



What if **the water**
rises in Dordrecht?

The dark blue storyline describes the course of the high water, the flood and the consequences.

High water occurs in Dordrecht through an interplay of sea and rivers.

The light blue storyline describes the actions of the regional authorities over time.

These include the municipality of Dordrecht, the water board Hollandse Delta and the safety region Zuid Holland Zuid.

The white storyline describes the actions of the residents, volunteers and organizations over time.

About 120,000 people live in Dordrecht, of whom about 100,000 are protected by dikes and 20,000 live outside the protected diking.

Flooding in Dordrecht

Dordrecht is a Dutch city situated in one of Europe's major delta regions. As it is the case for most Dutch people, for the inhabitants of Dordrecht too water is both a friend and an enemy. Dordrecht owes its existence to the water, but that very same water can also be a threat to the city. Governments, research and educational institutions, non governmental organizations and inhabitants of the city are very much aware of this, and they work together to build a decisive and resilient city. A city that knows what needs to be done in case of flooding.

Dordrecht invests in knowledge in the field of water safety and changing climate circumstances. Wherever possible, Dordrecht applies this knowledge to practical measures, leading to innovation. This knowledge and these experiences attract the attention, not only of other Dutch cities, but also of places far abroad.

In September 2015, the Municipality of Dordrecht, in collaboration with other institutions, organized an exhibition for inhabitants outlining the course of a major flooding disaster in our city. From the cause leading to the flooding, to the flooding itself, and the first weeks after the disaster. You can read the storyline in this brochure. It shows what each person affected can do from their own perspective, situation and capabilities to limit the damage and number of casualties resulting from the flooding.

2 weeks/1 week from disaster

2 weeks: due to heavy rainfall in Germany, the water in the Rhine is rising.

1 week: the Directorate-General for Public Works and Water Management [Rijkswaterstaat] predicts a heavy storm on the North Sea.

2 weeks: The regional authorities carry out their day-to-day activities.

1 week: The national crisis management scales up to level 1 and warns the water board.

Through the media, the residents hear about the heavy rainfall in Germany.



3 days from disaster

Rijkswaterstaat predicts a water level higher than 2.50m + NAP for Dordrecht (warning water level).

There is a threat of extremely high water levels.

The national crisis management scales up to level 2 and informs the regional authorities.

The water board informs the safety region and starts the regional crisis management.

The residents of the unembanked areas are informed about the threat of extreme high water via email service.



2 days from disaster

Rijkswaterstaat predicts a water level higher than 3.00m +NAP for Rotterdam (closing level Maeslant Flood Barrier).

Rijkswaterstaat warns for the possible closure of the Maeslant Barrier.

The municipality provides sandbags and closes off roads and the sewage system in the unembanked area.

The residents of the unembanked areas protect their houses with sandbags and move their cars.



1 day from disaster

Rijkswaterstaat predicts a water level higher than 2.80m + NAP for Dordrecht (national alert level).

The risk of flooding is high.

The national crisis management scales up to level 3.
The national government takes control of the crisis management.

The water board assembles its dike army and closes the temporary flood barrier system on the Voorstraat.

The residents of the unembanked areas have protected their houses and moved their cars.



12 hours from disaster

The water level is so high that the lowest quays in the unembanked area flood.

Rijkswaterstaat prepares the closing of the Maeslant Barrier.

The national and regional crisis management coordinate possible measures with each other.

The residents of the unembanked areas stay inside as much as possible during the storm.



6 hours from disaster

The water level rises 20 cm higher than expected.

Rijkswaterstaat adjusts their prediction up towards a high water level of 2.90m to 3.10m +NAP.

The municipality advises residents to stay indoors and to turn on the TV or radio.

The water board instructs her dike army and sets up the dike monitoring.

Most of the residents follow the advice to stay indoors.

About 12% try to leave the Island anyway, with the chance that they become stuck in traffic.



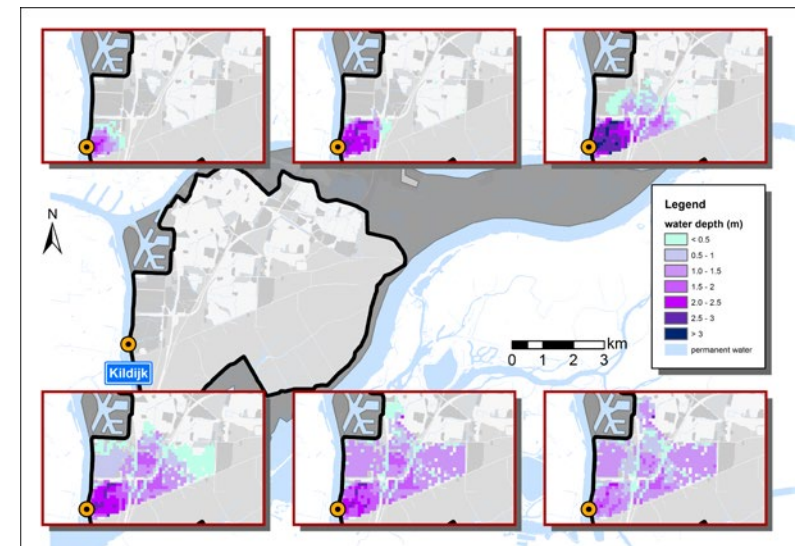
The disaster: breach of Kildijk

At a water level of 2.90m +NAP, the Kildijk breaches on the west side of the Island.

The temporary flood barrier system on the Voorstraat holds back a lot of water. However, serious local flooding occurs.

The dike guard on site reports the dike breach to the water board.

The water board informs the safety region and the municipality about the threatened area.



1 hour after the disaster

The industrial area, Dordtse Kil 3, floods quickly.

The electricity is shut down, causing the failure of the communication/information services.

The safety region takes charge of the crisis management.

The focus of the crisis management is shifted to warning and rescuing residents.

Most residents in the threatened area flee to their attics or to a high building.

Some residents try to leave the threatened area. This causes life-threatening situations.



2 hours after the disaster

The water rises above the main access road N3. The districts of Sterrenburg 3 and Crabbehof flood.

There are casualties, especially when the people are surprised by the water.

Aid workers try to warn and rescue the residents in the threatened area.

The safety region and the water board ask for support from the army.

The residents who have fled to the attics have to rely on themselves and must try to survive in the flooded area.



4 hours after the disaster

More and more residential areas in the western part of Dordrecht are flooded.

The storm on the North Sea decreases and the water level in the river starts to drop.

The safety region expands the crisis management over a larger area.

The water board prepares for an inspection of the location of the breach.

Due to the loss of electricity, gas, and (waste)water, the quality of life decreases severely in the flooded areas.



6 hours after the disaster

The water level in the river drops under 2.50m +NAP.

Electricity, gas and (waste)water are turned back on in the dry sections.

The water board takes emergency measures to limit the impact of the next high water situation.

The safety region prepares for rescue operations in the flooded area.

Many volunteers offer to help in the disaster, for example via Ready2Help from the Red Cross.



12 hours after the disaster

The next high tide occurs.

There is very little water flowing in, due to the emergency measures taken.

Aid workers try to rescue the less self-reliant residents from the flooded area.

The water board draws up a plan to repair the Kildijk.

The affected residents try to rescue themselves with available boats.



3 days after the disaster

A limited water volume continues to flow in and out of the area under the influence of the tide.

Aid workers try to save all affected residents from the flooded area.

The water board works on repairing the Kildijk.

The affected residents who have rescued themselves or have been rescued, are taken care of and given medical care.

They let family and friends know that they are safe via social media and via www.ikbenveilig.nl.



1 week after the disaster

No more water is flowing in.

In total, 10 million cubic meters of water has flowed into the affected area.

The aid workers recover the casualties and clear up the drowned animals.

The water board starts to pump water out of the affected area.

The last affected residents rescue themselves or are rescued.



1 month after the disaster

The affected area is pumped dry again.

The flood has resulted in 67 casualties and 20,415 affected residents.

The municipality and the water board start repairing the vital infrastructure.

Aid workers give after-care to relatives of the casualties and affected residents.

Large numbers of residents and volunteers work actively to clean up the affected area.

The affected residents make an inventory of the damage to their homes and start with the repair work.



1 year after the disaster

The total damages from the flood turns out to be
€ 700 million Euros.



The recovery process of the affected area has been completed.

The municipality shares the lessons from the evaluation with the
UNISDR network "Making Cities Resilient."



90% of the affected residents have returned.

They have received a government compensation for the
damages incurred.



Epilogue

The flooding from this storyline is based on simulations
with models and insights from experts.

Via the Delta programme, governmental organizations collaborate
on flood protection.

The water board strengthens the dikes on the west and east sides.
This leads to a required level of safety.

The regional authorities examine the opportunities for
damage control via multi-layer safety.

Do you know how high the water rises in Dordrecht?
And what you can do as a resident?

Go to: www.overstroomik.nl



Dordrecht and the Drechtsteden

The city of Dordrecht (119,000 inhabitants) boasts a rich history. It is the oldest city of the Holland provinces. In 1572 Dordrecht was host to the First Assembly of the Free States, which was the first important step towards the free and independent Dutch Republic. Over a thousand monuments testify of Dordrecht's rich history. Its strategic location at the confluence of large rivers is still of major importance to the city, as is its situation near international highways and railways.

Dordrecht is located in the south wing of the Randstad region, at the edge of De Biesbosch National Park. The city forms the heart of the Drechtsteden region. An area counting 265,000 inhabitants, and with a unique way of regional cooperation. The maritime industry is strongly represented in this region. Both industry and education are highly focused on making this industry more sustainable. The Leerpark, a concentration of educational institutions, has a varied offer of vocational training, including the remarkable Duurzaamheidsfabriek (Sustainability Factory). The top clinical teaching hospital Albert Schweitzer is the largest employer.

There is a large offer of cultural provisions, including the Dordrecht Museum, theatre Kunstmijn and the Energiehuis (Energy House), a center for the performing arts. It is a spectacular example of transforming former industrial buildings to new functions, as is the hotel and restaurant Villa Augustus, in the old water tower. Thanks to these provisions among other things Dordrecht attracts more and more tourists.



What if **the water**
rises in Dordrecht?

