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# Quantifying the potential of local stormwater infiltration measures in western Copenhagen

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## Introduction and problem definition

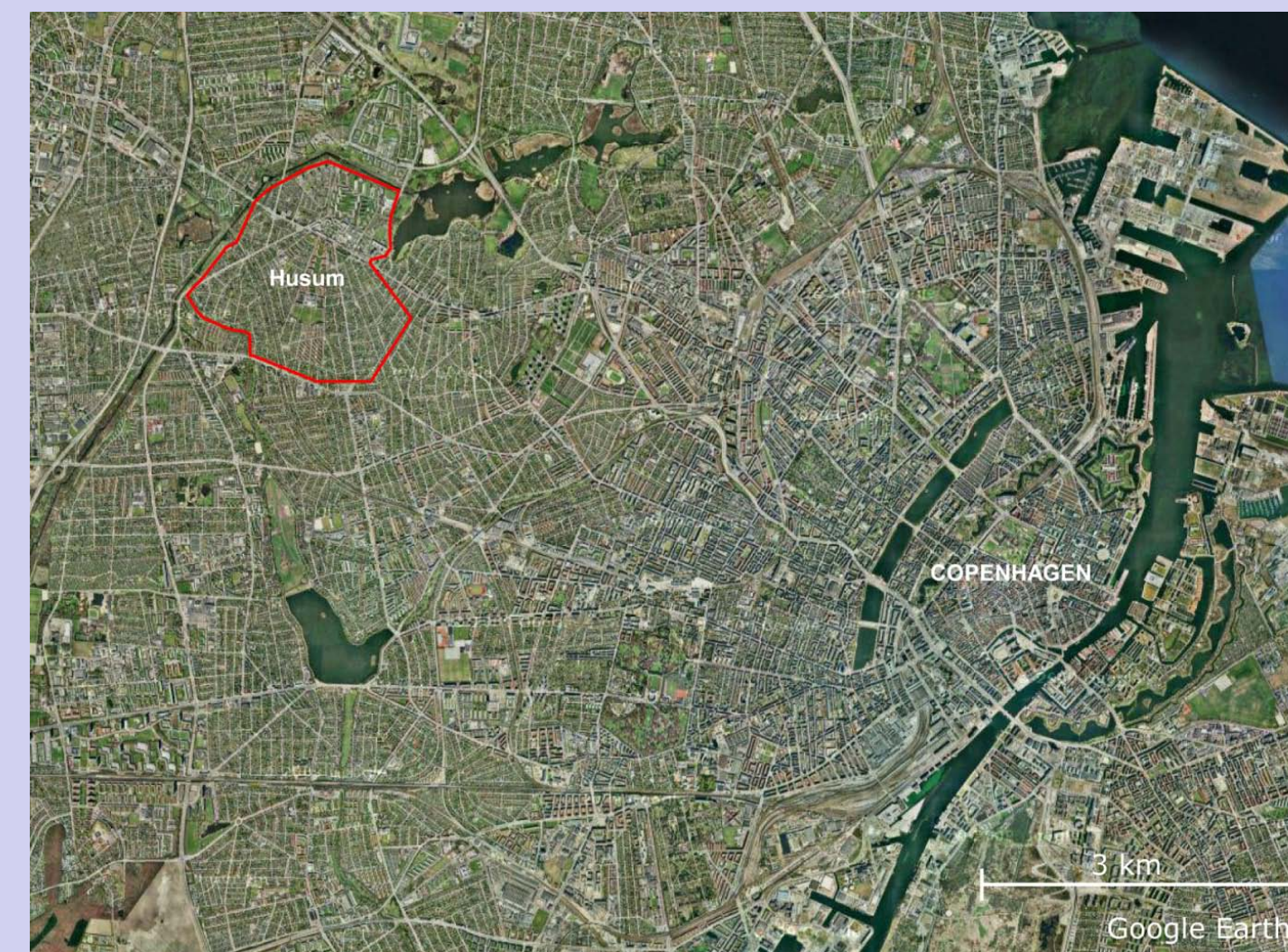
Frequent combined sewer overflows (CSOs) to the Harrestrup river in western Copenhagen lead to poor water quality in the estuary Kalveboderne. To solve this we need to greatly reduce the number of annual CSOs to the Harrestrup river, from today's 15 to 1 CSO per year and structure.

*Copenhagen Municipality (2007), in: "Vision for the Harrestrup river system and Kalveboderne"*

Local stormwater solutions are important in adaptation to climate change.

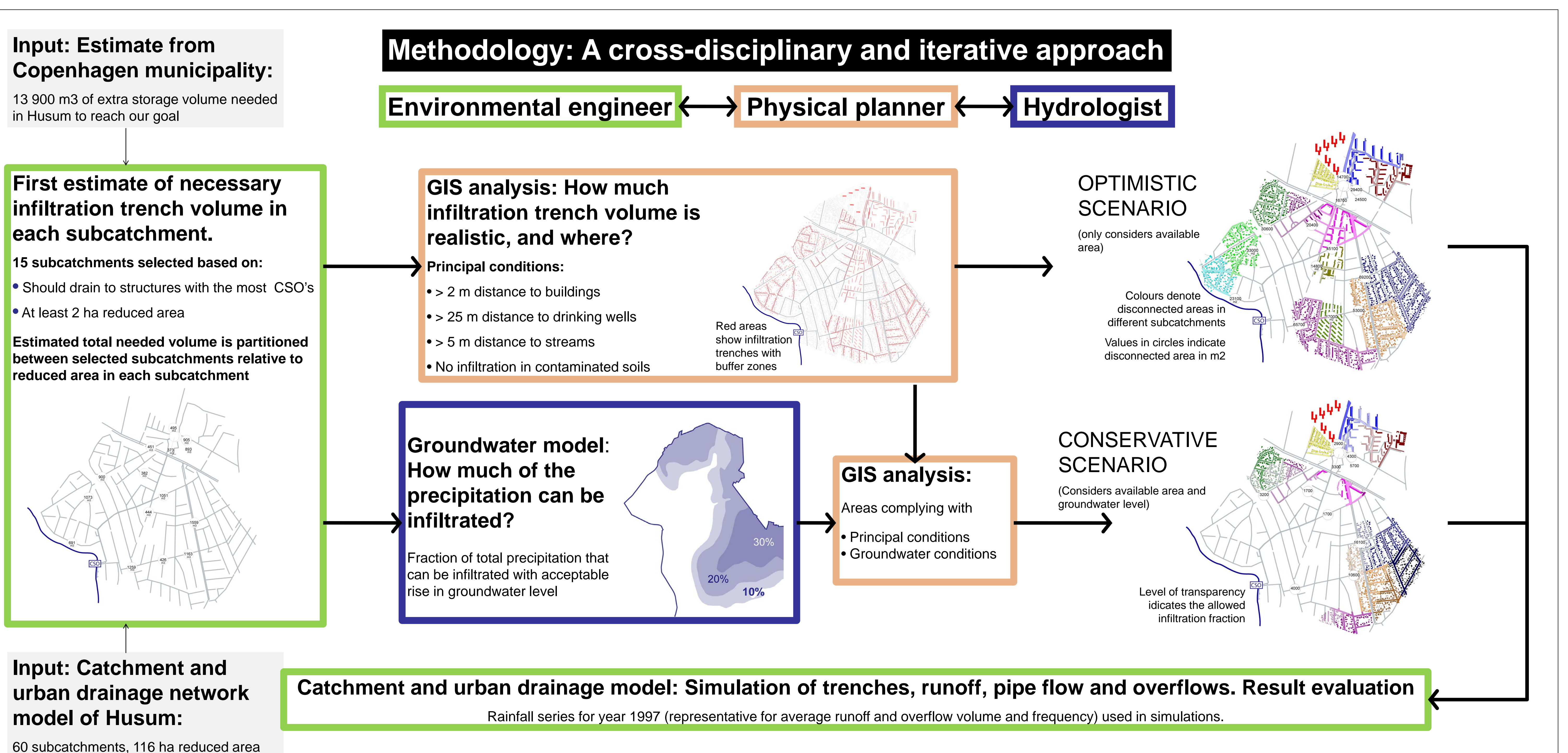
*Copenhagen Municipality (2010), in: "Climate Adaptation Plan (Københavns Klimatilpasningsplan)"*

## Case study area: Husum in western Copenhagen



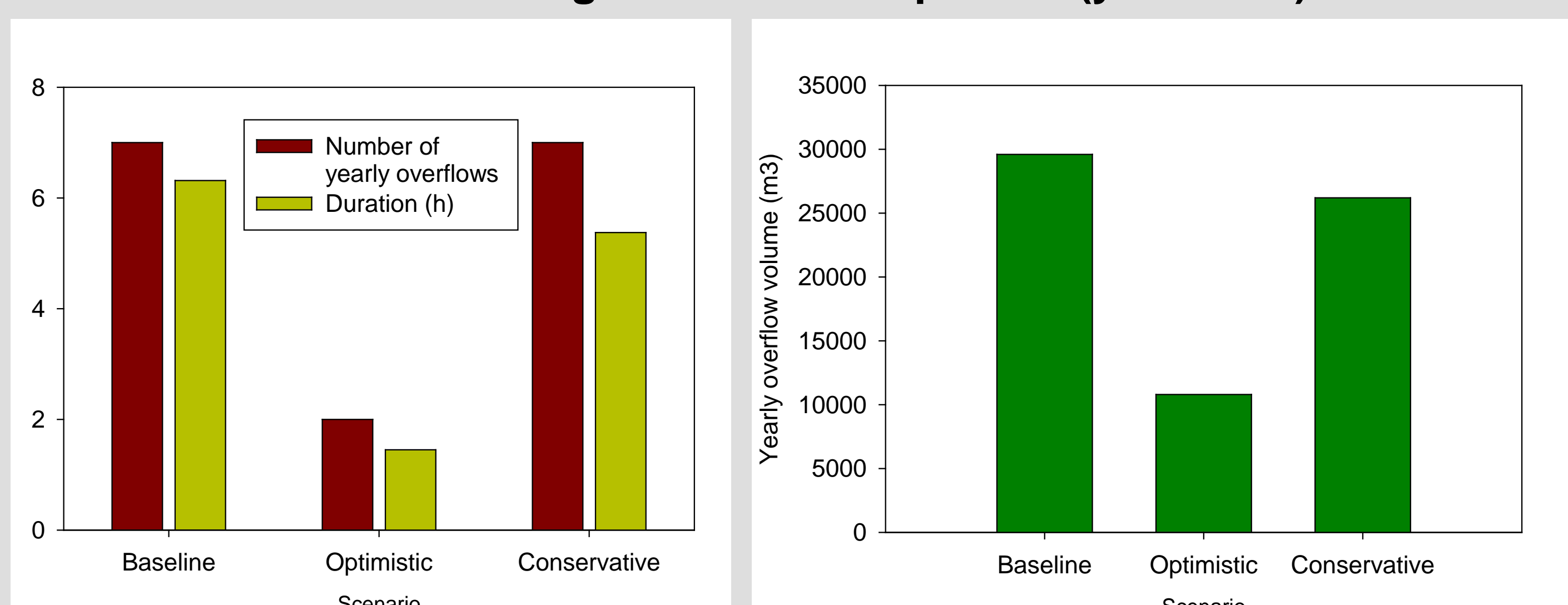
- 300 ha in the upstream part of Harrestrup river catchment
- Mainly residential area: single family houses and a few apartment blocks
- Restrictions for infiltration: drinking water interests, low permeability soils (glacial till), high groundwater table

## How can we make a realistic estimate of the amount of stormwater that can be infiltrated in Husum?



## Results and evaluation

Estimated effects of infiltration trenches in Husum on CSO discharges to Harrestrup River (year 1997)



## Conclusions and future challenges

### Conclusion:

- Our methodology can be used to estimate the amount of stormwater that can be infiltrated locally
- The estimated reduction in overflow volume is between 10% (conservative scenario) and 67% (optimistic scenario)

### Suggested future improvements:

- Integrate groundwater model with runoff/pipe flow model
- Extend model with more types of local stormwater management structures (e.g. green roofs, permeable pavements etc.)