

# Aarhus River Project



Aarhus Municipality  
Denmark



Gitte Normand Andersen  
Leader of groundwater and  
wastewater section



# Aarhus is surrounded by water

AARHUS  
KOMMUNE



# 1865

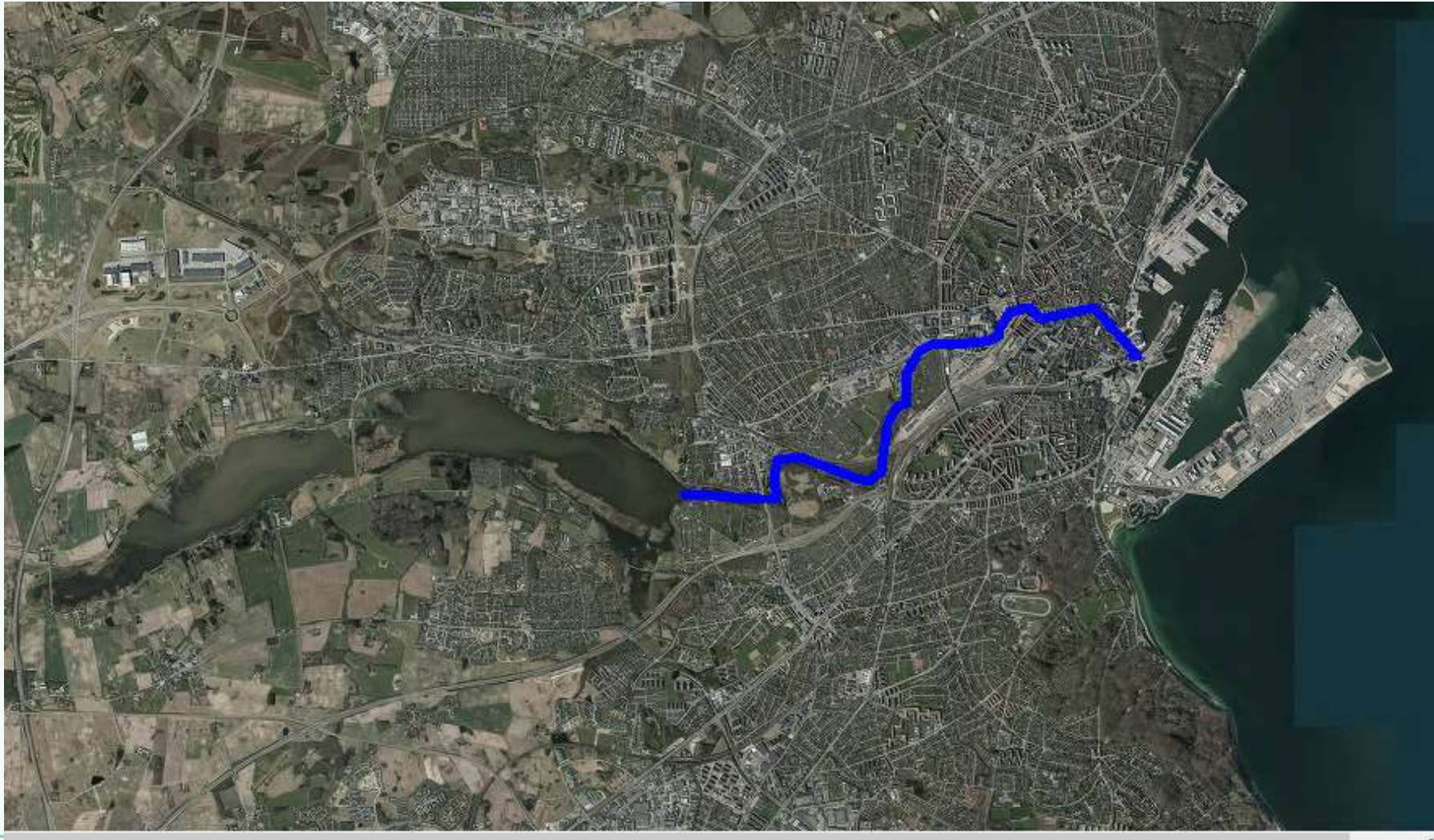








# History of River Aarhus



# Up till 1930's



# 1930





# Increasingly busy....





# More and more traffic...



# Re-opening of the river





# 2006 - Aarhus River project

AARHUS  
KOMMUNE



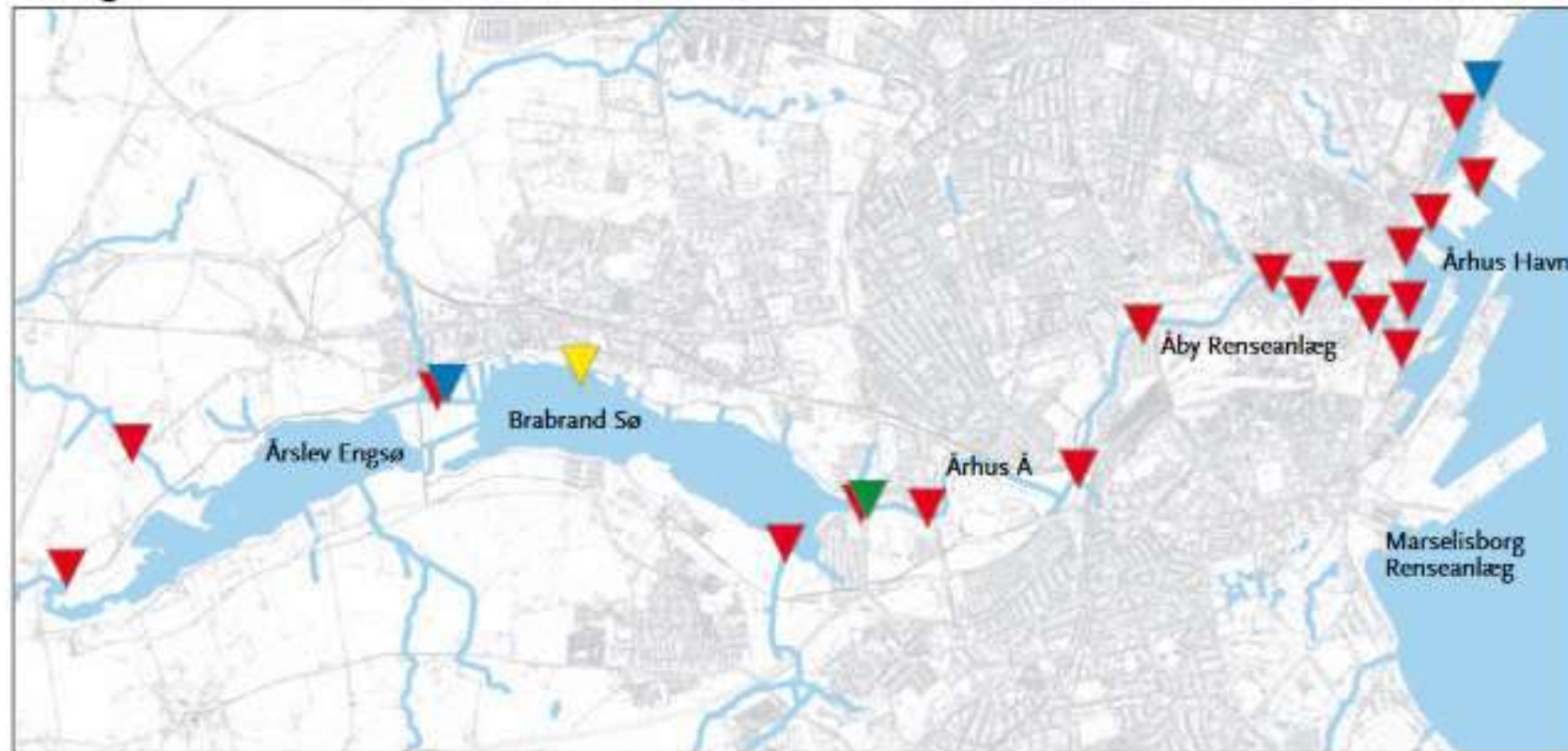
# Purpose

- Improve the hygienic water quality
- Increase the opportunity for sailing and other water activities
- Maintain / improve quality of nature
- Improve the recreational conditions along the urban river and harbour areas





# Water quality



Målestedernes vandkvalitet:

- ▼ Udmærket
- ▼ God
- ▼ Tilfredsstillende
- ▼ Ringe

# Mapping of sources

- Viby og Åby WWTP
- 75 overflows from sewer systems
- 58 outlets from rain systems
- Discharge from properties in ural ares
- Area drainage on the contry side





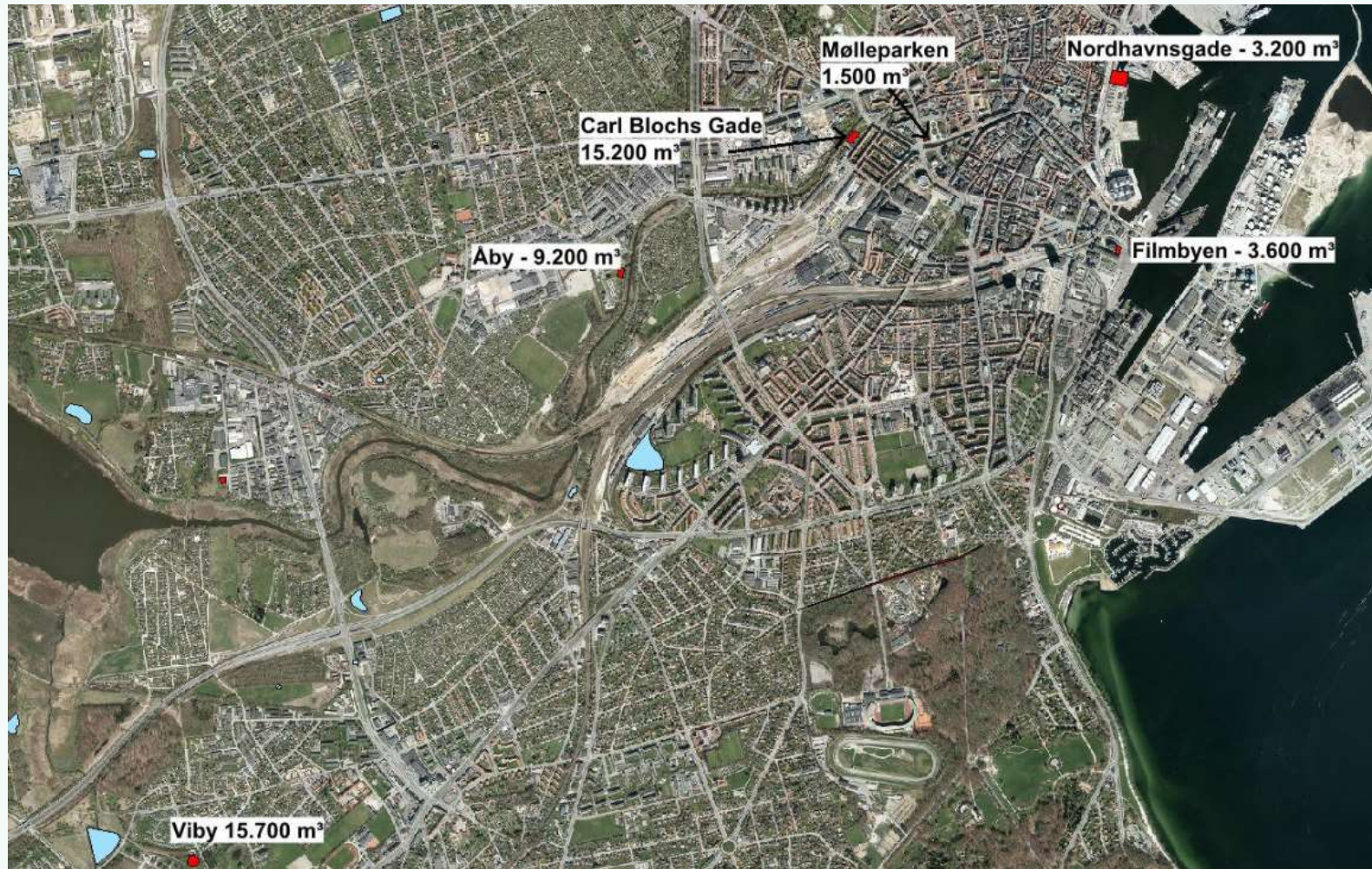
# Actions

- Establishment of 4 wastewater/equalization basins (43.000 m<sup>3</sup>)
- Establishment of disinfection of the treated wastewater from Viby and Åby
- Warningsystem (prediction) - overflow of untreated wastewater
- Coordinated management of sewer systems
- Separating combined sewer systems
- Sewerage of properties in rural areas
- Sewerage of allotments
- Opening of the last part of Aarhus River

**(Investment according 340 mill. DKK / 45 mill. EURO).**



# Equalization basins





# Basin at Carl Blochs gade



# Disinfection

UV treatment is expensive →

Chemical disinfection with peracetic acid as an alternative to UV

Dosed in the sand-filters on WWTP during the summer period

Authority requirements for documentation of peroxide in treated wastewater led to the recipient





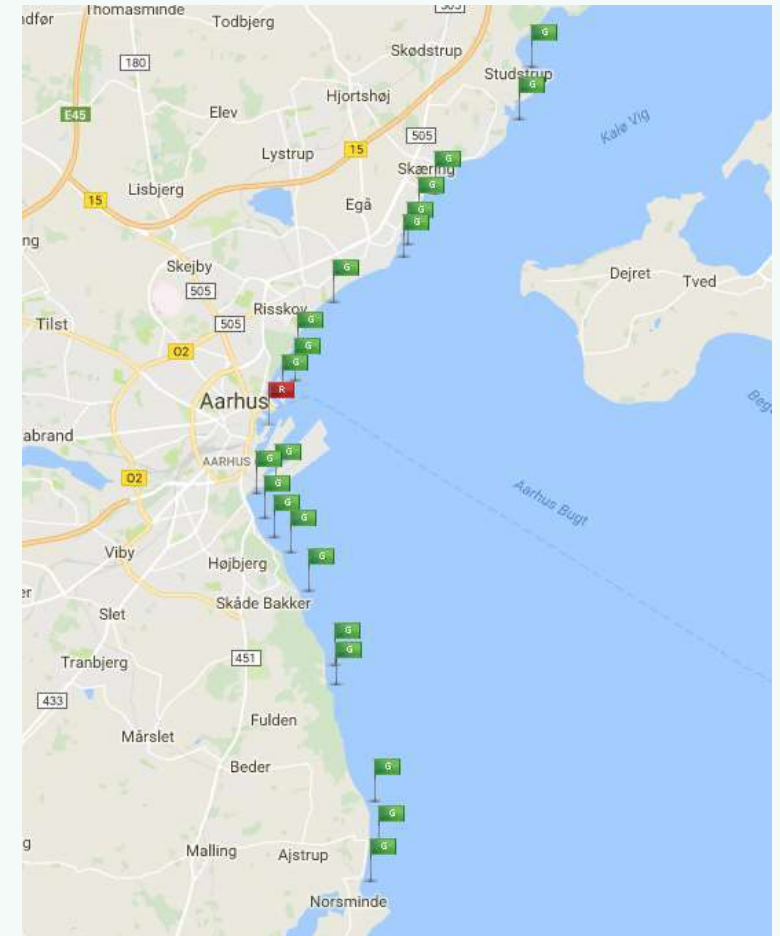
# Warning systems

- Warning system (prediction) - overflow of untreated wastewater
- Coordinated management of sewer systems

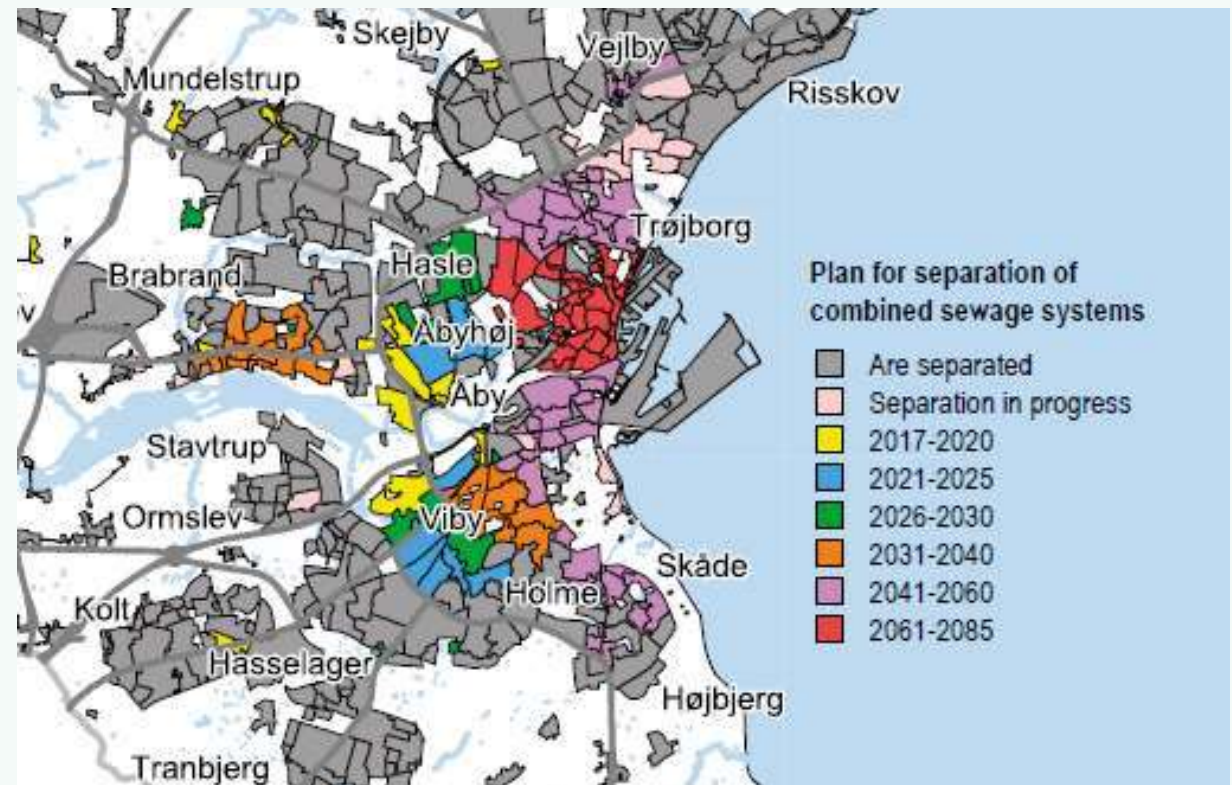
Per will come more into that 😊

<http://www.badevand.dk/>

Also available on smartphone



# Separation of combined sewers





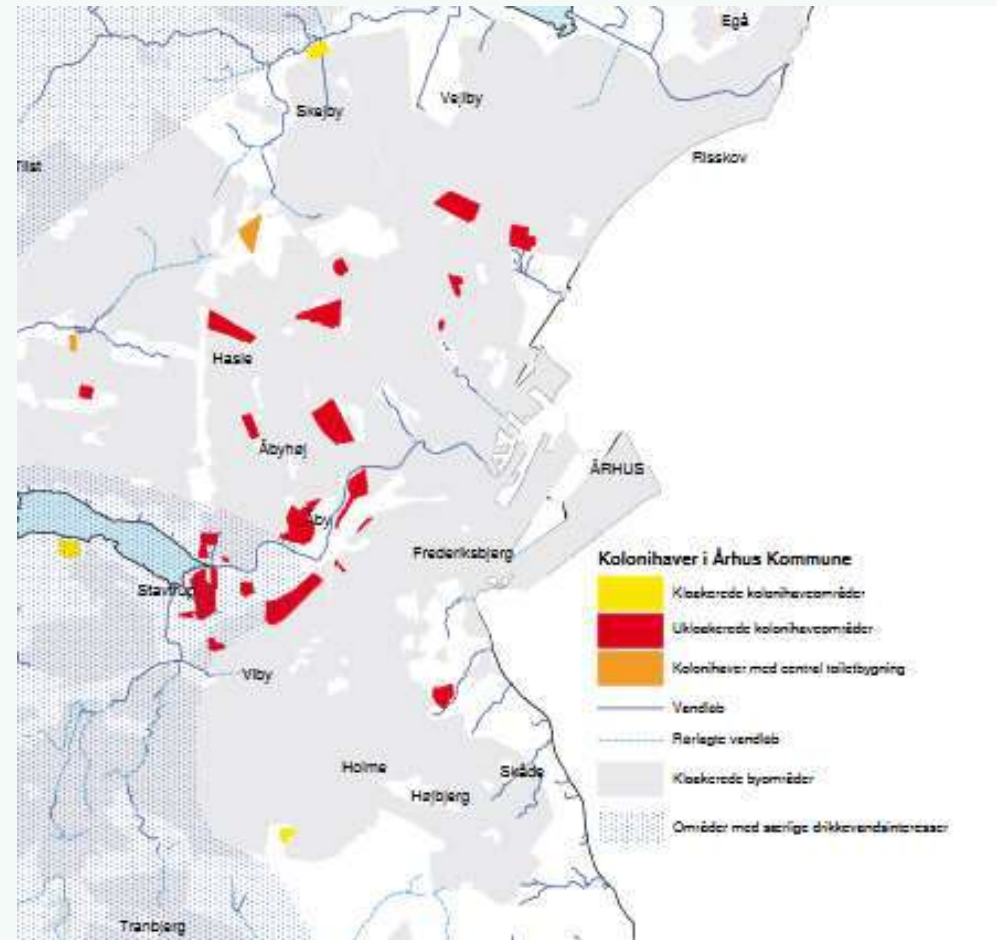
# Allotments

Nearly 4000 allotments (39 associations)

Wastewater is considered to be a problem to groundwater, recipients and hygiene

All allotments is commanded to connect to public sewer system

Starting with those closest to Brabrand Lake / River Aarhus



# Drainage from rural areas



Water storage outside urban areas:

- Reduction of nutrient load to Aarhus Bay
- Biodiversity - animal and plant habitats
- More recreational activities





# Results: Recreation and liveability 😊





A nighttime aerial photograph of Aarhus, Denmark. The city is illuminated by streetlights and building lights, with a prominent tower in the center. A semi-transparent white box with the text 'Thank you' is centered in the upper half of the image.

Thank you