

Relations between the built environment and physical activity and health *- How can there be made use of us?*

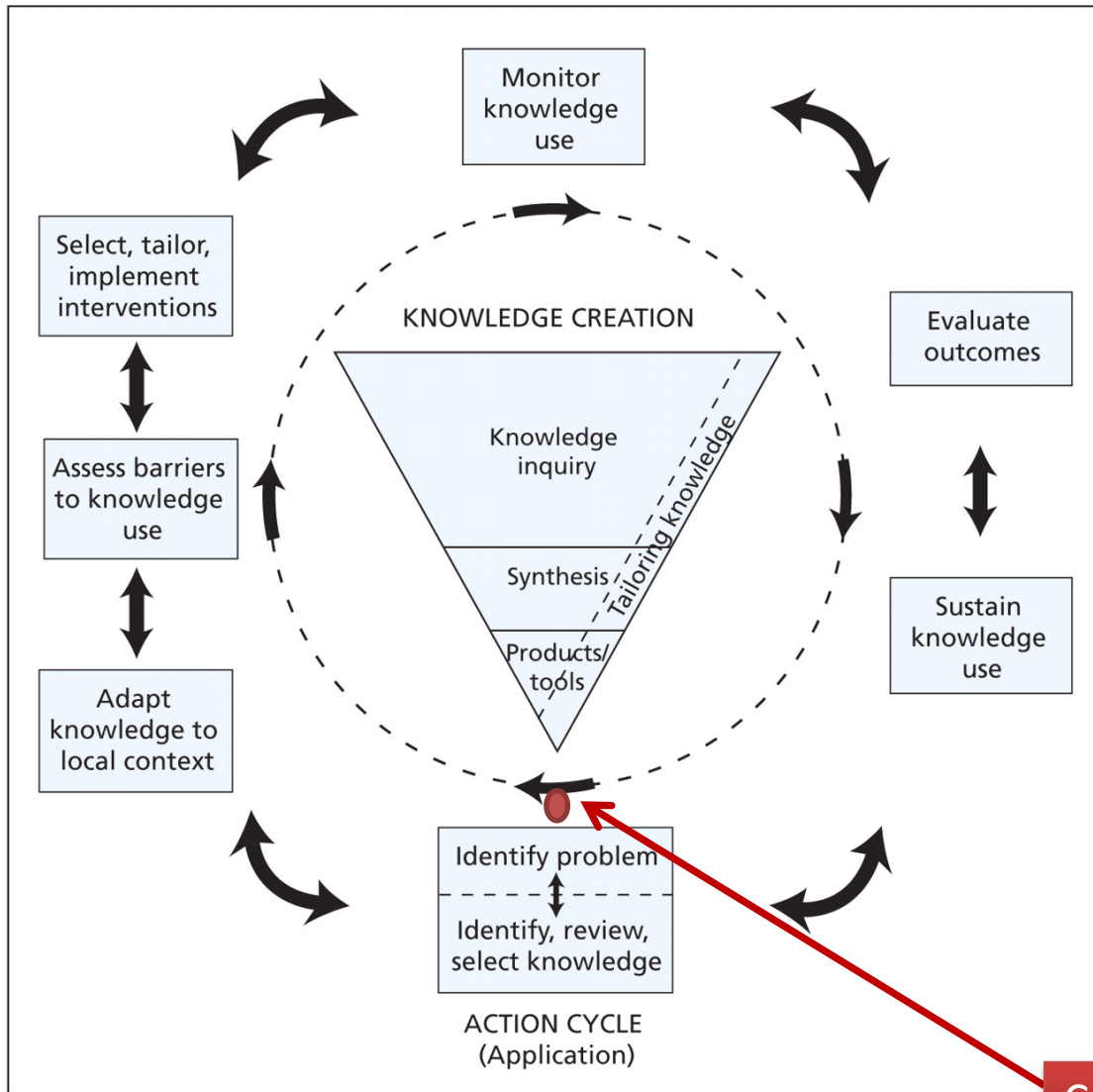
Conference:
Aktivitets- og sundhedsfremmende fysiske miljøer

1 September 2016

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Head of Research Unit for Active Living
Department of Sports Science and Clinical Biomechanics
University of Southern Denmark



Knowledge-to-action cycle



Knowledge Funnel

The process through which knowledge is refined and tailored to end-users

Action Cycle

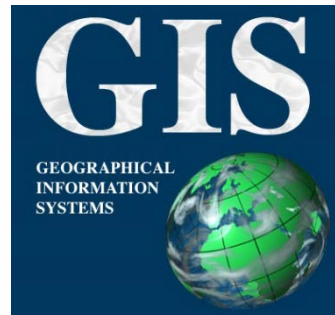
The cycle represents 7 phases that are needed for application.

Cycle starting point

Active Living Research

What have we accomplished?

Developed new study designs, methods and analyses
Using Accelerometers, Global Positioning Systems, Geographic Information System, E-surveys, Travel- and Behavior logs, Observation, Interviewing, Participation



surveyXact®

Hvilken karakter vil du give SurveyXacts nye temaer?

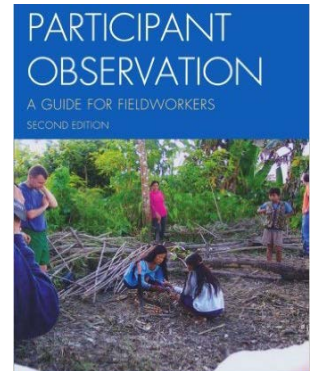
	Rigtig dårlig	Dårlig	Hverken eller	God	Rigtig god
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Classic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zebra	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



SOPLAY

means

System for Observing Play and Leisure Activity in Youth



Mixed-methods analytic approach



SDU Active Living Research Team



Moveability analyses based on Geographic Information Systems (GIS)

- Aim
 - Using GIS data to access the settings for Active Living

Factors

Residential density

Land use mix

Infrastructure

Urban recreational areas

Aesthetics

Perceived safety

Variables in GIS

number of people living in a neighborhood

mix of residential, commercial, industrial and institutional buildings

connectivity and quality of sidewalks, paths, roads and number of intersections, public transport stops

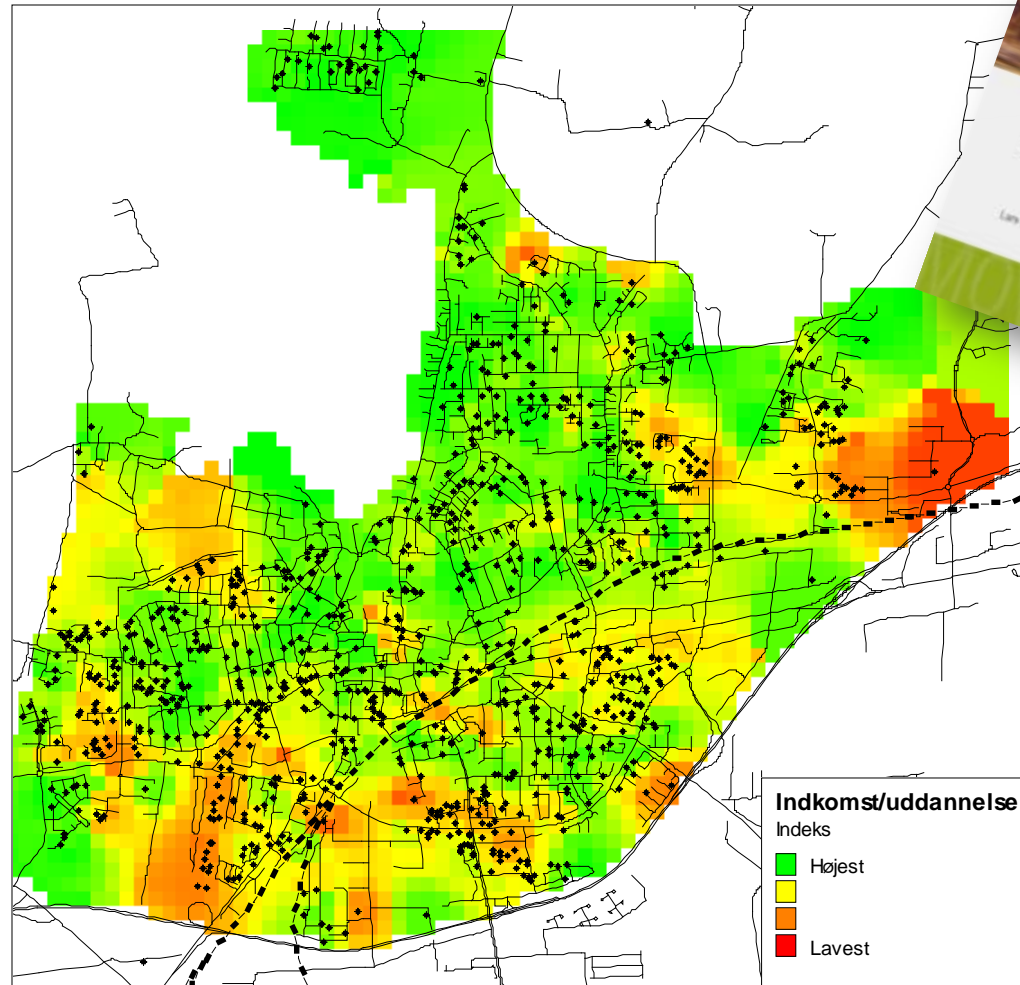
number of parks, urban green areas, natural resorts

architecture, planting, noise, pollution

traffic, crime, lighting,

Moveability analyses in Roskilde

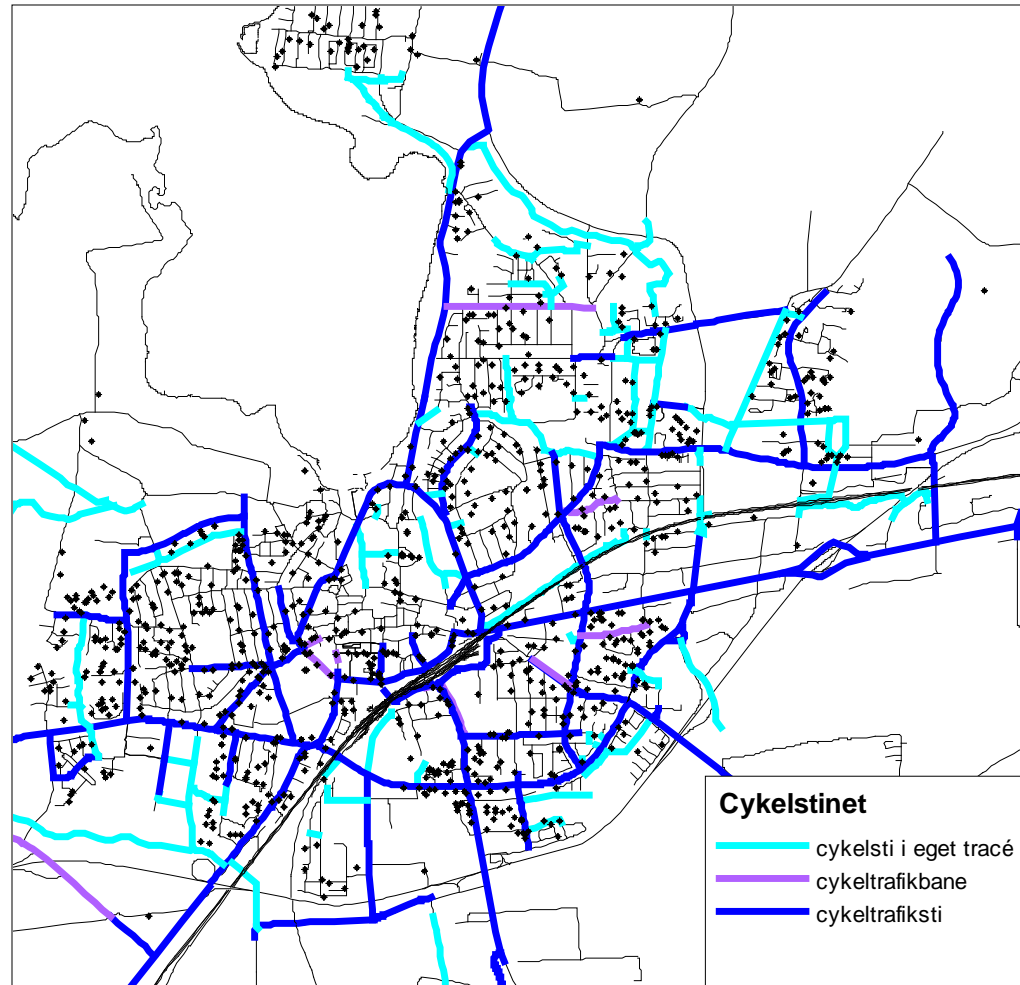
Socio- economic
distribution
(n= 961)



Source: Breum Christiasen and Troelsen (2008)

Moveability analyses in Roskilde

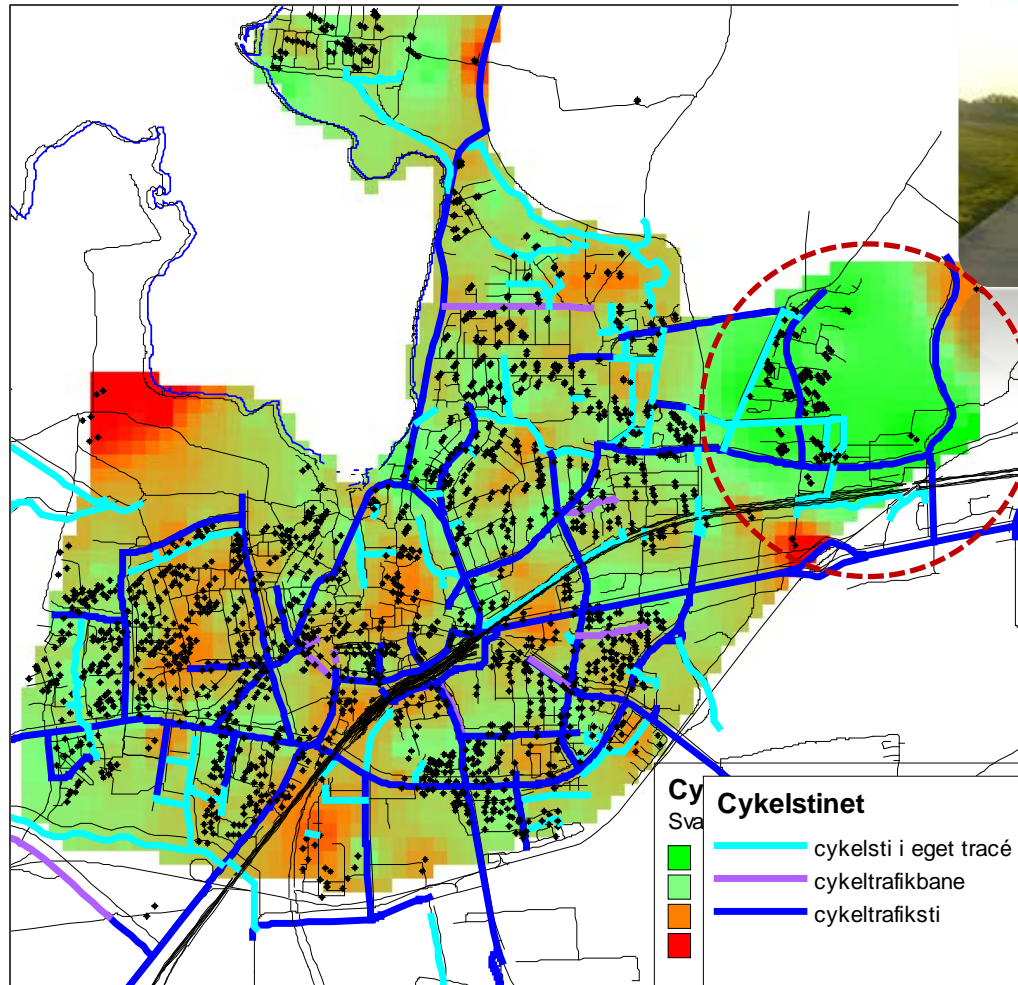
Cycle
path connectivity



Source: Breum Christiasen and Troelsen (2008)

Moveability analyses in Roskilde

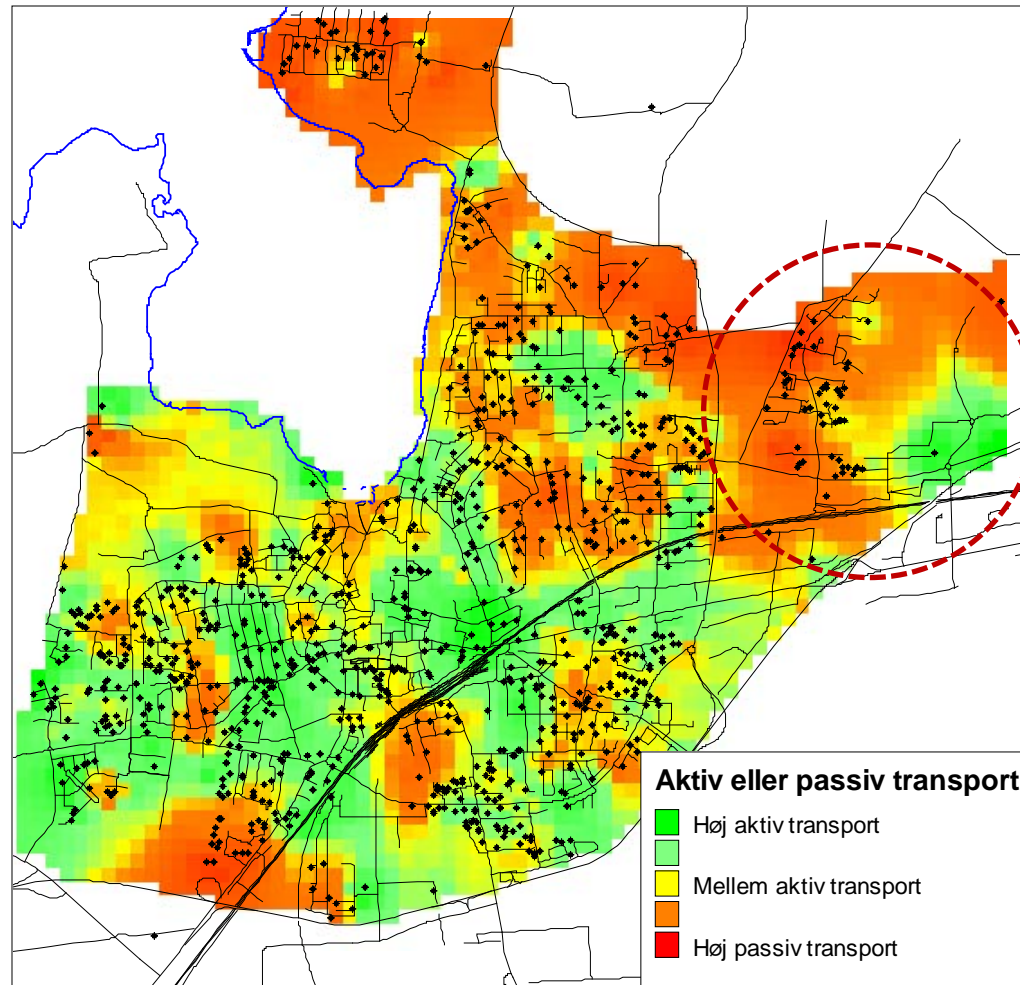
State of repair



Source: Breum Christiasen and Troelsen (2008)

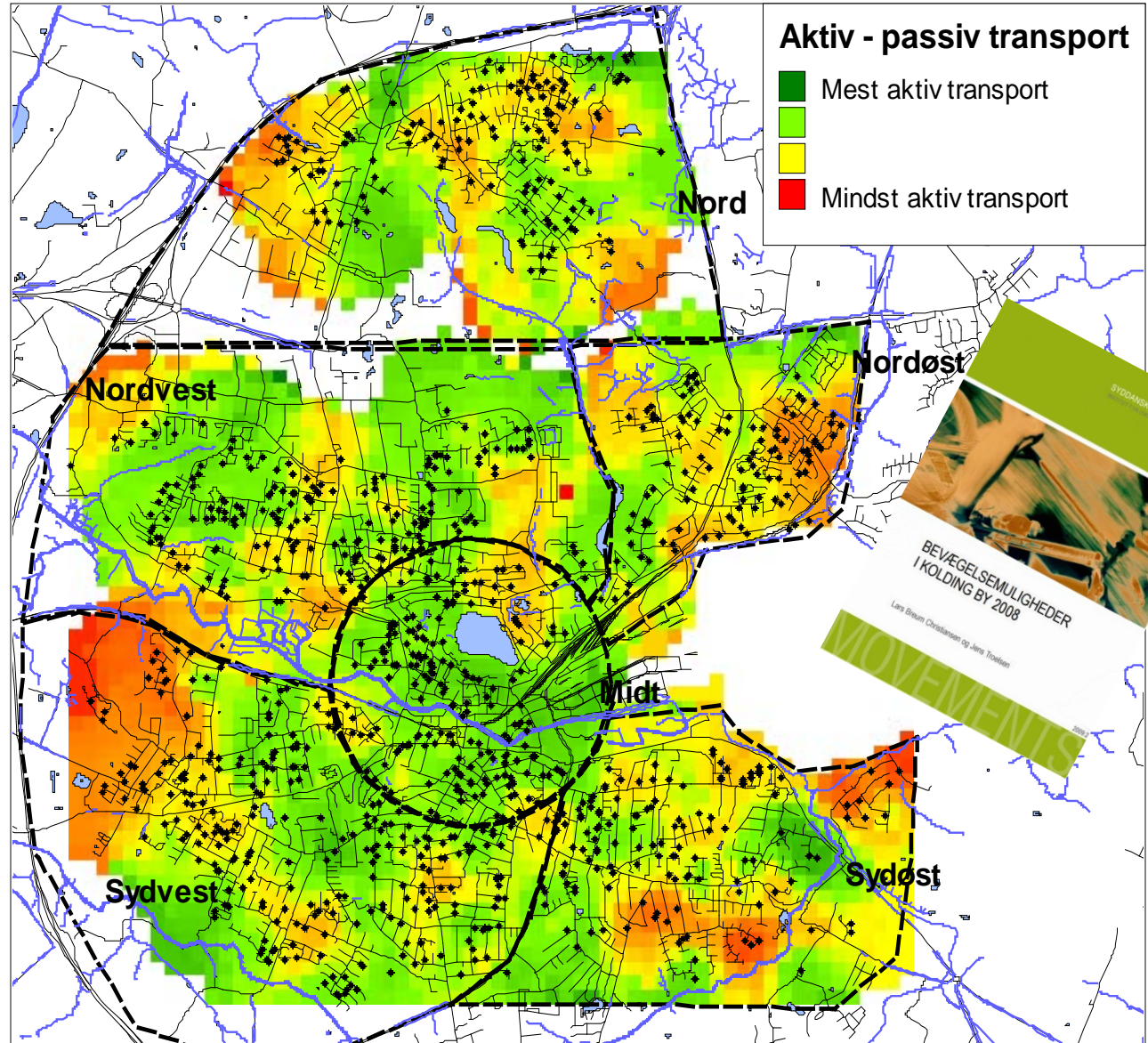
Moveability analyses in Roskilde

Active or passive
transportation



Source: Breum Christiasen and Troelsen (2008)

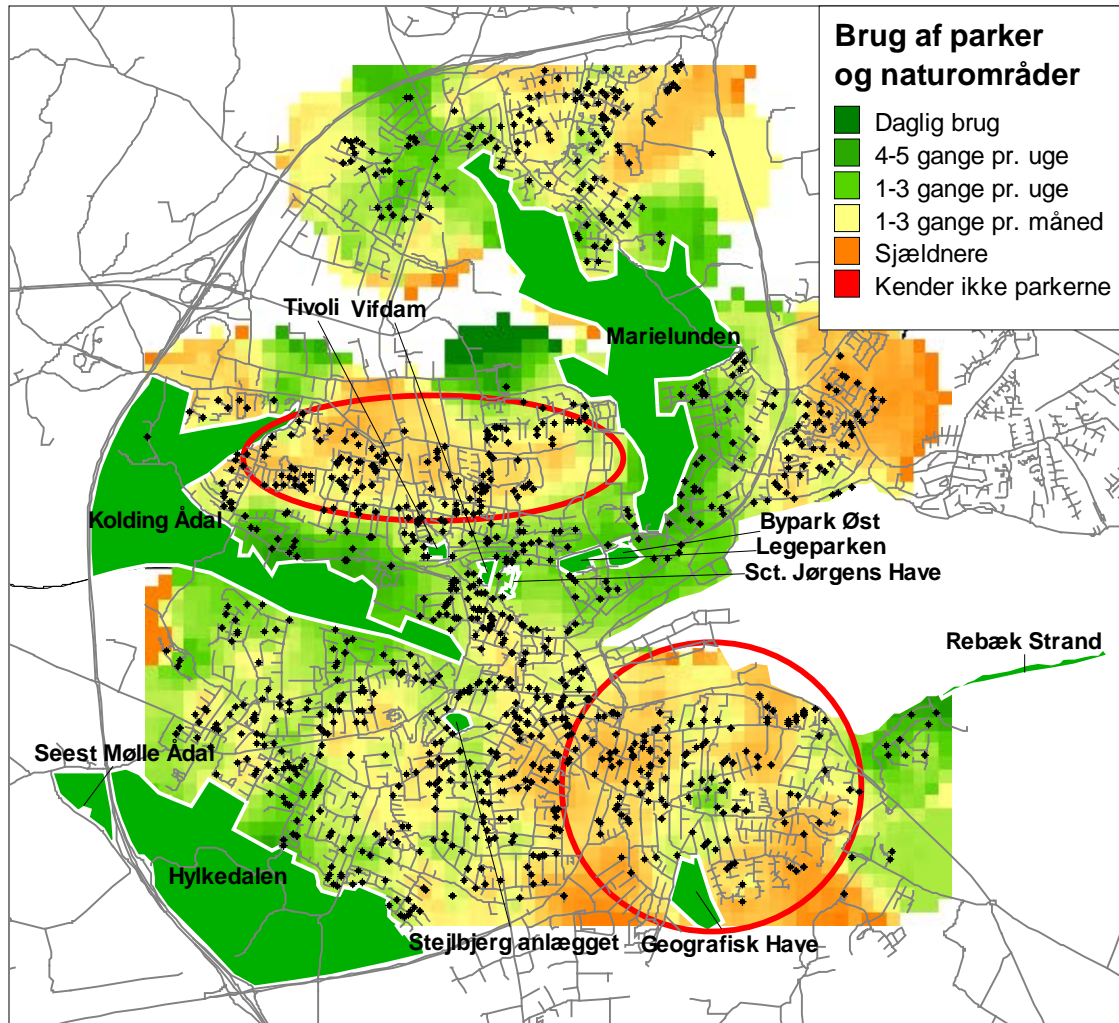
Moveability analyses in Kolding



Active or passive transportation
(n= 1.053)

Source: Breum Christiasen and Troelsen (2008)

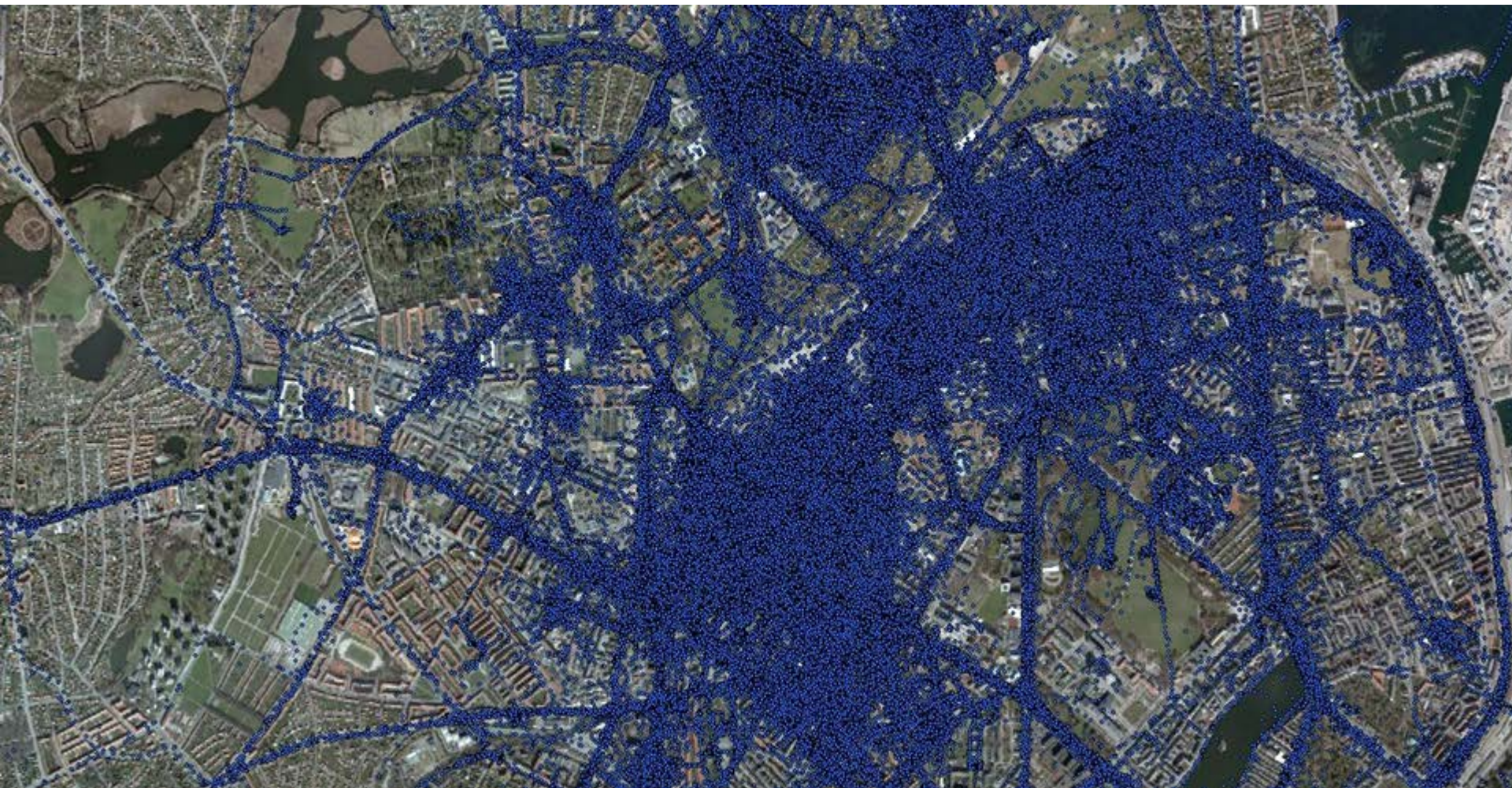
Use of 12 parks and urban green spaces



Percentage of user	
Marielunden	43 %
Legeparken	22 %
Kolding Ådal	21 %
Rebæk Strand	18 %
Sct. Jørgens Have	17 %
Hylkedalen	15 %
Seest Mølle Ådal	10 %
Geografisk Have	8 %
Bypark Øst	7 %
Stejlberg Anlægget	6 %
Vifdam	5 %
Tivoli	3 %

Source: Breum Christiasen and Troelsen (2008)

When-Cities-Move-Children Study



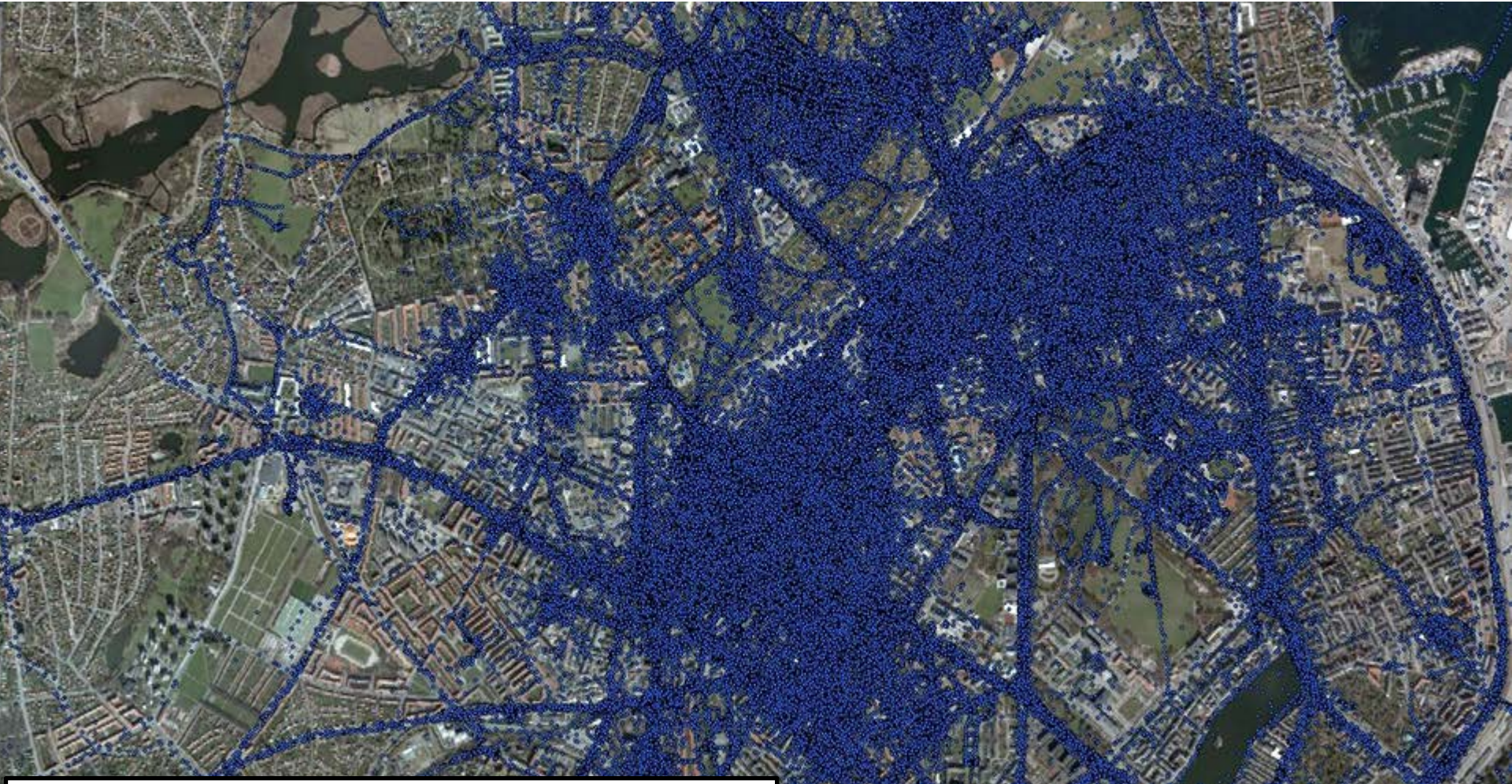
Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

TrygFonden

 Centre for
Intervention Research
in Health Promotion and Disease Prevention

Objective measurements of physical activity behavior

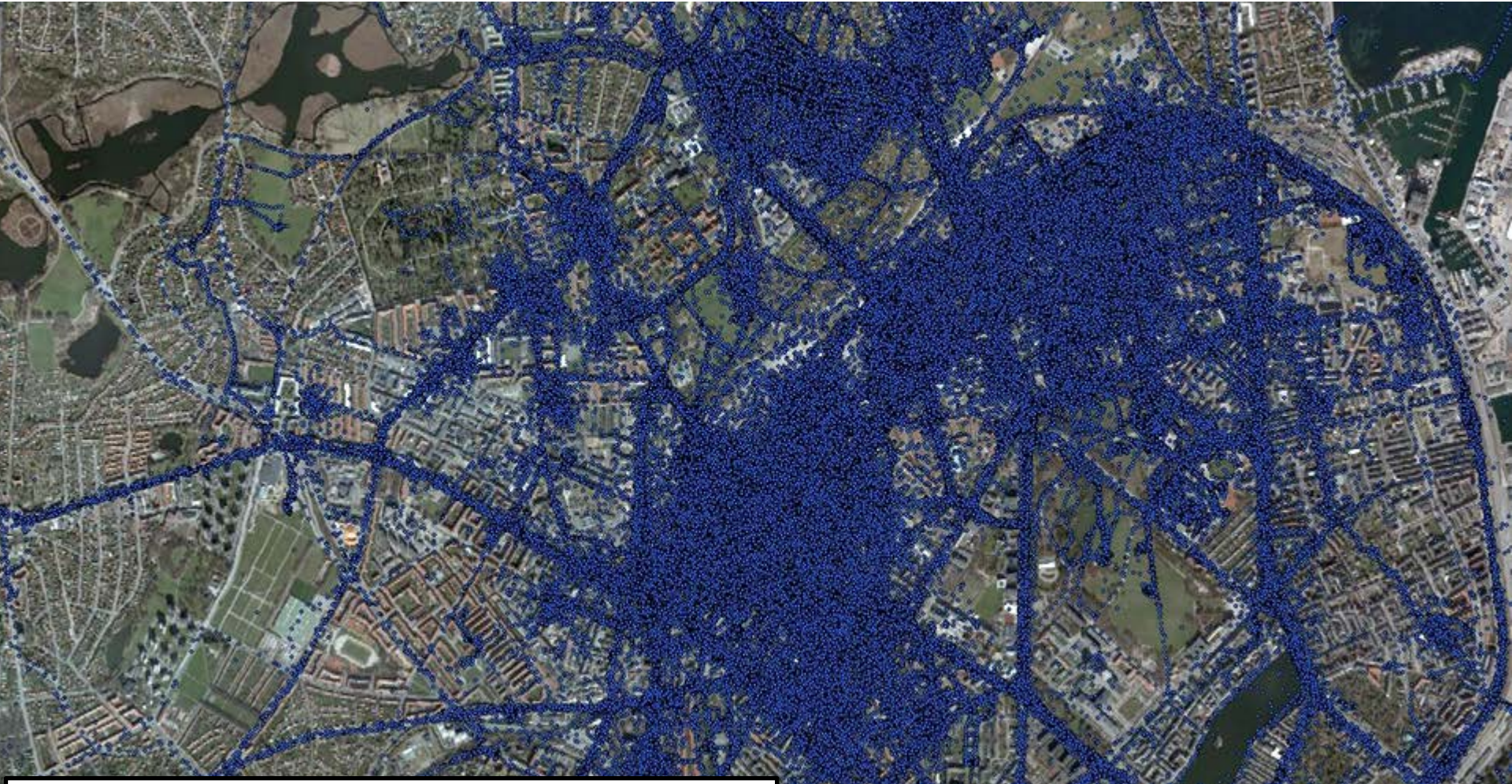
- this is 18 m x-y-coordinates collected by GPS in Copenhagen



Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

Objective measurements of physical activity behavior

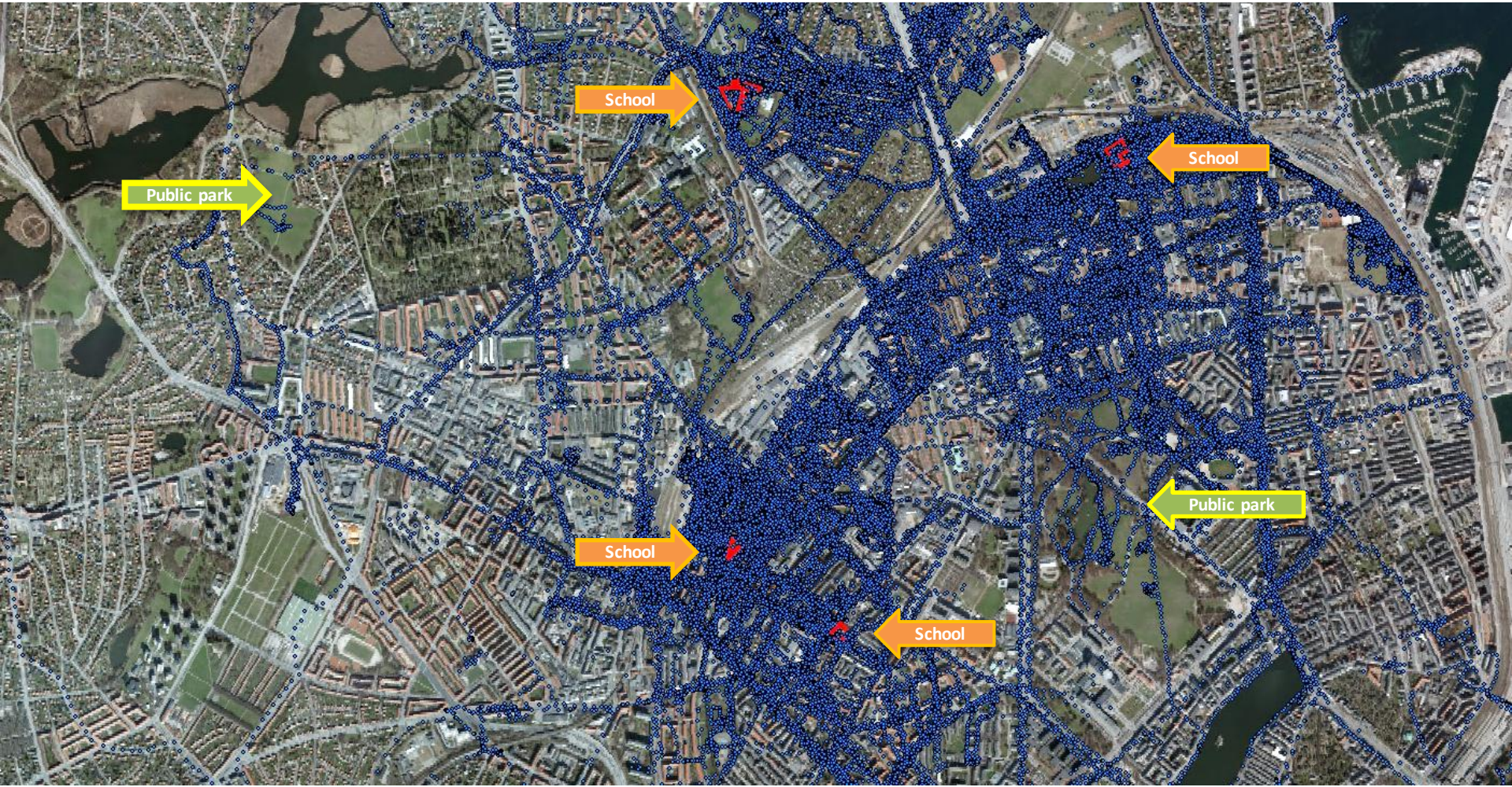
- giving us the possibility to detect movement patterns



Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)



Movement patterns – one day



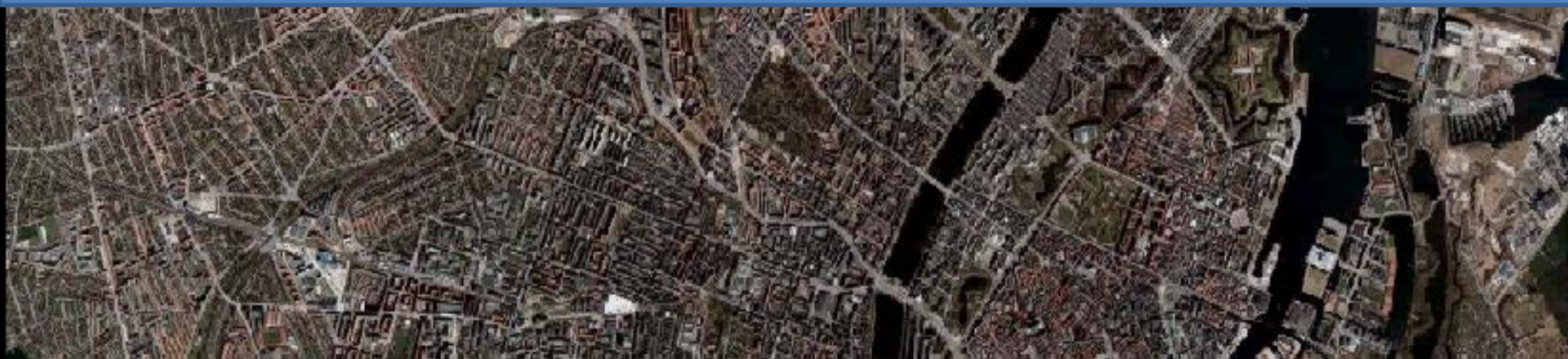
Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

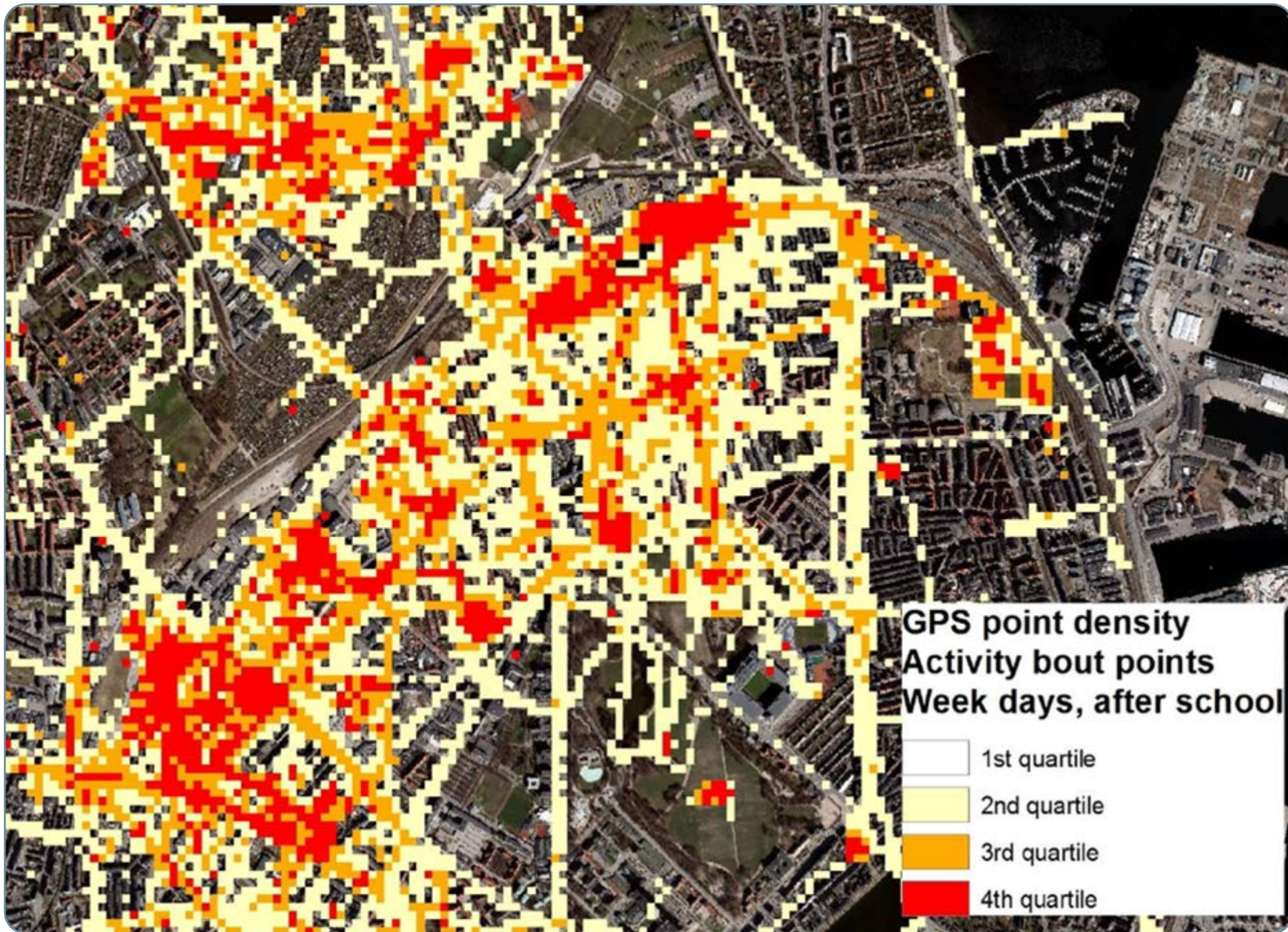
Activity Intensity

- Sedentary
- Light
- Moderate
- Vigorous

6:00:15 AM

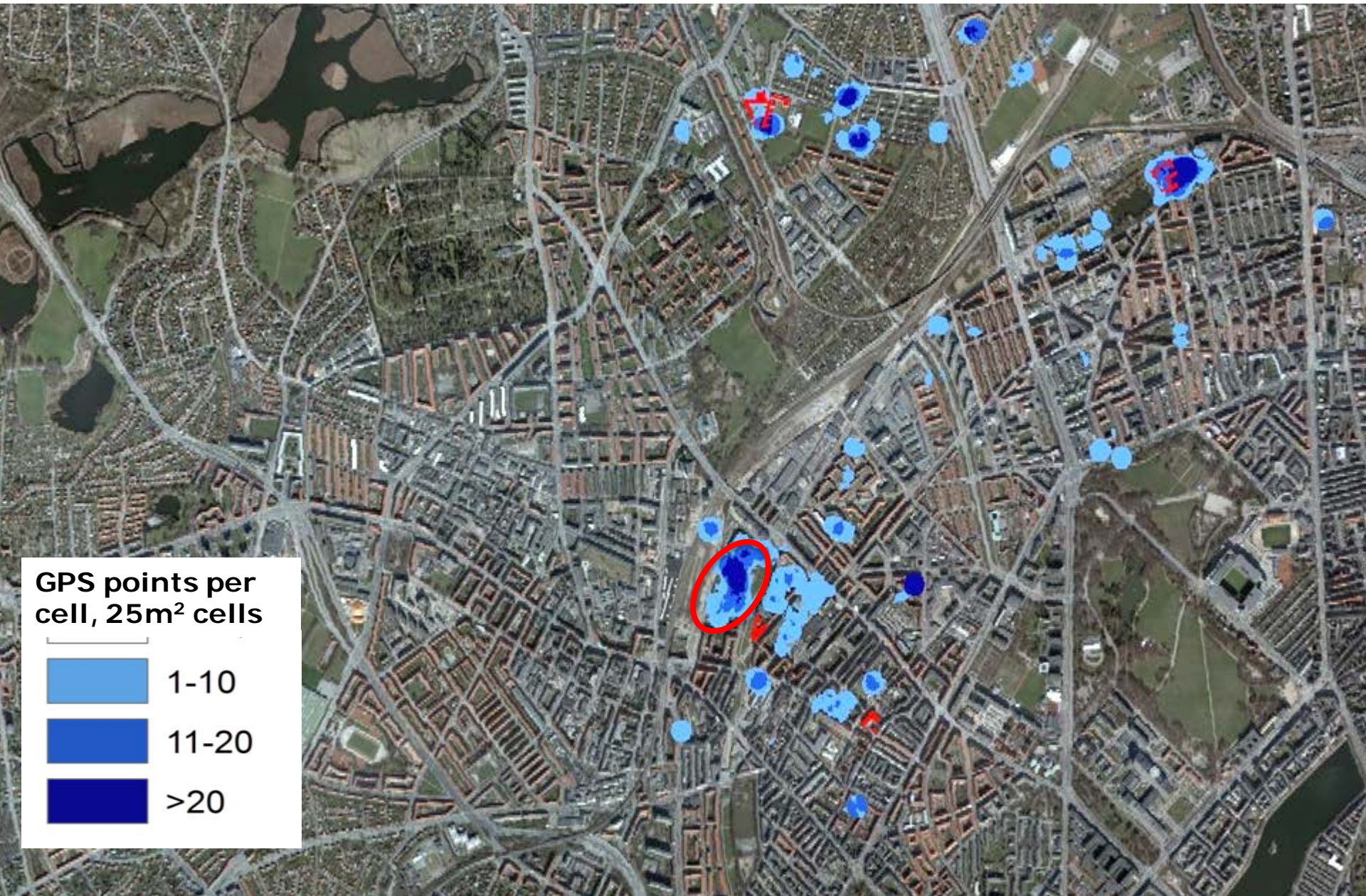
We follow 60 adolescents one day
– starting 6 AM to 11 PM





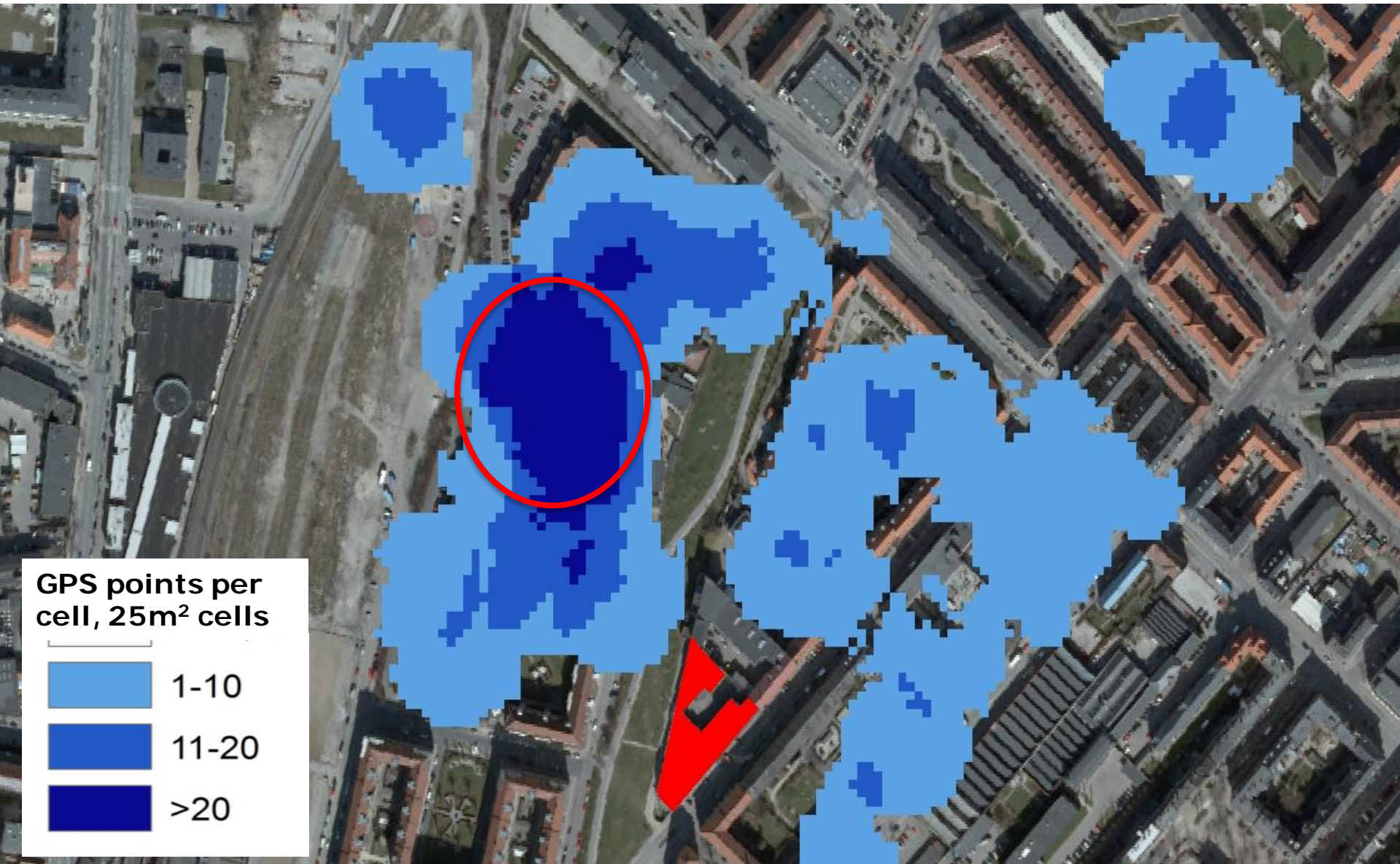
Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

Physical activity hotspots



Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

Activity hotspots – Mjølnær Park



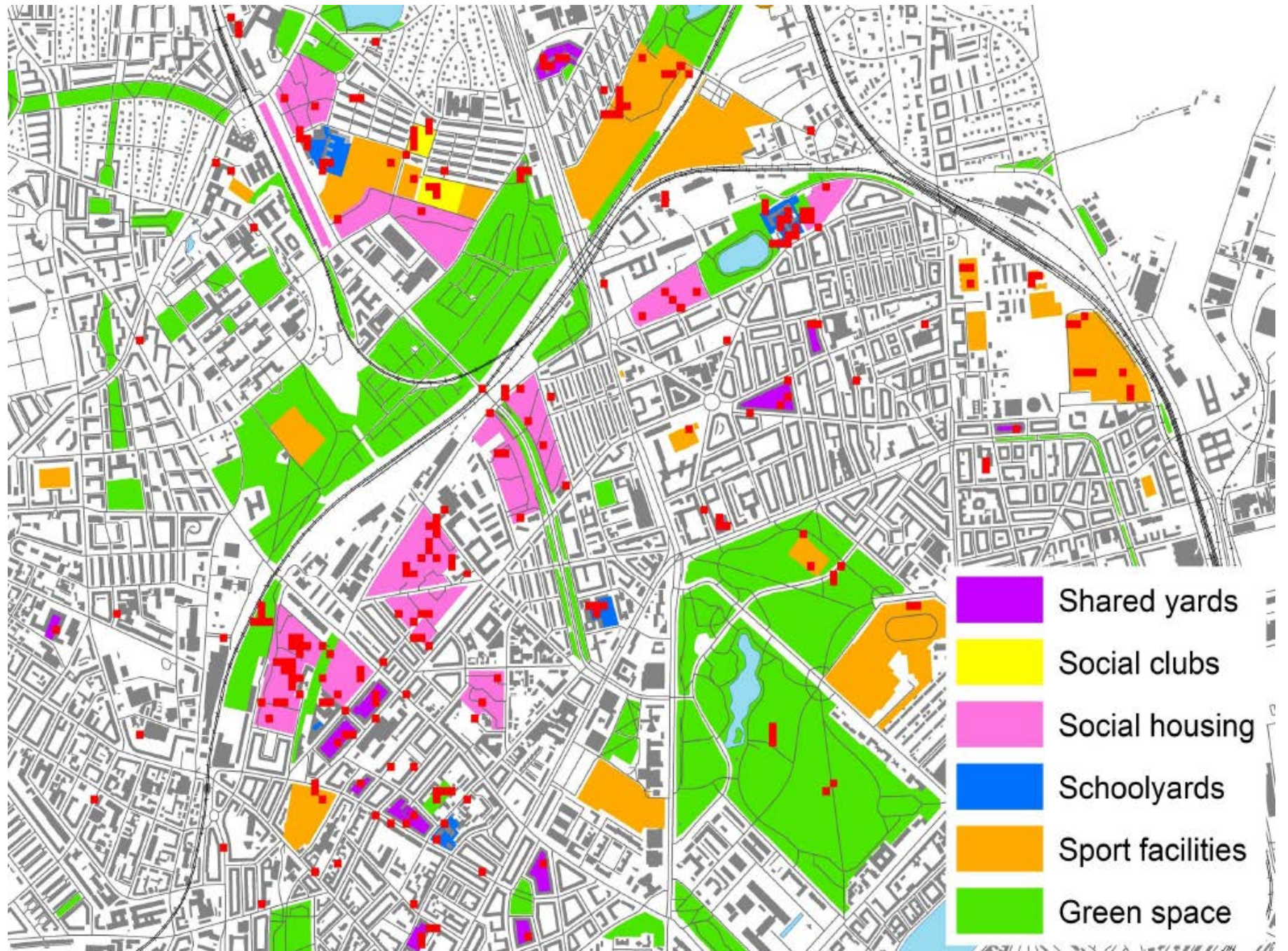
Activity hotspots – Mjølner Park



Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

Activity hotspots, week days, after school boys versus girls

Land use	Boys		Girls	
	count	percent	count	percent
Social housing	23	25%	22	24%
Sports facilities	15	16%	10	11%
Shared backyard	7	8%	15	17%
Green space	9	10%	7	8%
Schoolyards	7	8%	4	4%
Social club	4	4%	2	2%
<i>Currently uncategorized</i>	26	29%	30	33%
Total	91	100%	90	100%



Source: Klinker, Schipperijn, Kerr, Ersbøll, Troelsen (2014)

Movement pattern, one school, one day



Lundehusskolen, one day (8AM-2PM), N=151



Recess (9.30-9.45 AM) N=151

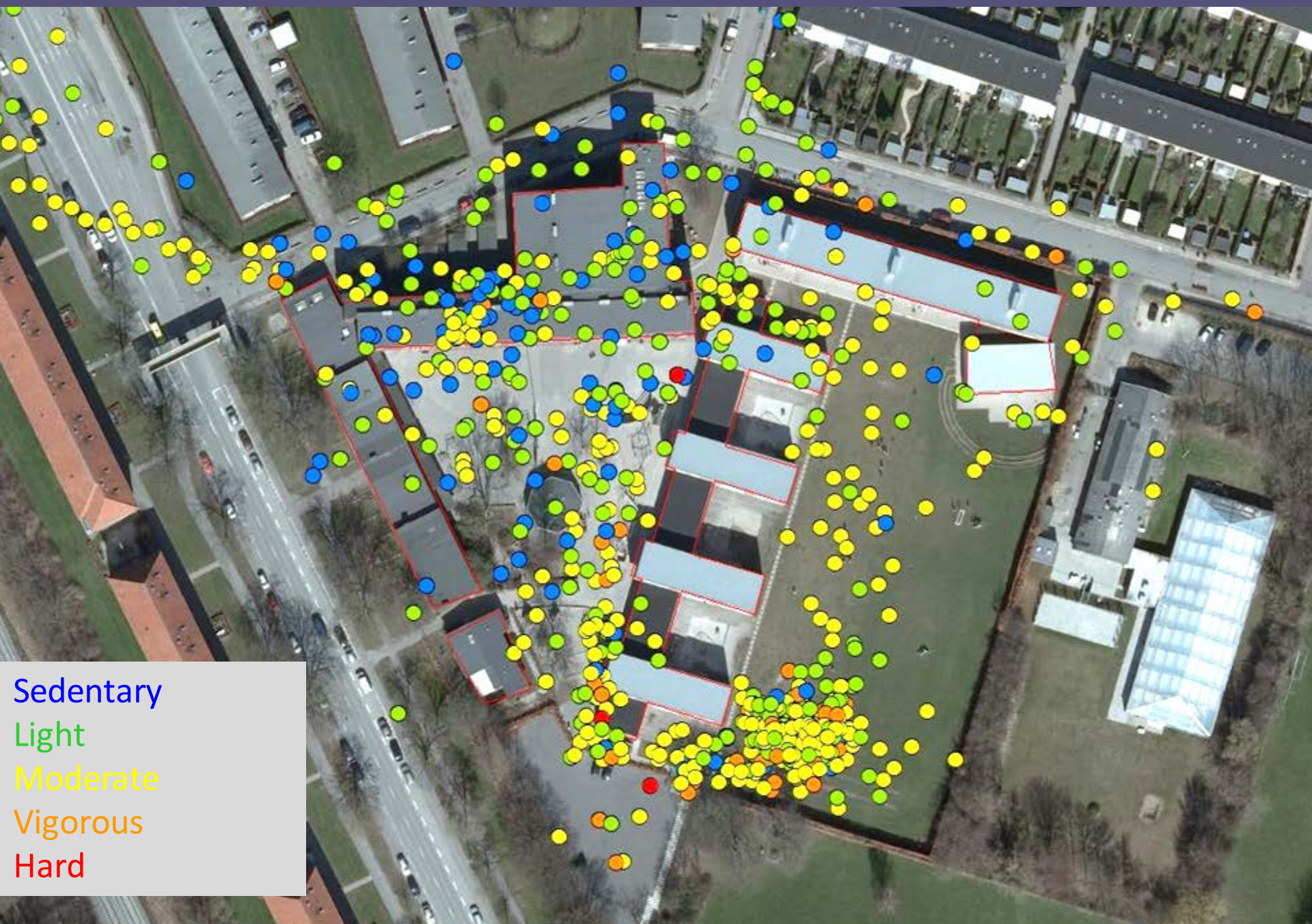


Recess for 5 – 8 graders



5th grade
6th grade
7th grade
8th grade

Intensity of physical activity during recess



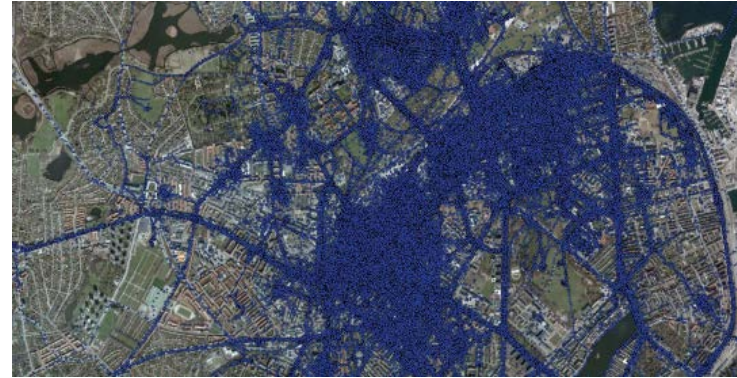
Sedentary
Light
Moderate
Vigorous
Hard

Analytical approach

How to identify facilitators and barriers to Active Living?



Quantitative approach



Qualitative approach



Qualitative analytical approach

- Organization

- *The ideal way of organizing school recess (Pawlowski, 2016)*



- Social relations

- *Beings and becomings - The quality of being a place together (Olesen, 2016)*

- Architecture and aesthetic

- *Affordance - functional versus sculptural design (Spect Petersen, 2010, 2014)*



The ideal recess

- to promote physical activity

- Longer recesses – more time to initiate activities
- No use of smartphones, tablets or computers
- Teacher initiated activities
- Loan of play and sport equipment coordinated by older students.
- Encourage outdoor recess despite the weather or/and permit indoor physical activity.
- Make use of diverse places (copse, lawns, hills) to facilitate diverse activities.

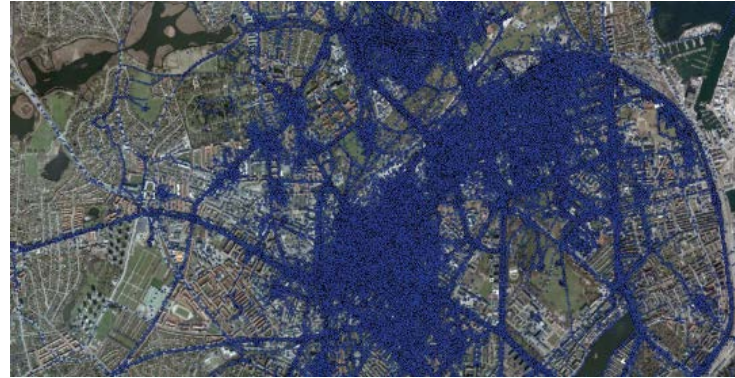


Analytical approach

How to identify facilitators and barriers to Active Living?



Quantitative approach



Qualitative approach



Active Living Research in Denmark

Further information

- www.interventionsforskning.dk
- www.bikeability.dk
- www.engodomvej.dk
- www.drønpåskolegården.dk
- www.ipenproject.org
- www.impala-eu.org
- www.cyclecity.dk



BEVÆGELSE
I LOKALOMRÅDET

APEN.DK



Questions???

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physical activity and health
- How can there be made use of us?

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