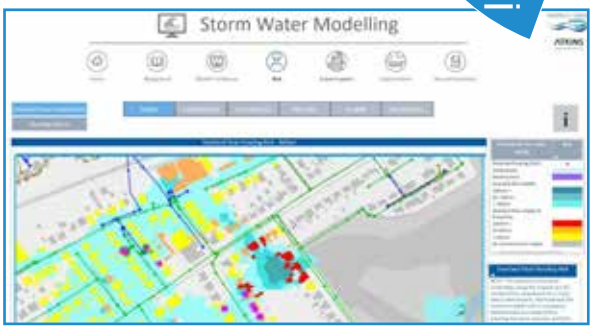
INTENSE RAINFALL, RISING SEA LEVELS AND SEVERE STORMS

KEEP STORM WATER OUT OF THE SEWERS

Most urban areas in Northern Ireland, including road surfaces, are served by combined sewers that carry both wastewater and surface water - such a system would never be built today. Reducing the amount of surface water reaching the sewers can help reduce the risk of sewer flooding due to overcapacity.

We undertake storm water modelling to help inform investment needs in our wastewater system.

Climate change was not a factor when most of our sewers were installed. We need to design all improvements to existing sewers and the construction of new sewers with climate change in mind. We have taken account of the Water Industry Research (UKWIR) project on the impact of rainfall intensity on sewer design. Our wastewater design standards will be increased to account for latest climate change predictions. However well designed, our wastewater system will not be able to cope with all extreme rainfall events. Storm overflows will still be required.



Storm water modelling.

Rainwater can be directed to water courses or ditches to address road drainage by natural means. We are working with our customers, communities, and key stakeholders (such as local councils and landowners) to create the green infrastructure to manage rainwater water run-off.

WINDSOR PARK STORM WATER SEPARATION

The existing 1930s combined sewerage system in the area did not have the capacity to take the increase in flow from the re-development of the Windsor Park Stadium and construction of the new Olympia Leisure Centre.

The project gave NI Water the opportunity to update the combined drainage system by the removal of around 70,000m^2 of existing impermeable area, reducing the risk of 'out of sewer' flooding and environmental pollution.

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Rainwater can also be slowed to help ensure our wastewater system is not overwhelmed. Examples include the creation of ponds with capacity to store the additional water resulting from intense rainfall (what is often called Sustainable Drainage Systems or SuDS) so reducing and slowing the rainfall entering our sewers.

RAINWATER GARDEN AT CLANDEBOYE PRIMARY SCHOOL

The Rainwater Garden was constructed utilising funding from the Department for Infrastructure.

The rainwater garden is a simple concept, which collects water run-off from the school roof and playground area, which is collected in an underground storage tank disguised as a turtle.

When the water within the storage tank builds up to a certain level, a valve opens and allows the water to run down a channel, which will be used by the school children as a 'duck run' play facility.

The rainwater then travels into two split-level ponds within the rainwater garden area, which provides additional storage. This process reduces the rate at which the storm water reaches the local watercourse – Clandeboye Stream, lowering the risk of flooding in this area of Clandeboye.

We will undertake the following to keep storm water out of the sewers:

- undertake further storm water modelling;
- increase our wastewater design standards to account for the latest climate change projections; and
- use SUDS and green spaces such as designated flood plains to reduce the rainwater that gets into the sewers.