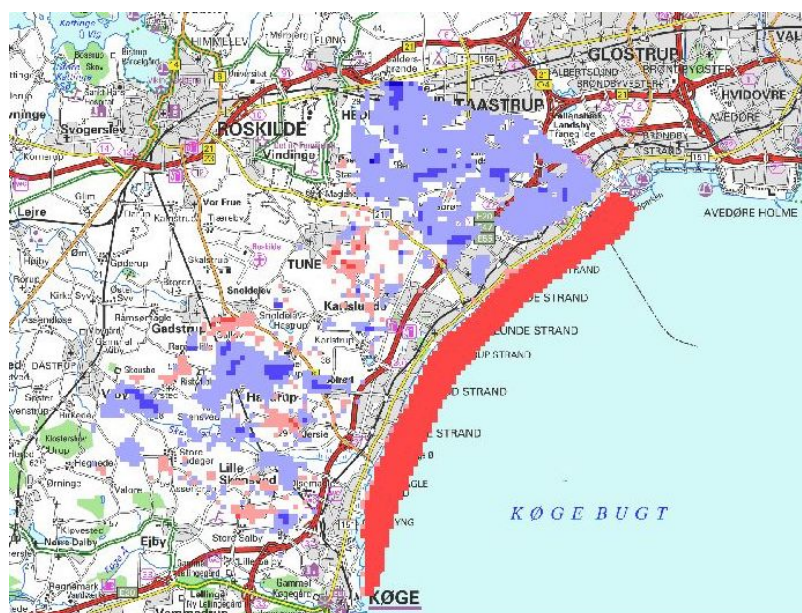

Location	Copenhagen
Type of Project	Climate change impact study
Client	Greve Kommune



Description

In general it is anticipated that temperature, precipitation and evaporation in Denmark will increase and be redistributed over the year over the next century because of climate changes. Furthermore, the sea level will rise with about 0.5 m until the end of the 21st century. Among many other things this will impact the hydrological and groundwater conditions in Denmark.

The effects on the surface water and groundwater conditions in an area south west of Copenhagen (Greve) have been investigated. The boundary conditions of an existing integrated surface water and groundwater model for the area was updated with the anticipated sea level rise and the simulated climate changes in terms of daily precipitation, temperature and reference evaporation. The climate variables were determined using the delta change method on results from the 25 km grid model developed by Danish Meteorological Institute using the climate scenario A2.

Only minor changes in the groundwater system are forecasted because the expected increase in precipitation is leveled out by an increase in evaporation of the same magnitude. Detailed studies, however, showed that the groundwater level will be above sewer pipes and a large part of the urbanized areas especially close to the coast causing increased potential for unwanted groundwater inflow. Only minor changes are forecasted in the surface water system as well which is partly due to the fact that the delta change method is used. This method does not reflect the anticipated increase in heavy rainfall events.

DHI performed the following tasks:

Extraction and re-formatting of climate data

Update of and scenario simulations with the hydrological model

Analysis and reporting of results