

Flood risk assessment and mapping

Flood risk maps indicate areas prone to flooding. Typically, maps show the extent and expected water levels of an area flooded in three scenarios: 1) a low probability scenario or extreme events, 2) in a medium probability scenario (a return period of 100 years) and 3) a high probability scenario. Maps should also show potential population, economic activities, and the environment at potential risk of flooding.

Why: According to the EU Floods Directive 2007/60/EC, all EU member States need to assess if all water courses and coast lines are at risk of flooding, to map the flood extent, assets, and humans at risk in these areas, as well as to adopt adequate and coordinated measures to reduce this flood risk. The flood risk maps should be considered when planning local stormwater management (SWM) and land-use. The flood risk maps can be used as a parallel or a background tools for SWM guidelines.

How: Different water sources that might cause flooding must be considered: Groundwater, surface water, rivers and streams, sewers and drains, and artificial water (reservoirs and canals). Floods can occur because of a combination of sources of flooding, such as high groundwater and an inadequate surface water drainage system. The topography, hydrogeology and physical attributes of the existing or proposed development all need to be considered.

Good to know: Advanced modelling programmes can allow for all the above mentioned aspects. However, special expertise is still required to assess the risks of different water sources as well as the possible consequences.

Recommendation: The flood risk maps should be available online in each city.

POINT 1
URBAN
RESILIENCE

POINT 2
TECHNICAL
OPTIMI-
ZATION

POINT 3
DAY-TO-DAY
VALUES



Flood risk map of the City of Söderhamn, the lowest points of the landscape are shown in purple.

References / More information

The EU Floods Directive:

http://ec.europa.eu/environment/water/flood_risk/flood_risk.htm

Information on flood mapping in English, Swedish and Finnish: http://www.environment.fi/en-US/Waters/Floods/Flood_risk_management/Flood_risk_management_planning/Flood_mapping and link to flood map service by SYKE : <http://paikkatieta.ymparisto.fi/tulvakartat>

Sweden's flood portal: <https://gisapp.msb.se/Apps/oversvamningsportal/enkel-karta.html> and information on stormwater floods: <http://www.klimatanpassning.se/hur-forandras-klimatet/vattendrag-och-grundvatten/oversvamnning>

