WINTER CYCLING FEDERATION

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# YEAR-ROUND CYCLING IN FINLAND

## FROM THE WINTER MAINTENANCE POINT OF VIEW




City MasterClass

Timo Perälä
Winter Cycling Federation
Navico Oy

BATS -meeting
12th of February, 2025

OULU navico WINTER CYCLING FEDERATION

finnish cycling embassy



masterclass.city/omc/
cyclingembassy.fi/master-classes/

Photo: BicycleDutch

SEE IT, FEEL IT,
LEARN FROM IT.

NEXT OULU
MASTER CLASS
IN 08-09/2025



Photo: Finnish Cycling Embassy







Photo: Harri Vaaarala

- At the turn of the millennium, it was still a largely unexplored area.
- Seasonal changes gradually better understood through traffic survey development and bicycle counters.
- Good basic conditions for year-round cycling, but still big differences in cycling and mobility cultures between different cities.
- Many different views, mindsets and attitudes towards promoting year-round cycling. Local narratives!
- Still a lot of data missing, especially from maintenance

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Winter cycling - scope, motives, barriers and health effects, Perälä T. 2002




*2001-2002 Helsinki, Jyväskylä, Oulu, Rovaniemi*

**Fix winter maintenance – making year round cycling safer in Finnish municipalities, 2023**
*(Finnish Transportand communications Agency, Network of Finnish Cycling Municipalities, Navico Ltd.)*




https://navico.fi/project/kunnossapito-kuntoon/

**Winter cyclist profile survey, 2024,**
n = 1709 (Winter Cycling Federation, 2024)




https://navico.fi/talvipyorailijaprofiili/

**Snow storage planning guide, 2024,**
(The Finnish Association of Landscape Industries, 2024)




https://www.vyl.fi/tietoa-ja-tyokaluja/ohjeet/lumitilaopas/

City MasterClass

A City MasterClass -education

**”How to plan for winter and snow storages” –educations** for cities Of Oulu, Vantaa, Espoo, Turku, Tampere, Kuopio, Vaasa, Hyvinkää, Lahti, Mikkeli, Joensuu and Kajaani (2022 -> ongoing)




SOCIO-ECONOMIC DATA
CYCLING ACTIVITY DATA
WELL-BEING DATA
**MAINTENANCE SURVEY**

# DO YOU BIKE IN WINTER?

## ANSWER TO OUR WINTER CYCLIST PROFILE – QUESTIONNAIRE!

**Over 1 700 ANSWERS**

The data will be used for cycling promotion in Finland.

02/2024

WINTER CYCLING FEDERATION

## REFERENCE DATA

| PHYSICAL STATE | MOOD | SICK LEAVES (d/y) |
|---|---|---|
| 5,6 | 6,5 | 13,0 |

## ACTIVE SUMMER CYCLISTS, LESS ACTIVE DURING THE WINTER (n=527)

2-6 d/week  1-2 d/week

| PHYSICAL STATE | MOOD | SICK LEAVES (d/y) |
|---|---|---|
| 7,5 | 7,5 | 5,7 |

*Scale 1-10 (1 = really bad, 10 = really good)*

## OFTEN, YEAR-ROUND, > 2 500 km / y (n=395) (4-7 d/week)

| PHYSICAL STATE | MOOD | SICK LEAVES (d/y) |
|---|---|---|
| 8,2 | 8,0 | 4,6 |

# WINTER CYCLIST PROFILES according to the cycling activity

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## REGULAR YEAR-ROUND CYCLISTS (25 %)




- Cycles on 2-4 days / week in winter
- More often during summer months and wider variety of trips
- Around 50 % cycles over 2 000 km/v, almost 20% over 4 000km/v

## WEATHER PROOF YEAR-ROUND COMMUTERS (23 %)



- Cycles year-round on 4-5 d/week
- Cycles diverserly different trips during summer months
- Over 2 000 km/y: 65 %, over 4 000 km/y: 25 %

## ALL TRIPS BY BIKE, IF JUST POSSIBLE (21 %)



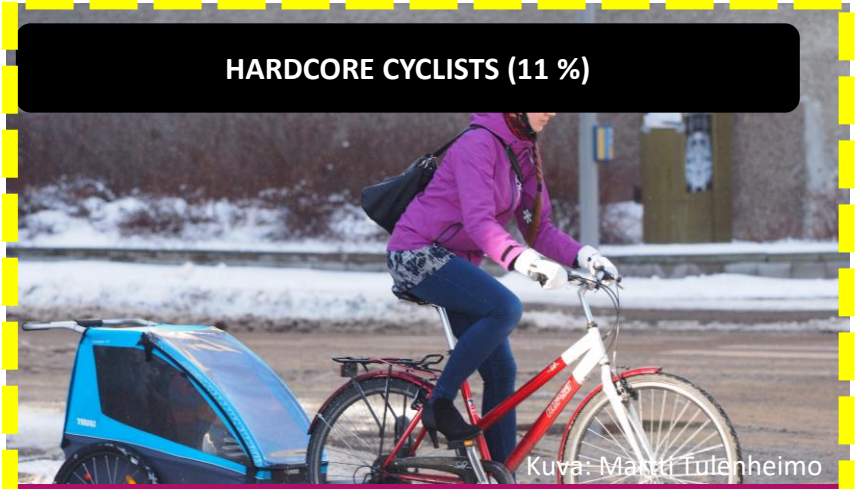
- Almost all trips by bike all year round
- Cycling ncreases even more in the summer
- Over 2 000 km/y: 68 %, over 4 000 km/y: 33%

## GOOD WEATHER WINTER CYCLISTS (12 %)




- In winter max on 1-2 d /w
- During summer on 2-3 d/w
- Most cycling km's during summer, 71 % cycles less than 2 000 km/y

## HARDCORE CYCLISTS (11 %)




- Year-round on 6-7 days / week
- Cycling also has the highest average mileage, with 78% cycling over 2,000 km/year and around half cycling over 4,000 km/year.

## RECREATIONAL WINTER CYCLISTS (8 %)



- On winter, just recreational cycling trips
- In the summer cycles at least 2 times or more per week.
- Annual mileage varies greatly within the group

Tampere University

BASIC INFO

MOBILITY IN SUMMER / WINTER

NON CYCLISTS | SUMMER CYCLISTS | YEAR-ROUND CYCLISTS

FREE TIME BIKING | CYCLING HABITS, DEVELOPMENT

OBSTACLES, CONDITIONS

MOTIVES

PERCEIVED CYCLING SAFETY AND DEVELOPMENT EFFORTS

CYCLING GEAR, SPENDINGS ON CYCLING

ACCIDENTS

HEALTH AND WELLBEING

WINTER MAINTENANCE




INTERNATIONAL SURVEY!

ENG VERSION OPENS THIS WEEK!



Kuva: Pekka Tahkola

## Net Promoter Score Index (Average -11 %)

Turku: -39
Vaasa: -31
Mikkeli: 3
Espoo: -56
Kajaani: -7
Kuopio: +33
Oulu: +75

-100 | 0 | 50 | 70 | 100

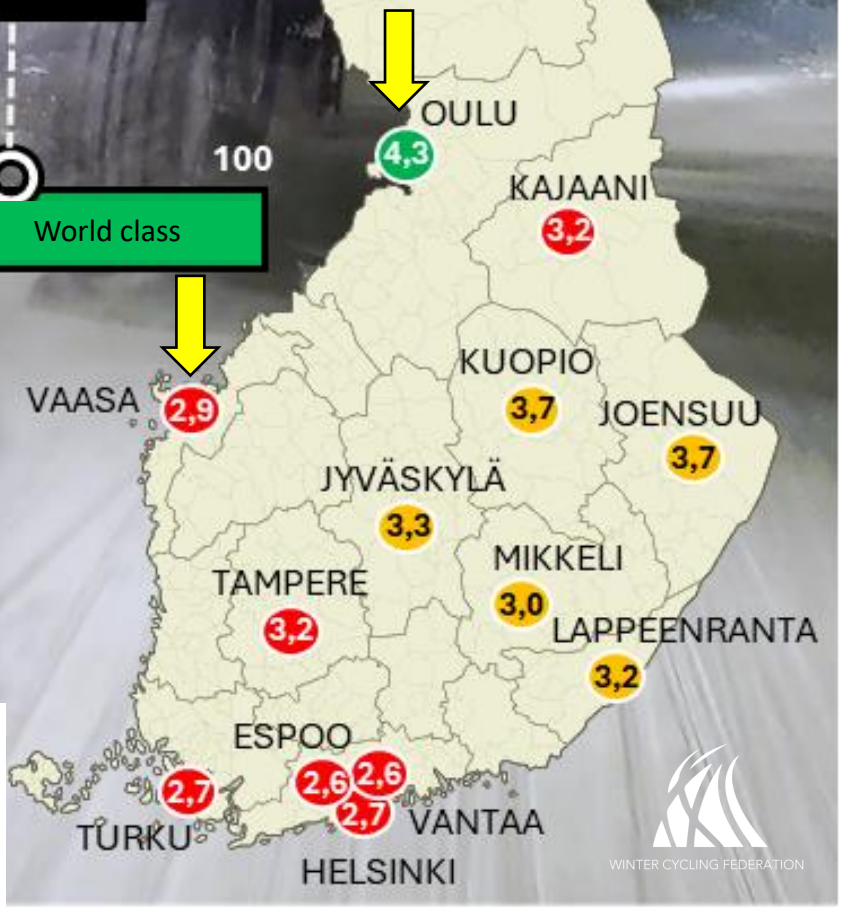
Low, Do better! | Good | Excellent | World class

Vantaa: -60
Helsinki: -41
Joensuu: +23
Tampere: -10
Jyväskylä: +8
Lappeenranta: +9

How probably would you recommend year-round cycling in your city to your friends and relatives?




## Winter maintenance overall rating (scale 1-5, national average: 3,1)




Winter cycling Net Promoter Score index and overall maintenance service level score (1 = very bad to 5 = very good) in different Finnish cities.

# WINTER MAINTENANCE DEVELOPMENT NEEDS

WINTER CYCLING FEDERATION

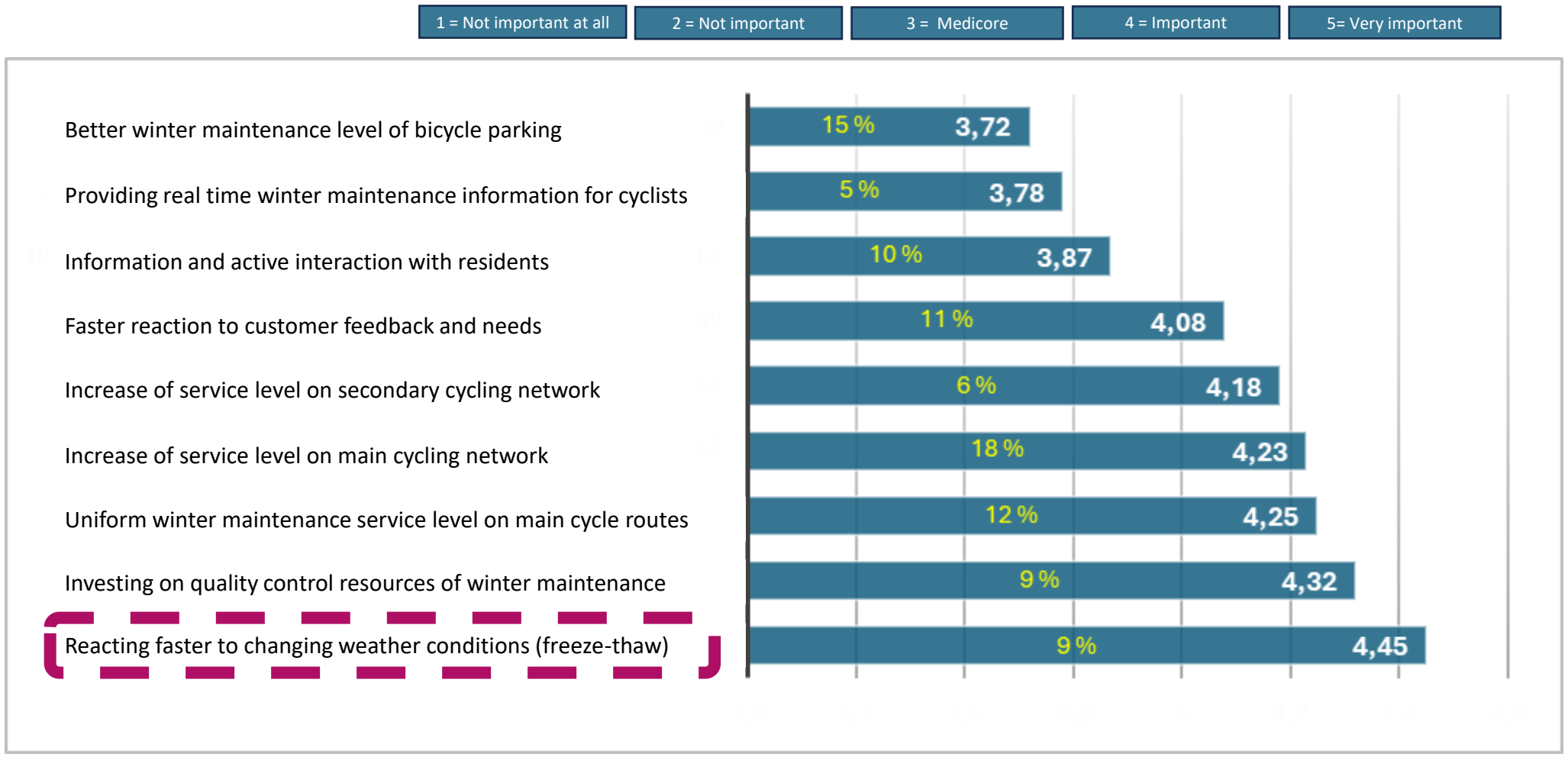
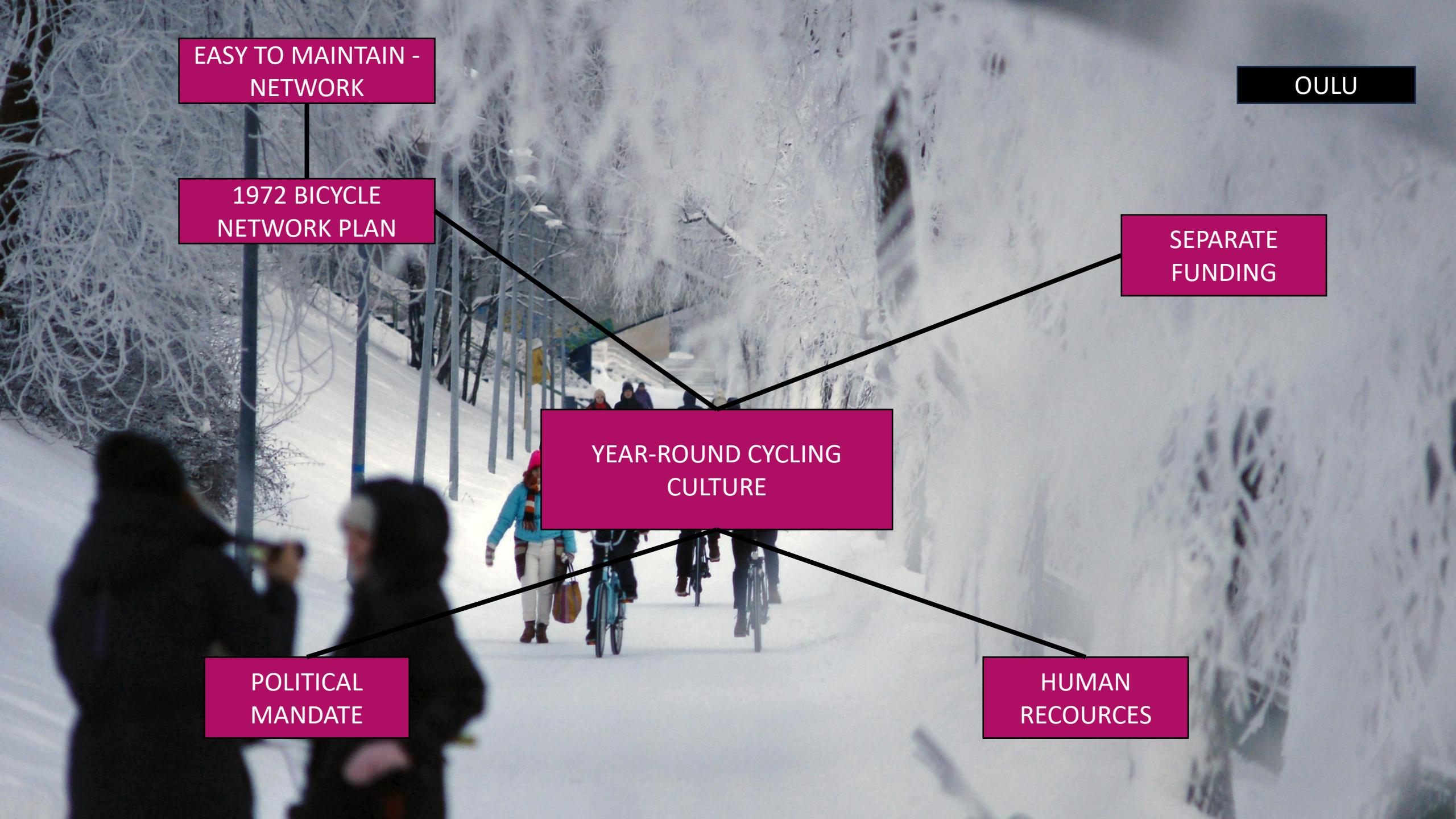



***Figure.*** *The importance of winter maintenance development measures (1= not at all important, 5 = very important and the proportion of respondents who think the proposed development measure is already at a satisfactory level (percentages marked in yellow in the figure)*


OULU
EASY TO MAINTAIN - NETWORK
1972 BICYCLE NETWORK PLAN
SEPARATE FUNDING
YEAR-ROUND CYCLING CULTURE
POLITICAL MANDATE
HUMAN RECOURCES




- Prioritized network from 2017 (pilot)
- Now 50 km prioritized winter maintenance network, contracted. Partly sweep-salted / sweep-sanded.
- Lack of space and snow storage space biggest issues in downtown

200 000 inhab.
735 km bicycle & pedestiran routes



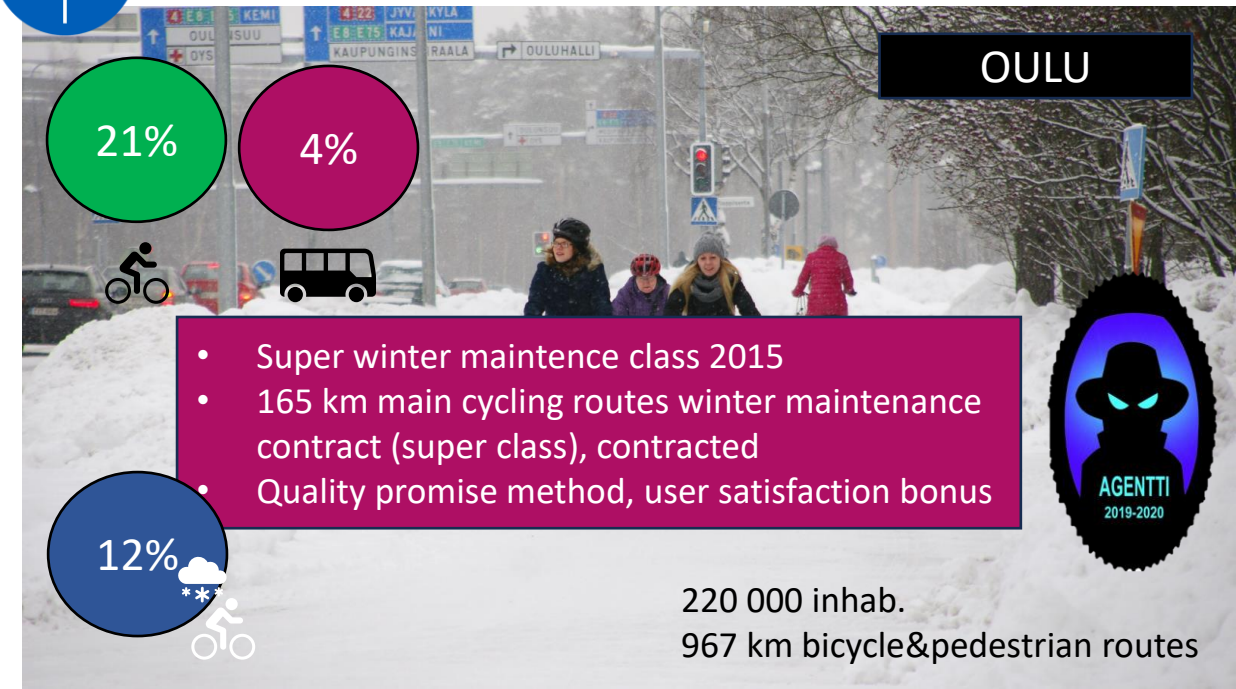

- Developing winter maintenance within regional contracts with classic quality classifications
- Year-round regional maintenance contracts, 50 % by city owned company, 50 % contracted.
- Biggest concern: lack of resources for supervision

124 000 inhab.
260 km(?) of bicycle&pedestrian routes



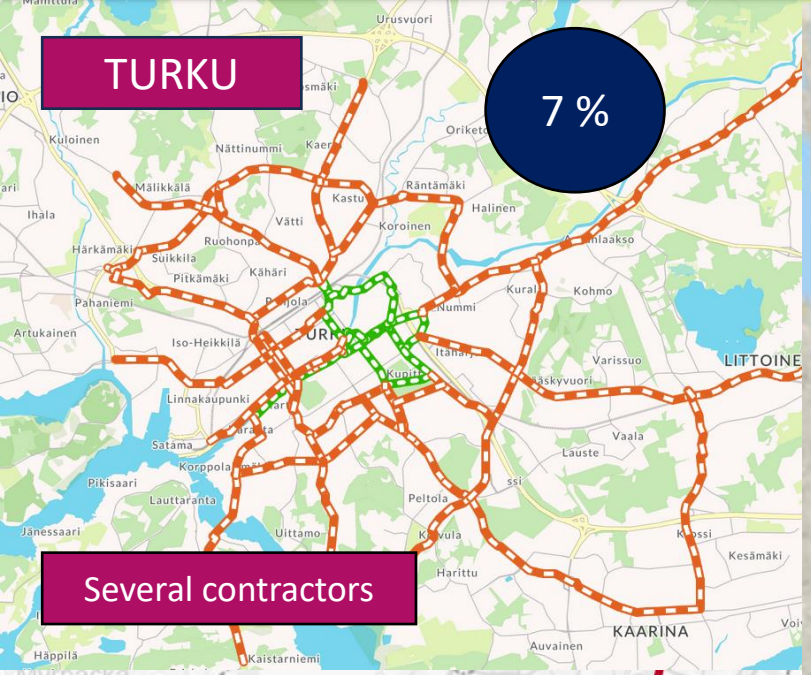

- Prioritized network pilot 2015 (8,7 km)
- Now 105 km prioritized winter maintenance network as part of the year-round regional contracts.
- Lack of space and lack of snow storages in down town

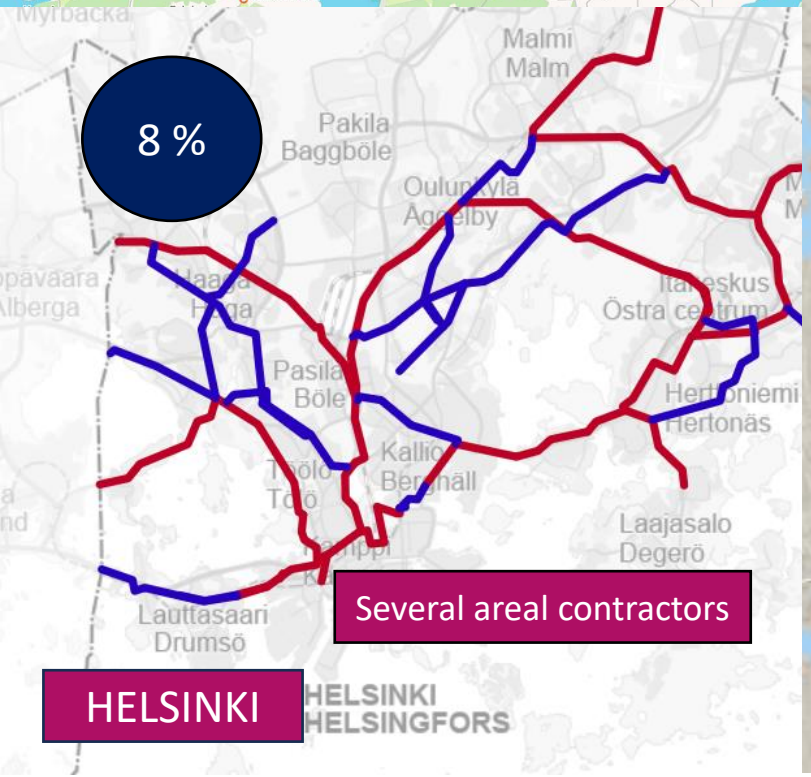
675 000 inhab.
1300 km bicycle&pedestrian routes

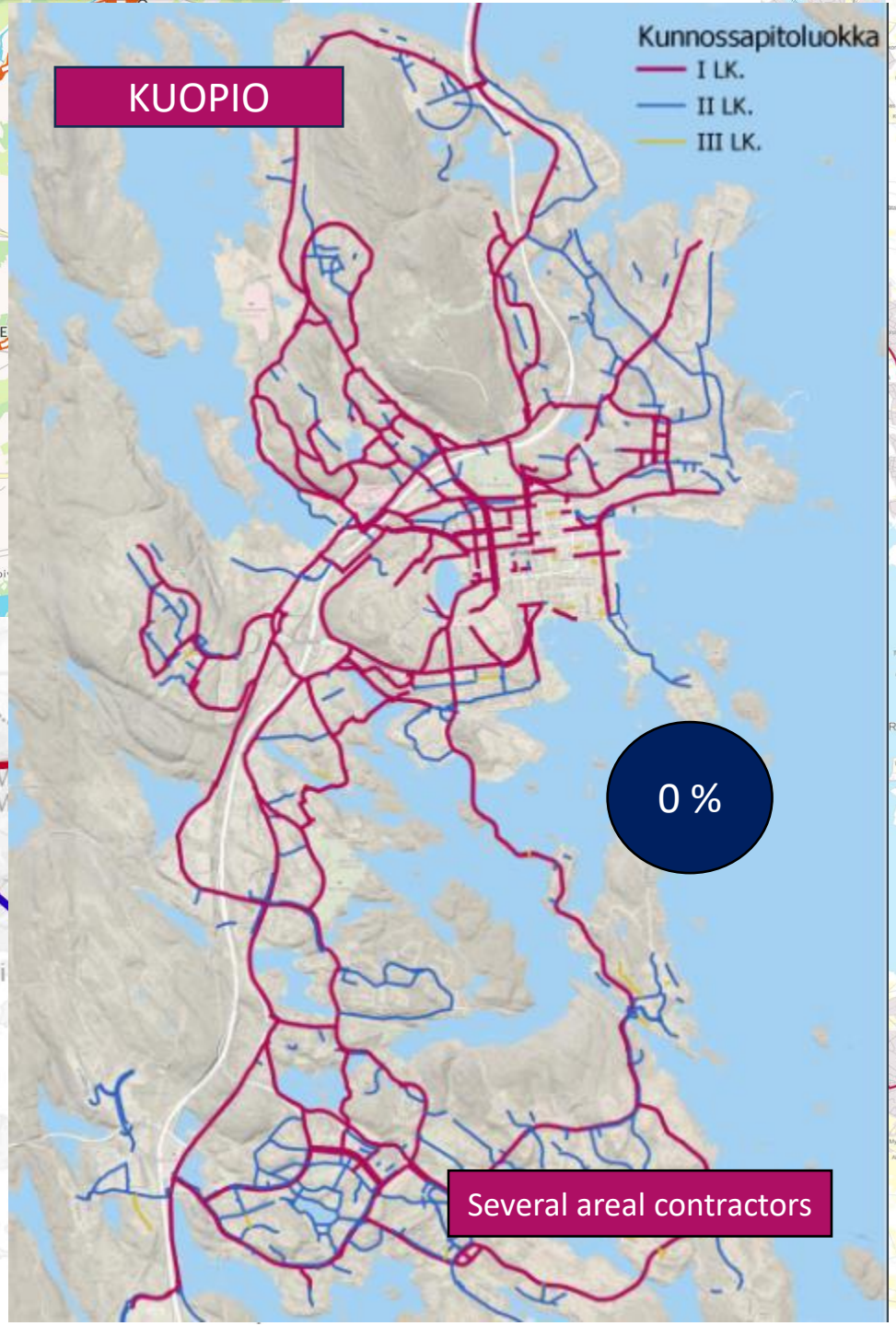


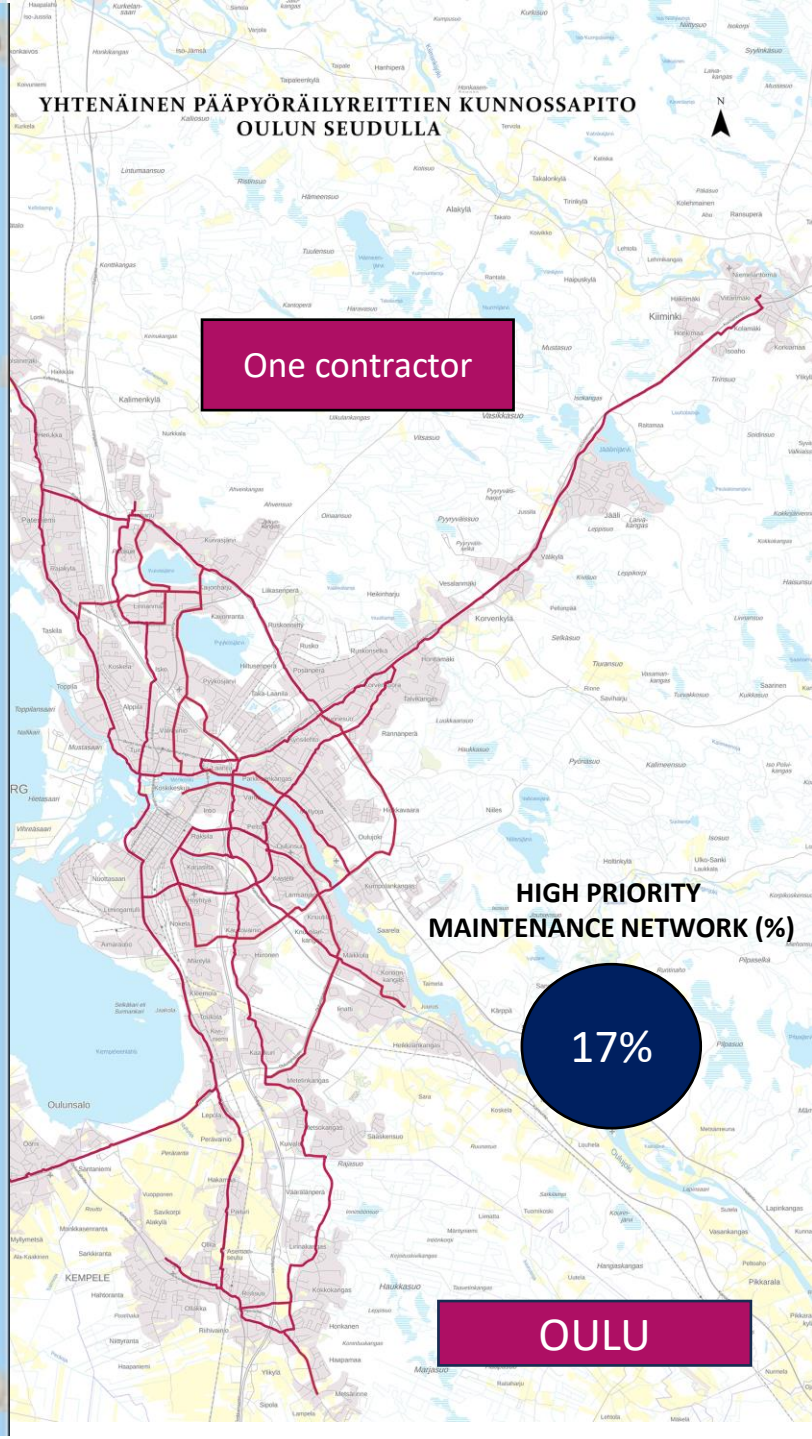

- Super winter maintence class 2015
- 165 km main cycling routes winter maintenance contract (super class), contracted
- Quality promise method, user satisfaction bonus

220 000 inhab.
967 km bicycle&pedestrian routes

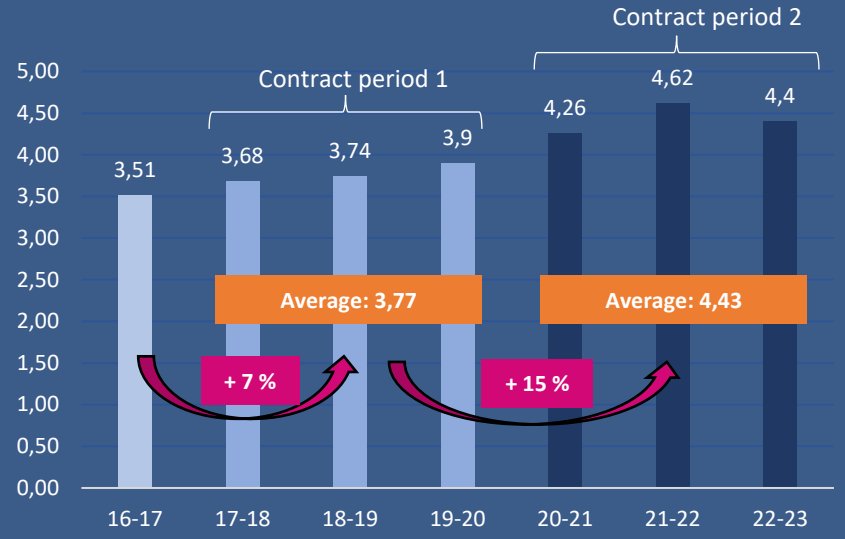

TURKU
7 %
Several contractors


8 %
Several areal contractors
HELSINKI
HELSINGFORS


KUOPIO
Kunnossapitoluokka
I LK.
II LK.
III LK.
0 %
Several areal contractors


YHTENÄINEN PÄÄPYÖRÄILYREITTIEN KUNNOSSAPITO
OULUN SEUDULLA
One contractor
HIGH PRIORITY
MAINTENANCE NETWORK (%)
17%
OULU

## FROM CENTIMETERS TO CUSTOMER SERVICE




***Graph.*** *Customer satisfaction (scale 1-5) of main cycling network winter maintenance 2016 - 2023*




AGENTTI
2016-2017

https://citymasterclass.podia.com/

| | Oulu | | | Helsinki | | | Turku | | Kuopio | | | National Road Admin. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Super | I | II | A+ | B | C | I | II | I | II | III | K1 | K2 |
| Snow clearance, cm limit to start | 2 cm | 3 cm | 5 cm | 3 cm | 5 cm | 5 cm | 4 cm | 6 cm | 3 cm | 5 cm | 5 cm | 3 cm | 4 cm |
| Snow clearance, time windown | 3 h | 4 h | 6 h | 3 h | 4h | 8h | Before streets | | 5-12 h after snow fall | | | 3 h | 4 h |

YOU CAN GET GOOD QUALITY BY DEMANDING AND BY CONTROLLING.

NO ROCKET SCIENCE. DOING THE RIGHT MEASURES ON THE RIGHT TIME.

MILD AND CHANGING WINTER CONDITIONS REQUIRE MORE MAINTENANCE MEASURES AND FASTER REACTION.

QUALITY REQUIREMENTS

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# HOW TO BUILD SWAMP HOUSE






”TALK TO THE HEAD, NOT TO THE ASS”

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# CONTENT OF THE GUIDEBOOK

**INDEX**


1. SUMMARY

2. BENEFITS
   - 2.1. Improved safety for pedestrians and cyclists
   - 2.2. The foundation for well-being and for local economics
   - 2.3. Equality, equity and sustainable development
   - 2.4. Winter maintenance as an attraction factor

3. STRATEGIES INTO PRACTICE!
   - 3.1. The meaning of leadership and management with knowledge
   - 3.2. Valuation and financing of winter maintenance
   - 3.3. Strategical management of maintenance services and public procurement

4. PLANNING WINTERPROOF CYCLING INFRASTRUCTURE
   - 4.1. What to take into consideration in winterproof infrastructure planning?
   - 4.2. Fix the bottlenecks of urban planning process
   - 4.3. Drainage, drainage, drainage

5. MAINTENANCE PLANNING AND ORGANIZING THE OPERATIONS
   - 5.1. From street hierarchy to the end-user-based maintenance planning
   - 5.2. Giving priority for pedestrian and bicycle path maintenance in practice
   - 5.3. The need for changing the mindset, attitude, competence needs and operation modes

6. BUYING SERVICES AND SERVICE MANAGEMENT
   - 6.1. Planning and development of public procurement processes
   - 6.2. More interaction in public procurement process
   - 6.3. Development of quality management in winter maintenance

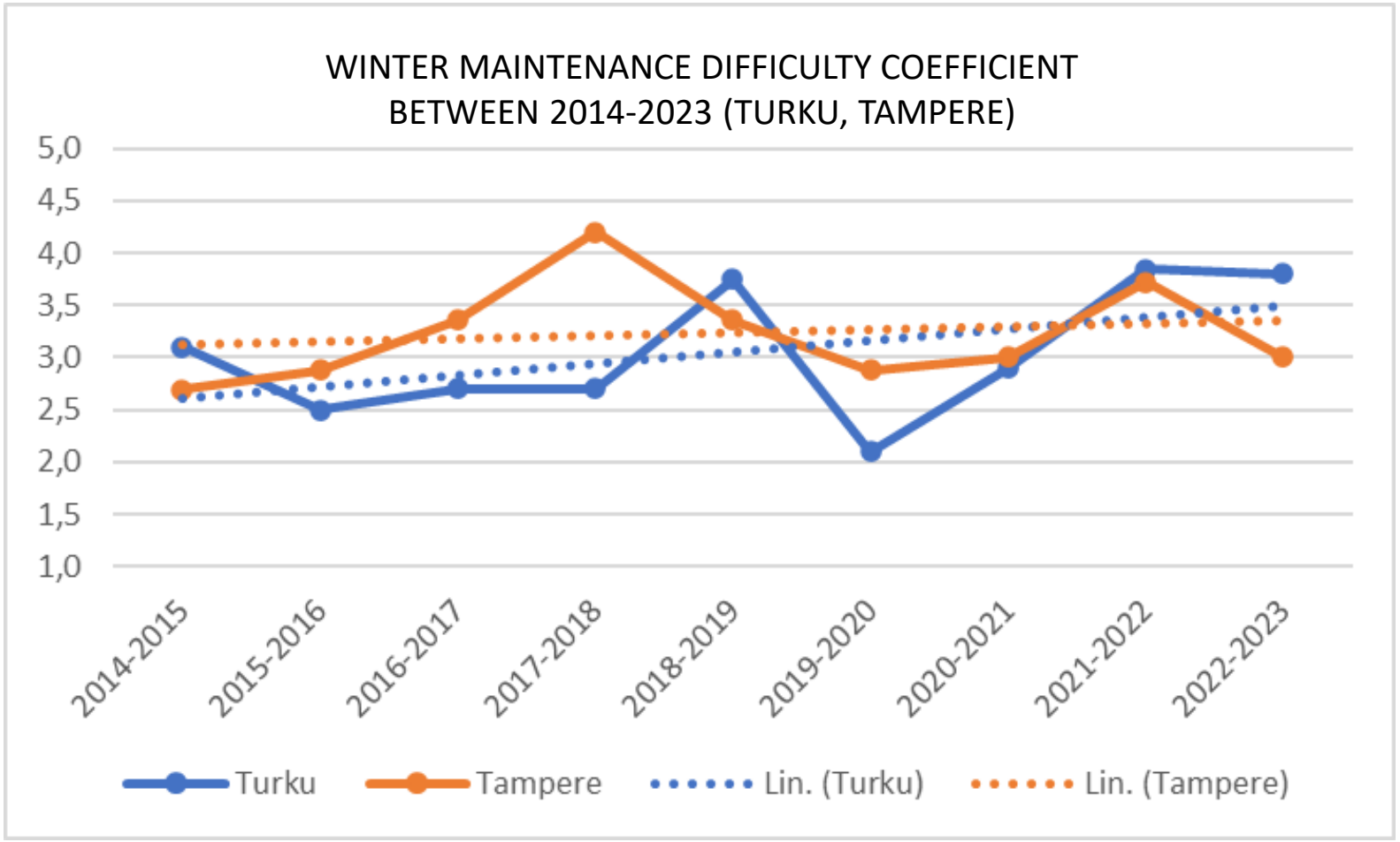
7. WINTER MAINTENANCE MENTHODS
   - 7.1. Winter maintenance methods in different cities
   - 7.2. Development needs in winter maintenance methods

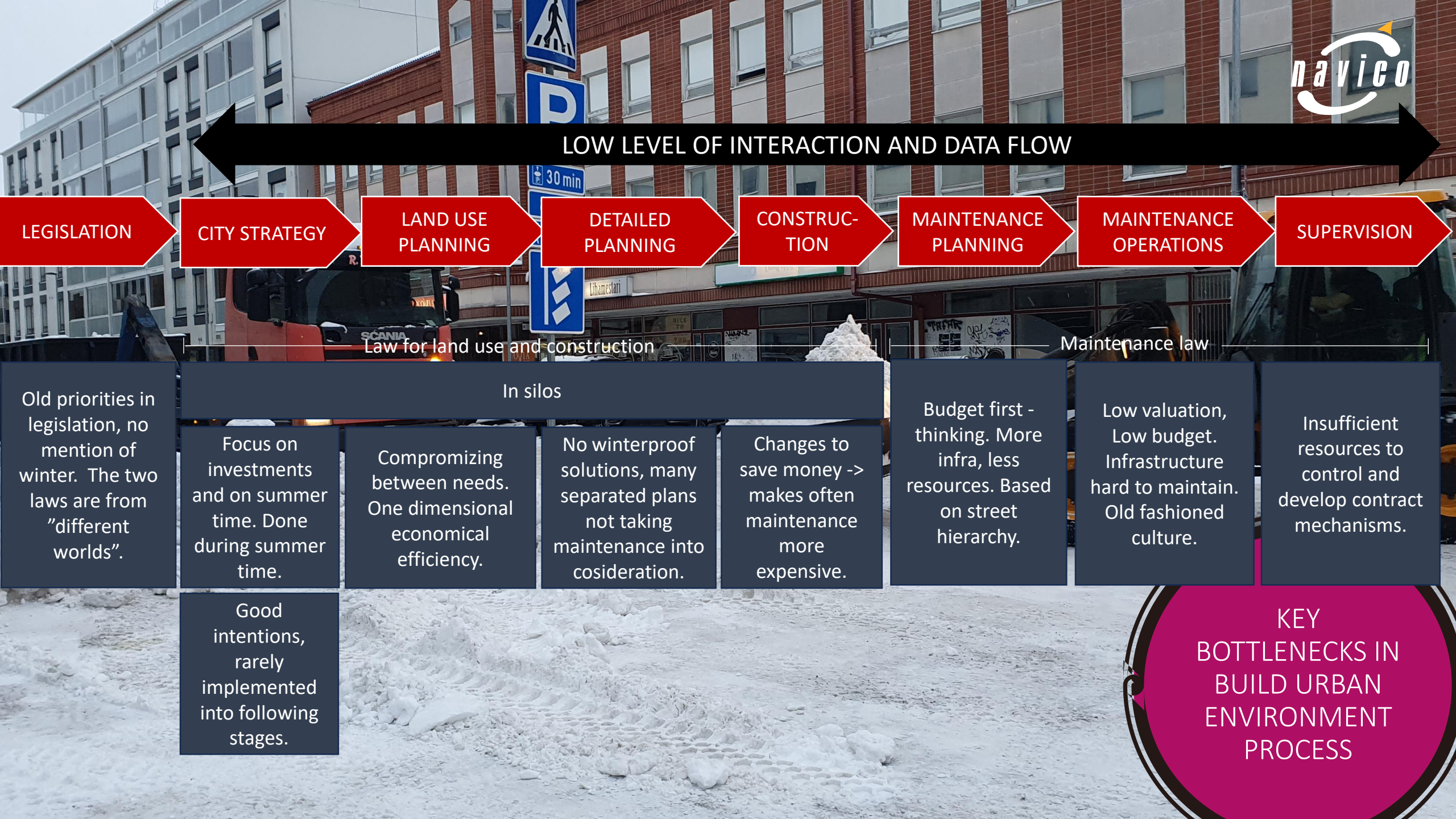

navico.fi/project/kunnossapito-kuntoon/





# WINTER WON'T GO AWAY, THEY CHANGE





# KEY BOTTLENECKS IN BUILD URBAN ENVIRONMENT PROCESS

LOW LEVEL OF INTERACTION AND DATA FLOW

LEGISLATION → CITY STRATEGY → LAND USE PLANNING → DETAILED PLANNING → CONSTRUC-TION → MAINTENANCE PLANNING → MAINTENANCE OPERATIONS → SUPERVISION

Law for land use and construction

Maintenance law

Old priorities in legislation, no mention of winter. The two laws are from ”different worlds”.

In silos

Focus on investments and on summer time. Done during summer time.

Compromizing between needs. One dimensional economical efficiency.

No winterproof solutions, many separated plans not taking maintenance into cosideration.

Changes to save money -> makes often maintenance more expensive.

Good intentions, rarely implemented into following stages.

Budget first - thinking. More infra, less resources. Based on street hierarchy.

Low valuation, Low budget. Infrastructure hard to maintain. Old fashioned culture.

Insufficient resources to control and develop contract mechanisms.

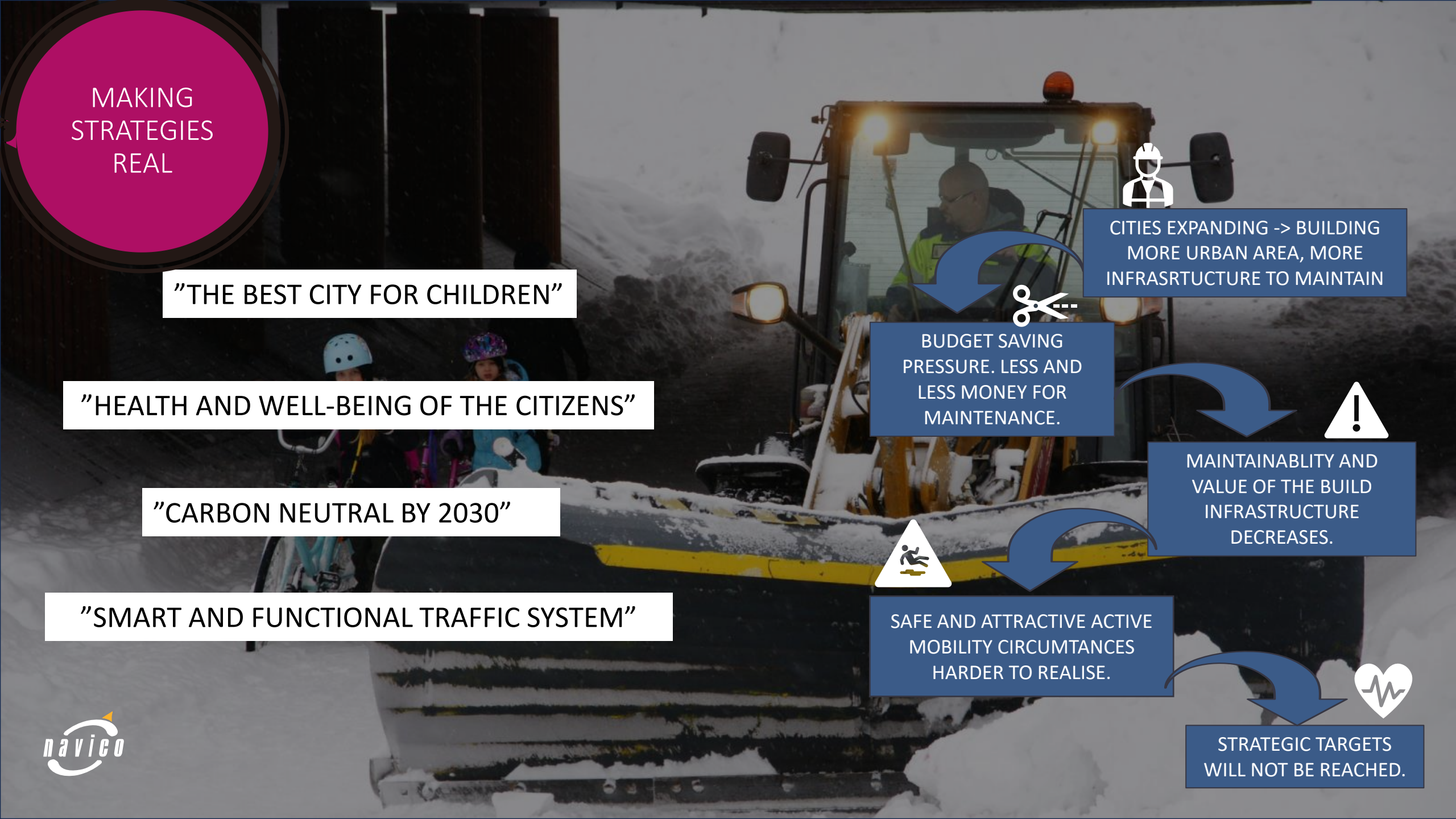
# MAKING STRATEGIES REAL

”THE BEST CITY FOR CHILDREN”

”HEALTH AND WELL-BEING OF THE CITIZENS”

”CARBON NEUTRAL BY 2030”

”SMART AND FUNCTIONAL TRAFFIC SYSTEM”



CITIES EXPANDING -> BUILDING MORE URBAN AREA, MORE INFRASRTUCTURE TO MAINTAIN

BUDGET SAVING PRESSURE. LESS AND LESS MONEY FOR MAINTENANCE.

MAINTAINABLITY AND VALUE OF THE BUILD INFRASTRUCTURE DECREASES.

SAFE AND ATTRACTIVE ACTIVE MOBILITY CIRCUMTANCES HARDER TO REALISE.

STRATEGIC TARGETS WILL NOT BE REACHED.

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# 8 €/y/inhab.

PEDESTRIAN AND BICYCLE PATH WINTER MAINTENANCE COSTS PER CITIZEN / YEAR

*EQUALS TO 0,2 % OF THE CITY'S BUDGET (City of Oulu)*

# 0,8 €/y/inhab.

OULU SUPER CLASS WINTER MAINTENANCE CONTRACT'S ADDITIONAL COST PER CITIZENS / YEAR (+160 000 €/y).




https://wintercycling.org/projects

# 100 €/y/inhab.

MUNICIPAL SPORT AND RECREATIONAL SERVICE COSTS/CITIZEN/YEAR (Finland)

IT IS NOT ABOUT MONEY, IT IS ABOUT PRIORITIES.

# WINTER MAINTENANCE = LABOR POLITICS

Kuva: Pekka Tahkola

INTERVENTION

100 000 inhab.

19 % 8 %

20 % less summer cyclists who quit as winter comes

1 562 more regular year-round commuters.

Expected decrease of sick leaves **1 718 days**

The expected financial savings in terms of sick leave days is **635 700 € / year.**

The savings potential, based on kilometer savings is **1.2 M€ / year**



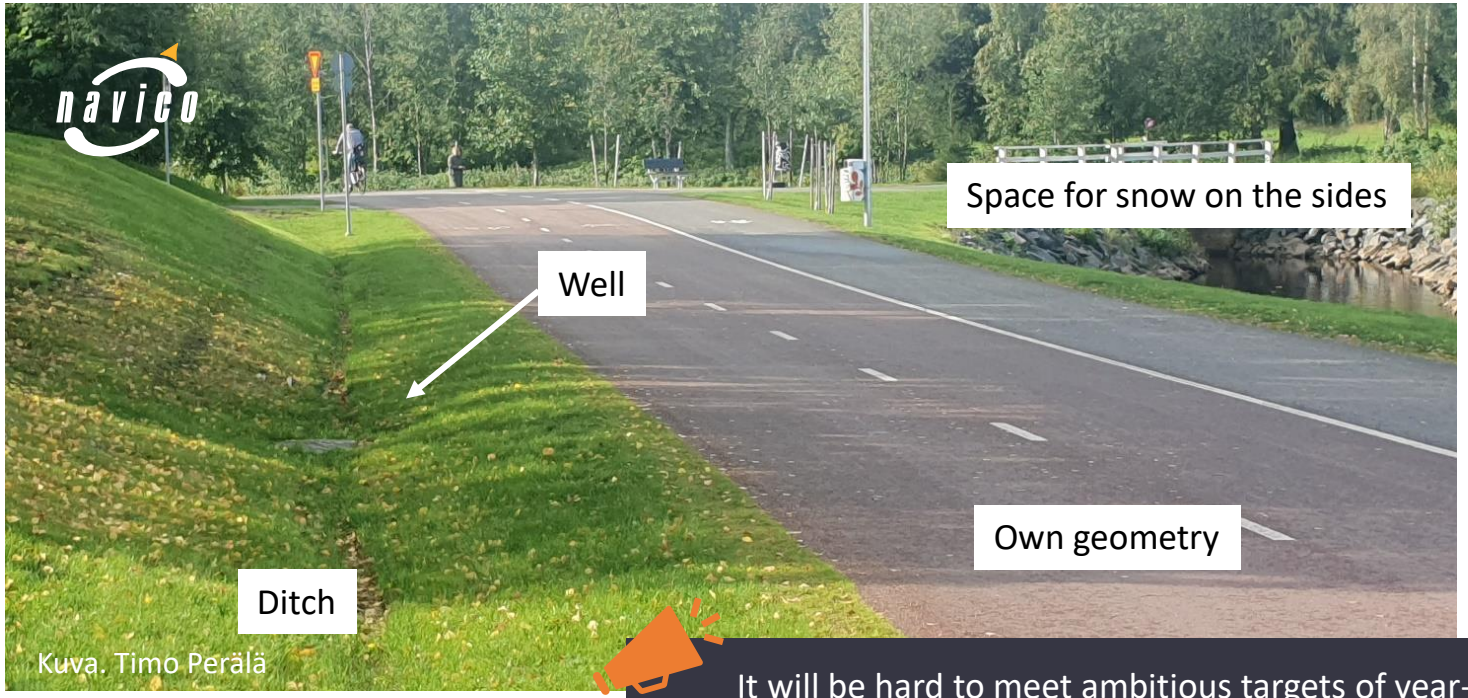
Better level of winter maintenance -> 18 – 25% more year-round cyclists

Professor Steven LaValle fell in love with Oulu, which he discovered during his 2007 quick visit to the Arctic Circle. A day on the bike in Oulu was amazing. Oulu's combination of nature and technology is astonishing: "This is heaven on earth". In 2021, now Oulu based professor Steven LaValle received 2.5 million euros in Advanced Grants funding from the European Research Council for his research team.

**SHOW ME THE MONEY!**



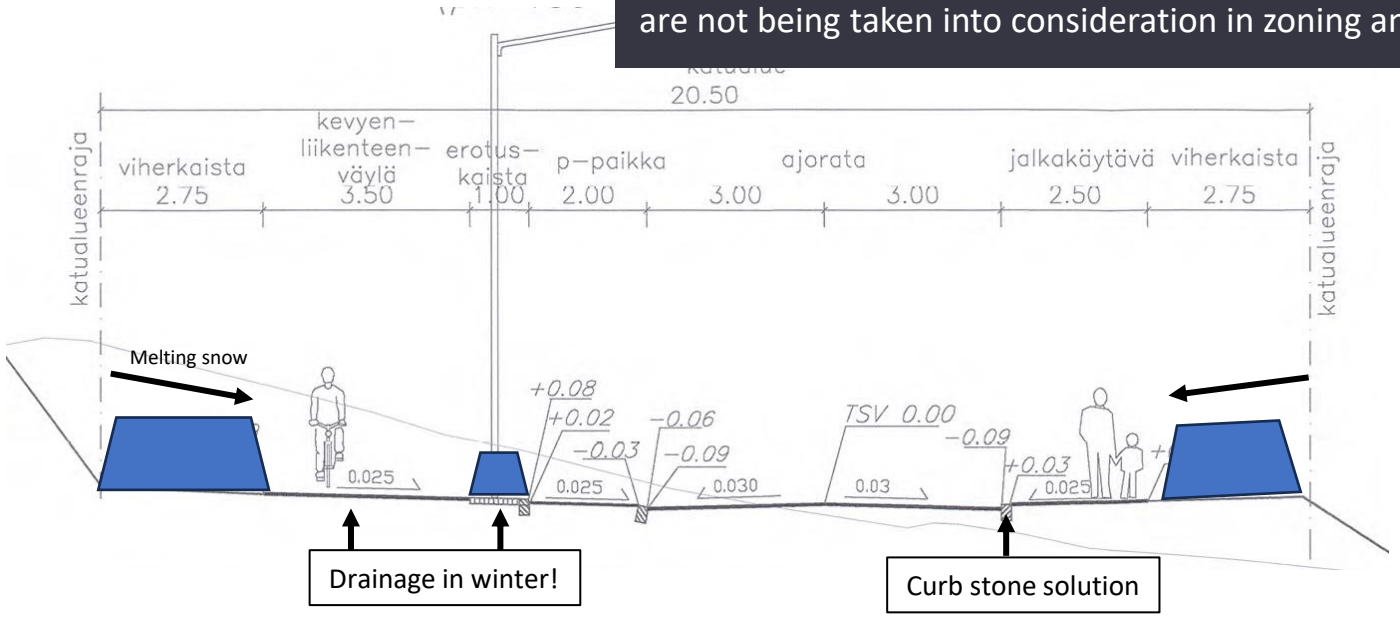
The annual cycling volume of people who cycle frequently and regularly all year round was 932 km higher than the cycling volume of those who reduce it for the winter (Helsinki data, Winter Cycling Profile Survey 2024). The calculation uses the average of the kilometer benefits used by the City of Helsinki, 0.85 €/km, as the kilometer benefit of cycling.







It will be hard to meet ambitious targets of year-round cycling develpoment if the current and new challenges of winter maintenance are not being taken into consideration in zoning and street design phase.







WINTER PROOF DESIGN. DRAINAGE, DRAINAGE, DRAINAGE!


WINTER
PROOF
DESIGN.
DRAINAGE,
DRAINAGE,
DRAINAGE!
navico


WINTER
PROOF
DESIGN.
DRAINAGE,
DRAINAGE,
DRAINAGE!

WINTER CYCLING FEDERATION

PROPOSAL FOR PARTICIPATION & FUNDING

LET'S FIX MAINTENANCE GLOBALLY!



# WINTER CYCLING PLANNING GUIDEBOOK

How to plan and execute year-round safe cycling for all ages and abilities

## WHY WINTER CYCLING PLANNING GUIDEBOOK IS NEEDED?



Timo Perälä
Winter Cycling Federation
President

*"Winter as a season is often forgotten in the design of the built urban environment. Maintenance takes care of the job! With less and less funding than before, of course. National and city-specific cycling planning guidelines do not take into account winter and the spesific design solutions it requires, such as drainage and snow dump areas. Maintenance operators often get their hands on a difficult-to-maintain cycling network, which is expensive - if not impossible - to keep in good condition in rapidly changing winter conditions.*

*Therefore, we need a winter cycling planning guidelines that identifies the bottlenecks of the entire built urban environment process starting from the legislation. Only then we can truly achieve the ambitious goals set by cities for reducing emissions and increasing the well-being of residents."*

## PRELIMINARY CONTENT

The guidebook is targeted for all city and traffic planners, but also for decision makers and cycling advocates.

The winter cycling planning guidebook represents all the phases of the urban built environment process starting from the legislative level all the way to the supervision of the maintenance operations and contracts. Not to forget data development needs for year-round cycling development.

All chapters include identification of the most common problems in different nations and cities, best international practices, data needs and recommended solutions, tools and practices.



CHAPTERS OF THE GUIDEBOOK

1. Benefits of year-round active mobility and cycling
2. Legislation
3. National, regional and city strategy level
4. National and regional traffic system planning
5. Zoning, urban structure planning
6. Service structure planning
7. City building code
8. City level traffic network planning
9. Winterproof street and cycling path design
10. Planning and organizing of winter maintenance
11. Procurement and management of winter maintenance services
12. Maintenance methods
13. Communications and interaction, internal / external
14. Winter cycling data; development needs, AI -solutions



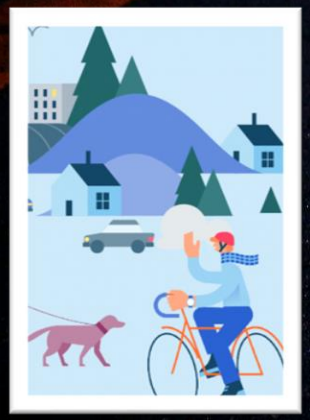
# OUR TAILORED EDUCATIONS, KEY-NOTES & WORKSHOPS RELATED TO THE TOPIC




HOW TO PLAN WINTERPROOF CITIES & SNOW STORAGES




FIX THE WINTER MAINTENANCE



HOW TO PLAN ACTIVE YEAR-ROUND CITIES?



ACTIVE MOBILITY, DATA & DECISION MAKING

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@CityMasterClass
navico.fi
masterclass.city

Want to stay tuned? Subscribe to our English newsletter at **masterclass.city**!

Winter Wizard

EEVA HUUHTANEN

Kick-ass well-being engineer

TIMO PERÄLÄ

Oracle of Oulu

PEKKA TAHKOLA

## THANK YOU! QUESTIONS?

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