




NTNU-DTU-TUBerlin  
Smart Sustainable Cities Workshop

Lyngby Campus, DTU,  
Copenhagen, Monday, February 6<sup>th</sup>, 2017

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Norwegian University of  
Science and Technology





# What it is

## Climate KIC



# What it is Climate KIC?

— The EIT's **Knowledge and Innovation Communities (KICs)** are partnerships that bring together **businesses, research centres and universities**.

- The EU's largest public private partnership addressing climate change mitigation and adaptation:
- Created in 2010 by the European Institute of Innovation and Technology (EIT)
- **Innovative products and services** to be developed in every area imaginable, including **climate change, healthy living and active ageing**
- **New companies** to be started
- **A new generation of entrepreneurs** to be trained



# What it is Climate KIC?

The KICs carry out activities that cover the entire **innovation chain**: **training and education** programmes, reinforcing the journey **from research to the market**, **innovation projects**, as well as **business incubators** and **accelerators**:

- **Climate-KIC**: addressing climate change mitigation and adaptation
- **EIT Digital**: addressing Information and Communication Technologies
- **KIC InnoEnergy**: addressing sustainable energy
- **EIT Health**: addressing healthy living and active ageing
- **EIT Raw Materials**: addressing sustainable exploration, extraction, processing, recycling and substitution



# What it is Climate KIC?



Innovation is the application of new ideas to solve a valued need

## Pathfinder

**Exploratory and a pre-stage to the exploitation of innovation opportunities**

- Pathfinder awards – Up to €50k, but most from €15k to €30k
- The duration should not be more than 6 months.

## Accelerator

**Validate the business model of an innovation**

- Demonstrate a coherent business model and/or market validation of the business model
- Grant award up to €50k.

## Demonstrator

**Must prove the Innovation works and demonstrate the idea and the context.**

- Needs a business model
- International CKIC engagement required
- Typically lasts 2-3 years
- Funding typically ranges from 200-800k€/year.



# What

about FLEXI



# What about FLEXI?

- FLEXI is a Climate KIC Pathfinder project
- FLEXI = ***FLEXible visioning and facilitation of sustainable urban development***
- The aim of FLEXI is to develop a **geo-ICT based service** facilitating urban transitions towards sustainability. FLEXI explores the **market potential** for such **geo-ICT-supported** and **geodesign-based** approaches, which provide stakeholders with a **better overview** and **better decision support** for their prioritization of **future resources**.
- **FLEXI Budget:** 100 kEuros in total:
  - 50 kEuro Climate KIC + 5 kEuro Sluppen Forum contribution + 45 kEuro in kind
- FLEXI has a testbed: **Sluppen area** in Trondheim;



# Test bed Sluppen Area



Photo: R. Kjeldsberg AS



# Test bed Sluppen Area



1. To become an internationally-recognized city for technology and knowledge.
2. To become a sustainable city where it's easy to live an environmentally friendly life.
3. To become an including and diversified city.
4. The municipality plays the role as an active society developer and an attractive employer.

Source: Trondheim Kommune

# The Knowledge Axis

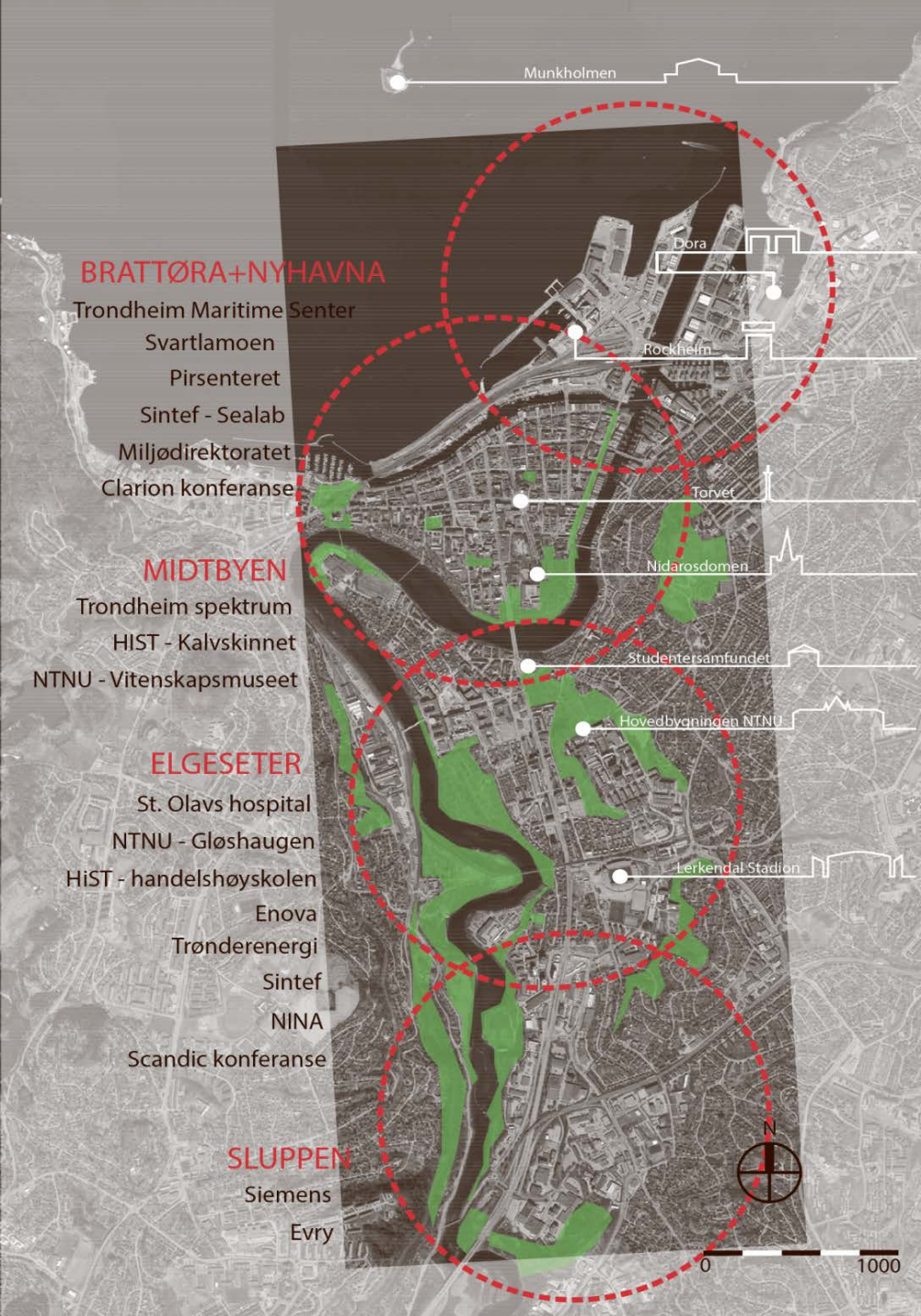
## Trondheim's biggest "playground"

What can happen when city and knowledge are merged together?

Can it bring...

- new urban forms?
- innovation and business?
- new ways of collaboration?
- new meeting places?
- new energy solutions?
- low-carbon lifestyle?
- better international competitiveness?

Source: Trondheim Kommune





# Sluppen - Feasibility study ....2050?



Source: Trondheim Kommune

# Feasibility study: purpose

## *Sluppen merging city, technology and innovation*

- Future-oriented transport solutions
- Underpin 0 growth target
- Ensure green and safe mobility
- Maintain access on state roads
- Solutions for public transport hubs
- Bypass road underground
- Possibilities for a future light rail

## Transport

- A sustainable, inspiring and distinctive district of Knowledge axis.
- Attractive cluster for technology
- High density
- Mixed uses including housing,
- Urban qualities and urban spaces
- Aim for a ZEN

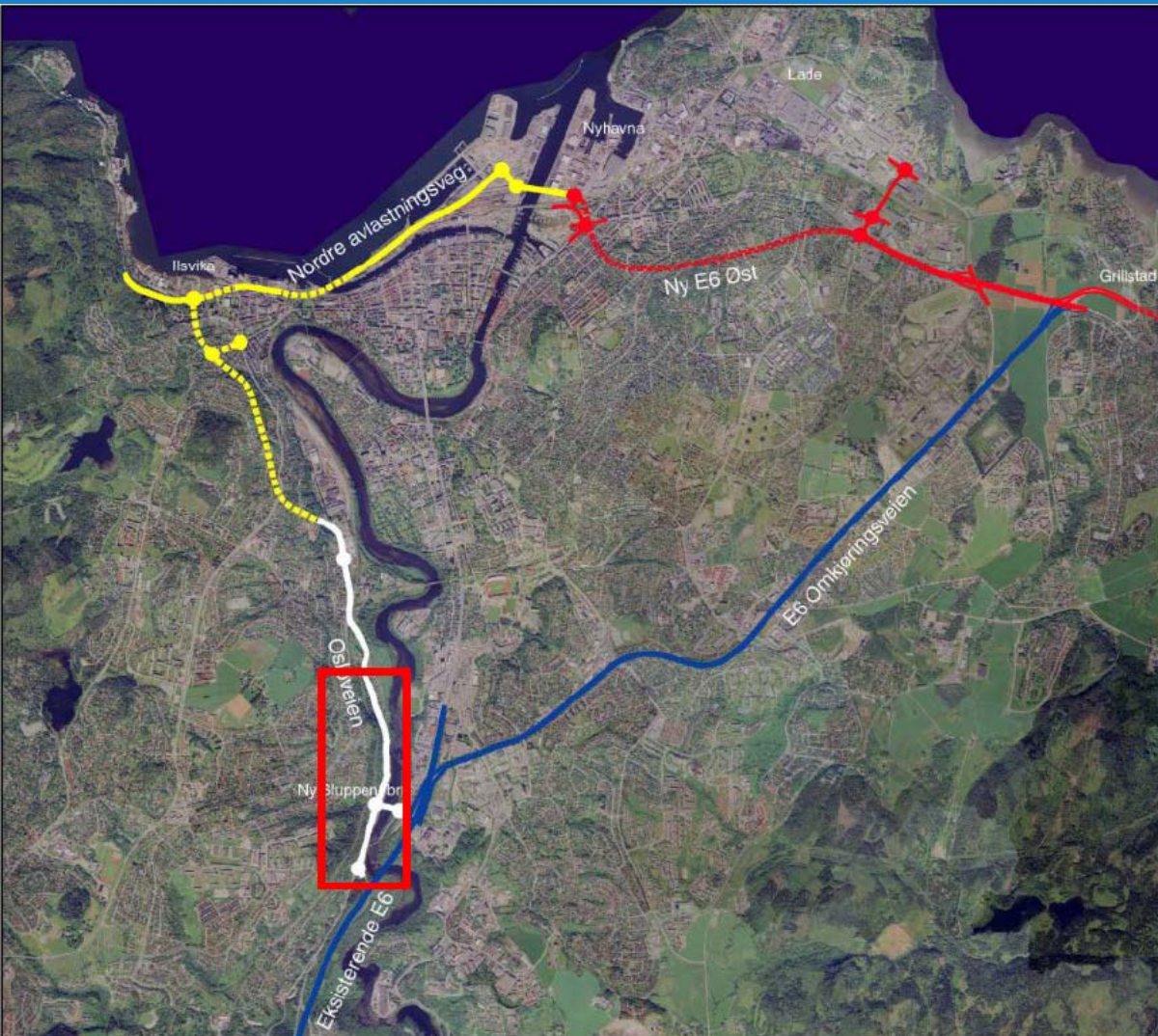
## Innovation

## Sustainability and Service

Source: Trondheim Kommune



# Byutredning- city traffic system



What measures are necessary to achieve the goal of zero growth target in passenger traffic?

Source: Trondheim Kommune



# Nydalsbrua



Source: Trondheim Kommune



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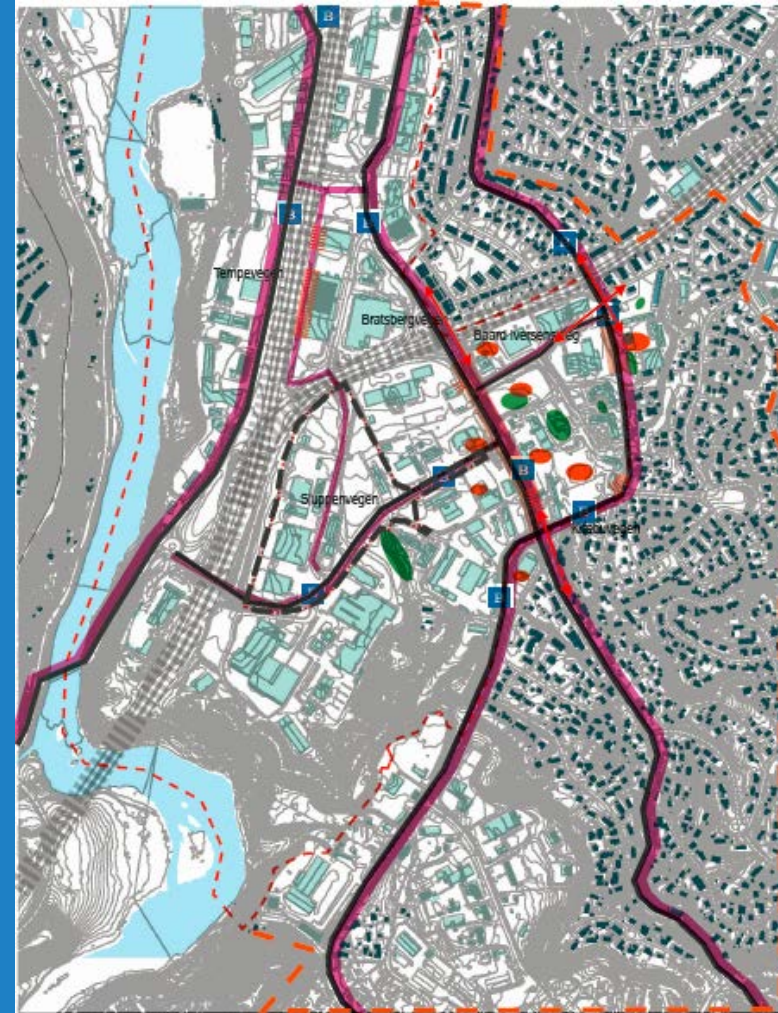


Climate-KIC



# Feasibility study: issues - Connections and places

- Urban structure more suited to the car than pedestrian.
- Klæbuvegen and Bratsbergvegen has given structure to the area



Source: Trondheim Kommune

# Feasibility study: issues - Transport

## *Sluppen merging city, technology and innovation*

- Limit traffic into the city center
- Traffic calculations
- Solutions for underground bypass
- Credible
- Pedestrians
- Bikes
- Superbus
- Electric bikes
- Driverless cars
- Light rails

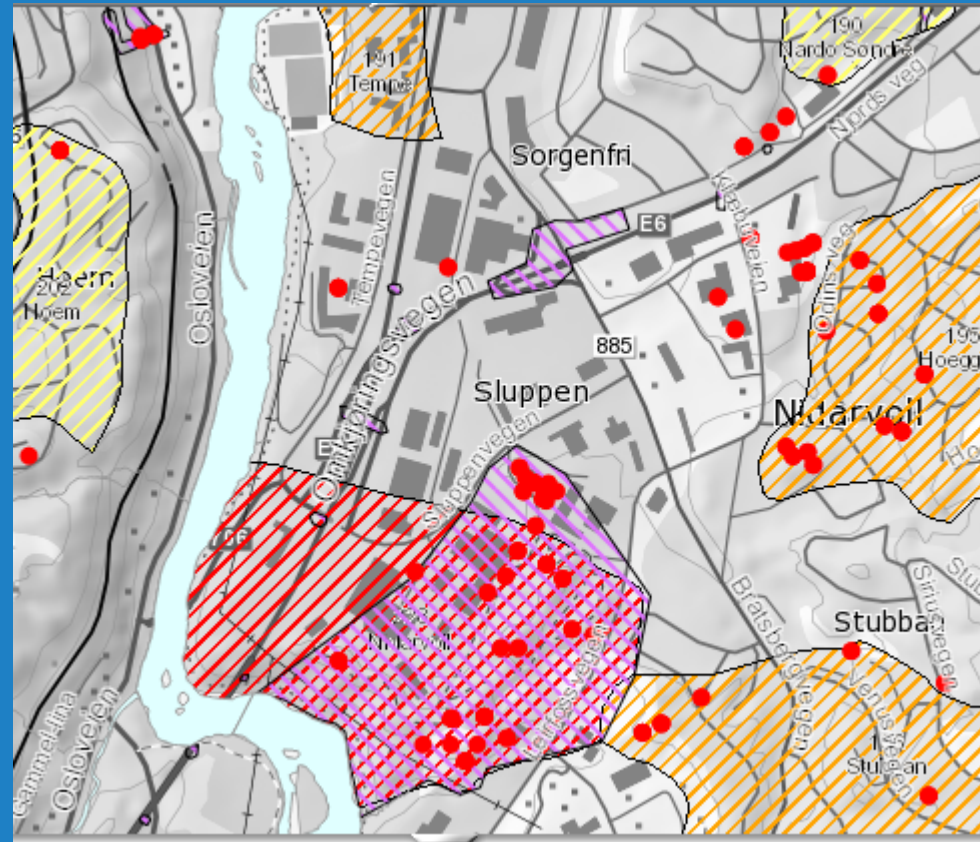
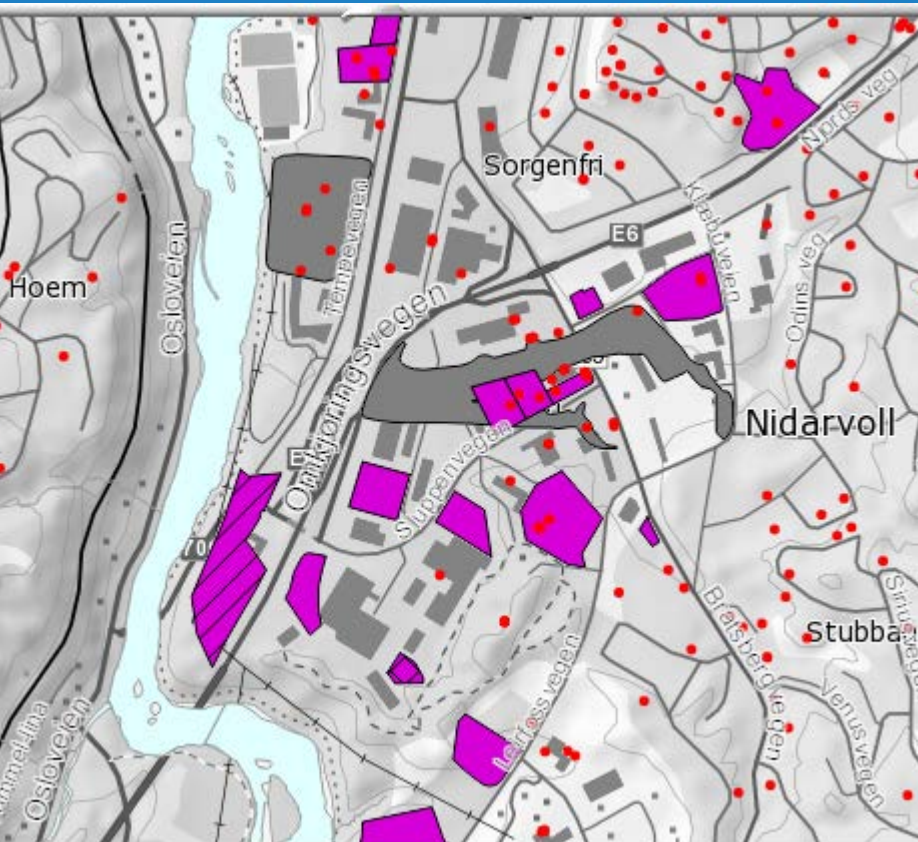




# Feasibility study: issues – Soil conditions

Contaminated soil

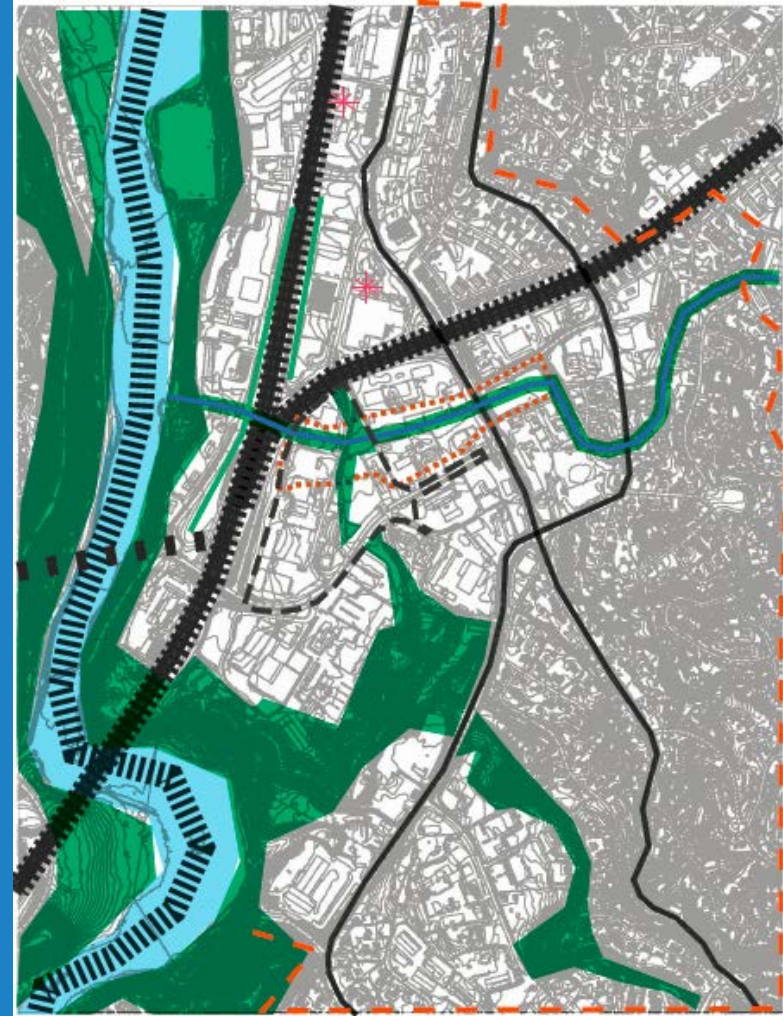
Quick clay



Source: Trondheim Kommune

# Feasibility study: issues - Green – Blue structures

- Nidelva
- Smidalen – old forest
- Fredlybekken – open or enclosed
- Hydrology
- Old land fill



Source: Trondheim Kommune



# Feasibility study: issues – Buildings structure

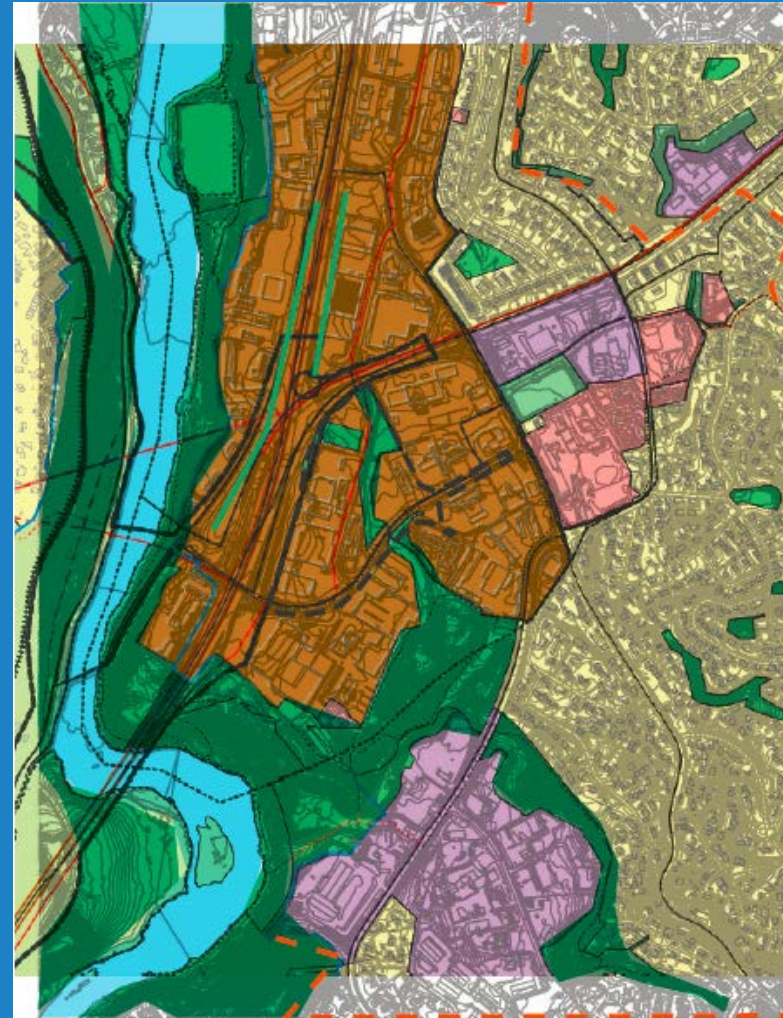
- Existing building
- Buildings coming



Source: Trondheim Kommune

# Feasibility study: issues – Land Use

- New Housing
- More Offices
- More Knowledge based business
- New Local center
- New Schools
- New Health care center
- New Sports facilities?
- New parks

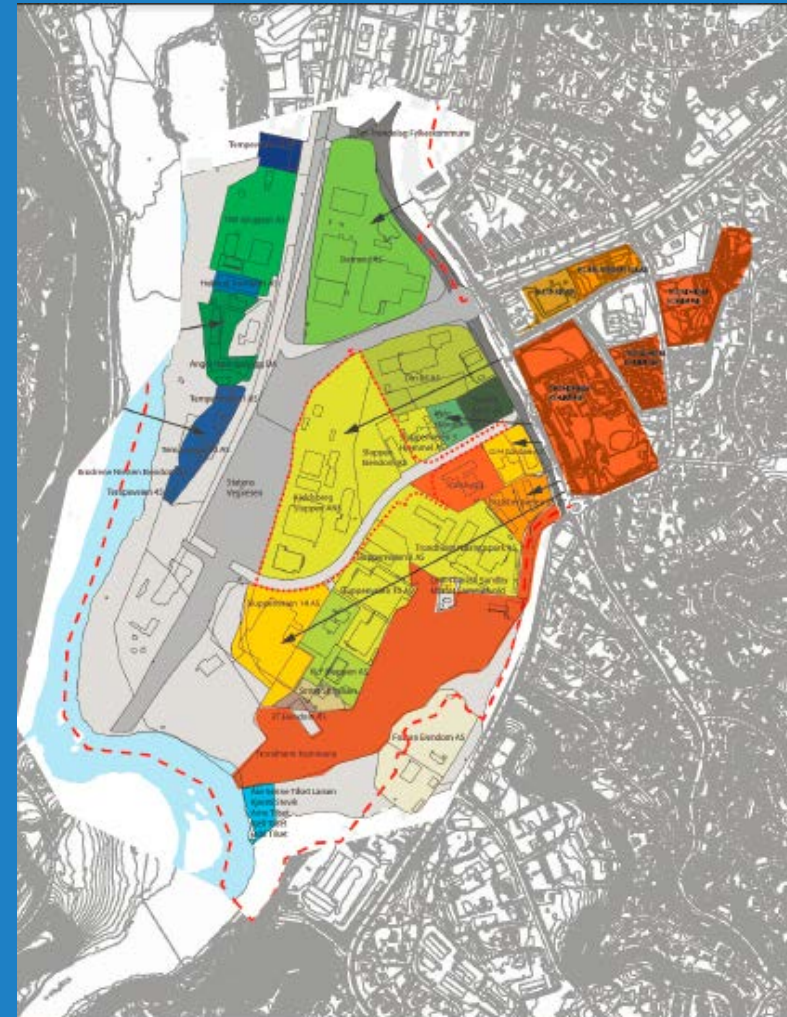


Source: Trondheim Kommune



# Feasibility study: issues – Property structure

- Few property owners
- Large industrial/comercial areas
- Good basis for transformation



Source: Trondheim Kommune

# Test bed Sluppen Area

How this area can be attractive?



Photo: R. Kjeldsberg AS



# Partners

of FLEXI



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Climate-KIC

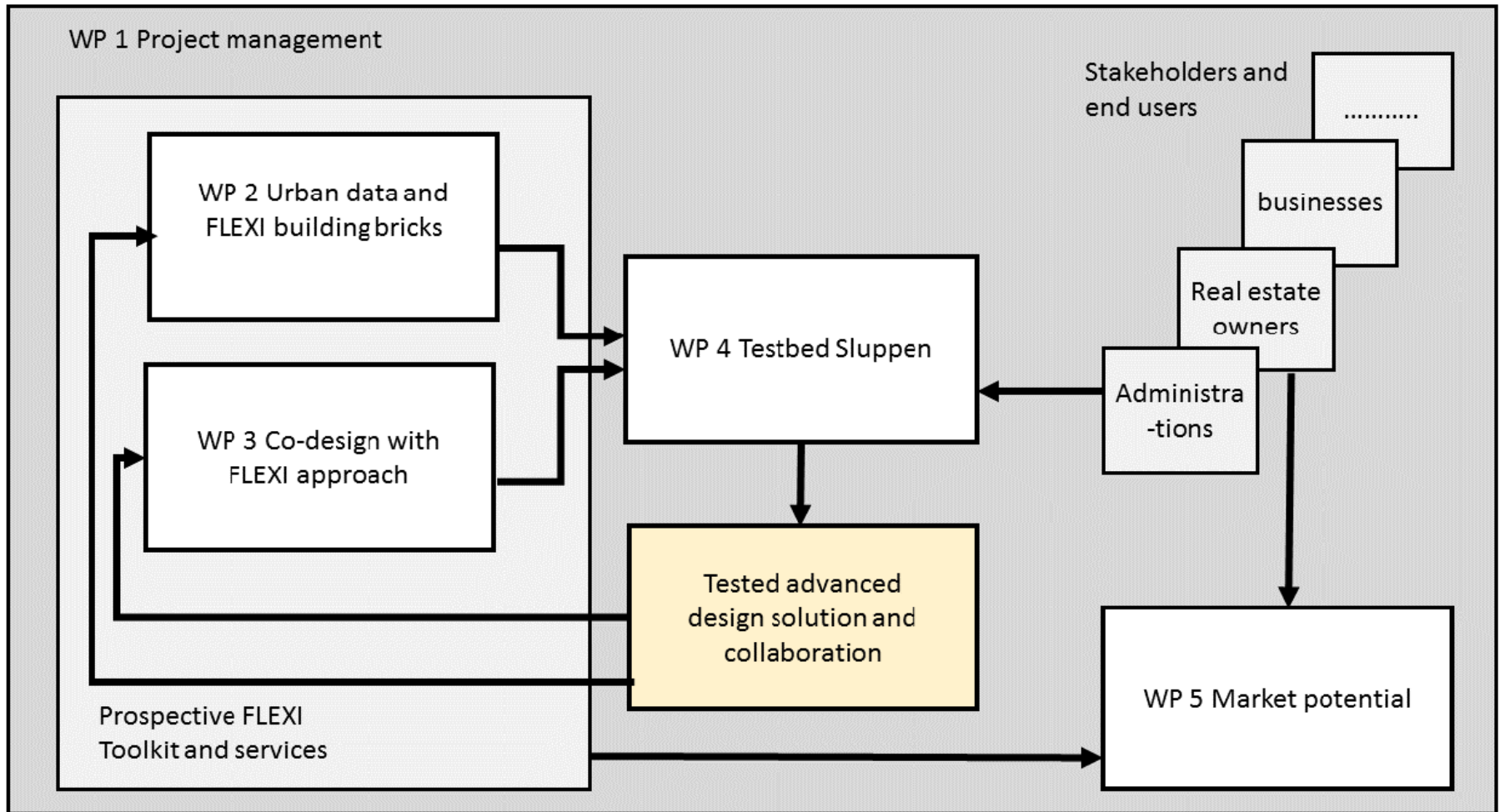


# Partners of FLEXI

| Partner Number               | Organisation Name (Full legal name)             | Contact person                                   | Email  | Roles and responsibilities   |
|------------------------------|---|--|--|--|
| Climate-KIC Partners         |   |  |  |  |
| 1                            | Norges Tekniske Naturvitenskapelige Universitet | Judith.Borsboom                                  | Judith.Borsboom@ntnu.no  | Project Coordinator, provide expertise on sustainable urban (re)design and (re) development, open planning processes, energy efficient buildings, transport and land use planning, quantitative impact assessment  |
| 2                            | Trondheim Kommune*                              | Hilde Bøkestad<br>Anne Torres<br>Mollan          | Hilde.Bøkestad@trondheim.kommune.no<br>Anne-Torres.mollan@trondheim.kommune.no | Municipality, planning authority, responsible for redevelopment, redesign and maintenance of areas, provides local and practitioners knowledge, provides expertise on urban transition processes and urban data  |
| Non-Climate-KIC Partners     |   |  |  |  |
| 3                            | Asplan Viak/Misa                                | Kari Skogstad Norddal                            | KariSkogstad.Norddal@asplanviak.no   | Engineering and planning consultancy, expertise in all phases of planning processes, expertise in developing Geo-ICT based toolkits and impact assessment, prospective exploitation of FLEXI toolkit   |
| Third parties (non-funded)** |   |  |  |  |
| 4                            | Kjeldsberg Eiendomsforvaltning                  | Harald Bjørlykke                                 | harald.bjorlykke@kjeldsberg.no   | Real estate developer and investor, aims to combine development of innovative knowledge based business areas with green ambitions, and a new urban housing district. Provides expertise on energy-efficient buildings. Prospective application of the FLEXI service and toolkit. |
| 5                            | Sør-Trøndelag Fylkeskommune                     | Oddveig Kipperberg,<br>Vigdis Espnes<br>Landheim | oddveig.kipperberg@stfk.no<br>vigdis.espnes.landheim@stfk.no                   | Sør-Trøndelag County Authority, state coordinator, provides expertise on options for more sustainable transport systems, e.g. rapid bus transit. Prospective application of the FLEXI service and toolkit.   |
| 6                            | Statens Vegvesen                                | Eva Solvi, Arne Gussiås                          | eva.solvi@vegvesen.no<br>arne.gussiaas@vegvesen.no                             | Norwegian Public Roads Administration, national and county roads. Investor in major transport infrastructure measures. Prospective application of the FLEXI service and toolkit  |
| 7                            | Miljøpakken                                     | Heidi Fosslund                                   | heidi.fosslund@trondheim.kommune.no  | Greener Trondheim (TK+STFK+SVV+JBV) Partnership for sustainable transport, Expertise on transformation to green mobility, e.g. rapid bus transit. Prospective application of the FLEXI service   |

# Work packages

# Work Packages



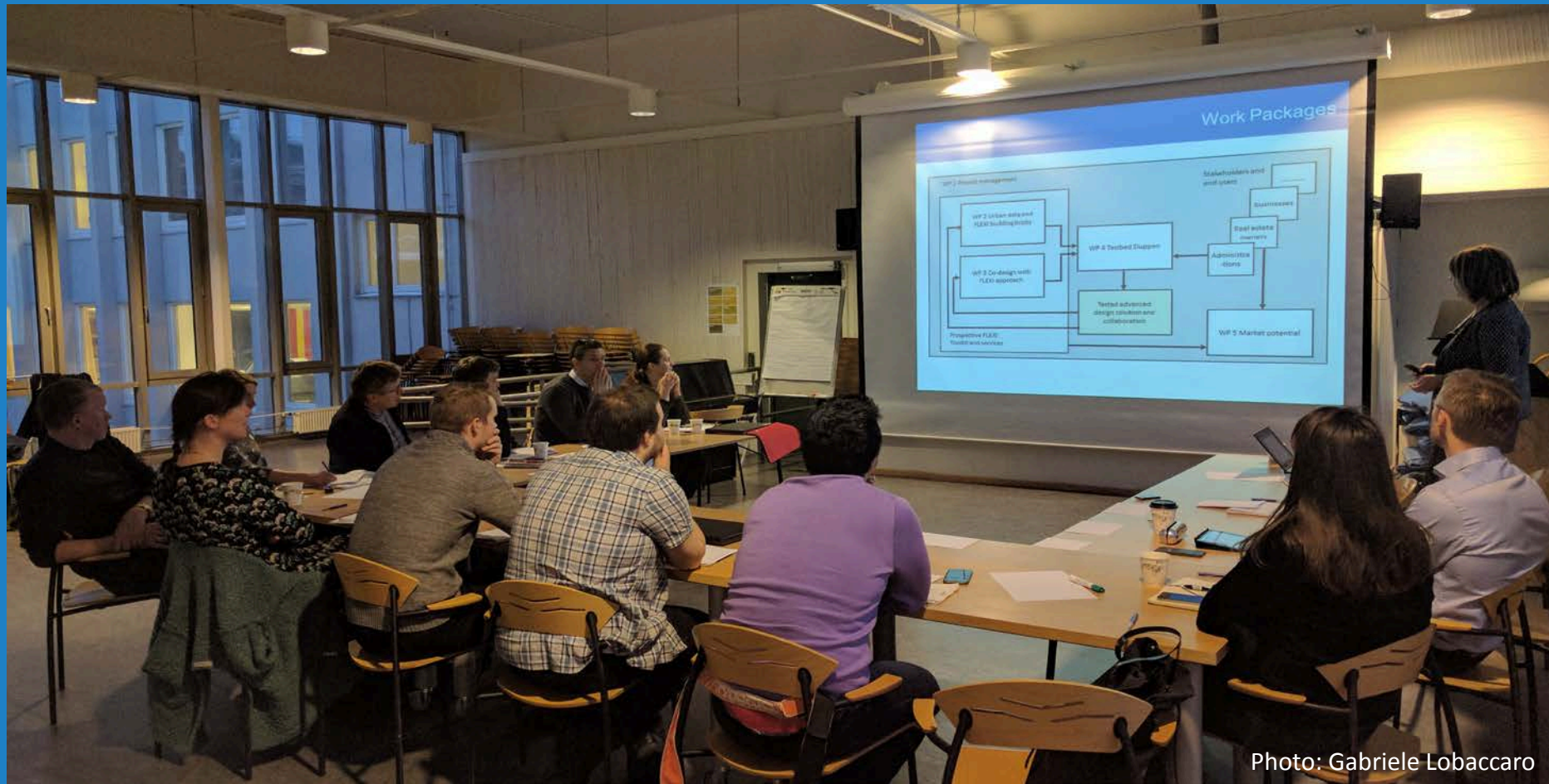


Photo: Gabriele Lobaccaro

Kick-off meeting: 16<sup>th</sup> January 2017





Source: Gabriele Lobaccaro

Training sessions and workshop with stakeholders participations using map table approach. First session in Trondheim, February 28th & 01st March





# Thanks

for your Attention!

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