

Salford and Bury Street Trees

Reducing rainwater in sewers during downpours

Background

There are many challenges that face United Utilities within urban areas. This is due to the combination of the naturally high levels of rainfall in the north and west, combined with large cities that have high impermeable areas, such as Manchester. The result is that response times from rain falling on impermeable areas to sewer system, as commonly occurs through highways drainage infrastructure is swift. In addition to problems caused as a result of increased pumping and treatment of this water, quick response times leads to increased sewer flooding risk. Systems that are typically designed for a 1 in 30 year events can quickly get overwhelmed. Building bigger pipes, or larger tanks, we cannot solve this easily in isolation, particularly in an urban setting. These are problems shared with other risk managed authorities and so it is important to tackle them in partnership.

- Requirement to test, and pilot innovative ideas in green infrastructure that decrease run off rates and increase capacity within sewers.
- Requirement to build solutions to drainage issues that improve the green environment

Our approach

In 2015 United Utilities, in partnership with City of Trees (CoT), University of Manchester and other associated partners including EA LIFE Natural Course undertook a project to explore ultra-urban green infrastructure. This is part of the Irwell Catchment Partnership. The benefits in being involved in a research project such as this was to quantify the benefits of using the technology developed by a tree pit manufacturer.

- 30 streets planted across Salford, Eccles and Bury
- At Howard Street, Salford
 - Run off collected through slot kerbs
 - 3 trees installed in a 3 layer pit system
 - Flow monitored for volume and quality at the inlet and outlet

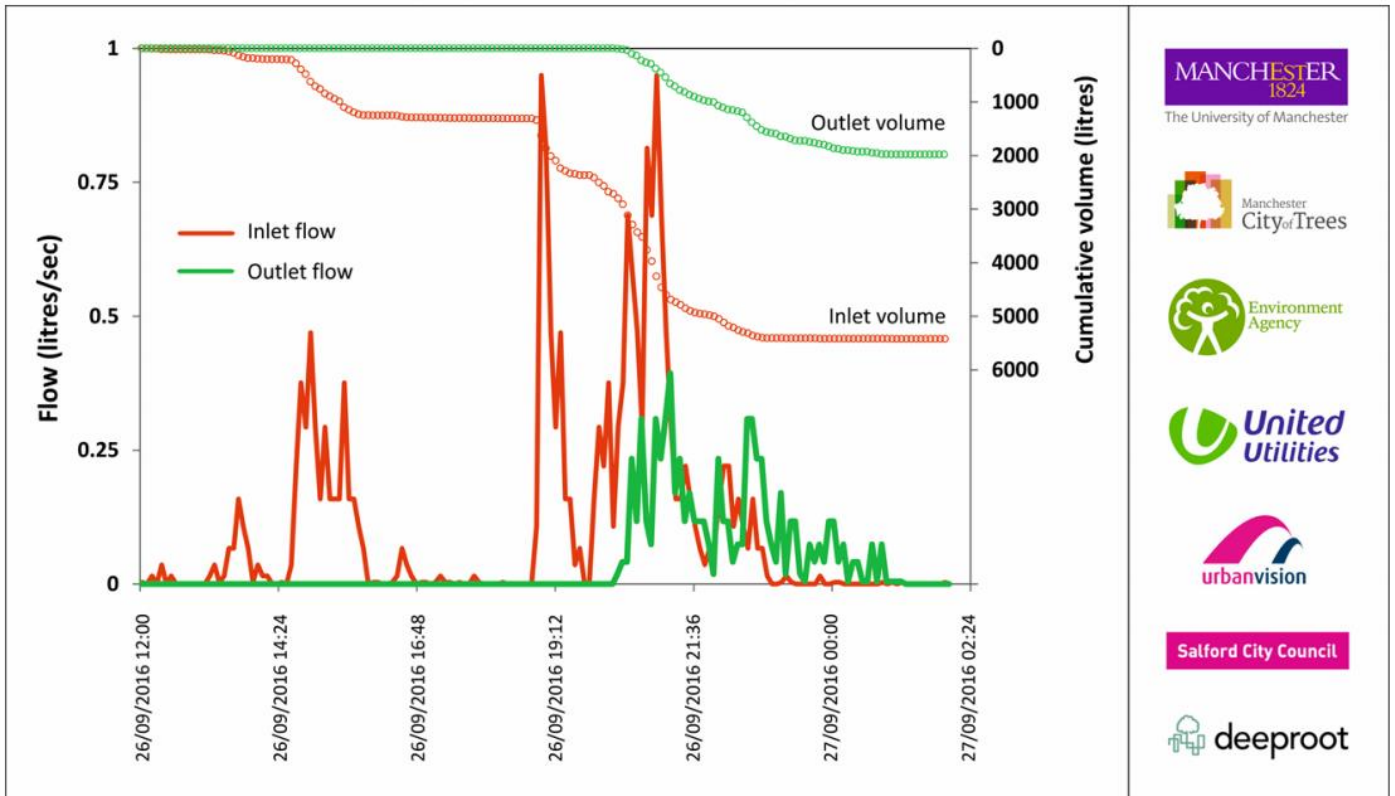
The University of Manchester assessed the impacts of these solutions to inform us on the performance over an extended period of time. This enables us to learn about how effective the solutions are and how they can be applied to other areas not just within Greater Manchester but across the region.

Key learning points

Initial results showed evidence of;

- ✓ Average peak flow attenuation was 81% - Reducing the rate at which rainfall enters into the sewer
- ✓ Average volume reduction was 78% - The actual volume/amount of water that will end up in the sewer
- ✓ Average delay of storm water peak flow was 68 minutes - The amount of time it took for rainwater entering the system and then leaving via the sewer

For a short informational video from us, [please click this link to Vimeo](#)



Great Howard Street Provisional Results



Great Howard Street