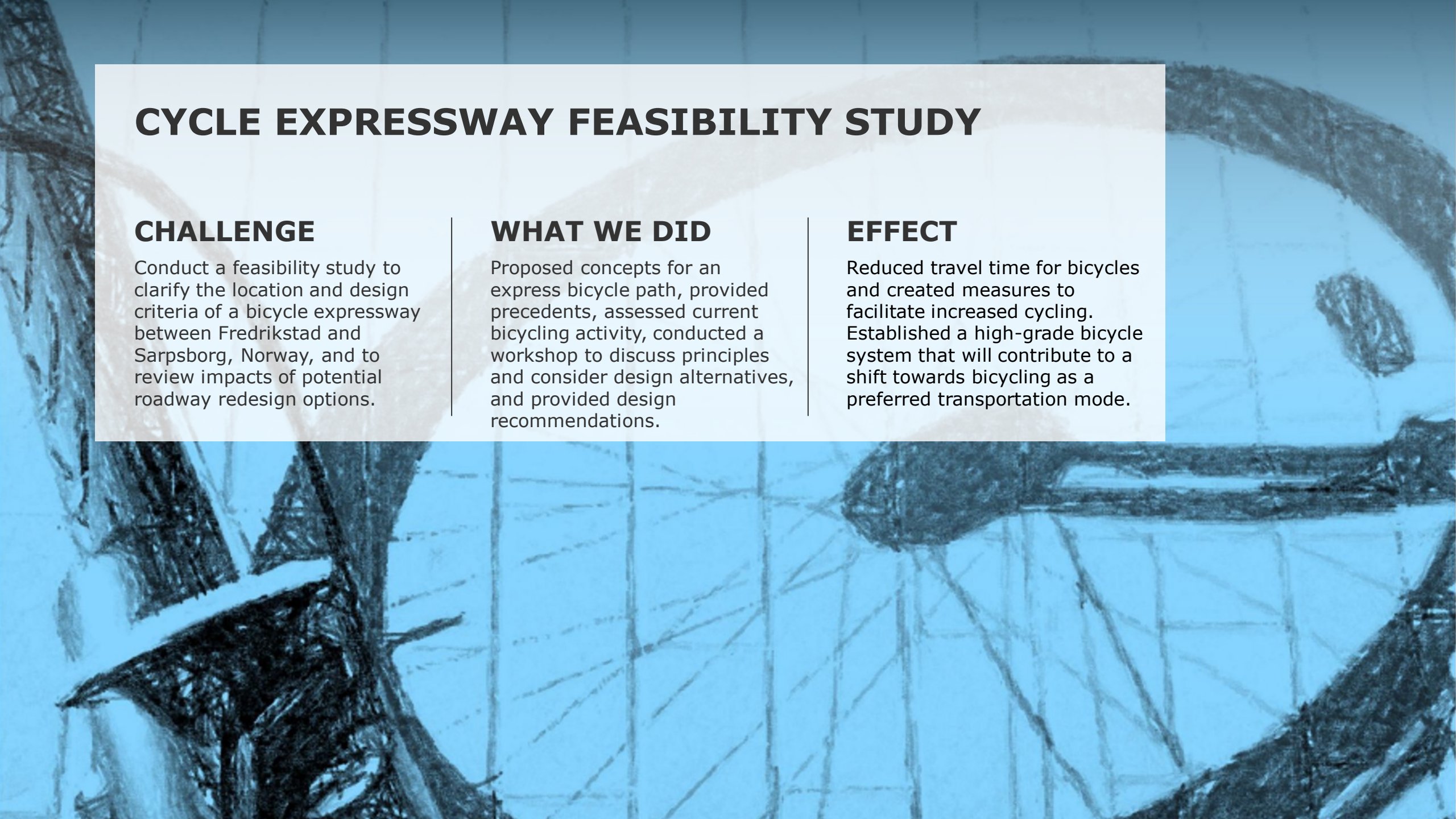
Develop a concept for high standard commuting routes between the cities in Skåne with measures that could be accepted by all municipalities and road authorities.

WHAT WE DID

Together with the region and municipalities we developed a concept for super bike routes. To test the concept we also studied three possible routes and proposed measures for these routes.

EFFECT

A concept together with specific measures to lay the ground for a network of super bike routes and better biking facilities in Skåne.



CYCLE EXPRESSWAY FEASIBILITY STUDY

CHALLENGE

Conduct a feasibility study to clarify the location and design criteria of a bicycle expressway between Fredrikstad and Sarpsborg, Norway, and to review impacts of potential roadway redesign options.

WHAT WE DID

Proposed concepts for an express bicycle path, provided precedents, assessed current bicycling activity, conducted a workshop to discuss principles and consider design alternatives, and provided design recommendations.

EFFECT

Reduced travel time for bicycles and created measures to facilitate increased cycling. Established a high-grade bicycle system that will contribute to a shift towards bicycling as a preferred transportation mode.

COUNTERFLOW CYCLING ON ONE-WAY STREETS, SANDEFJORD

CHALLENGE

Reduce detours for bicyclists due to one-way street regulations in the town centre of Sandefjord, Norway by planning counterflow cycling routes.

WHAT WE DID

Evaluated existing traffic conditions, developed corridor and sectional risk mitigation measures as well as revisions to delivery and parking regulations. Produced signage and striping plans for candidate streets.

EFFECT

Increased accessibility will lead to increased cycling, which in turn benefits community health and the environment.
The plan will also dramatically strengthen the perception of bicycling in the cityscape.

COUNTERFLOW CYCLING ON ONE-WAY STREETS, DRAMMEN

CHALLENGE

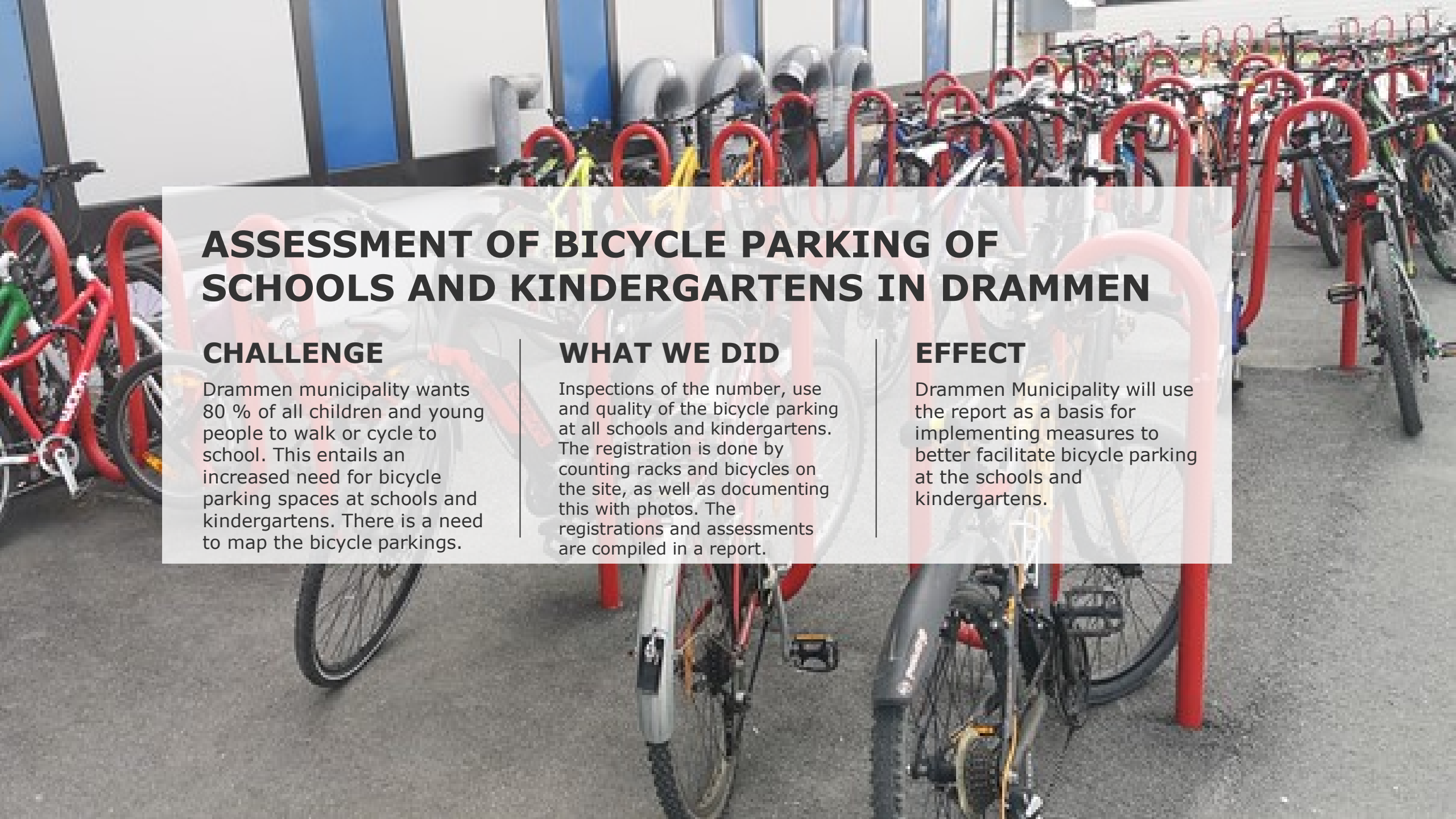
Reduce detours for bicyclists due to one-way street regulations in Drammen, Norway. Allowing cycling towards one-way traffic can give cyclists better accessibility. But the measure can also lead to an increased risk of traffic accidents.

WHAT WE DID

Risk analysis of 8 different streets, performed in accordance with requirements. Measures to improve traffic safety are proposed, such as signage, speed bumps, pavements and visibility improvements.

EFFECT

Cyclists in Drammen get better accessibility and safety and leads to increased cycling, which in turn benefits community health and the environment.



ASSESSMENT OF BICYCLE PARKING OF SCHOOLS AND KINDERGARTENS IN DRAMMEN

CHALLENGE

Drammen municipality wants 80 % of all children and young people to walk or cycle to school. This entails an increased need for bicycle parking spaces at schools and kindergartens. There is a need to map the bicycle parkings.

WHAT WE DID

Inspections of the number, use and quality of the bicycle parking at all schools and kindergartens. The registration is done by counting racks and bicycles on the site, as well as documenting this with photos. The registrations and assessments are compiled in a report.

EFFECT

Drammen Municipality will use the report as a basis for implementing measures to better facilitate bicycle parking at the schools and kindergartens.

PRE-STUDY STENERSGATA AND MORE, OSLO CITY CENTRE

CHALLENGE

There is a lack of bicycle infrastructure through the center of Oslo.
At the same time, the needs of public transport, pedestrians and goods delivery must be taken care of.

WHAT WE DID

Rambøll assists Oslo municipality in carrying out a pre-study for bicycle facilitation for the missing links in the city center. This includes designing of 6 street sections.
Ramboll draws up various solutions and assesses these against requirements.

EFFECT

City of Oslo will use the report and the designs as a basis for implementing measures to better facilitate for cycling through the city center.

TRAIL PROJECT INNHERRADSVEIEN, TRONDHEIM

CHALLENGE

Test how the capacity for both public transport and car traffic is affected by the narrowing of the street to prioritize walking and cycling infrastructure. It must be possible to re-establish the infrastructure at short notice.

WHAT WE DID

Preparation of geometry plan, and sign and markings. Analysis of average traffic volumes in intersections, travel time data for cars collected with Bluetooth antennas and travel time data for buses from real-time systems.

EFFECT

Provides a continuous cycle path of 1.3 km with better accessibility for cyclists.

PRE-STUDY BROMSTADRUTA CYCLE WAY, TRONDHEIM

CHALLENGE

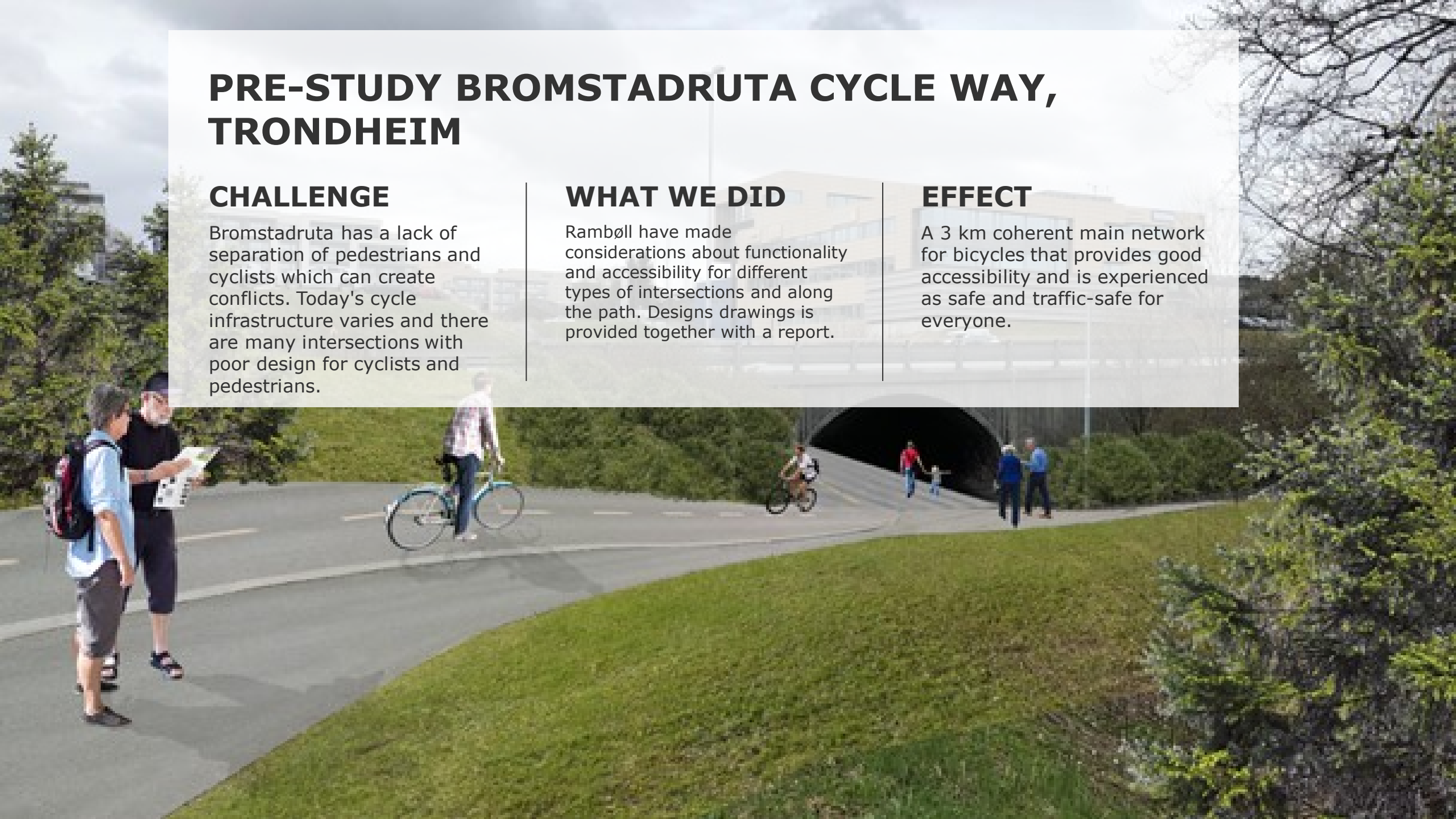
Bromstadruta has a lack of separation of pedestrians and cyclists which can create conflicts. Today's cycle infrastructure varies and there are many intersections with poor design for cyclists and pedestrians.

WHAT WE DID

Rambøll have made considerations about functionality and accessibility for different types of intersections and along the path. Designs drawings is provided together with a report.

EFFECT

A 3 km coherent main network for bicycles that provides good accessibility and is experienced as safe and traffic-safe for everyone.



USER-CENTRIC BICYCLE PARKING PLANNING

CHALLENGE

Identify the most user-friendly implementation for a planned 5,000-6,000 new bicycle parking spaces in Copenhagen, Denmark.

WHAT WE DID

Supported the Municipality of Copenhagen via eight sub tasks including an anthropological behavior survey of cyclists' habits for parking at shopping and subway stations.

EFFECT

The project revealed a wide range of tools and techniques that could be used to improve bicycle parking conditions and availability within the municipality.

CITY-CENTRE BICYCLE AND PEDESTRIAN BAANA

CHALLENGE

Convert a former railway corridor into an attractive and convenient walking and bicycling route through the city centre of Helsinki, Finland, entirely separated from street-level motor vehicle traffic.

WHAT WE DID

Prepared a general and construction plan for municipal engineering and lighting in coordination with architects and city designers.

EFFECT

The “Baana” is a world-class, dedicated route for pedestrians and bicycles to and form the heart of the city, lined with natural rock, historic stone walls, and ramp access to adjacent streets.

WINTER WALKING AND CYCLING IMPEDANCES

CHALLENGE

Weather, road conditions, maintenance, and treatment methods all impact the desirability for walking and cycling and consequently the number of cycling trips and its modal share.

WHAT WE DID

Monitored impacts of winter conditions before and after infrastructure improvements and developed winter maintenance optimization recommendations as a research project.

EFFECT

Improved understanding of impedances to winter walking and bicycling can lead to more comfortable conditions and more sustainable mobility via improved infrastructure design and maintenance procedures.

Graphic source: Pyöräilykuntien verkosto / Antero Aaltonen

RURAL BICYCLE NETWORK PLANNING

CHALLENGE

Develop a safe, attractive, and comprehensive walking and bicycling network plan that encourages use across the demographic spectrum for the rural Municipality of Syddjurs, Denmark.

WHAT WE DID

Assisted the municipality in developing the plan and identified optimal corridors where paths should be established.

EFFECT

The plan provides the municipality with a clear, phased guide for implementing a comprehensive network with a priority placed on implementation of the most desirable segments first.

ATTRACTIVE URBAN BICYCLING CONNECTOR

CHALLENGE

Improve connectivity and reduce travel time and route distance for users of a heavily trafficked bicycle route bifurcated by a canal in central Copenhagen.

WHAT WE DID

Prepared the project proposal, detailed design and tender materials, as well as fabrication and construction inspection.

EFFECT

The “Bicycle Snake” prioritizes connectivity, greatly increases the convenience of bicycling, and is a visually stunning example of people-focused infrastructure.

CYCLE SUPERHIGHWAY NETWORK PLAN

CHALLENGE

Establish an easily recognizable and coherent network of cycle superhighways to link together the main hubs across 22 municipalities and the Copenhagen Capital Region.

WHAT WE DID

Concept development, creation of signature system elements, preparation of design standards catalogues, awareness campaign support

EFFECT

A visionary plan to prioritize and facilitate longer-distance bicycling has resulted in a highly successful and world-renowned network of direct routes throughout the capital region.

Source: Cycle Superhighways, Capital Region of Denmark

SMALL TOWN BICYCLE PLANNING

CHALLENGE

Provide guidelines and actions necessary to implement an attractive network that can encourage bicycling and achieve the Swedish Municipality of Ystad's goal of 35% more bicycle trips from 2018-2028.

WHAT WE DID

Prepared a bicycle plan for the municipality of Ystad, including a description of existing conditions and deficiencies, as well as providing quantifiable goals and general design guidelines of physical and non-physical features for future bicycle paths.

EFFECT

Convenient and attractive bicycle network recommendations in the plan encourage the inhabitants of Ystad Municipality to shift to more sustainable modes of transportation.

USER-OPTIMIZED BIKE SHARE STATIONS PLAN

CHALLENGE

Identify optimal locations for existing and future bike-share stations in Malmö, Sweden based on the specific needs and priorities of riders.

WHAT WE DID

Identified critical origins and destinations and conducted user-optimized spatial analyses for the placement of bike stations. Provided user-optimized recommendations for expansion of the bike share station network.

EFFECT

Increased accessibility, ease of use, and convenience of bike share stations optimized to user’s preferred origins and destinations encourages this more sustainable mode of transport around the city.

DOWNTOWN BICYCLE PARKING STRATEGY

CHALLENGE

Reduce impediments to residents of Lund Municipality, Sweden, choosing bicycling as their preferred mode of transport by elevating the importance of parking in the existing bicycle strategy.

WHAT WE DID

Performed a GIS-based inventory to analyse existing conditions, evaluated international trends, conducted a workshop with city representatives, and produce and a new bicycle parking strategy.

EFFECT

Specific recommendations and guidelines as well as inspirational ideas for bicycle parking in the strategy will improve overall planning of bicycle traffic, making bicycling an easier and more convenient way of getting around town.

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ACCESSIBILITY BY BIKE TO PUBLIC TRANSPORT

CHALLENGE

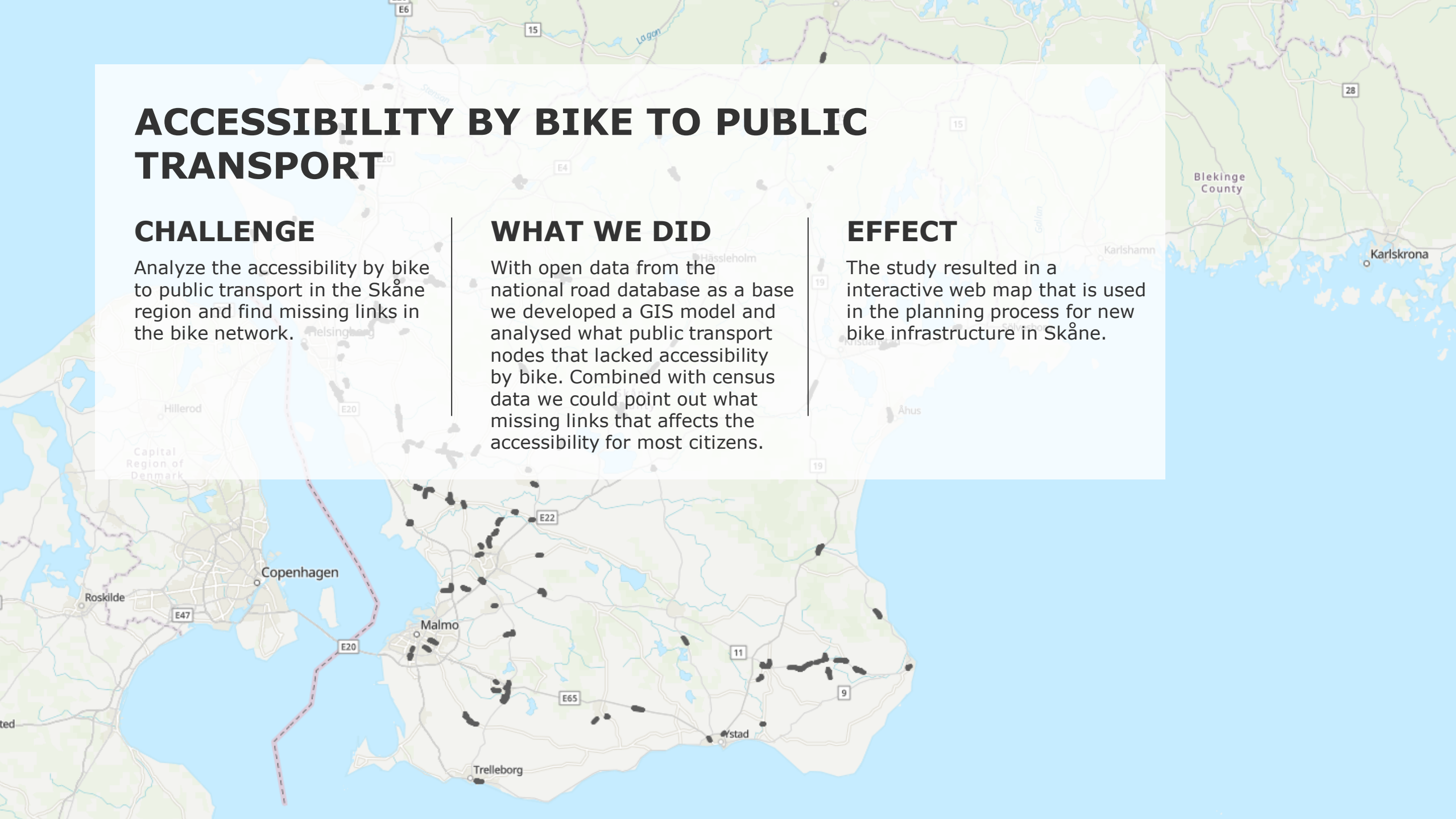
Analyze the accessibility by bike to public transport in the Skåne region and find missing links in the bike network.

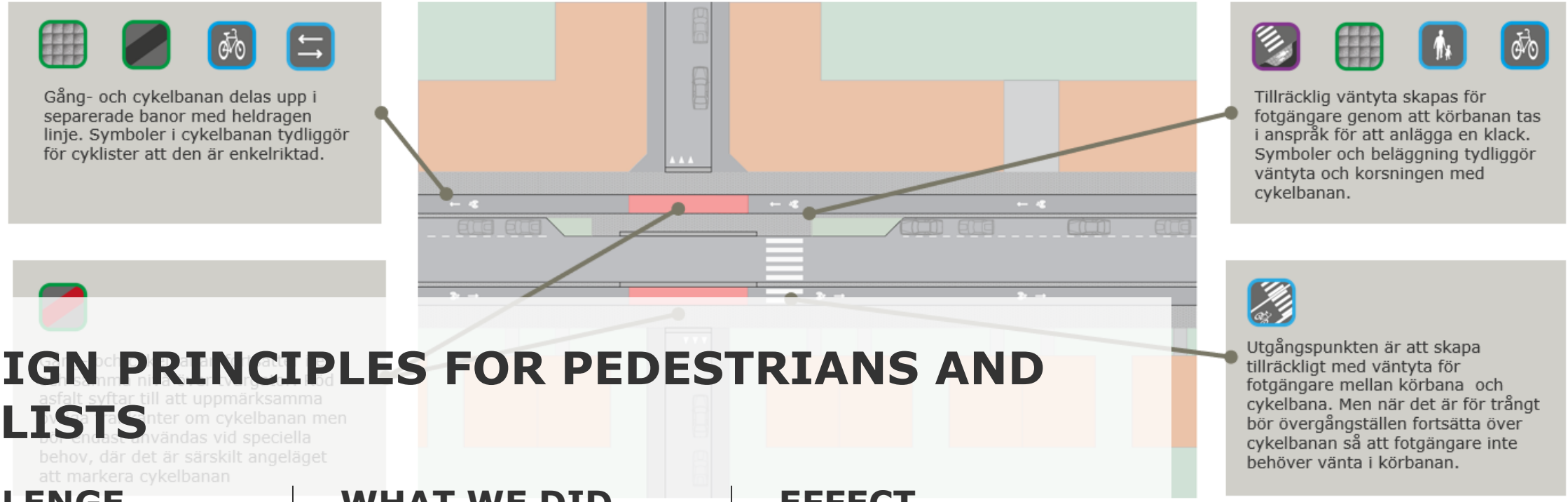
WHAT WE DID

With open data from the national road database as a base we developed a GIS model and analysed what public transport nodes that lacked accessibility by bike. Combined with census data we could point out what missing links that affects the accessibility for most citizens.

EFFECT

The study resulted in a interactive web map that is used in the planning process for new bike infrastructure in Skåne.





DESIGN PRINCIPLES FOR PEDESTRIANS AND CYCLISTS

CHALLENGE

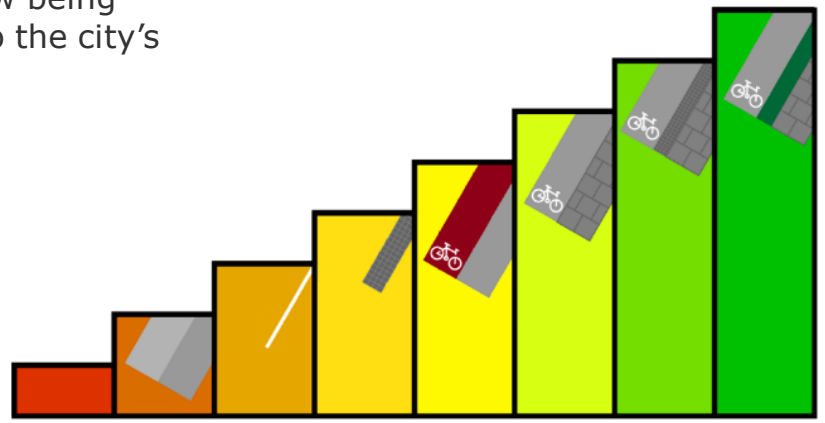
Develop design principles for interaction between cyclists and pedestrians which would be applicable in a multitude of situations around town

WHAT WE DID

From a literature study and behavioural studies we set four basic design principles. From these principles we developed guidelines on how and when to use different design elements such as materials and markings. We also provided some examples on how these can be used to realise segregation according to the design principles.

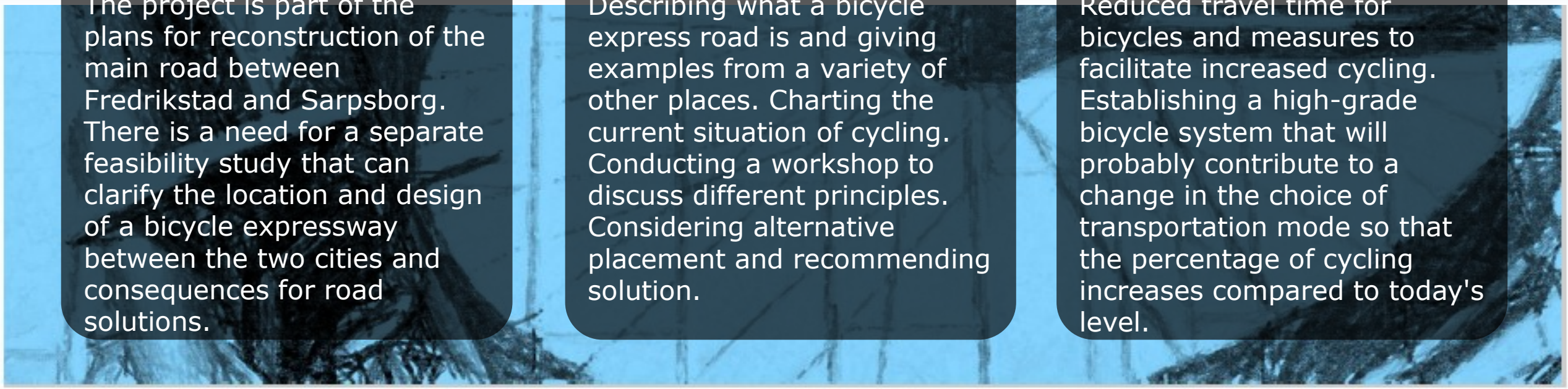
EFFECT

The design principles and the elements are now being incorporated into the city’s design manual.



ADDITIONAL REFERENCES IN 2018 REFERENCE FORMAT

FEASIBILITY STUDY FOR CYCLE EXPRESS WAY BETWEEN FREDRIKSTAD AND SARPSBORG



Objective

The project is part of the plans for reconstruction of the main road between Fredrikstad and Sarpsborg. There is a need for a separate feasibility study that can clarify the location and design of a bicycle expressway between the two cities and consequences for road solutions.

Ramboll's role

Describing what a bicycle express road is and giving examples from a variety of other places. Charting the current situation of cycling. Conducting a workshop to discuss different principles. Considering alternative placement and recommending solution.

Benefits

Reduced travel time for bicycles and measures to facilitate increased cycling. Establishing a high-grade bicycle system that will probably contribute to a change in the choice of transportation mode so that the percentage of cycling increases compared to today's level.

CYCLING AGAINST DRIVING DIRECTION IN ONE WAY STREETS – SANDEFJORD CENTRE

Objective

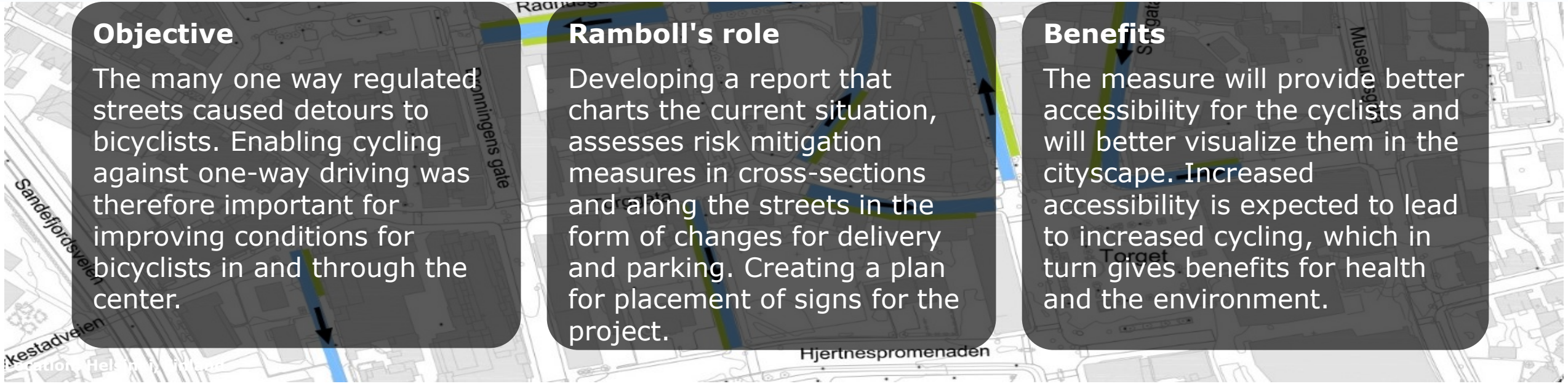
The many one way regulated streets caused detours to bicyclists. Enabling cycling against one-way driving was therefore important for improving conditions for bicyclists in and through the center.

Ramboll's role

Developing a report that charts the current situation, assesses risk mitigation measures in cross-sections and along the streets in the form of changes for delivery and parking. Creating a plan for placement of signs for the project.

Benefits

The measure will provide better accessibility for the cyclists and will better visualize them in the cityscape. Increased accessibility is expected to lead to increased cycling, which in turn gives benefits for health and the environment.



DOWNTOWN HELSINKI BICYCLE AND PEDESTRIAN BAANA

Objective

Provide a safe and fast bicycle route through the city centre connecting various points in the city independent of the street-level motor traffic.

Ramboll's role

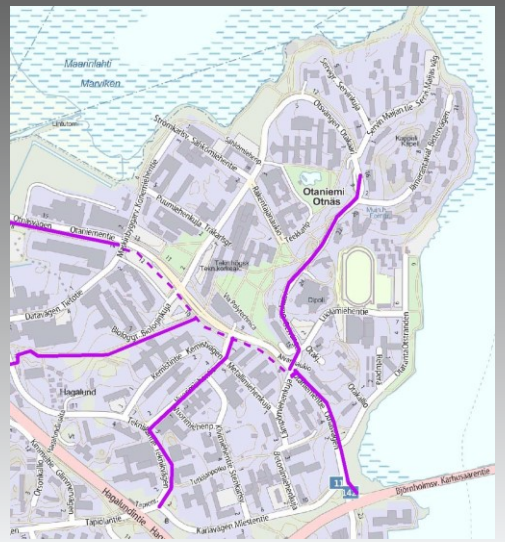
Coordinate with architects and planners to prepare a general and construction plan for municipal engineering and lighting.

Benefits

The “Baana” is a dedicated way for bicycles and pedestrians built into a former harbour railway corridor lined with natural rock and old stone walls with ramp access to adjacent streets.

Location: Helsinki, Finland

THEMATIC BICYCLE ROUTES FOR UNIVERSITY CAMPUS



Objective

Establish updated routes based on activity themes relevant to the students and residents at Finland’s premiere technical university.

Ramboll's role

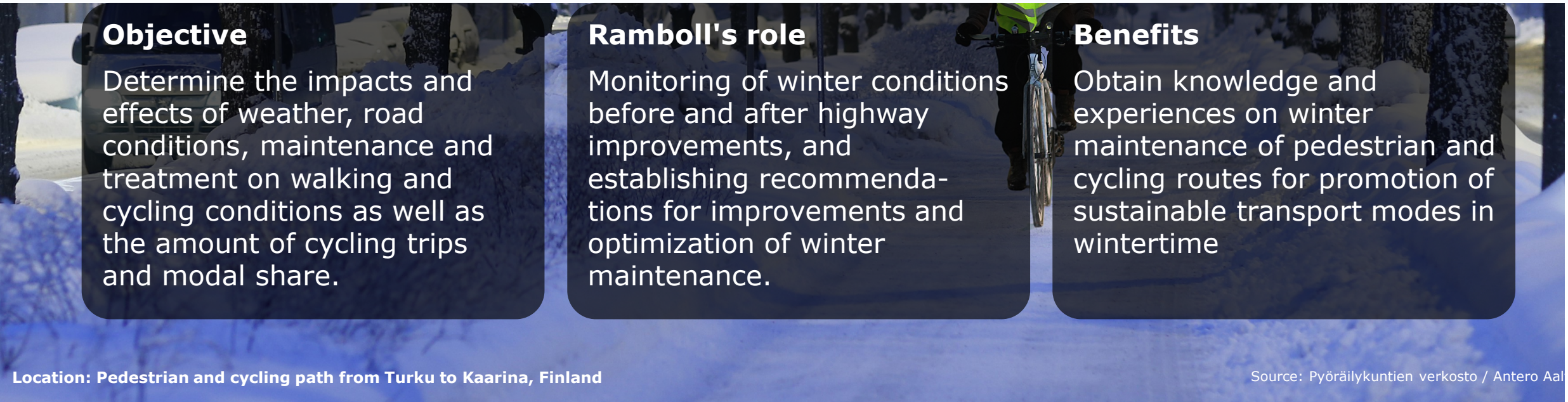
Develop an updated, thematic bicycle route plan as well as design guidelines for future planning work.

Benefits

Four main bicycle axes in the Otaniemi campus area of Aalto University were designed taking into account their different roles in the transport system.

Location: Otaniemi, Espoo, Finland

IMPACT OF WEATHER, ROAD CONDITIONS AND MAINTENANCE ON WALKING AND CYCLING CONDITIONS (RESEARCH PROJECT)



Objective

Determine the impacts and effects of weather, road conditions, maintenance and treatment on walking and cycling conditions as well as the amount of cycling trips and modal share.

Ramboll's role

Monitoring of winter conditions before and after highway improvements, and establishing recommenda-tions for improvements and optimization of winter maintenance.

Benefits

Obtain knowledge and experiences on winter maintenance of pedestrian and cycling routes for promotion of sustainable transport modes in wintertime

Location: Pedestrian and cycling path from Turku to Kaarina, Finland

Source: Pyöräilykuntien verkosto / Antero Aal

DIMENSIONING OF EXISTING BICYCLE- AND PEDESTRIAN ROUTS IN ESPOO

Objective

Text

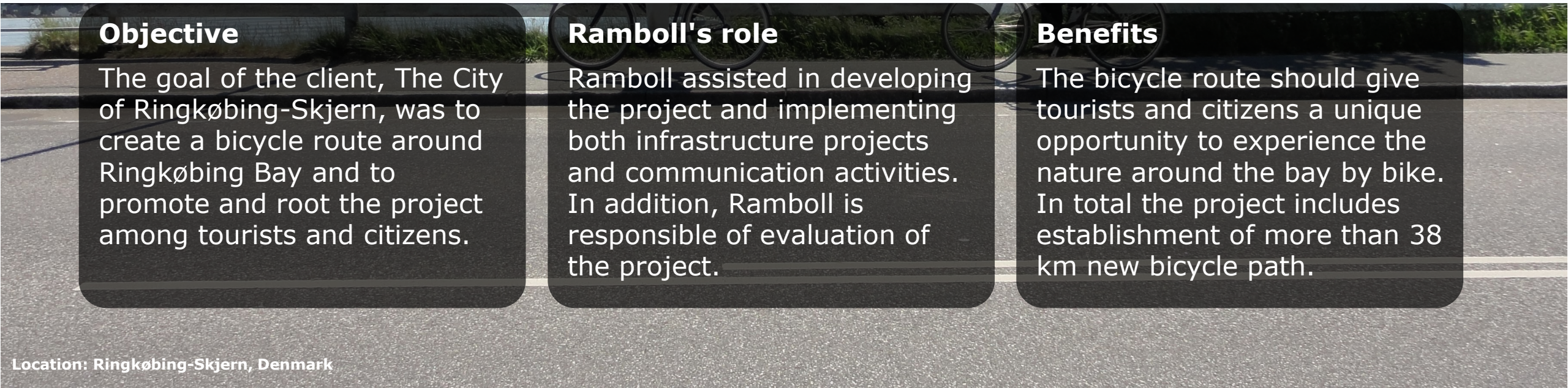
Ramboll's role

Text

Benefits

Text

BICYCLE ROUTE AROUND THE BAY



Objective

The goal of the client, The City of Ringkøbing-Skjern, was to create a bicycle route around Ringkøbing Bay and to promote and root the project among tourists and citizens.

Ramboll's role

Ramboll assisted in developing the project and implementing both infrastructure projects and communication activities. In addition, Ramboll is responsible of evaluation of the project.

Benefits

The bicycle route should give tourists and citizens a unique opportunity to experience the nature around the bay by bike. In total the project includes establishment of more than 38 km new bicycle path.

Location: Ringkøbing-Skjern, Denmark

HERNING BIKE

Objective

The overall objective of the project is to get more citizens to commute by bike, to bike to school and to use the bike for leisure activities. The goal is to convert 6.500 car trips to bike or public transport.

Ramboll's role

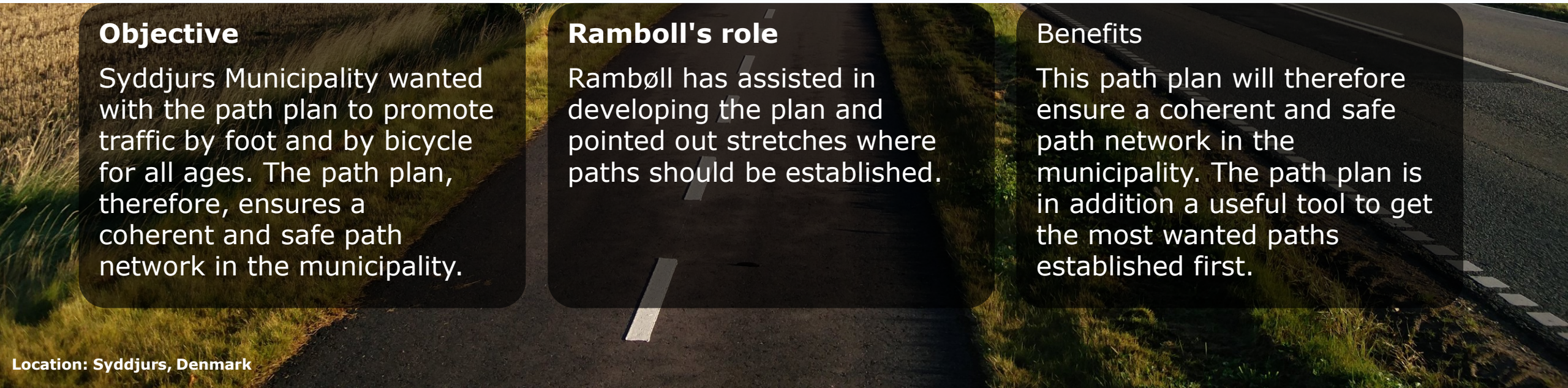
Rambøll has assisted the client, The City of Herning, in project management, development of campaigns and communication material and project engineering of infrastructure projects.

Benefits

The project includes among other things establishment of super bicycle routes on important commuter routes, campaigns and initiatives at schools and a homepage with information for cyclists.

Location: Herning, Denmark

PATH PLAN FOR SYDDJURS



Objective

Syddjurs Municipality wanted with the path plan to promote traffic by foot and by bicycle for all ages. The path plan, therefore, ensures a coherent and safe path network in the municipality.

Ramboll's role

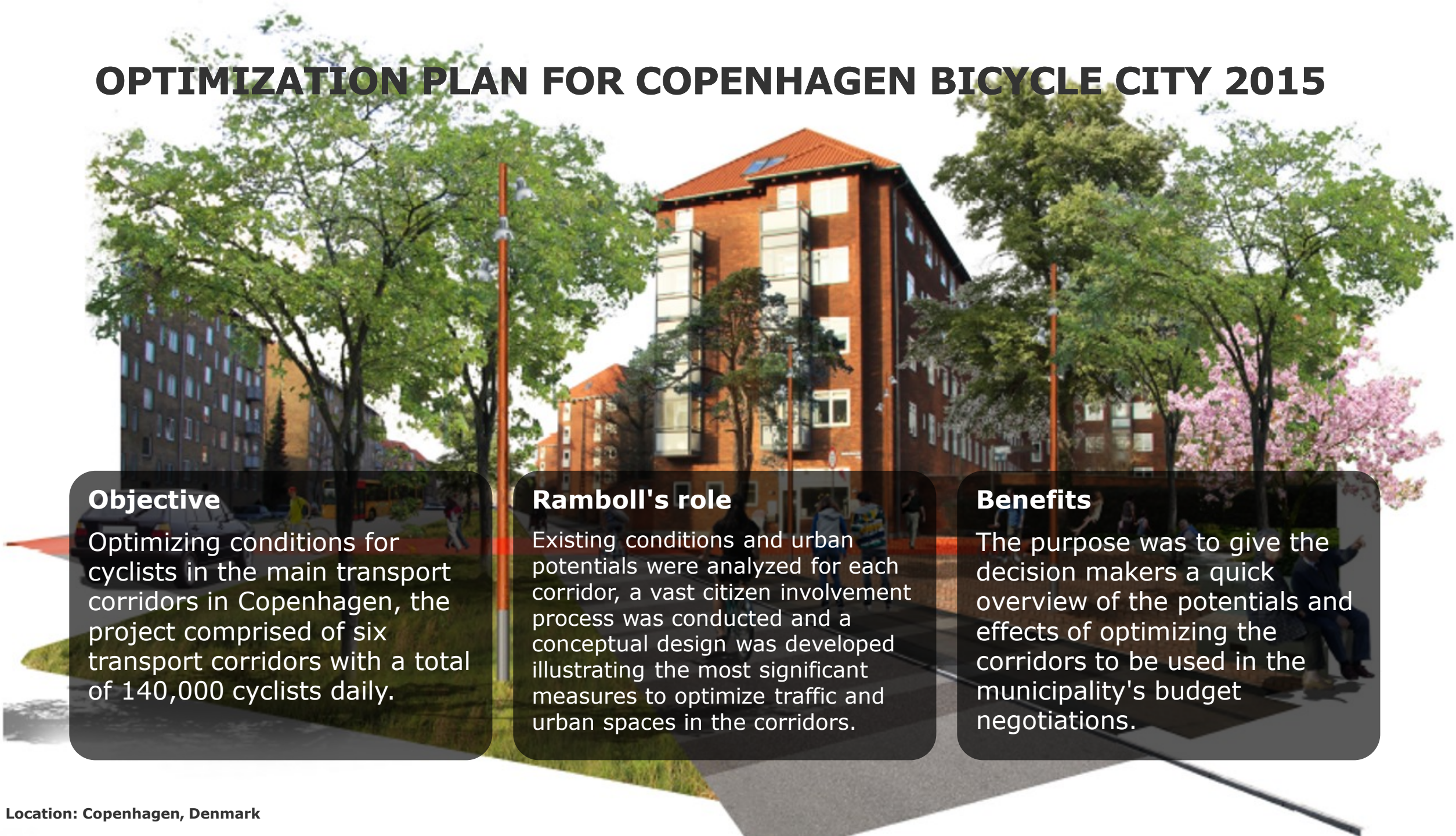
Rambøll has assisted in developing the plan and pointed out stretches where paths should be established.

Benefits

This path plan will therefore ensure a coherent and safe path network in the municipality. The path plan is in addition a useful tool to get the most wanted paths established first.

Location: Syddjurs, Denmark

OPTIMIZATION PLAN FOR COPENHAGEN BICYCLE CITY 2015



Objective

Optimizing conditions for cyclists in the main transport corridors in Copenhagen, the project comprised of six transport corridors with a total of 140,000 cyclists daily.

Ramboll's role

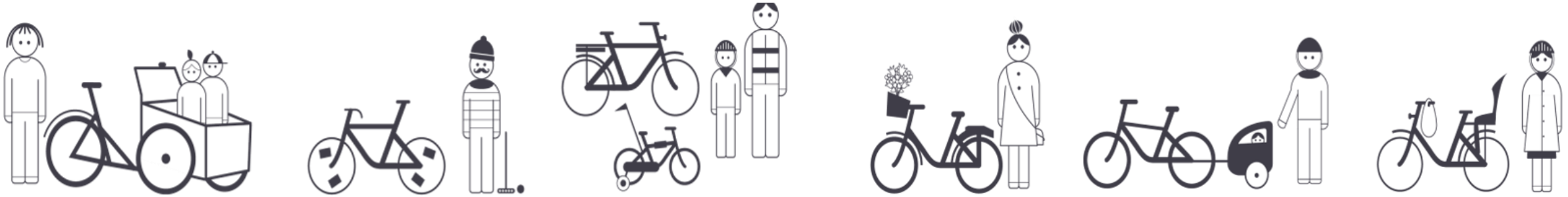
Existing conditions and urban potentials were analyzed for each corridor, a vast citizen involvement process was conducted and a conceptual design was developed illustrating the most significant measures to optimize traffic and urban spaces in the corridors.

Benefits

The purpose was to give the decision makers a quick overview of the potentials and effects of optimizing the corridors to be used in the municipality's budget negotiations.

Location: Copenhagen, Denmark

BETTER BICYCLE PARKING IN COPENHAGEN



Objective

In the budget for 2013 the Municipality of Copenhagen has allocated funds to establish 5,000-6,000 new bicycle parking spaces thus significantly boosting the parking facilities in the city.

Ramboll's role

Ramboll assisted the Municipality of Copenhagen with eight subtasks, including anthropological behavior survey on cyclists' habits for parking at shopping and subway stations.

Benefits

The project revealed a wide range of tools that could be used to improve the bicycle parking in the municipality.

RAMBØLL

Location: Copenhagen, Denmark

Objective

Cycling is the primary means of transport for the majority of the Copenhageners, which leads to a lack of sufficient bicycle parking places. The Municipality has a great focus on establishing bicycle parking.

Ramboll's role

Screening of the possibilities for establishing bicycle parking in fully automated bicycle parking facilities in the inner city, based on, among others, urban spaces, architecture, traffic, economic parameters.

Benefits

The project provided a clear overview of how a new modern approach to increase bicycle parking capacity in Copenhagen will affect the medieval city centre.

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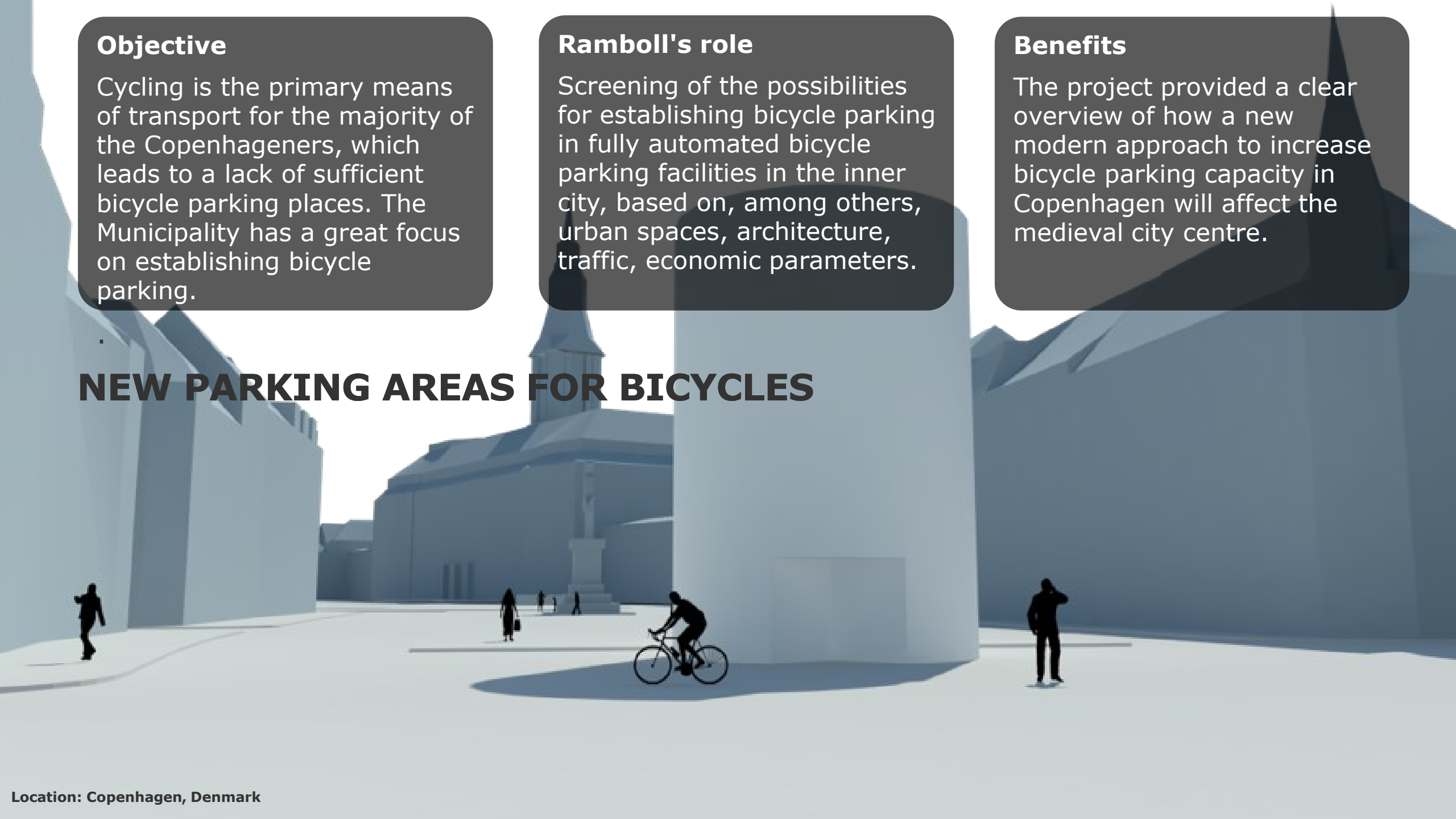
NEW PARKING AREAS FOR BICYCLES



Location: Copenhagen, Denmark