

# Municipalities and utility companies cooperate to tackle flooding

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## Background

### [Climate change tools](#)

### [Planning measures](#)

### [Diverting surface water](#)

### [Using infrastructure as emergency channels](#)

## Background

The recent flooding in Ireland and the United Kingdom caused by heavy rain highlighted the challenge that many European countries face because of climate change. The insecurity of affected landowners regarding their safety and the protection of their homes from future flooding has seen them turn their anger towards the public authorities and politicians. Landowners in Europe expect governments to protect them against flooding caused by heavy rain.

A lot of attention at national and European levels is focused on the problems caused by climate change. The implementation of the EU Flood Directive (2007/60/EC) in Denmark has highlighted the challenge that the Danish authorities face in relation to flooding. However, a number of municipalities and utility companies are cooperating at a local level to protect their towns from the effects of climate change.

## Climate change tools

Efforts to protect towns against flooding include:

- limiting the amount of surface water allowed into sewage systems through planning or regulatory measures;
- diverting surface water during heavy rain to places where it will cause as little damage as possible (eg, parks and football pitches), rather than into the basements of buildings; and
- using urban infrastructure as emergency channels for surface water.

In many instances, the initiative to protect towns from the effects of climate change has come from utility companies, as they are faced with the difficult task of renovating and repairing the public sewage system on an ongoing basis. Utility companies cannot handle the economic burden of expanding the sewage system to a capacity where it can handle all surface water from increased rain. This has caused them to put pressure on municipalities to amend their planning policies and regulate more strictly the right of landowners to dispose of surface water in the public sewage system. Municipalities have welcomed these initiatives from the utility companies, partly because Danish legislation enables utility companies to contribute to the funding of infrastructure projects that would otherwise be financed by municipalities.

## Planning measures

A 2012 amendment to the Spatial Planning Act regulates climate change adaptation in local plans, but not climate change mitigation. According to the Intergovernmental Panel on Climate Change, 'climate change adaptation' is the adjustment of natural or human systems in response to actual or

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expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Therefore, it is now possible to regulate certain aspects of climate change adaptation in local plans. However, this regulation suffers from the fact that it works only in relation to future changes to houses on properties that require a building permit.

In practice, Danish municipalities regulate the amount of surface water that single properties can discharge through the public sewage system and the level of surface consolidation on single properties.

In many municipalities, wastewater plans provide for a cash payment of up to €3,000 for single landowners if they disconnect their surface water from the public sewage system and instead percolate surface water into the ground.

Further, a number of municipalities have considered using the Environmental Protection Act to require single landowners to limit the amount of surface water discharged into the public sewage system, as flooding from sewage systems may pollute land and watercourses.

### **Diverting surface water**

From a practical point of view, utility companies are preparing to divert surface water to places where it will cause as little damage as possible. These could be parks, football pitches or farmland close to urban centres. Surface water is diverted to places where it will cause little damage in a way that requires no specific action on the part of the utility company or the municipality, or where specific action takes place in the case of heavy rain.

Further, specific facilities have been constructed in towns with the aim of functioning as dry spots for most of the year and as reservoirs of surface water in case of heavy rain. These facilities include skate parks or parks with small ponds, which are dry for most of the year, but can work as delaying reservoirs for surface water in case of heavy rain. These facilities also improve the urban environment in towns to the benefit of citizens.

### **Using infrastructure as emergency channels**

Utility companies have co-financed infrastructure projects with the aim of channelling surface water away from urban centres. An example of this approach is changing the profile of roads to enable them to function as watercourses for limited periods when they are closed to traffic. This allows them to channel surface water away from urban centres, where it can cause considerable damage. Although this may inconvenience drivers, it is a considerably less expensive way to deal with flooding from heavy rain compared to the potential cost of flooding of basements of houses and other premises in urban centres.

Similarly, utility companies can co-finance installations to limit the amount of water in watercourses that run through towns when heavy rain is forecast to ensure that the watercourses have the required capacity to handle surface water from the towns themselves.

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