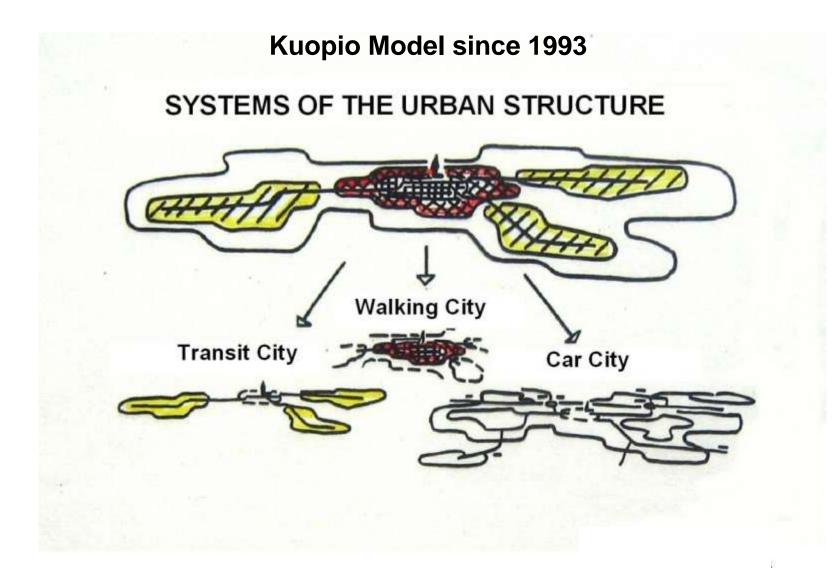
Transport and Health, Belfast, 17 October 2011



Kuopio: A model of Three Urban Fabrics promotes sustainable and healthy urban living

Leo Kosonen Architect Coordinator of Urban Projects

City of Kuopio Finland **Three urban fabrics**



KUOPIO Finland

Leo Kosonen 🕥 20.5.2007

Three urban fabrics

Kuopio Model since 1993

A practical comprehensive tool

for

analysis, understanding, communication, orientation and co-operation

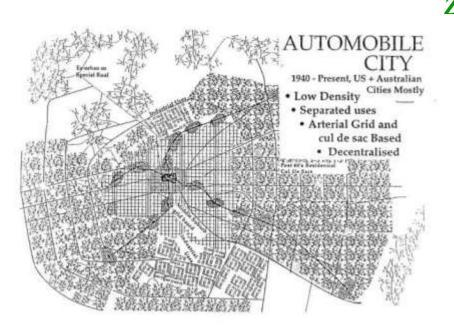
in

research, planning, implementation, maintenance and development



Three urban fabrics

Three Fabrics - Three Zones Walking- Transit- and Car Cities



Zones of a Car City

Zones of a Walkingand Transit City **SUSTAINABILITY**

CITICS

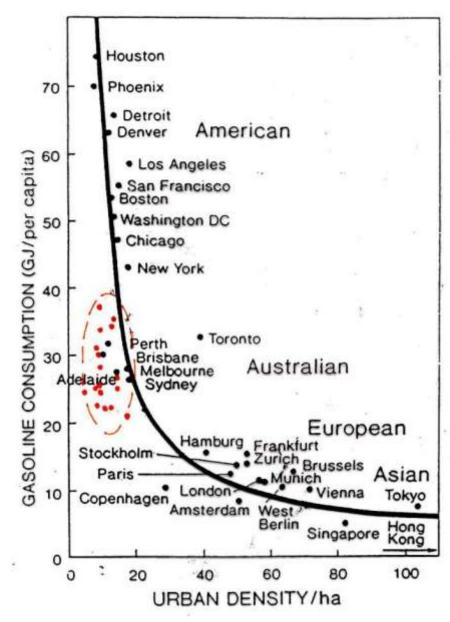
Overcoming

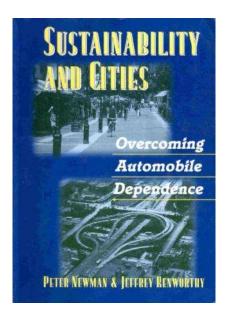
Automobile Dependence

24.9.2007

Leo Kosonen

Finnish cities





The red dots are Finnish Cities

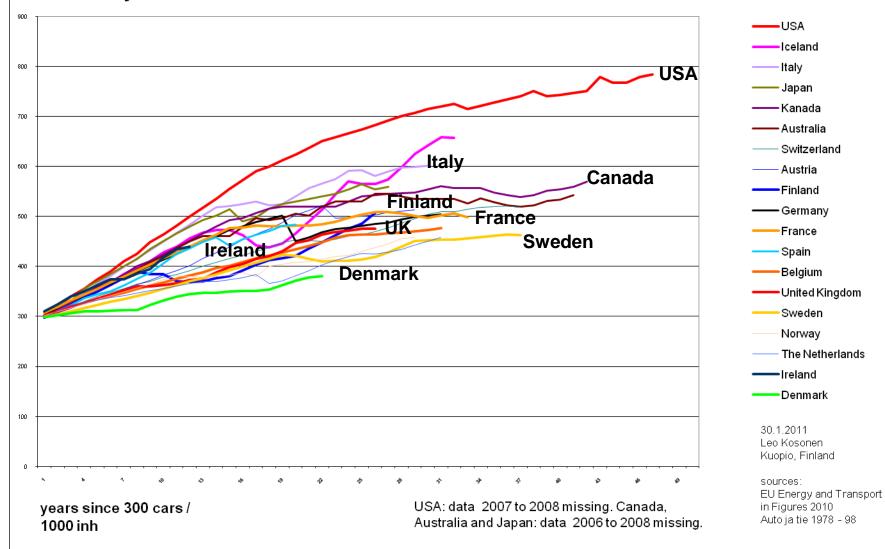
Finland is facing the period of Car Cities

Leo Kosonen

7.6.2005

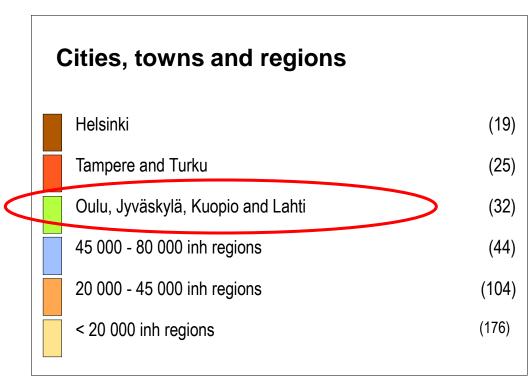
Levels of motorisation

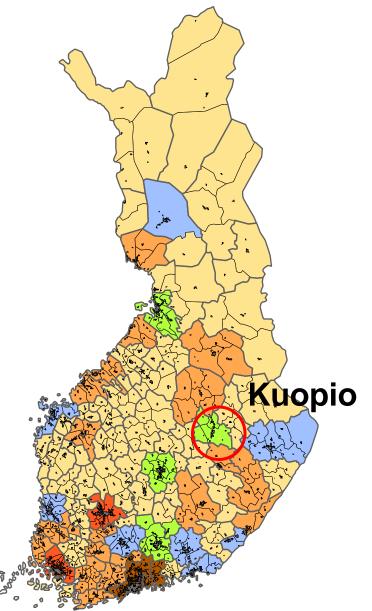
Car density of several countries since 300 cars /1000 inh





Finland





Kuopio



Compact small neighbourhoods

Network of green areas

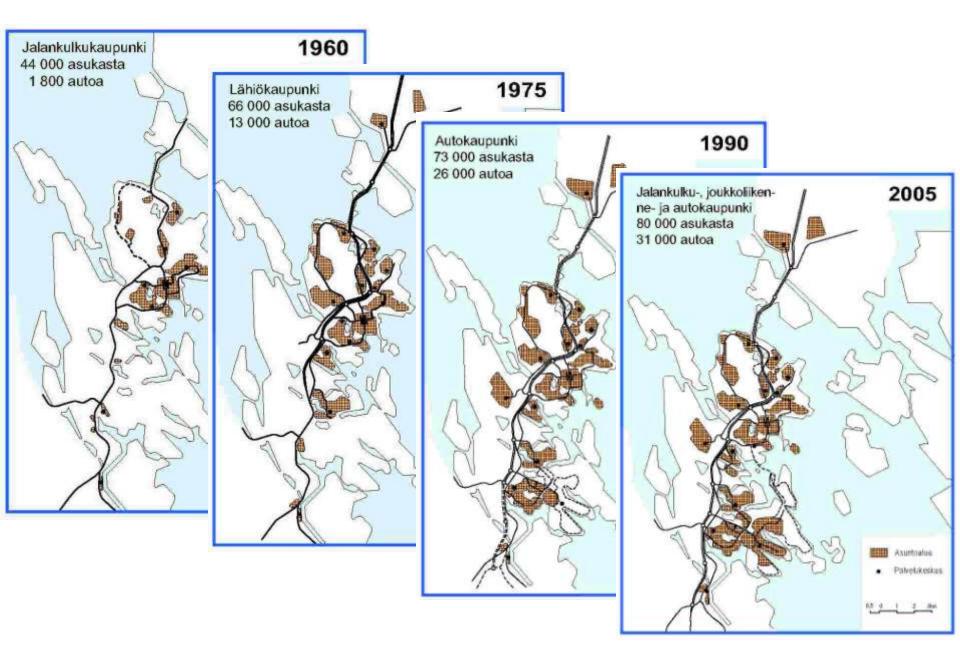
Compact Inner City













KUOPIO

Master Plan 2020

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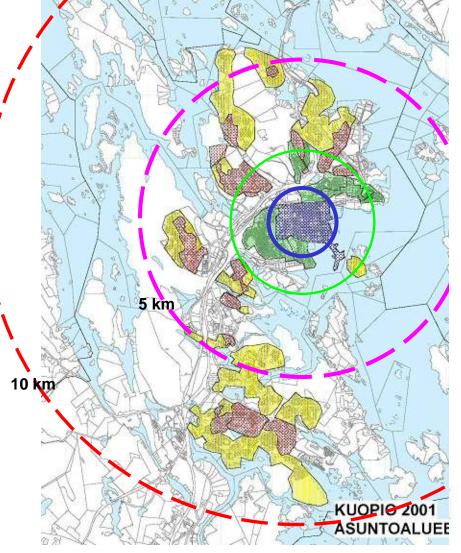
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Leo Kosonen 🞯 11.9.2007

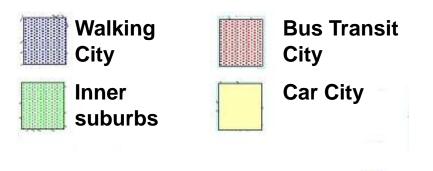
88

Walking- Transit – and Car City zones



70 000 inhabitants are living within cycling distance (5 km) from the city centre.

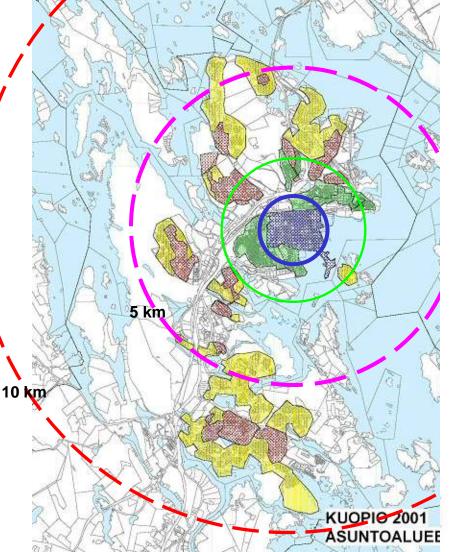
Housing structure



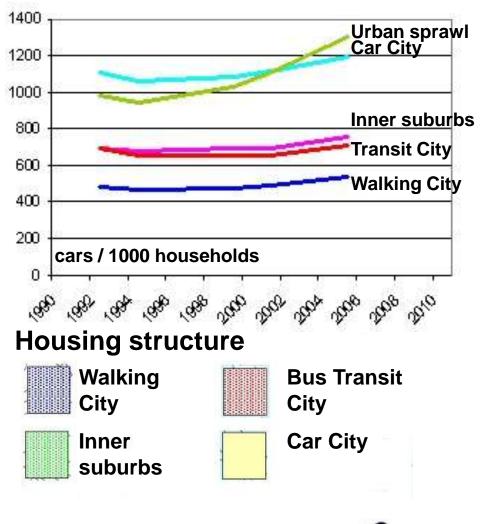
Leo Kosonen

20.5.2007

Walking- Transit – and Car City zones



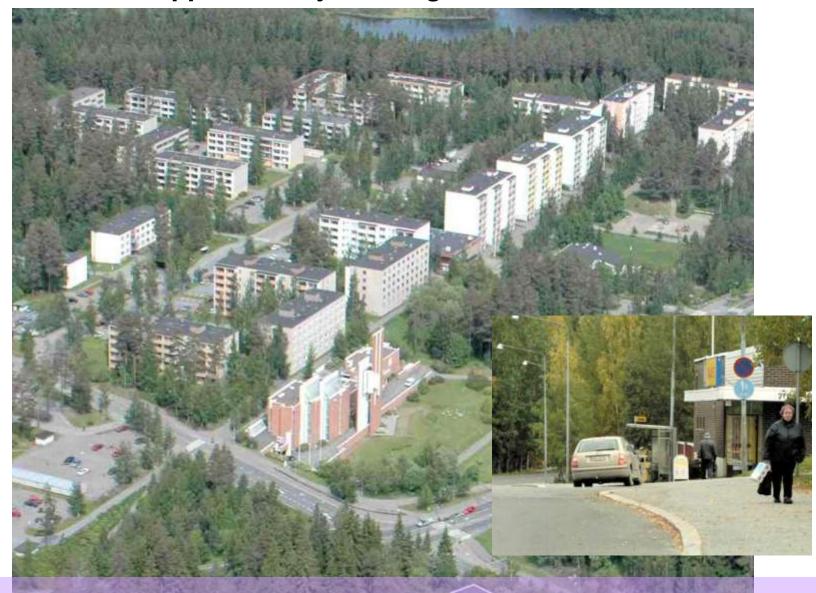
Car density 1992-2006

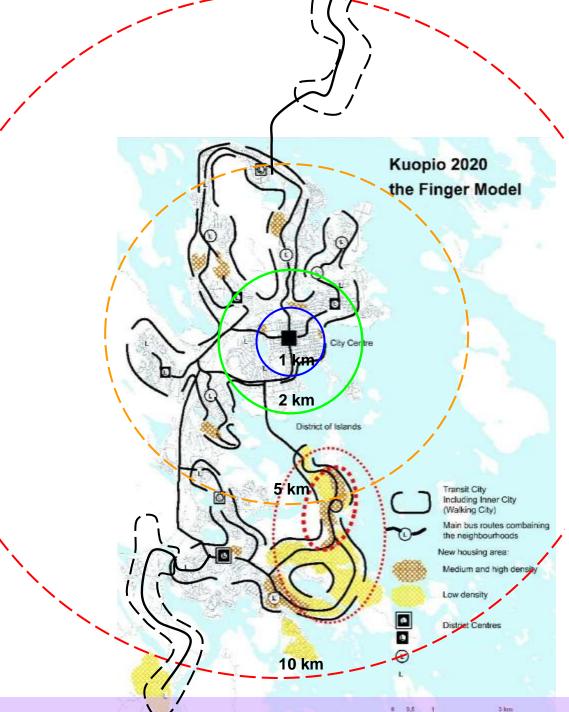


Leo Kosonen

20.5.2007

Bus-oriented neighbourhoods have needed renovation and supplementary housing construction





The Finger Model of Kuopio

Since 1993, the Centre, the Walking City and the fingers of the Transit City (orange colour) have had the major role in sustainable urban development

The fingers balance the growth and development of the Car City (yellow colour)

Leo Kosonen

.3.2010

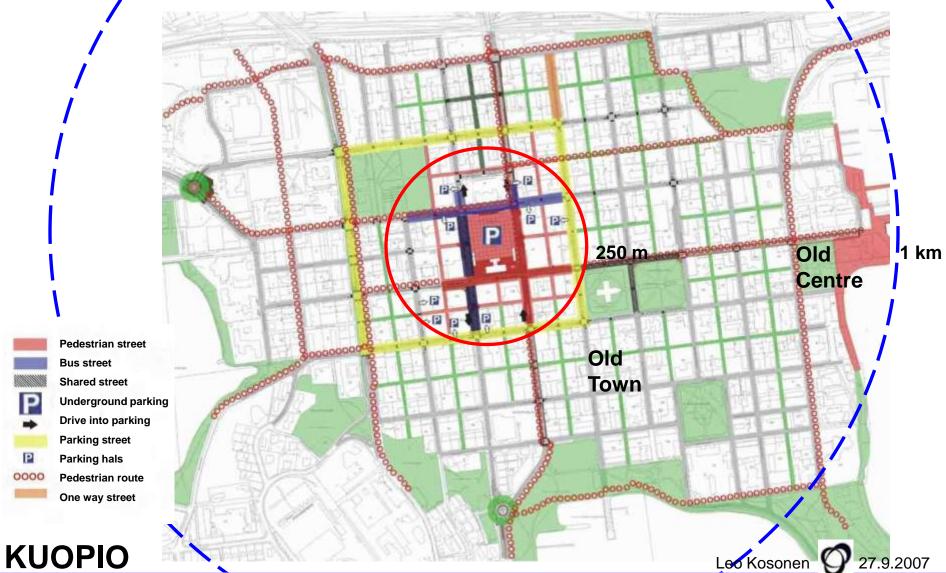
Extensive network of pedestrian allies around the pedestrian centre

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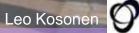








120 allies from the 18th century.



120 allies from the 18th century.

Now pedestrian streets, 60 allies renewed

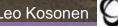
MPTOREST REPORT OF





Old Town

THINK





Renovated public spaces

11

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KUOPIO Finland

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New housing

2000 inh

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Finland

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Walking Guy

New courtyards

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KUOPIO Finland

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New courtyards



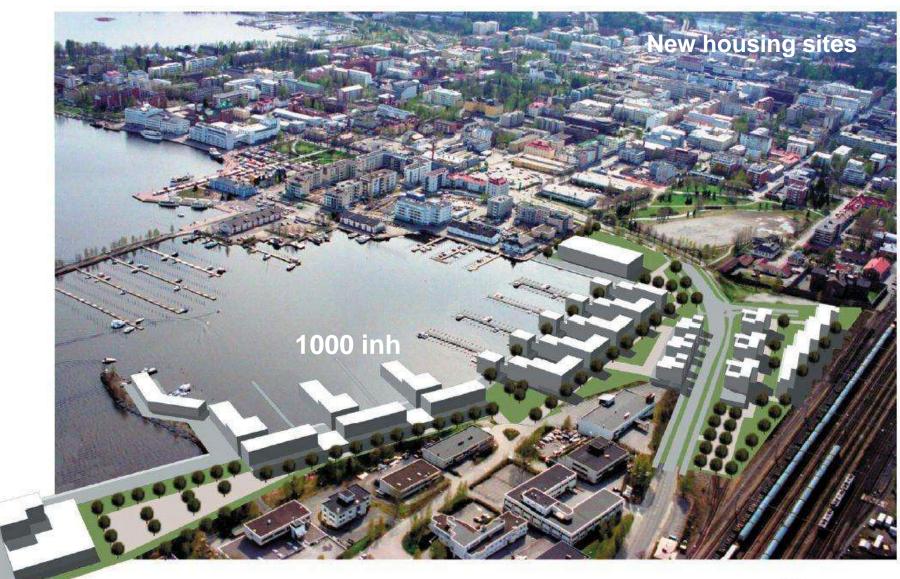


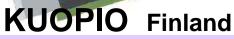




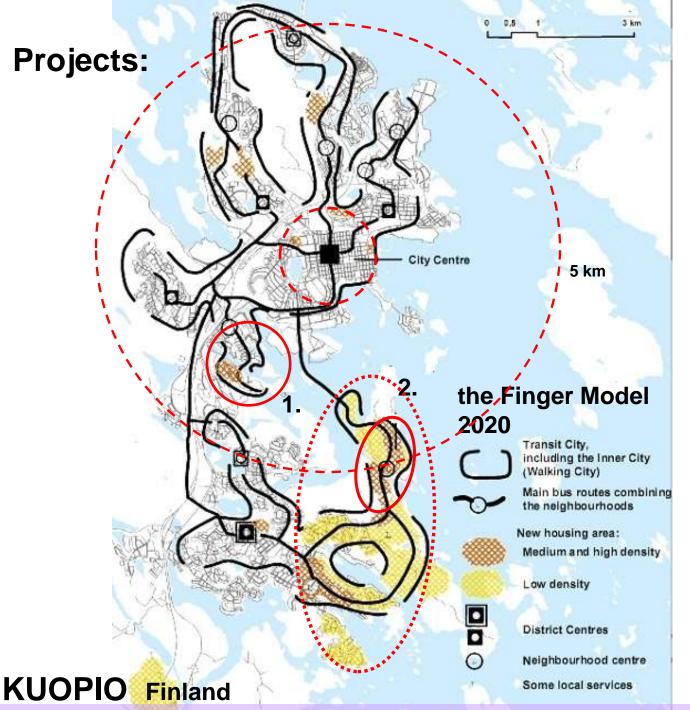
New public spaces









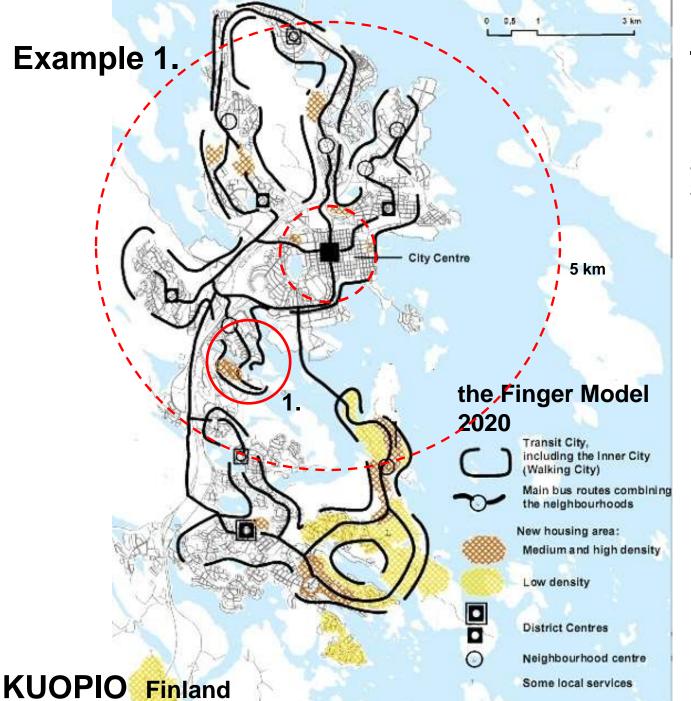


Transit City

3500 new housing units for 7000 inhabitants since 1995

New plans and area reservations for 5000 housing units





Transit City

Särkiniemi and Särkilahti

Leo Kosonen

12.2.2008

Särkiniemi neighbourhood project 1998-2003

Renovation of the old neighbourhood (2500 inh)

Transit City

Bus bridge

New supplementary housing project (1300 inh)







and the second

Särkiniemi neighbourhood project 1998-2003

Transit City

Särkiniemi



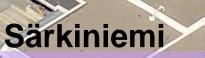
Leo Kosonen

Särkiniemi neighbourhood project 1998-2003

Transit City

4.8.2010

Leo Kosonen



A BE PRO

Särkilahti, a bus-oriented neighbourhood

Bus-bridge

Stop

150033

Transit City

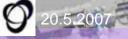
Diversity of housing units

Shop

Square bus

sto

Särkilahti



bus

stop





Trànsit City Särkilahti Leo Kosonen



Transit City

Kuopio Särkilahden silta

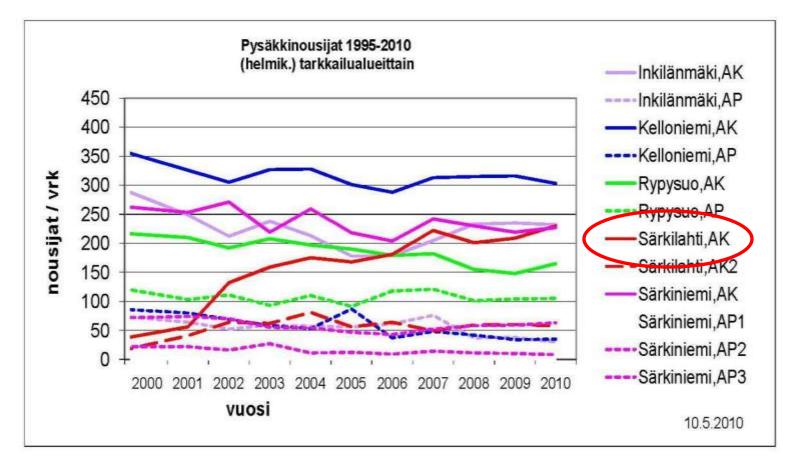
Leo Kosonen 🧭 2.4.2009

Särkilahti

Bus users / day 2001-2010

Transit City

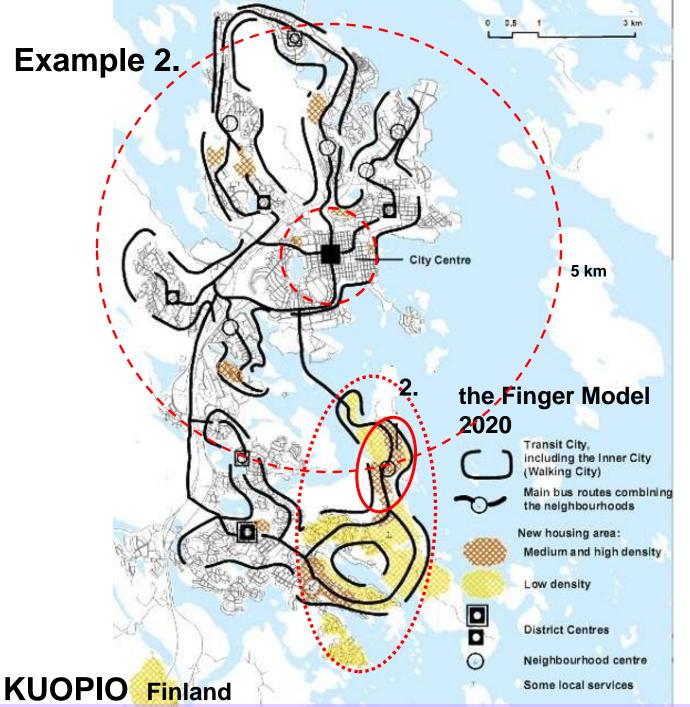
Number of bus users is higher than in old neighbourhoods



Särkilahti

Leo Kosonen





Transit City

District of Islands

Combination of transit- and car city 14 000 inhabitants

Leo Kosonen

12.2.2008

PETONEN

Street of Islands

Lehtoniemi Bus-oriented neighbourhood



KEILANKANAVA

District of Islands 14 000 inhabitants RAUTANIEM

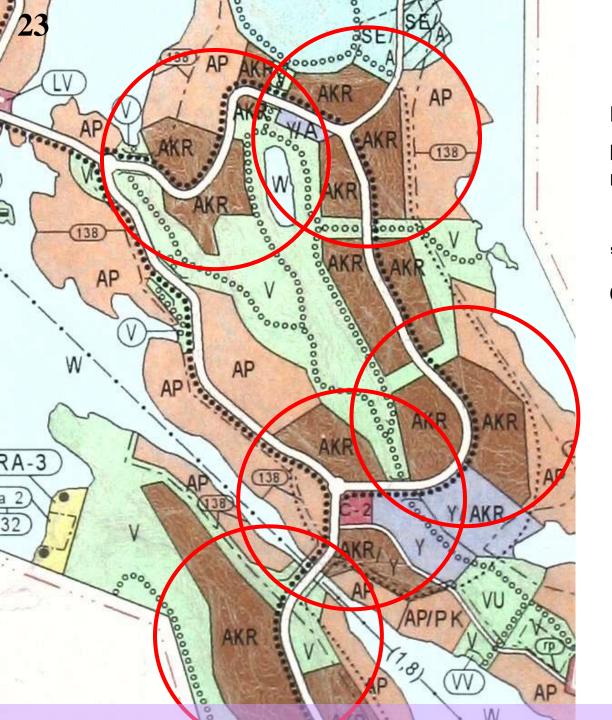
SAVOLANNIEMI

PIRTTINIEMI

111

Leo Kosonen





Lehtoniemi

bus-oriented neighbourhood

"A String of Pearls"6000 inhabitants



boulders

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KUOPIO Finland

paula roles a line home, the has job at the university in the even the line to go sking to the ize.

Production of a Declary Software available of the second s

District of Islands

Lehtoniemi

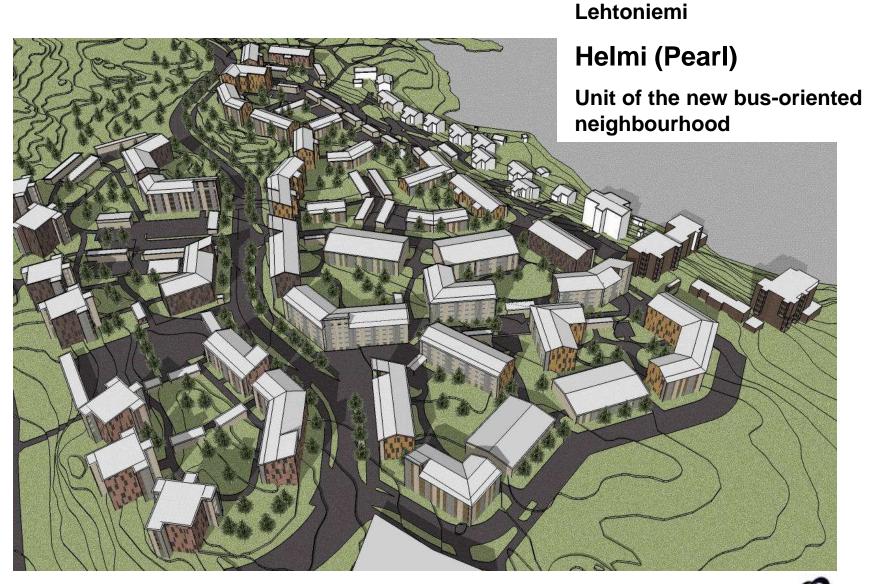


Europan 8 competition " A Bus-Oriented Pearl"

and the second s

Three runner-ups

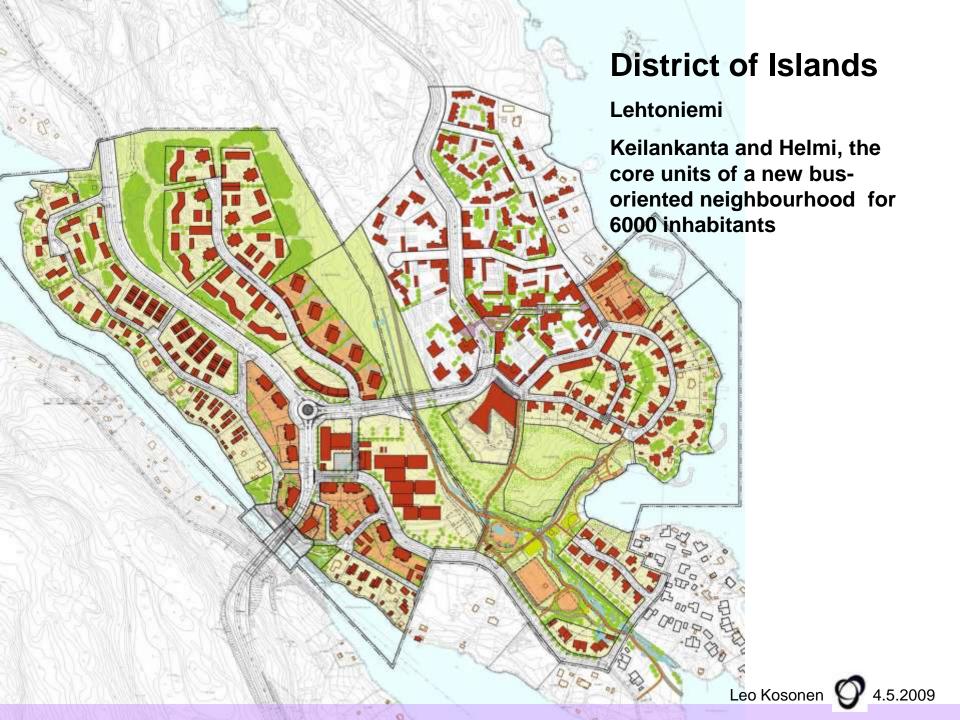






National Housing Fair 2010





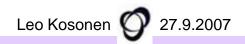


Keilankanta

New centre

Small compact pedestrian centre





Keilankanta

New centre is under construction

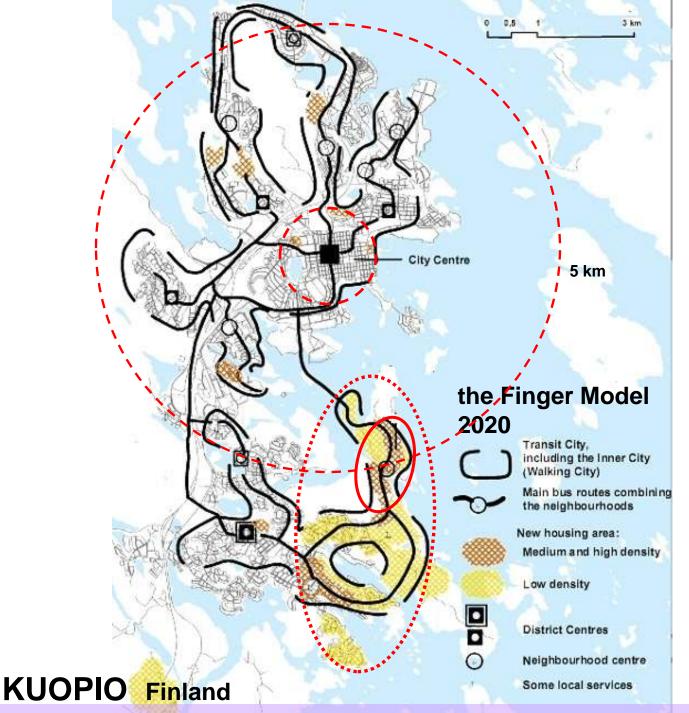
Leo Kosonen



Keilan kanta

New canal Plan of Art

Hannu Miettinen



Transit City and Car City

District of Islands

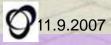
Symbiosis of transitand car city 14 000 inhabitants



Transit City and Car City

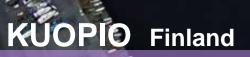
District of Islands

KUOPIO Finland



Transit City and Car City

District of Islands





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KESKUSTA

PETONEN

Transit- and Car-City

Street of of Islands

Street of Islands

Lehtoniemi Bus-oriented neighbourhood



KEILANKANAVA

District of Islands 14 000 inhabitants

RAUTANIEM

SAVOLANNIEMI

PIRTTINIEM

Leo Kosonen



Street of Islands

First draft 1989 Decisions 2002

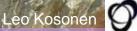
Street of Islands is a landscape street for slow driving



Transit- and Car City Street of Islands

AND TO A

Slow driving, 40 km/t, materials relate to local history of wood industry

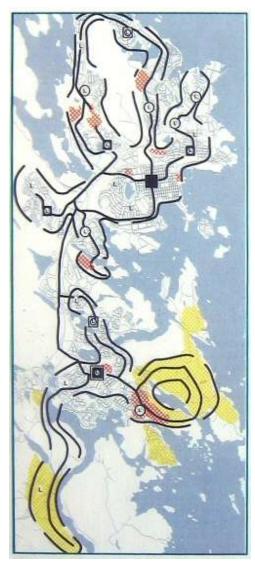


24.6.2009

Transit- and Car City Street of Islands

Active travel

Alt 0+ / Car City

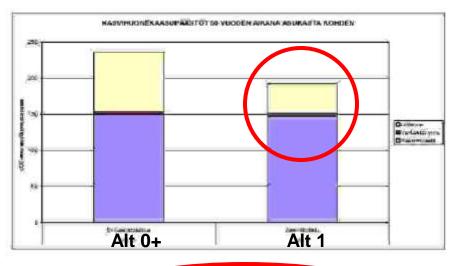


KUOPIO Finland

Alt 1 / Transit City

Transit- and Car City Street of Islands

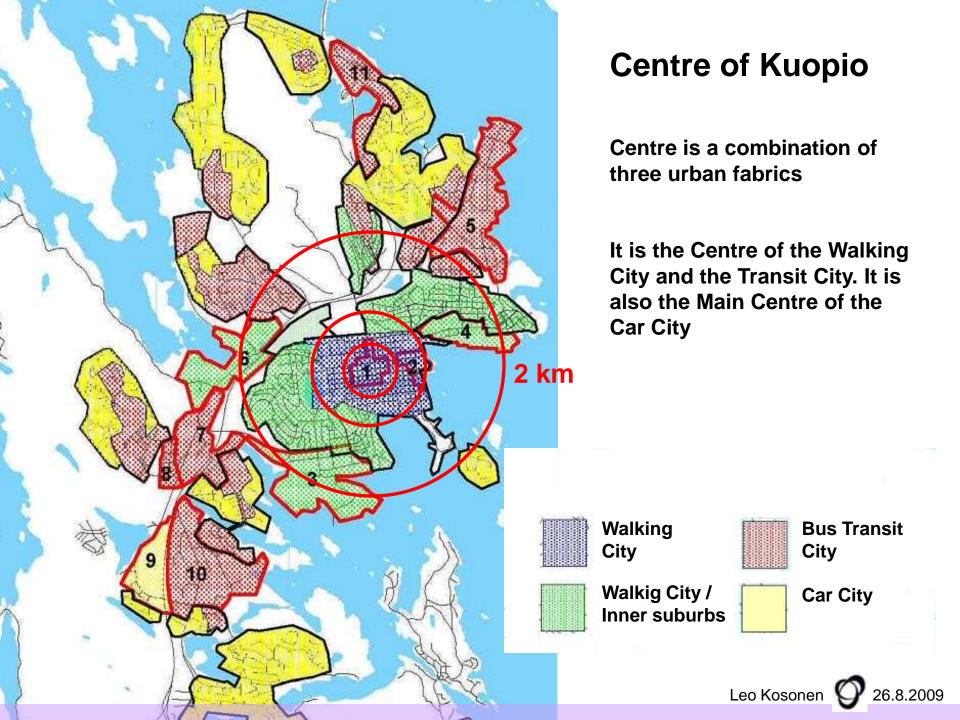
Alternative to car city development – reduction of gas house emissions



Gashouse emissions and costs of transportation are 50 % lower (in 50 years)

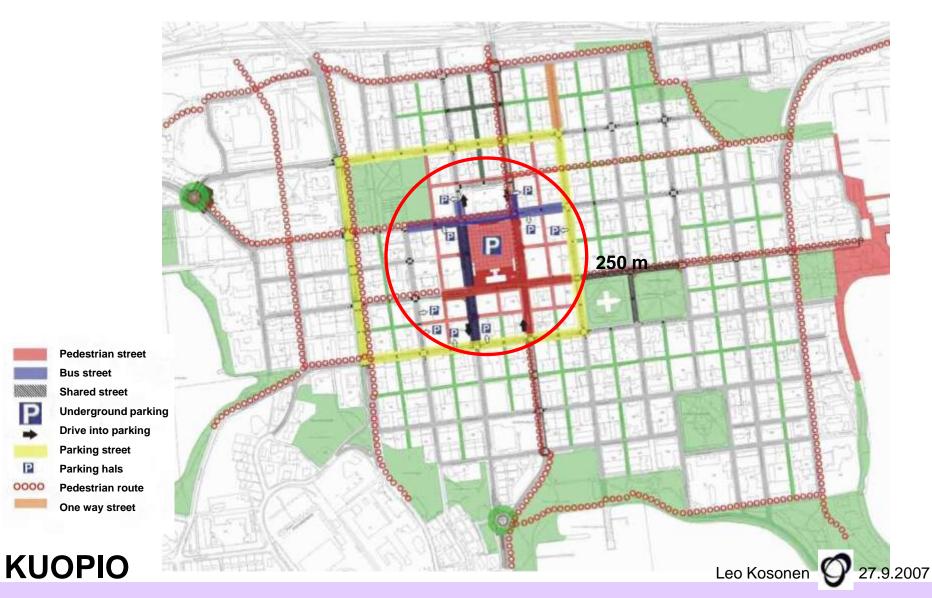
Leo Kosonen

12.2.2008



Pedestrian Centre

The core of the Walking City



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Kuopio 2013

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Redestrian Centre of two new pedestrian streets, the Market Square and 23 blocs is under construction

250 m

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OPL VMPÄRISTÖSI II INNITEI MA 1/1000

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27 05 2010 Arkkitehtitoimisto Mikko Heikkilä Sito Ov 🚍 SITE

VAHTIVUOR

City Centre

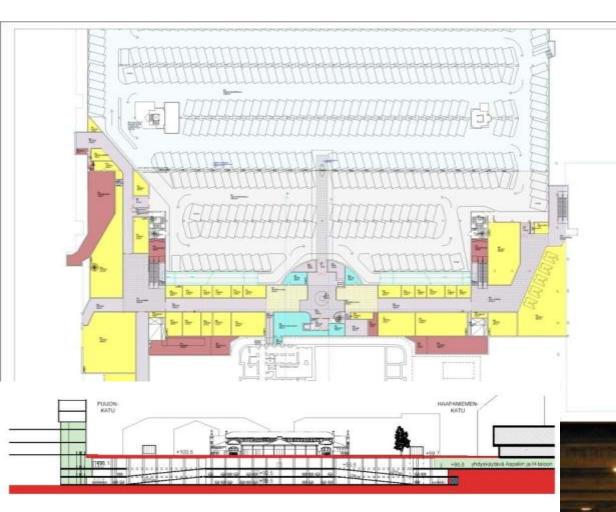
mos: AF ... Mar Merer

Biggest commercial centre of Eastern Finland

KUOPIO Finland

200

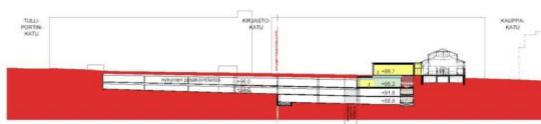




City Centre

Parking garage for 700 cars was constructed under the Market Sguare in 1991

Extension for 600 cars is now under construction



KUOPIO Finland



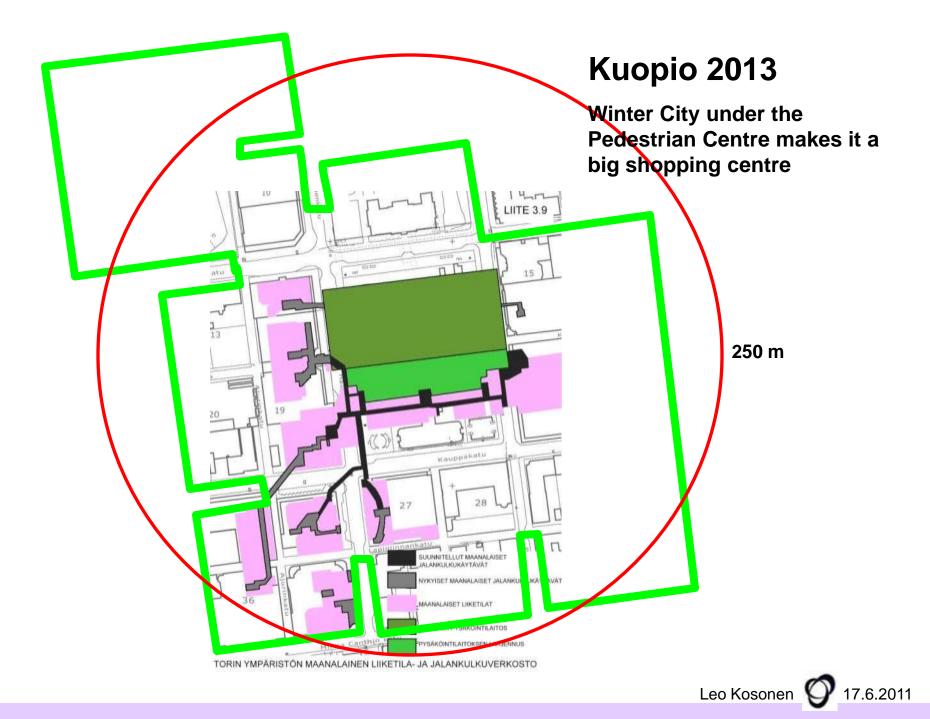


Kuopio 2013

New shopping corridor connects

The shopping corridor will link surrounding shopping areas, businesses and parking facilities as a functioning entity.





Kuopio 2013

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Conveniently accessible by foot, bicycle, bus and car,

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17.6.2011

Over 3000 parking spaces available

250 m

Leo Kosonen

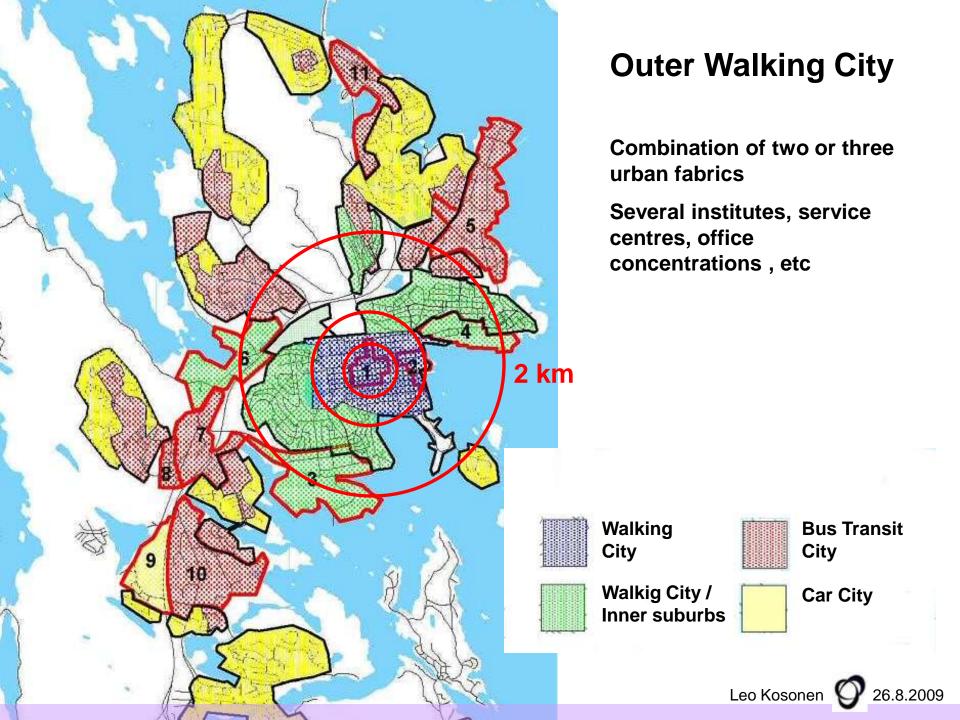




KAIKKI KOOSSA.

FINLAND'S BEST PEDESTRIAN CENTRE 2013





Outer Walking City

Walking- and transit city fabrics need to be promoted



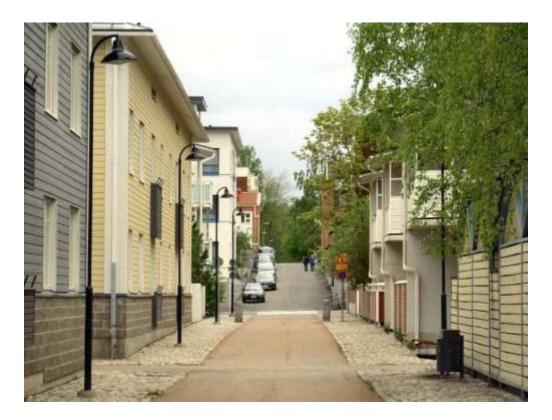


Car City

The share of the investments is too big



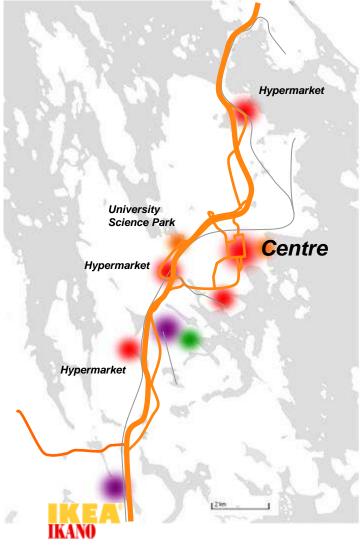
Leo Kosonen



There is still a lot of work to be done

and chalences like IKEA-Ikano shoping centre, which is under construction

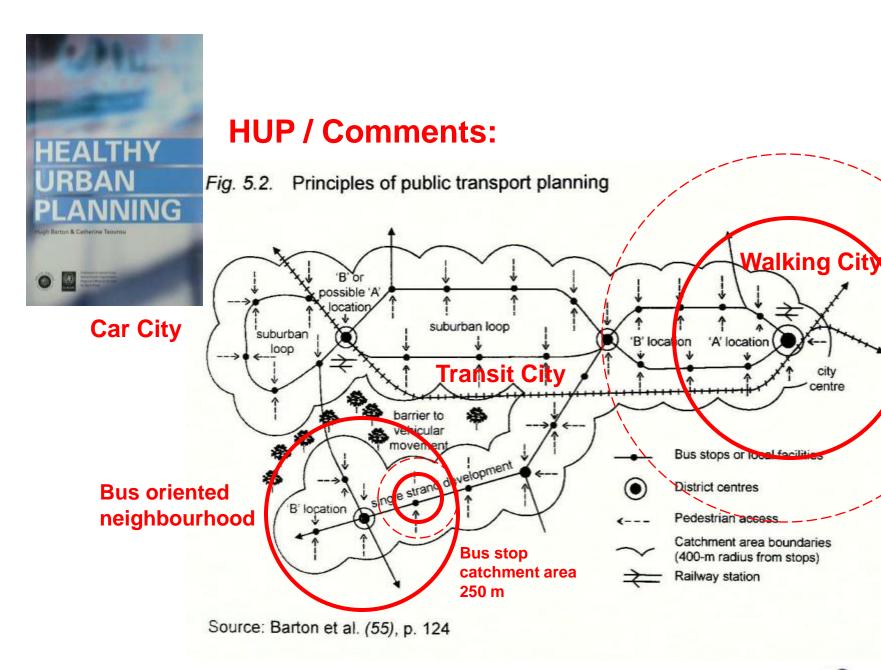
Healthy Kuopio





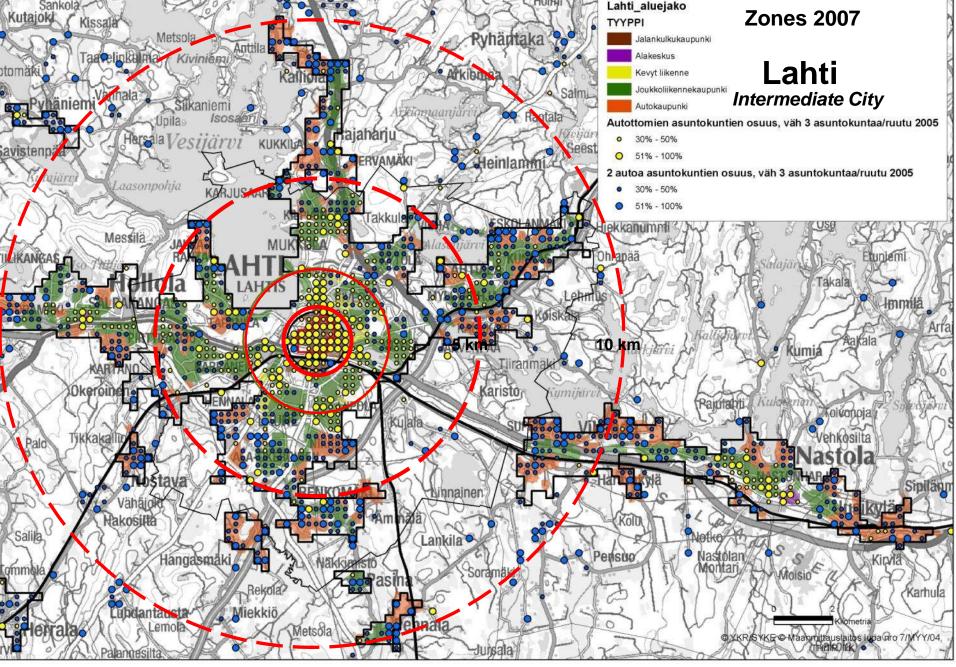
Fingers of the Walking- and Transit City promote healthy objectives

Kuopio			
Healthy objectives	Inner City /	Urban fingers	Urban sprawl /
28.8.2006 / Leo Kosonen	Walking City	Transit City	Car City
 opportunity for healthy exersice 	good	exelent	good
• social cohesion	fair	fair	segrecative
• equity	yes	yes	no
 access to employment 	yes	yes	by car only
and facilities			
• road safety	fair	good	problems / cars
 an attractive environment 	good	good	good
acceptable noise levels	fair	good	problems / cars
good air quality	fair	good	problems / cars
 climate stability 	yes	yes	no / cars



Leo Kosonen 20.5.2007

city centre



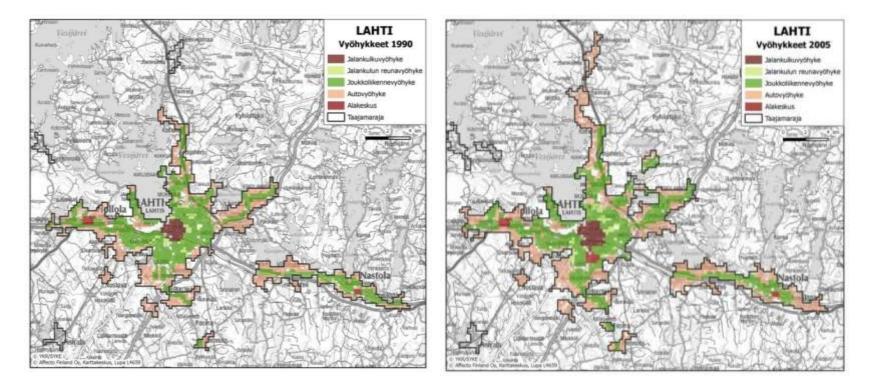
Mika Ristimäki / Finnish Environment Institute (SYKE)

Leo Kosonen 띩

10.6.2007

Zones 1990 and 2005

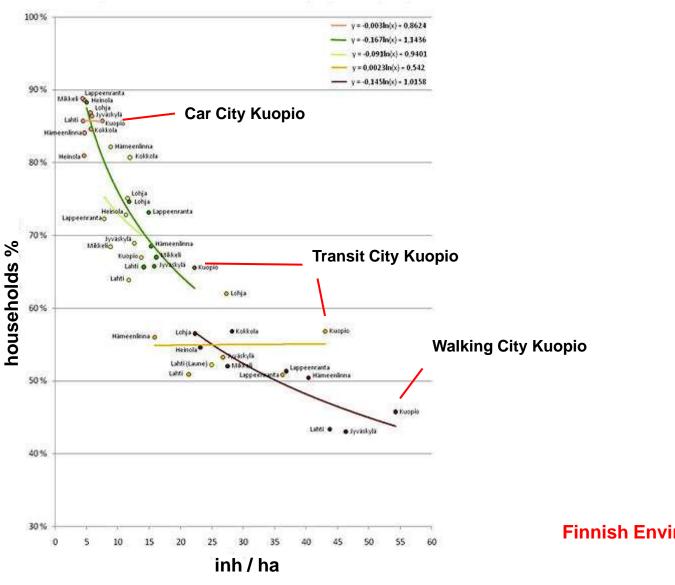
- Yhdyskuntarakenteen kehityssuuntien analyysi.
- Liikkumisen tarjontavyöhykkeet vuosilta 1990 ja 2005
- YKR-profiilit 1985-2007
- Monikeskuksisuus, alakeskusluokat
- Kaupunkiseutukohtaiset analyysit.



8.10.2010 Mika Ristimäki Finnish Environment Institute (SYKE)



Car ownership of households (%) / population density of the zones



8.10.2010 Mika Ristimäki Finnish Environment Institute (SYKE)



The Urban Zone research project, conducted over the last two years by the Finnish Environment Institute (SYKE), Tampere University of Technology and Aalto University, created a separate division into zones of the Helsinki metropolitan area. In the project, the urban form zoning was linked to data related to traveldemand, land use and the transport system.

> Travel Related Zones of the Urban Form – Case Peri-Urban Copenhagen 19 – 22 October, 2010 Mika Ristimäki, Hanna Kalenoja, Maija Tiitu

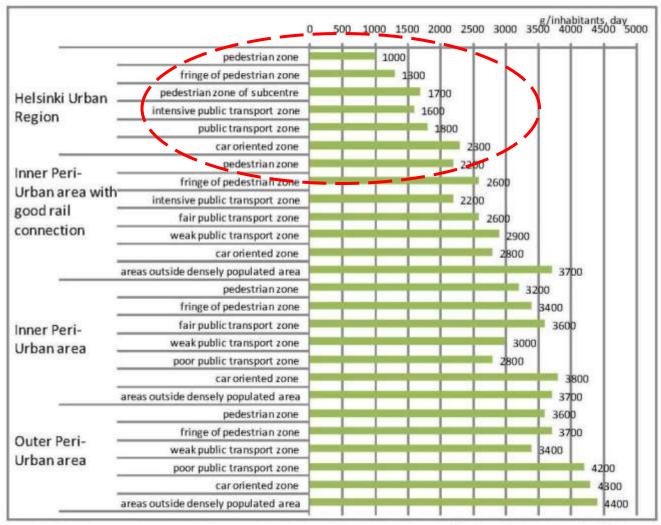
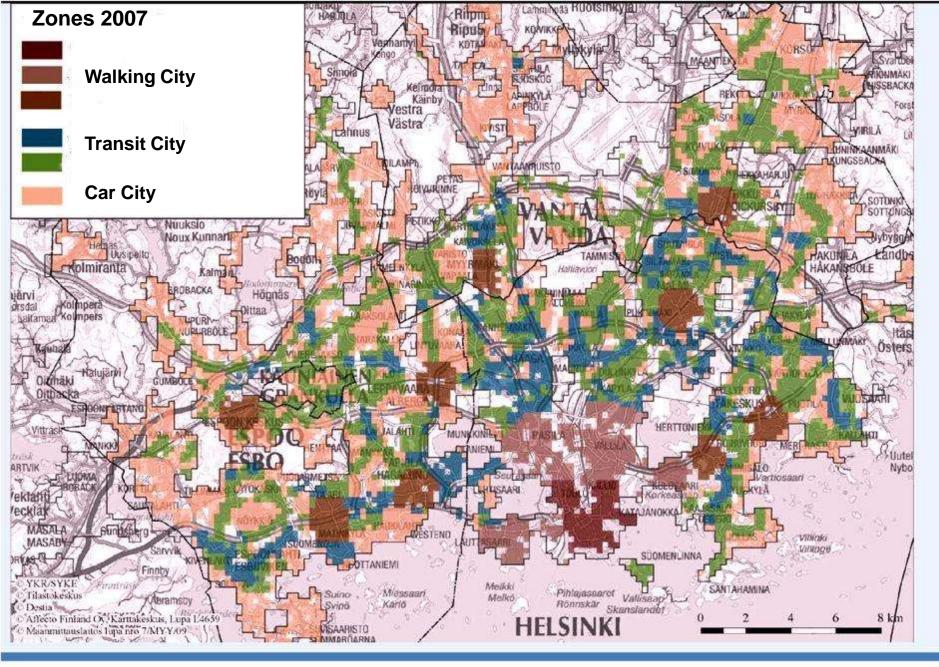


Figure 4. Average carbon dioxide emissions caused by passenger traffic by inhabitants of different zones in Uusimaa Region (grams per person per day). (SYKE, YKR, TUT, VTT Lipasto, YTV)

Travel Related Zones of the Urban Form – Case Peri-Urban

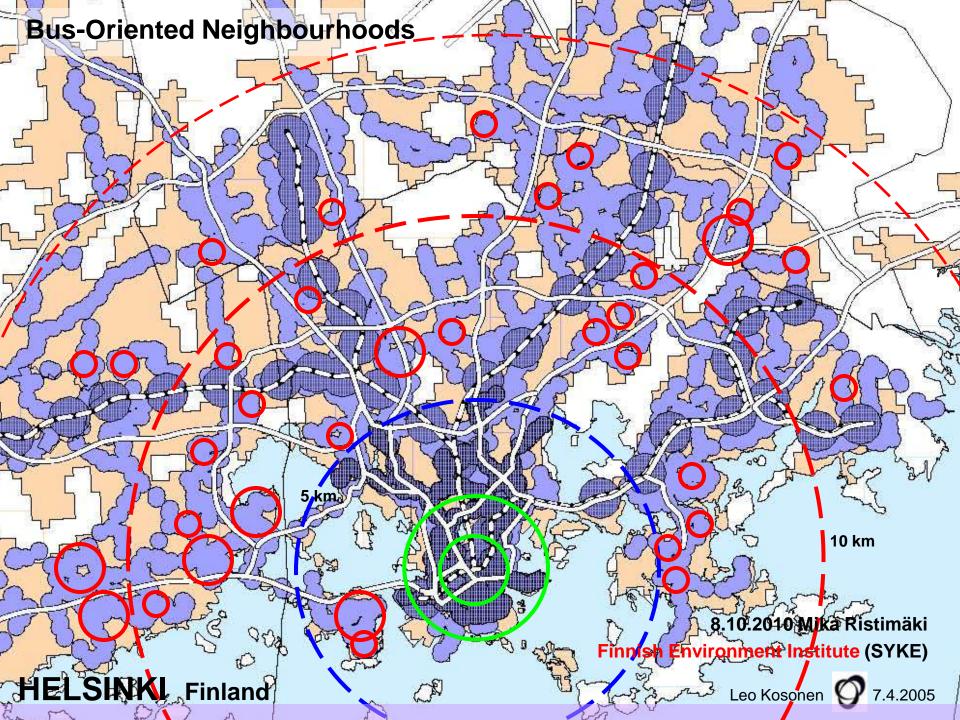
Copenhagen 19 – 22 October, 2010 Mika Ristimäki, Hanna Kalenoja, Maija Tiitu



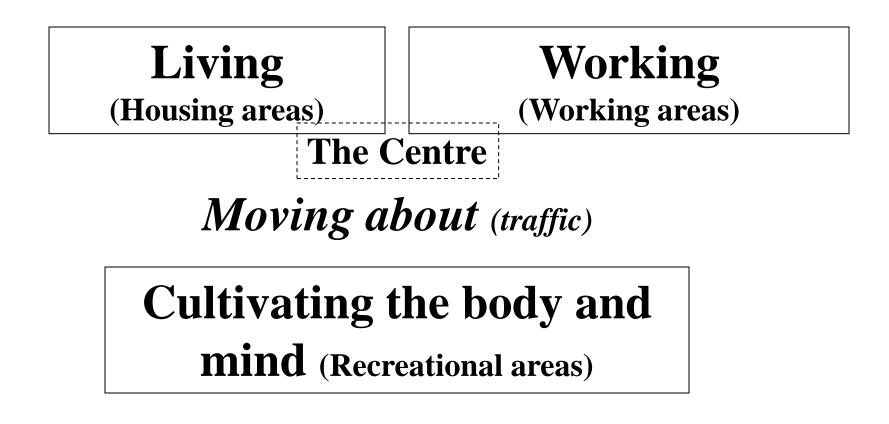
Finnish Environment Institute (SYKE)

Lähde: SYKE -YKR / TTY/ TKK Urban Zonehanke

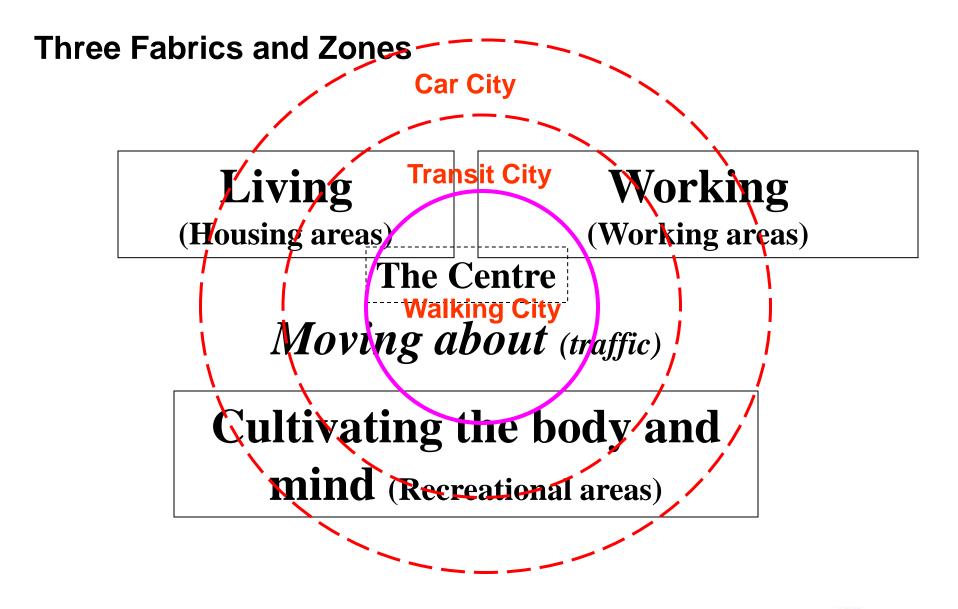




The idea of the Modern City







Leo Kosonen 🕥 26.1.2006

New city patterns:

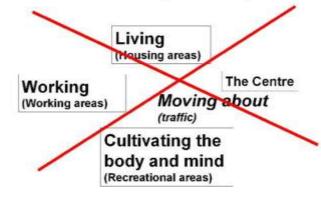
Sustainable and Healthy City

Walking- Transit- and Car City

Modern City

Traditional City

The idea of the Modern City is not valid any more







Zones:

SUSTAINABLE INNER ZONES:

24

2+

The urban fabric of diversity and alternatives

- the Inner City (the Walking City)
- the suburbs with good public transport (the Transit City and parts of the Car City) / 1

24

Leo Kosonen

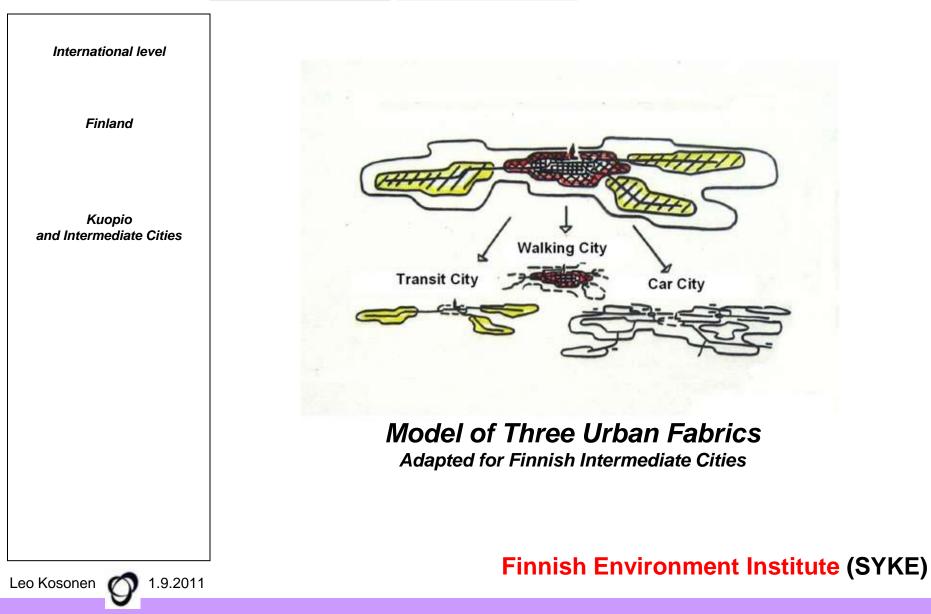
24.9.2007

OUTER ZONE (2+): Areas with only one option (car dependency)

2+

- Car dependent parts of the Car City

Theory	General	Walking City	Transit City	Car City
Facts	General	Walking City	Transit City	Car City
Challenge	General	Walking City	Transit City	Car City



Theory	General	Walking City	Transit City	Car City
Facts	General	Walking City	Transit City	Car City
Challenge	General	Walking City	Transit City	Car City

International level

Finland

Kuopio and Intermediate Cities

Leo Kosonen 🛛

1.9.2011

International conference, October 2013 in Helsinki, Finland

Model of Three Urban Fabrics

Adapted for Finnish Intermediate Cities

Finnish Environment Institute (SYKE)