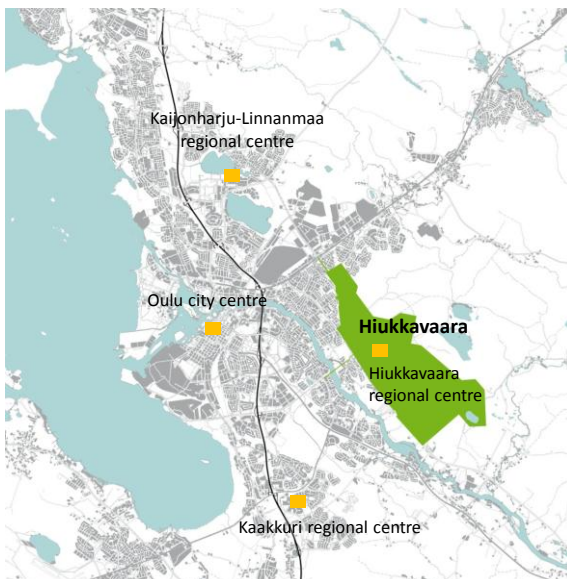


## HIUKKAVAARA

*A northern winter city –  
a human-sized, sustainable forerunner*

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### Hiukkavaara – the largest new city part in Northern Finland



Hiukkavaara is the most important future construction and investment area in Oulu

Land area: 1 500 hectares

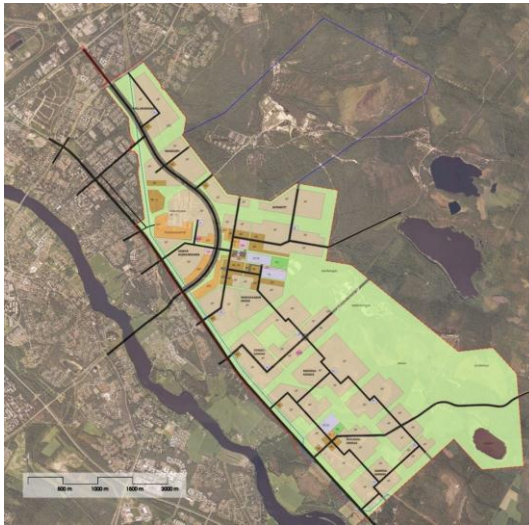
20 000 inhabitants  
10 000 housing units  
1 800 workplaces

Less than 7 km from the city centre of Oulu

The third regional centre in Oulu  
- total about 40 000 inhabitants  
- comprehensive public, commercial and private services and workplaces

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## Hiukkavaara – Sustainable northern winter city



### Outline plan

Outline plan for Hiukkavaara was started in 2006 on the basis of Oulu Masterplan 2020 and Hiukkavaara target plan (2003).

City Council approved the outline plan as a guide for city planning 21.4.2008.

Land ownership: City of Oulu

In the beginning no city plan

An existing military garrison area, otherwise mainly no buildings

Population development according to the outline plan / residents:

year 2015	3 400
year 2020	8 400
year 2030	16 600
year 2035	20 000

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## Hiukkavaara – the largest new city part in Northern Finland



### Outline plan 2006 - 2008

Project manager and planner: Leena Kallioniemi  
Project secretary and planner: Jere Klami

#### 1 First area city plan: Kivikkokangas 2009 - 2011

Project manager: Leena Kallioniemi  
City planning consultant: Linja Arkkitehdit Oy

#### 2 Second area city plan: Kiulukangas 2010 - 2013

Project manager and planner: Anne Olsbo

#### 3 Third area city plan: Hiukkavaara centre 2011 -

Project manager and planner: Leena Kallioniemi  
Project secretary and planner: Eini Vasu  
Architectural ideas competition in 2009: 36 proposals

- overall 100 persons involved in the planning of outline plan

- overall 200 persons in the planning of Hiukkavaara centre



## Hiukkavaara – Development guidelines



Nature and landscape values taken into consideration

A densely-built neighbourhood of urban houses in a versatile environment

Dense residential areas consist of seven zones bordering on large green areas

Excellent, comprehensive services



Cycling, walking and public transport are considered central

Excellent facilities and areas for sports, recreation and outdoor activities

Integrated storm water system

Alternatives and impact assessments

Participatory planning

Cost efficient



Development projects / Living Lab -platform

Energy efficiency

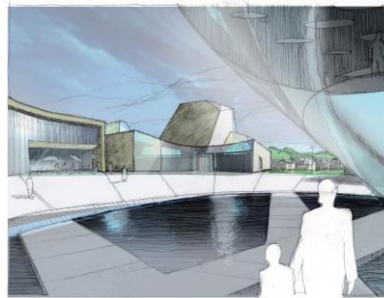
City farming

Arts in Urban Space

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## Hiukkavaara – Services

<b>Workplaces</b>	<b>55 000 sqm</b>
<b>Commercial services</b>	<b>25 000 sqm</b>
<b>Multifunctional centre</b>	<b>15 000 sqm</b>
• school	
• daycare	
• facilities for young people	
• sports facilities	
<b>Other municipal services</b>	<b>10 000 sqm</b>
• library	
• regional culture center	
• health care center	
• service housing	
<b>Sports and leisure</b>	<b>16 000 sqm</b>
• swimming hall	
• skating and ice hockey	
• gyms, sports halls, private sports facilities	
• outdoor sports areas	
• multifunctional leisure park	
<b>Church / parish centre</b>	<b>2000 sqm</b>

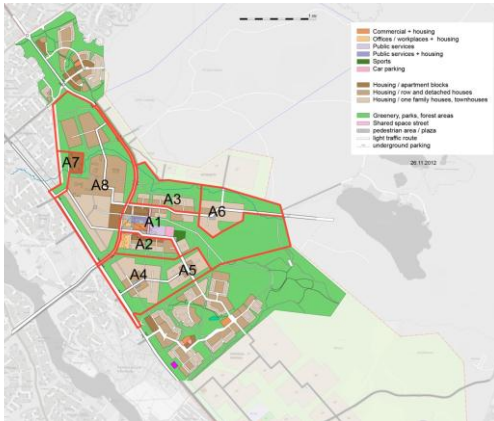


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## Hiukkavaara centre – structural plan 24.11.2011

A regional centre with a strong, northern identity, surrounded by residential areas with urban, single-family houses

The core of the regional centre is an energy-efficient area where services, school, jobs, sports and living are combined in a modern and sustainable way



land area: 280 hectares  
 services for 40 000 inhabitants  
 6 300 inhabitants  
 3 600 apartments  
 900 workplaces



### Hiukkavaara identity What is a good city like?

Wise use and ownership

Versatile and diverse

Historic yet modern

Smart and energy-efficient

Creative and skilled

International yet local

Active and sporty

Service-oriented and user-friendly

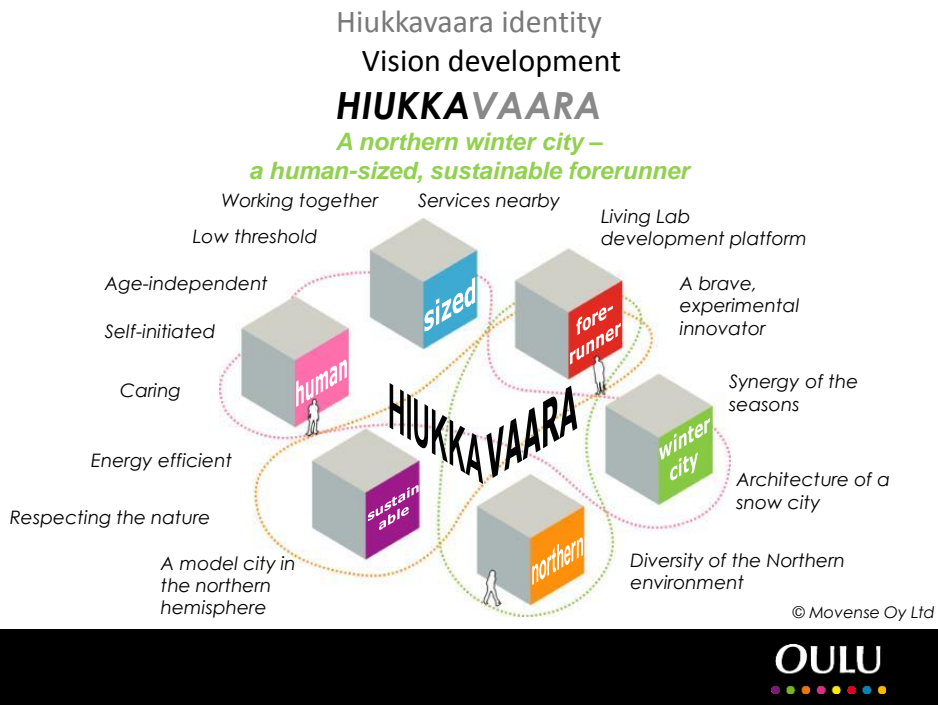
Open for suggestions and interactive

Self-initiated and independent

**Human-oriented!**

Pictures: [www.ouka.fi/city/album/](http://www.ouka.fi/city/album/)





## Hiukkavaara identity NORTHERN WINTER CITY

### **NORTHERN WINTER CITY**

#### **Synergy of the seasons**

Four distinct seasons  
Seasonal pockets and routes

#### **Architecture of a snow city**

Urban life in the winter  
Interior routes and premises

#### **A model city in the northern hemisphere**

The light of summer and the warmth of winter  
The myriad of services in the winter city

#### **The diversity of the northern environment**

Nature on your doorstep  
Different types of outdoor experiences

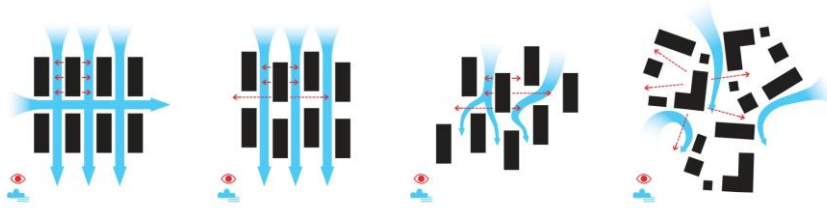


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## Hiukkavaara INURDECO

INtegrating URban DEvelopment CONcept, arctic smart and sustainable city



Building in subarctic and arctic areas requires special solutions and knowhow: skill and technology to build climate friendly, energy efficient and user oriented winter cities with innovative service and logistic processes.

Building cities is a long term activity in which 10-20 year period is a relatively short time. Finnish real estate and building cluster must immediately in its global strategy take into consideration the rising significance of the northern hemisphere. Located in the capital of northern Scandinavia, Hiukkavaara Living Lab offers a excellent possibility and test bed in such activities.

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## Hiukkavaara INURDECO

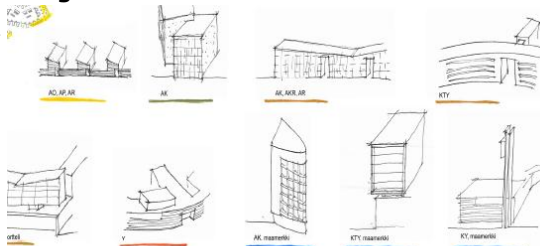
INtegrating URban DEvelopment CONcept, arctic smart and sustainable city

### Contents of Hiukkavaara Living Lab

- **Arctic Smart City Living Lab**
  - **Land use:** Integrating city development → participatory planning throughout the lifespan of a city...
  - **Building solutions:** Arctic smart building → energy efficiency and building durable in extreme conditions...
  - **ICT:** Smart city solutions → Smart grids, ICT platform, solutions, services...

### Which services do we provide in Living Lab?

- Test and innovation environment to companies,
- usability studies,
- mapping of user needs,
- high speed network as a service platform,
- online interaction,
- prototype creating and testing,
- product and service concept evaluation,
- productisation...



LEIKKAUS ©

HIUKKAVAARAN KESKUKSEN YLEISET IDEAKILPAILU 20.2.2009 - 22.6.2009 "RATAS" 5/5

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# Oulu Hiukkavaara, project portfolio

**RadioCity 2020:** Smart City ICT platform and service center

**ICT –solutions in traffic, safety and lighting**

**Optimized energy systems in smart city**

**Home information systems**

**Hiukkavaara test bed for electric vehicles – WintEVE co-operation**

**Stimulating Creative Sector in Hiukkavaara’s former military barracks area** (creative industries, ownership issues and governing policy)

**Winter city studies:** theory, winter city block modeling and winter maintenance

**InnoCity:** innovations in winter maintenance

**Hiukkavaara marketing and public relations**

**B-Team:** Brownfield renovation II from temporary use to permanent use

**Innovative public procurement** (life span and R&D perspective)

**KERVO: life span efficiency in city building**

**RESCA:** consulting private builders in choosing concepts for renewable energy and energy efficiency solutions

**Integrating urban development concept, arctic smart and sustainable city (INURDECO):** integrating urban development and life span thinking (energy efficiency, participatory planning, virtual concepts etc.) as a public private partnership

**Living Lab activation services:** Living Lab Concept

Hiukkavaara portfolio and Living Lab, please contact: Ari Saine, 044-497 3117, [ari.saine@ouka.fi](mailto:ari.saine@ouka.fi)

“VANIKAN PALAT” 4/8

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## Oulu traffic survey 2009 - to create tools for planning the future = transport model

### Region of Oulu

- ~ 230 000 inhabitants, 10 municipalities
- car density ~ 450 cars /1000 inhabitants

### Traffic survey 2009

#### 1) Trip-diary (traffic behaviour)

- sample: 8 000 randomly chosen respondents
- internet or phone
- 5 000 responds (60 %)
- 600 000 daily trips by Oulu region people

#### 2) Road-side interviews

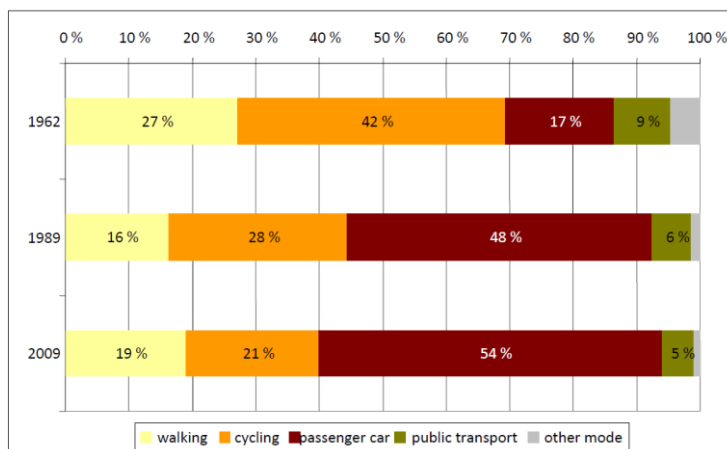
- at the borders of the region and at river crossings
- register plate method

#### 3) Traffic counts (to calibrate the model)

- cars, cyclists, pedestrians

RAMBOLL

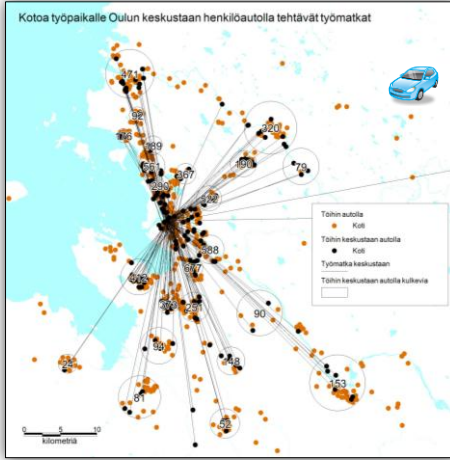
## THE DEVELOPMENT OF MODE CHOICE IN THE CITY OF OULU



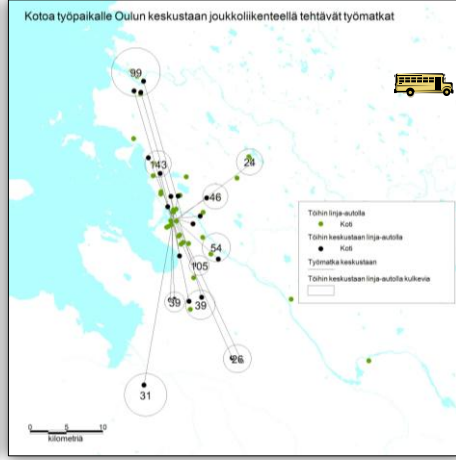
RAMBOLL



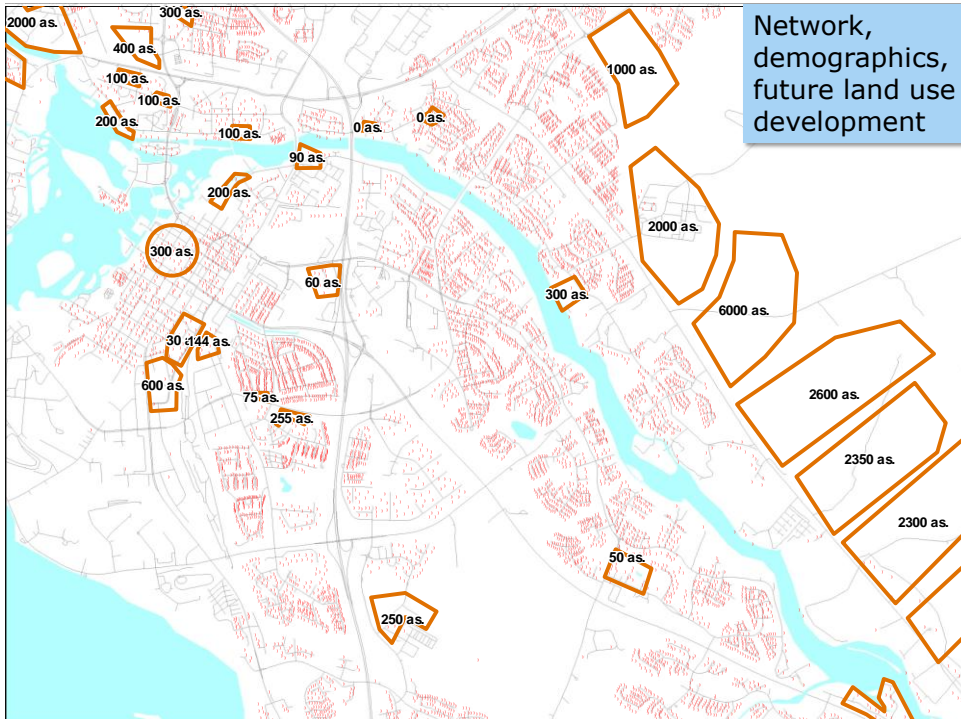
# COMMUTING TRIPS TO THE CENTER OF OULU

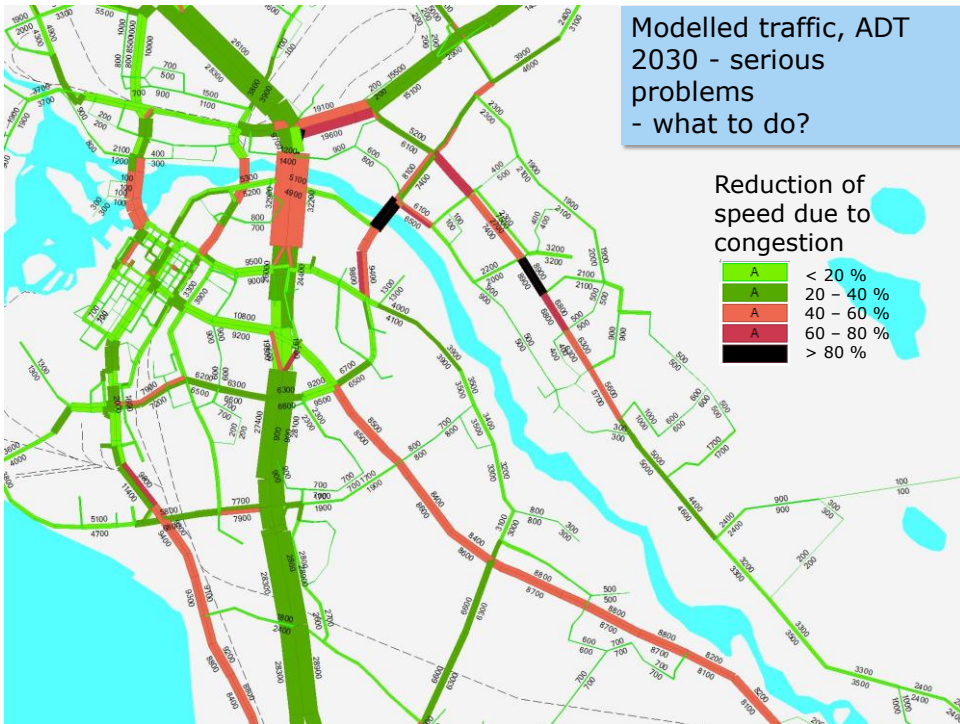
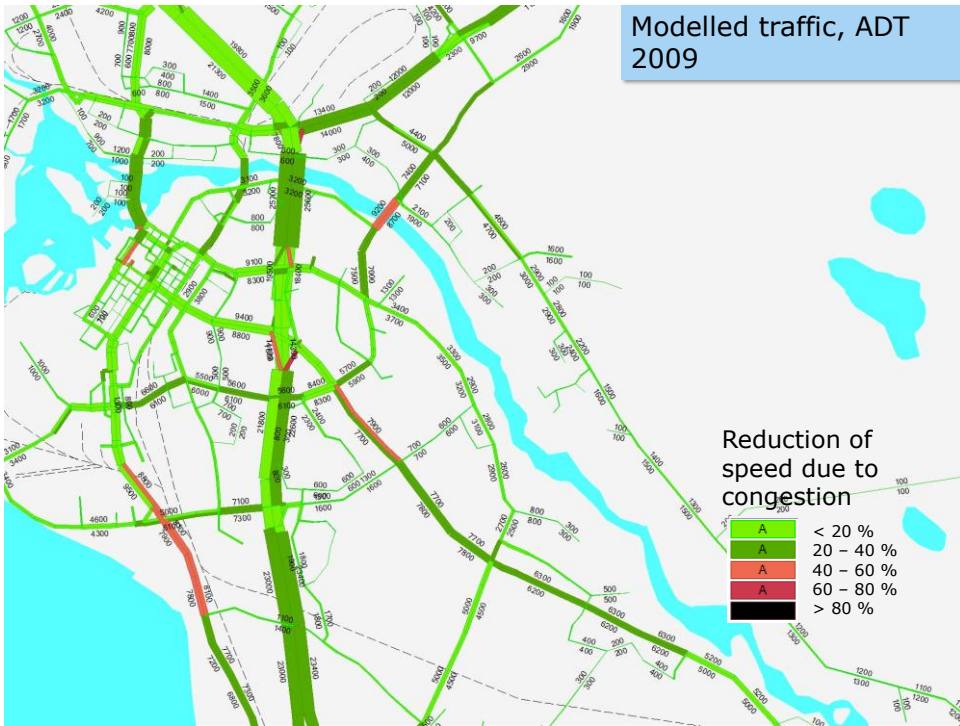


by car

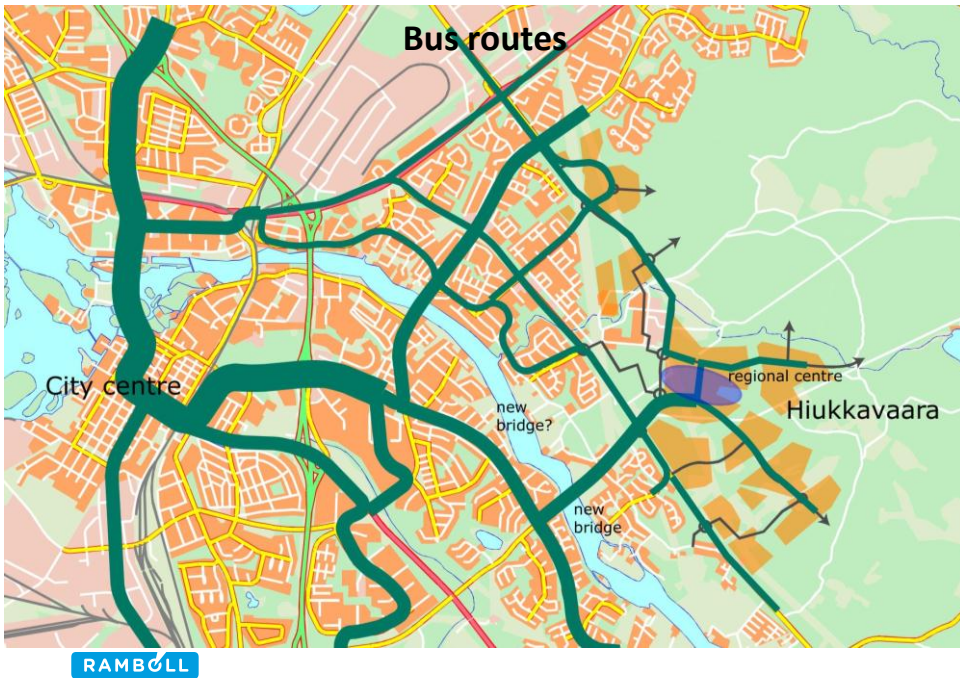
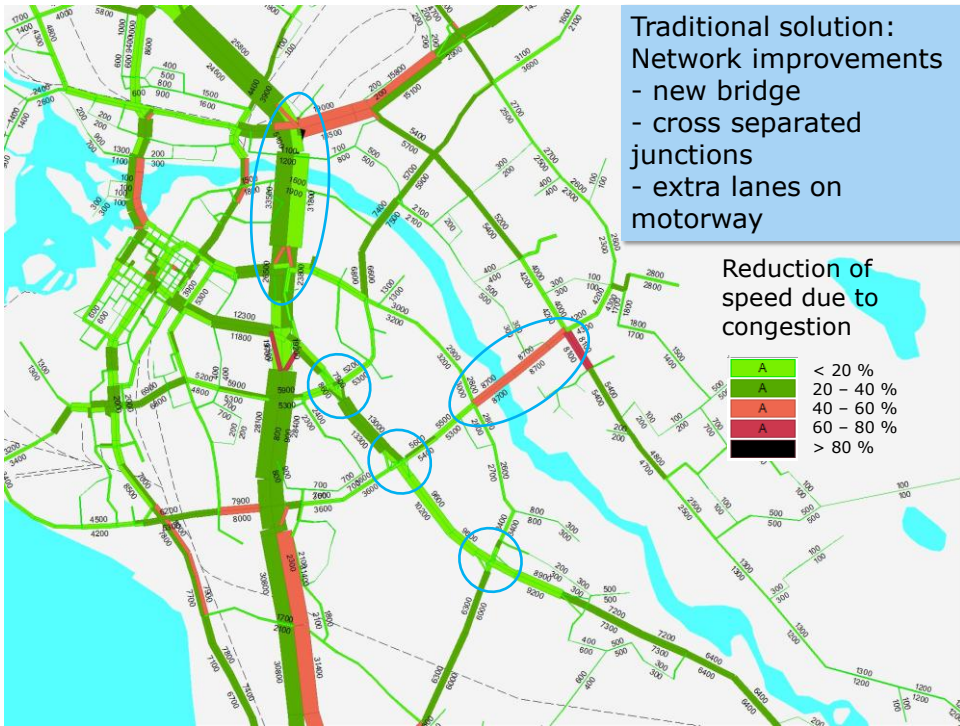


by bus











# TYBUSSI

[Etusivu](#)
[Aikataulut ja reitit](#)
[Liput ja hinnat](#)
[Infoa cityliikent](#)

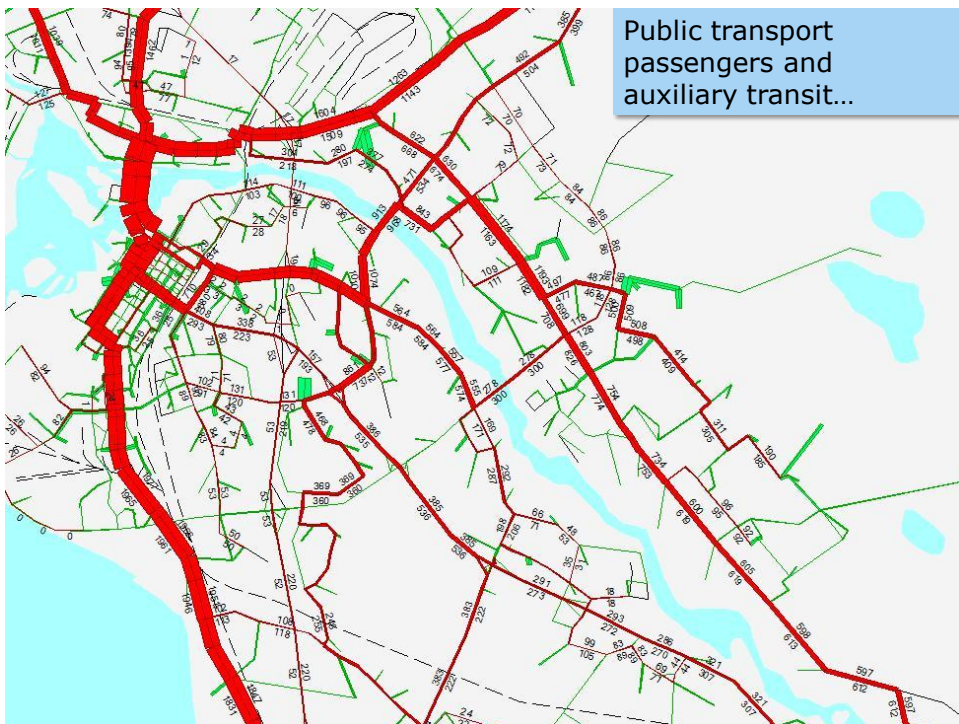

**ia Citybussiin!**

Valitse reitti:

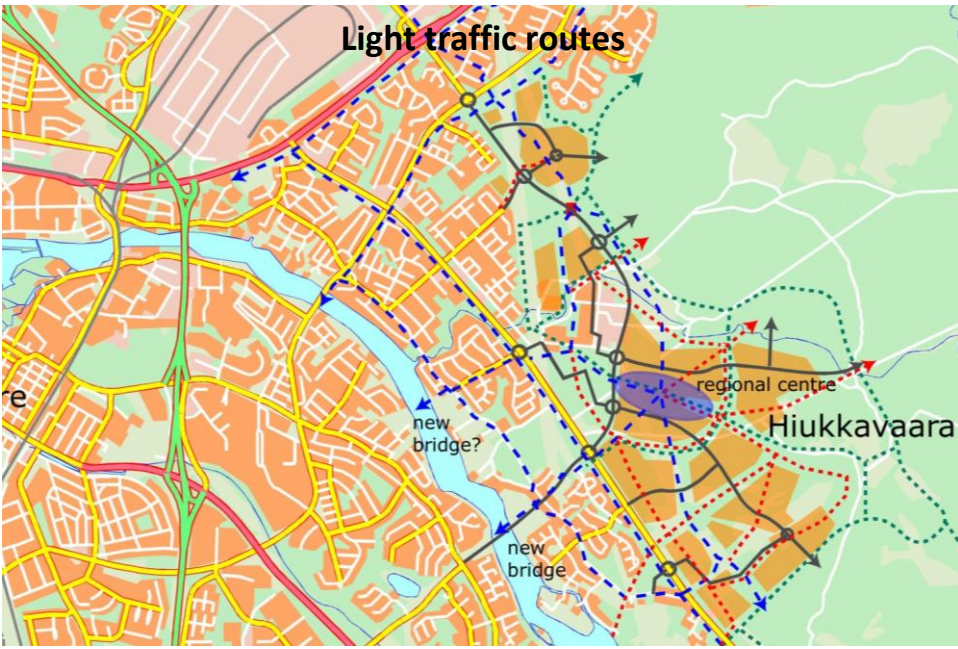
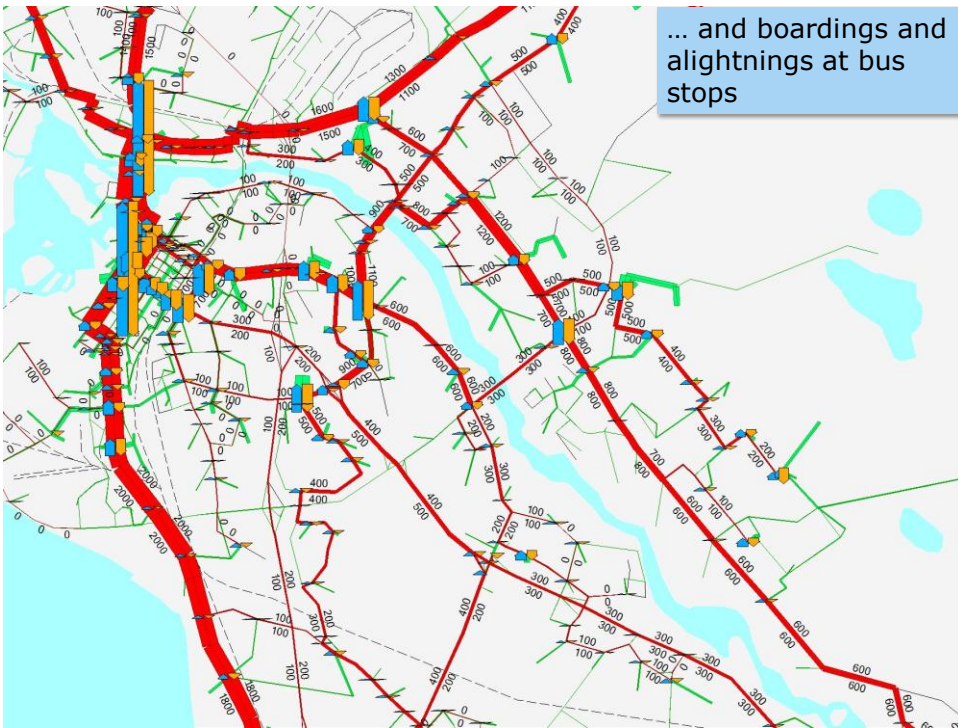


Ajankohtaista

nopea ja urbaani tapa liikkua Oulun lähialueiden välillä.









*Light Traffic paths*

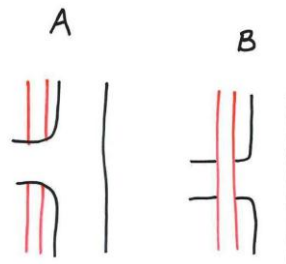
- Clear hierarchy, main paths wide enough for needs of different modes of light traffic
- Continuity in junctions
- Path is fitted for the environment
- Shortcuts

*Different experiences*

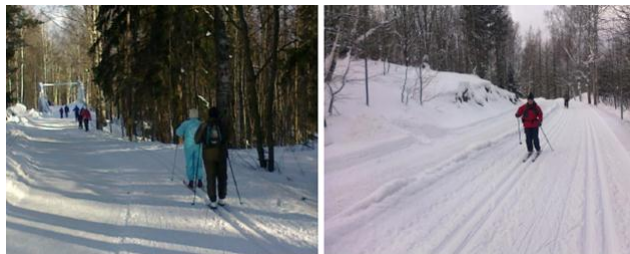
- Materials, facilities, flora, art
- Separating subareas by underlining their different nature using gates, materials, markings, guidance, etc.

*New path types*

- Exercise, functional exercise
- Less than 0,5 km from the outdoor to exercise track (jogging, skiing)
- Less than 0,4 km to the nearest busstop



RAMBOLL



RAMBOLL



**THANK YOU!**

